



INTERNATIONAL COMPETITIVENESS OF POLISH COMPANIES

DURING AND AFTER
THE GLOBAL ECONOMIC CRISIS

Differ

Edited by

Marlena Dzikowska Marian Gorynia
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THE GLOBAL ECONOMIC CRISIS

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Introduction

This book is the product of a research project titled “International competitiveness of Polish companies in the periods of prosperity and the global economic crisis”. The project was carried out in the years 2013–2016. The research team consisted of Marlena Dzikowska, PhD (key-investigator); Prof. Marian Gorynia, PhD (principal investigator); Barbara Jankowska, PhD (key-investigator); Aleksandra Kania, MA; Katarzyna Mroczek-Dąbrowska, PhD; and Piotr Trąpczyński, PhD.

The research matter investigated as part of the project was the international competitiveness of Polish companies, as well as changes in the influence exerted by endogenous and exogenous determinants on company competitiveness, induced by the recent global economic crisis. Poland is often perceived as a country which has dealt with the crisis relatively effectively. Firstly, even in 2009, the country’s GDP growth stood at 1.63%, while the average value of this variable for OECD countries was -3.94%. Secondly, although the export of goods and services in that same year decreased by 6.81%, the import of goods and services fell by 12.43%. In the same period, these variables in OECD countries averaged -12%. Thirdly, while in OECD countries the decrease in the net inflow of foreign direct investment amounted to 29.64%, it was only 13.06% in Poland. Moreover, even in 2009, the net value of Poland’s outward foreign direct investment increased by 21.51%, while the figure for OECD countries decreased by 32.82%.¹ The changes in Poland’s international trade might be partially ascribed to changes in currency rates and, therefore, might not necessarily reflect Polish firms’ favourable position. Nevertheless, data concerning outward foreign direct investment may serve as an indicator of a good situation of Polish companies which decided to buy assets and foreign companies at reduced prices.

¹ The data are taken from the World Bank’s World Development Indicators and Global Development Finance databases [date of access: December 2012].

The main (cognitive) aim of the project was to identify and interpret the dependencies which emerged between the crisis phenomenon observed in the global economy and Polish companies' behaviour. In particular, the point was to identify the relationship between Polish companies' international competitive position and its endogenous and exogenous determinants in the periods of the global economic crisis, the emergence of its consequences (represented by the years 2009–2010), a relative prosperity (represented by the year 2011), and an economic downturn (represented by the years 2012–2013). As the first signs of the global crisis were visible in the Polish economy only in the second half of 2008, that year is not taken into account in the analysis.

Fulfilling the main aim of the project required achieving the following specific objectives:

- 1) to conduct a critical review of the literature on theory of business cycles, including their phases, causes, manifestations, and effects, as well as empirical research regarding these issues,
- 2) to identify the variables indicating the scale of the economic crisis using a macro-, meso-, and microeconomic approach,
- 3) to discuss the economic crisis from the industry perspective,
- 4) to prepare a ranking list of countries affected the most and the least by the economic crisis, showing the position of the Polish economy,
- 5) to identify the industries most positively and most negatively affected by the economic crisis in Poland,
- 6) to carry out a critical review of the literature on theory of company competitiveness, adopt a framework for defining company competitiveness, and attempt to ascertain the determinants of a company's international competitive position,
- 7) to measure the level of Polish companies' competitiveness, as well as the internal and external factors that determine it, for the periods of the global economic crisis and prosperity,
- 8) to compare the determinants of companies' international output competitiveness in the periods under study,
- 9) to supplement the results of a quantitative analysis with the results of a qualitative analysis focused on two examples of companies which used the global economic crisis as an opportunity to improve their international competitive position.

The research hypotheses were formulated on the basis of a synthesis of selected theoretical aspects developed as part of the concept of the value chain [Porter 1985], the resource-based theory [Wernerfelt 1984, 1995; Prahalad, Hamel 1990; Barney 1991, 2002; Barney, Clark 2009], industrial organisation economics [Bain 1958; Porter 1990], and international business. The research hypotheses were

divided into two groups. One group is related to the determinants of the international competitive position in general, while the other contains hypotheses based on a comparison between the periods of prosperity and the global economic crisis.

The determinants of the international competitive position:

- H1: The higher the company's input competitiveness, the better its competitive position.
- H2: The more intense the competition within an industry, the worse the company's competitive position.
- H3: The more favourable the company's demand factors, the better its competitive position.
- H4: The more favourable the company's external resource factors, the better its competitive position.
- H5: The higher the company's internationalisation level, the better its competitive position.

A comparison between the periods of prosperity and the global economic crisis:

- H6: The influence of the global economic crisis will strengthen the positive relationship between the company's input competitiveness and its competitive position.
- H7: The influence of the global economic crisis will weaken the positive relationship between the company's external demand factors and its competitive position.
- H8: The influence of the global economic crisis will weaken the positive relationship between the company's external resource conditions and its competitive position.
- H9: The influence of the global economic crisis will weaken the positive relationship between the company's internationalisation level and its competitive position.

The relationships included in the above hypotheses are presented in Figure 1.

As for the philosophical framework adopted for the purpose of this project, the present authors faced the dilemma over which of the three paradigms prevailing in social sciences to adopt: positivism, interpretivism, or realism. Making this choice has far-reaching consequences regarding ontological assumptions/directives (what is the reality under study? what is its nature?), as well as epistemological (what can be researched? what can be subjected to research?) and methodological ones (what are the desirable ways/methods of investigating the reality?). In this study, the authors opted for philosophical realism owing to its assumed

actuality of the external world, or independence of the observed world from the subject studying it, as well as to its pragmatic approach to simultaneously using two different research methods: quantitative and qualitative ones.²

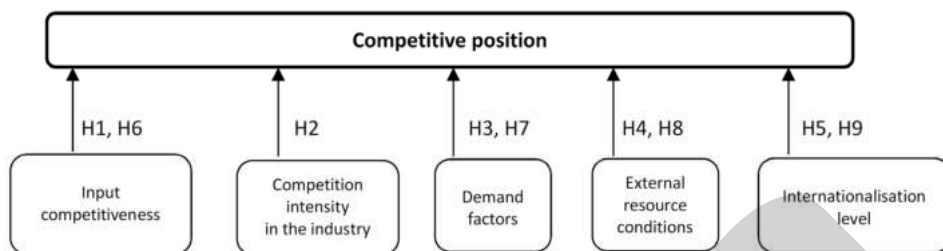


Figure 1. The relationships investigated – a scheme

Source: authors' own study.

In the study carried out, considerable efforts were made to ensure the interdisciplinary nature of analysis, to conduct a multi-level analysis, and to employ to the largest possible extent a dynamic approach. These features of research strategy were aimed at reflecting the complexity of the relationships investigated. The project used the output of the majority of the disciplines found in economic sciences (economics, finance, and management sciences), in particular the achievements of selected subdisciplines dealing with the research area concerned, such as, primarily, strategic management, international business, corporate theory, industry economics, microeconomics, and macroeconomics. What is more, where appropriate, references were made to variables and arguments used in other disciplines of social sciences, such as psychology, sociology, or law.

Empirical research into economic crises can be classified according to the adopted viewpoint of economic analysis. Macroeconomic studies focus mainly on the causes, manifestations, and effects of crises. Indicators of the strength of an economic crisis include [Urbanek, 2010; Marek, Wieczorek-Szymańska 2011, pp. 232–233] a decrease in industrial output, a decrease in national income, falling real wages and living standards, a decrease in stock-market indices, a lower number of operating companies, and the psychological effect of impoverishment caused by a significant drop in the prices of property and securities. Unlike in the majority of studies, the subject matter of the project did not concern one selected level of analysis (it was not single-level). On the contrary, the present authors

² Cf Hardt [2013, pp. 11–16]; Bunge [1967, p. 291].

concluded that a comprehensive investigation of complex crisis phenomena requires a simultaneous consideration of at least three units of analysis. In effect, the research conducted refers to three levels of economic analysis – macroeconomic, mesoeconomic, and microeconomic. A justification for such an approach is that trends identified at the national-economy level can variously translate into regularities observed within particular industries; usually these trends are all the more so variously related to individual companies. For the sake of this project, it was assumed that the national economy as a system has features some of which are of a holistic nature. What it means is that a country's economic system is not a simple sum of component elements (industries and companies), and that the average values seen on a macro scale may have a very diverse effect on subsystems. From the other perspective, i.e. the micro level, it should be observed that the effect of combining micro and meso values can be quite surprising. In other words, it could be noted that identical macro values for two similar economies may result from a completely different distribution of economic indicators for industries and companies. Only a simultaneous investigation of economic processes on at least the three aforementioned levels can provide a credible picture of the economy as a whole.

The authors' next goal was to highlight the dynamic character of the processes under study. This is why their research referred to data describing particular years of the global economic crisis. The study demonstrates that the passage of time had a various impact on particular national economies, industries, and individual companies.

The discussion as part of the study was based mainly on a deductive method, i.e. reasoning from a premise to a conclusion. As part of the reasoning, conclusions were drawn from formulated universal statements, and their empirical confirmation was sought [Bogdanienko 2008, p. 131]. Additionally, the following research methods were used: cause-and-effect analysis, logical analysis, and quantitative and qualitative approach to problems. Owing to the nature of the research matter investigated, it was necessary to extensively refer to previously produced theoretical and empirical output, which was done primarily through a comprehensive literature analysis.

The study presented here involved conducting both literature and empirical research. The empirical research was preceded by a deep critical analysis of the literature on the subject. Since both a quantitative and a qualitative approach was used to carry out the empirical research, the project was a mixed-method study [Tashakkori and Teddlie, 1998]. A planned, dominant, sequential model of QUANTITATIVE → qualitative research was employed. The empirical quantitative research adopted the macro-, meso-, and microeconomic levels of analysis, where macro- and mesoeconomic research played an introductory and supplementary

role. The statistical tools used in the project included descriptive statistics and a multidimensional analysis of data, with a special consideration for multiple regression.

Macro- and mesoeconomic studies are based on secondary materials collected from electronic databases. Research at the national-economy level using multidimensional analysis identified the countries which were most badly hit by the global economic crisis, and ascertained Poland's position in the ranking. Conclusions resulting from mesoeconomic research helped to identify the industries affected most positively and most negatively by the global economic crisis, which was ultimately used to select the industries covered by microeconomic research.

The microeconomic research, which contextually adopted the industry perspective, was based on primary material collected by means of a survey of Polish companies operating within selected industries. The decision to include specific companies in the study was based on their operation within deliberately selected industries and registration in Poland, regardless of the source of their capital. A company's belonging to a particular industry was determined by its PKD (Polish Classification of Activities) number. Additionally, the companies were divided according to the number of employees. The contact and financial data of the companies representing the industries investigated in the study were collected from electronic databases. The first version of the questionnaire was tested as part of a pilot study, and, after the introduction of necessary corrections, was used as a basis for developing the survey questionnaire. The minimum size of the research sample required to consider all planned variables in one regression equation was approximately 250 companies. However, the final size of the research sample was established at 750 subjects. After the data were collected, they were checked, reduced, encoded and entered into the Statistica program so that they could be analysed.

The qualitative research, based on primary and secondary materials, ultimately constituted an attempt to exemplify the results of the quantitative research (complementarity) and to extend the scope of the information contained therein (expansion) [Greene et al. 1989].

In general, the project attempted to determine the consequences for Polish companies' international competitive position that result from demand factors, from the intensity of competition within an industry, from external resource factors, as well as from a company's internationalisation level and input competitiveness, and to establish how their significance changed during the global economic crisis. Understanding the influence of an economic crisis on the company's ability to build its competitiveness, to compete, survive, and develop increases the level of knowledge in the field of corporate theory. At the same time, this project provides an opportunity to confront the results of research carried out on a large number of

Polish companies with the results of studies conducted in other countries and/or concerning other crises.

Chapter 1 introduces the determinants and trends in the occurrence of cyclical fluctuations, also describing business cycles found in today's market economy. Chapter 2 discusses the theoretical and empirical aspects of issues related to economic crises. In particular, it identifies the causes of economic crises and demonstrates the manifestations of this economic phenomenon from the perspective of national economies, business entities, and consumers. Chapter 3 presents the industry dimension of economic crises: it attempts to explain what an industry crisis is by showing its causes and manifestations. The next chapter discusses the theoretical, empirical, and methodological aspects of company competitiveness. Chapter 5 establishes the time period of the global economic crisis, discusses its origins, and points to the diversity of approaches used in the analysis of the phenomenon. Chapter 6 presents quantitative empirical studies aimed at identifying the countries affected the most and the least negatively by the crisis, as well as the countries which struggled the most and the least to recover at least to the pre-crisis level of economic development. Additionally, the conclusions resulting from mesoeconomic research helped to identify the industries which were affected the most and the least negatively by the crisis, as well as the sectors which struggled the most and the least to recover at least to the pre-crisis level of economic development. Chapter 7 reviews the causes, the course, and the consequences of the economic crisis in particular countries identified as the most badly affected by the global economic crisis and struggling to return to the pre-crisis rate of development. Chapter 8 presents the methodology of the empirical research conducted as part of the project on the basis of primary sources. In particular, it discusses the research problem, formulates hypotheses, describes the general population of subjects under investigation, and presents the research tools used. Chapter 9 contains quantitative research results and refers to the research hypotheses, while Chapter 10 supplements quantitative analysis results with the results of a qualitative analysis focused on two companies.

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Chapter 1

Business cycles

Marian Gorynia

Katarzyna Mroczek-Dąbrowska

The functioning of a market economy is inseparably associated with fluctuations of economic activity. Studies on the complexity of this phenomenon have been conducted since the middle of the nineteenth century. Explaining the relationship between the waves of prosperity and recession is problematic because the fluctuations affect all aspects of social and economic life. The problem is both to explain the origin of the phenomenon and to find a method for identifying particular cycles. The thesis that the occurrence of periods of recession and prosperity is unavoidable is rarely called into question.

The aim of this chapter is to discuss the determinants of and regularities in the occurrence of cyclical fluctuations, and to describe the cycles found in today's market economy. To understand the relationship between various economic indicators, it is advisable to study available theories accounting for cyclical fluctuations and review business-cycle research.

1.1. The definition of a business cycle

The phenomenon of economies' cyclical nature is one of the crucial characteristics of free-market economies. Business cycles follow various patterns, from short fluctuations resulting from seasonal changes to long ones, caused by political and social changes. What also varies is the strength of their impact on particular components of the economic system, including the production level, the inflation rate,

or the employment rate. These cycles, however, occur repeatedly and undergo transformation.

Despite disputes over the causes of business cycles, researchers agree that the knowledge of their origins and their course is essential to a properly developing economic policy and making macroeconomic forecasts [Skrzypczyński 2010, p. 11]. One of the first definitions of a business cycle was offered by Burns and Mitchell [1964], who claimed that it is a cyclical, though irregular, fluctuation of economic activity manifesting itself as changes of various economic indicators of countries which organise their production mostly in companies. This definition, currently known as the definition of a classical business cycle, refers to pre-World War II cycles. The cycles that occurred after World War II are known as modern business cycles. An important difference between the two is a shorter and gentler declining phase of the cycle.

A classical cycle is traditionally divided into four phases: recovery, peak, recession, and trough [Altug 2010, p. 9]. Within a modern business cycle we can distinguish two phases: decline and peak. The cyclical nature of the fluctuations may be slightly misleading, as their frequency is not constant or regular [Skrzypczyński 2010, p. 12]. In the US, business-cycle research is conducted by the National Bureau of Economic Research, which has been gathering data since 1857 [Altug 2010, p. 10]. On the basis of these data, it can be stated that from the time the first records were made until 2001 there occurred 32 business cycles of various length. It is commonly believed that classical business cycles lasted 8–12 years, while modern ones are shorter, lasting 3.5–5 years.

The course itself of a cycle differs as well. The morphological features¹ of business-cycle fluctuations include, first of all, the amplitude of the phases and of the cycle, the frequency and intensity of the cycle, as well as its symmetry and pattern of turning points. The amplitude is the difference between the two extreme values of a given phenomenon investigated in a period of time.² Its measure is usually the standard deviation from the trend [Kydland and Prescott 1982, Altug 2010]. In a classical business cycle the phase amplitudes are similar, while in a modern one the amplitude of the peak phase is usually greater than the amplitude of the decline phase. As a result, the amplitude of a classical business cycle oscillates around zero, while in the case of a modern business cycle it is usually positive.

The frequency of cycles, or the number of cycles occurring in a given period, is relatively low in the case of classical business cycles, and relatively high in the

¹ The features of business-cycle fluctuations.

² The amplitude of a cycle is the biggest absolute value of turning points' deviation from the adopted reference line; the amplitude of a business-cycle phase is "the sum of the module of the value of the upper turning point's deviation and the module of the value of the lower turning point's deviation in a given business-cycle phase" [Skrzypczyński 2010, p. 15].

case of modern ones. However, their intensity, or the strength of the upward or downward trends, has the opposite character. Related to business-cycle fluctuations is their symmetry or asymmetry,³ measured as the relationship between the amplitude of a phase and its duration [Barczyk et al. 2006, p. 142]. These business-cycle categories are referred to as asymmetrical cycles.

Between subsequent stages of the movement of economic values, there are two quite noticeable moments called turning points.⁴ These are limits beyond which a previously decreasing value starts growing, or conversely, an increasing phenomenon starts declining. We can distinguish the upper turning point, or the maximum level of a given indicator in a time unit, and the lower turning point reflecting its minimum value [Lubiński 2004]. A characteristic feature of classical business cycles was a rapid pattern of turning points. The turning points of modern business cycles are gentler.

Table 1.1 compares selected morphological features of a classical and a modern business cycle.

Table 1.1. A classical and a modern business cycle compared

Criterion	Classical business cycle	Modern business cycle
Number of phases	Four phases: recovery, peak, recession, and trough	Two phases: decline and peak
Phase duration	Recovery and peak: 4–6 years Recession and trough: 4–6 years	Decline: 1.5–2 years Peak: 2–3 years
Course of the cycle	Asymmetrical	Asymmetrical
Pattern of turning points	Rapid	Gentle
Cycle intensity	High	Low
Cycle frequency	Low	High
Phase amplitude	The amplitudes of the periods of growth and decline in business activity are similar.	The amplitude of the peak phase is higher than the amplitude of the decline phase.
Cycle amplitude	Close to zero	Positive

Source: authors' own study based on: Barczyk [1997]; Barczyk and Kowalczyk [1993]; Hübner et al. [1994, p. 12]; Skrzypczyński [2010].

³ When the difference is reflected in the duration of phases, the cycle is asymmetrical to the duration of phases, and when the difference concerns the amplitudes, the cycle is asymmetrical to the amplitudes of phases [Skrzypczyński 2010, p. 15].

⁴ A full cycle has three turning points, whereas one phase has two turning points.

The definition of a business cycle explains the phenomenon of fluctuations in the economy, but it is also a starting point for the following questions [Altug 2010, p. 8]:

- Why are there differences between business cycles in particular regions, and are they a threat to the global economy?
- How will business cycles evolve in time?
- In what new areas of social life should we seek the changes caused by particular cycle phases?
- How to differentiate between seasonal or accidental irregularities in the economy and business cycles?
- Has the progress of globalisation led to the emergence of international business cycles?

Many of these questions have been answered, although not all the issues have been fully explained. A significant role in the formation of modern business cycles is ascribed to the globalisation process [Skrzypczyński 2010, p. 12]. As a result, one of the most popular research trends has been to establish whether, owing to synchronisation between various countries' cycles, we can speak of a global business cycle [Köse, Otrók and Whiteman 2003]. Further questions are asked [Barczyk et al. 2010, p. 7], such as:

- How fast is the synchronisation of cyclical fluctuations, and what factors have an impact on the process?
- Are cyclical fluctuations in Poland similar to those observed in new and old EU member states, and if so, to what extent?
- What are the consequences of the synchronisation of cyclical fluctuations on an international scale for stabilisation policy, especially in crisis conditions?

1.2. Types of cyclical fluctuations

Fluctuations of economic activity have been classified more than once. One of the first studies was Estey's [1959] classification, which distinguishes long-term changes, as well as seasonal, cyclical, and accidental fluctuations. Cyclical fluctuations, which are the subject of the present discussion, can be classified in a similar manner, using the criteria of cycle duration and cycle impact. The three most frequently listed types of cyclical fluctuations are [Pałaszewski 2009, p. 161]:

- Juglar cycles,
- Kitchin cycles,
- Kondratiev wave.

In his research on changes in the economy, Juglar investigated the time between noticeable economic crises. Juglar cycles, which last 6–10 years,⁵ are also referred to as major economic cycles [Pałaszewski 2009, p. 161]. His research was focused mainly on the influence exerted on economic activity by the central bank, changes in interest rates, prices of goods, investments, etc. [Maddison 1991]. Turning points in these cycles are rapid. The occurrence of Juglar cycles is synthetically re-classified by Estey [1959, p. 166]:

- real causes, or new production methods, changes in the demand structure,
- psychological causes, or changes in the forecasting of a future economic situation,
- monetary causes, or fluctuations in the money supply market,
- investment causes, or the investment or savings rate.

Another type of business cycles is the Kitchin cycle, also known as minor because of its duration (about forty months) and considerably limited impact [Pałaszewski 2009, p. 162]. Kitchin [1923] distinguished these cycles through an analysis of economic indicators (such as interest rate or prices of goods) in the UK and the US, and identified changes in supplies as the main cause of their occurrence.

The last of the analysed types of cyclical fluctuations is the Kondratiev wave, which lasts approximately 50–60 years [Pałaszewski 2009, p. 162]. In his analysis, Kondratiev took into account indicators such as the levels of prices, wages, consumption, industrial manufacturing, as well as fossil-fuel consumption and international trade (both indicators per capita). This allowed him to identify three cycles, each with two phases: an increasing and a decreasing one. Owing to their duration, Kondratiev waves are referred to as long cycles. Their possible causes are [Lubiński 2004, p. 33]:

- technological innovation,
- political changes and warfare,
- a long-term change in the supply of gold and raw materials,
- agricultural productivity.

The above types of business cycles meet with criticism in the literature, mainly over the method of distinguishing the statistical series constituting a reference point for business cycles.

⁵ According to some sources, they last 7–11 years (e.g. Maddison [1991]). Juglar investigated the synchronisation of business cycles in France, the UK, and the US. In France, an average cycle lasted seven years, while in the UK only six years.

1.3. The phases and morphology of a business cycle

Identifying business cycles involves dividing the observed time series into periods representing the phases of a cycle. To this end, the literature uses a variety of econometric methods, including spectral analysis. There are many approaches to identifying business-cycle fluctuations, which is why various studies mention different numbers of cycles occurring within one economy per time unit.

Distinguishing particular business-cycle phases enables us not only to find whether we can expect an increase in business entities' activity at a given moment, but also to compare cycle synchronisation between countries or even regions. Decomposition also allows us to observe whether particular phases, and hence whole business cycles, in the modern economy are getting shorter or longer.

1.3.1. The course of a business cycle

Business-cycle fluctuations are different from seasonal fluctuations in that they do not occur in exactly specified periods and oscillate around certain trends. At the same time, their influence is significant enough to affect business entities in the entire economy. Section 1.1 introduced the notions of a classical and a modern business cycle. As stated earlier, one of the main differences between these cycles is the number of phases they contain. The classical business cycle has four phases, demonstrated in Figure 1.1.

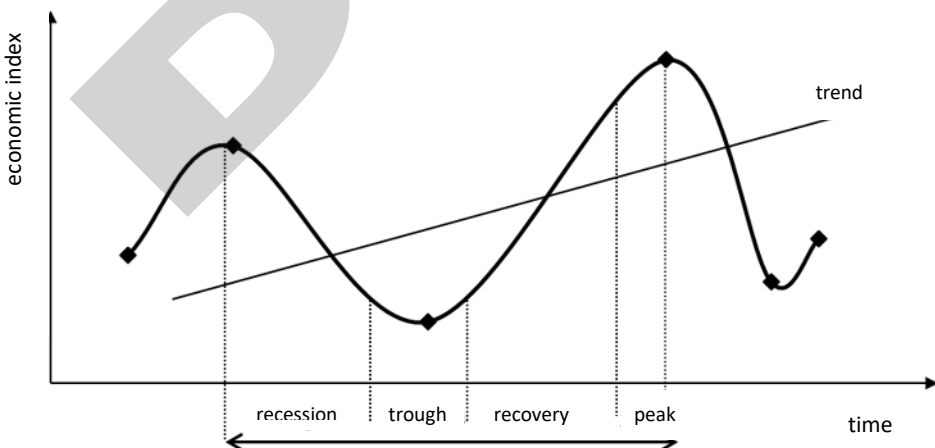


Figure 1.1. The course of a classical business cycle

Source: authors' own study based on Altug [2010, p. 9].

The four phases differ, among other things, in the value of particular economic indicators. The recession phase exhibits cautious consumer behaviour, which manifests itself in the surplus of supply over demand. The result is a considerable increase in inventory, for which manufacturers cannot find a market. This, in turn, leads to a decline in production, and hence a decline in sales revenue, profit, and, eventually, employment. Another characteristic feature of this period is a fall in prices, although today this is referred to as curbing inflation.

In the trough phase, the decreasing trend in production, consumption, wages and employment slowly weakens. Market equilibrium is restored, but economic-growth indicators remain at a lower level than previously. Because of relatively low prices, companies are forced to take measures to improve profitability.

The recovery phase is the opposite of recession. Demand – first investment demand, then consumption demand – starts growing. Owing to market expectations, companies' output and revenues increase, and so does demand for employees. During this phase inflation is growing.

The last phase of the cycle is the peak, during which economic activity is the highest. This phase starts when activity is higher than the peak of the previous cycle. The economy achieves stability again, but this time the levels of employment, production and profitability are high. So is the level of prices.

The phase of recession does not necessarily have to be associated with solely negative phenomena. This is a period when unprofitable entities – those that were not able to manage their resources effectively enough to meet market requirements – go out of business. Using public funds to rescue such entities might create widespread moral hazard, giving an illusion of impunity to companies which took bad management decisions [Jarmołowicz 2011, p. 37].

1.3.2. Stylised facts about business cycles

Regardless of their location, business-cycle fluctuations exhibit certain features which are known in the literature as stylised facts. These facts are constantly confronted with current empirical research in the field which shows that some of the assumptions made need modification. This, in turn, proves that business cycles undergo evolution and, to a large extent, are dependent on other economic factors.

The most important stylised facts about economic-activity fluctuations include the following observations [Skrzypczyński 2010, p. 16; Altug 2010, pp. 15–18]:

- in developed economies, the average cycle span is 5–8 years, whereas empirical research suggests that the span lasts from 1.5–2 to 8–10 years,
- in relation to a development trend, long-term GDP fluctuations are small,

- there are variables whose cyclicity is different from GDP,⁶
- variables can be lagging, leading or coincident in relation to GDP,⁷
- investment is more varied than consumption,
- changes in consumption are most noticeable in the case of durable goods,
- fluctuations have an effect on all industries within the economy.

In general, these stylised facts refer to economic-activity fluctuations. There are studies, however, which take into account particular countries' business cycles and, on their basis, create stylised facts concerning the business cycles of a given country. These facts may differ from those presented above. In Poland, similar research was conducted on the basis of time series from the years 1996–2009 and indicators such as [Gradzewicz et al. 2010] GDP, added value created in the industrial, construction and market-services sectors, private consumption, public consumption, import, export, accumulation, outlays on fixed assets, the average monthly wage per employee, and the number of people employed in the national economy.

The most important observations regarding Polish business cycles are as follows [Gradzewicz et al 2010, p. 50]:

- market services are much less variable than added value in the manufacturing industry and construction,
- business cycles are longer in industry, and shorter in construction and services,
- outlays on fixed assets, import and export show greater variability than GDP does,
- the growth rate of added value in agriculture is anti-cyclical in relation to the growth rate of GDP,
- despite the stylised fact of a weak pro-cyclicity of wages worldwide, it is strong in Poland,
- available data do not allow us to unequivocally resolve the issue of particular variables leading/lagging in relation to GDP, but they seem to exhibit tendencies consistent with generally accepted stylised facts.

1.4. Selected business-cycle theories

The occurrence and characteristic features of business cycles do not seem debatable, although their causes provoke a lot of emotions, discussions, and controversy.

⁶ The issue of the cyclicity or acyclicity of indicators will be discussed in greater detail in section 1.5.

⁷ The coincidence of indicators will be discussed in greater detail in section 1.5.

The numerous theories explaining this phenomenon are traditionally divided into two or three groups: endogenous theories, exogenous theories, and quasi-endogenous theories [Hübner et al. 1994, p. 63]. Endogenous theories seek the causes of cyclical fluctuations in the limitations of an economic system; exogenous theories consider non-economic factors to be of particular significance; while quasi-endogenous theories hold that fluctuations are caused by a triggered adaptation process in a disturbed economic equilibrium. This is an arbitrary division which, to a large extent, depends on the perception of how the economy works. Today, we often speak of theories of a sustainable business cycle, one of which is the real business-cycle theory.

1.4.1. Endogenous business-cycle theories

Endogenous theories do not discard the significance of non-economic factors in the functioning of an economic system; they do, however, ascribe to them a lesser importance. The causes of cyclical fluctuations are sought primarily in the system's internal specificity and dynamics. These theories include, among others, monetary theory, as well as demand and investment theories.

One of the best known business-cycle theories is the multiplier-accelerator model, which is based on the investment multiplier equation and the acceleration principle. An increase in investment demand translates into national income growth, usually multiplied. Greater resources at our disposal, in turn, increase consumer demand, leading to another rise in investment demand. Changes in the cycle occur at two points: first, when consumption does not grow as quickly as national income (the end of the peak phase), or second, when consumption does not fall as quickly as national income [Westerhoff 2006, p. 89]. On the basis of the multiplier-accelerator model proposed by Samuelson [1939], many developments of this theory have been created.

Another endogenous theory is the innovation theory offered by Schumpeter [1939]. In his view, the occurrence of a business cycle is caused by a periodical introduction and popularisation of innovations, which play a decisive role in countries' economic development. Introducing an innovation brings huge profits, which are quickly reduced because of technological diffusion. An increase in supply is greater than an increase in demand for new products, which leads to recession and a crisis. The introduction of new innovations leads to another economic recovery. Minor changes may result in shorter (Juglar) cycles, while breakthrough innovations in longer (Kondratiev) ones. The nineteenth century's most important achievements that formed particular long cycles are believed to be the innovation of the steam engine and railway; in the twentieth century it was the introduction

of electricity, the application of petroleum chemistry, and car production; and it is predicted that in the twenty-first century it could be information technologies, broadly defined [Madisson 1991]. However, Schumpeter is accused of having assumed that innovations appear in cyclical waves, although in fact they may be irregular. What is more, he does not distinguish between innovative countries and other economies, and treats them equally [Madisson 1991].

Monetary theories hold that the cause of business cycles is the wrong monetary policy. Regulation of money supply in the market leads to changes in the real interest rate and the investment rate. A limited availability of money in the market results in an increase in the real interest rate and in loan costs. This, in turn, reduces investment demand, eventually leading to a recession caused by lower production and national income. In the opposite situation, when there is an oversupply of money in the market, the real interest rate drops, and so do the costs of credit. Investors eagerly take advantage of favourable terms of investment credit, which results in a rapid increase in prices and leads to an “overheating” of the economy [Barczyk 2012, pp. 12–13].

A separate, but significant and extensively developed, trend within business-cycle theory is formed by theorists of overinvestment, who include representatives of the Austrian School. Hayek seeks the causes of business-cycle fluctuations in monetary demand shocks, which are a result of government activity. The availability of capital thanks to excessive loan expansion leads to the financing of unprofitable projects, which are rapidly liquidated when monetary policy is tightened, resulting in companies’ decreased business activity.

There are also other theories which often constitute a development of the concepts discussed (e.g. overproduction theory, inventory cycle theory, relative income theory, etc.) [Pałaszewski 2009].

1.4.2. Exogenous business-cycle theories

Exogenous theories explain the occurrence of business cycles as the result of external factors. Some of the best known are the sunspot (meteorological) theory and the political theory.

The sunspot theory associates poor harvest periods with a periodical occurrence of a larger number of spots on the sun. Consequently, changes in agricultural production translated into changes in industrial production, which in turn caused business-cycle fluctuations. This concept originates from Jevons, who asserted that the cyclical nature of economic activity stems from the laws of nature.

Continuing the discussion on exogenous factors influencing the business cycle, Kalecki pointed to government economic policy as a determinant of economic fluctuations. On the basis of observations of policies pursued by subsequent governments, it was concluded that politicians giving in to various lobbying groups “manipulate” fiscal and monetary instruments in order to gain electoral support. In the pre-election period, governments follow expansive fiscal and monetary policies in order to reduce the unemployment rate. After the election, however, the strategy is to implement a restrictive policy in order to reduce the budget deficit, limit the public debt, and curb inflation [Lubiński 2004, p. 93].

1.4.3. Sustainable business-cycle theories

Sustainable business-cycle theories include the monetarist model of nominal income and the real business-cycle theory.

The monetarist model of nominal income investigates the influence of external financial shocks on cyclical changes of nominal income [Friedman 1970]. As part of this concept, it is assumed that the source of fluctuations is the combination of stable demand and unstable supply functions. Empirical research, however, has not been able to account for the level of nominal income without making additional assumptions [Barczyk 2012, p. 17]. Friedman admitted that national-income fluctuations are visible partly in the real sphere, and partly in price changes. His discussion was developed by Laidler [1976], who introduced a business-cycle theory based on three elements: real values, monetary values, and the Phillips curve.

Although the real business-cycle theory is also classified as a sustainable business-cycle theory, it differs from theories of monetarist nominal income. It ascribes the occurrence of fluctuations mainly to real shocks on the demand side, which significantly influence productivity. Such shocks include, primarily, changes in the pace of technological progress, but also fluctuations in agricultural production, significant changes in energy prices, political conflicts and revolutions, as well as changes in economic policy [Lubiński 2004, pp. 104-105]. Real shocks (especially technological ones) lead to changes in productivity and in supply available in the market, which eventually translates into consumer behaviour. As understood by the real business-cycle theory, fluctuations in economic activity result from irregular technological shocks which change the upward trend.

The division into endo- and exogenous theories is arbitrary, as in many cases the internal and external causes of business cycles coexist with each other. Classifying business cycles according to the effect of endo- and exogenous factors is neither simple nor obvious. For example, most studies (e.g. Lubiński [2004];

Skrzypczyński [2010]) treat the real business-cycle theory as a separate category whose very characteristic feature is the assumption of maintaining the economic equilibrium at all times. At the same time, there are publications (e.g. Barczyk et al. [2010]) in which this theory is classified as an exogenous model. This is due to the complexity of these theories and the intertwining of various elements common to many models. The classification itself, however, is not the most significant issue, as long as we remember the most important theses of each theory.

Many concepts also have common elements determining the progression from one phase to another. Both Kalecki and classicists such as Smith, Ricardo and even physiocrats sought the causes of crises in government's excessive interference in the economy. Just as Marshall did, mercantilists stressed the significance of the amount of money in circulation, while representatives of the Austrian School, just as neo-classicists, found problems in monetary policy. This demonstrates the extent to which different approaches were based on contemporary knowledge of business cycles, as well as the complexity of their classification.

It is also difficult to determine which theories explain the occurrence of economic crises more fully and reliably. An example of this are attempts to explain the causes of the Great Depression of the 1930s. Empirical studies have helped to distinguish four main hypotheses which are seen as identifying its determinants in various areas [Snowdon and Vane 2003, pp. 24–38]:

- instability of global demand (non-monetary and non-financial hypotheses),
- money supply reduction (monetary hypothesis),
- unexpected deflation (financial hypothesis),
- faulty gold-standard system (systemic hypothesis).

None of the business-cycle theories presented here seems exhaustive, as in reality the causes of economic-activity fluctuations may co-occur. Some researchers also stress that at today's stage of business-cycle research, theoretical models are extremely abstract and hard to verify, while typically empirical quantitative studies approach them in a mechanical manner [Polaszakiewicz 209, p. 115]. As a result, the idea of determinism of business cycles is usually abandoned in favour of focusing on their course: on identifying particular cycle phases and investigating the degree of their synchronisation with other economies' fluctuations. Table 1.2 compares selected endogenous and exogenous business-cycle theories.

Table 1.2. A comparison of selected endogenous and exogenous business-cycle theories

Theory type	Name of the theory	Main representatives	Initial assumptions	Cause of the business-cycle
Endogenous theories	Monetary theories	Mill, Marshall, Hawtrey, Wickseil	<p>The economic system is unstable. The economy experiences a cyclical growth. Acceptance of the rational-expectations postulate</p>	Incorrect monetary policy
	Investment theories	Stiehlhoff, Schumpeter, Kalecki, Cassel, Afialon, Clark, Harrod, Hayek		Changes in the investment level stemming from fluctuations in the interest rate, profit, and capital efficiency.
	Multiplier-accelerator theories	Keynes, Samuelson		Changes in the investment level leading to multiplied changes in national income.
	Demand theories	Laderdale, Malthus		Insufficient consumption demand resulting in overproduction
	Innovation theories	Schumpeter		Technological changes in the form of breakthrough innovations
	Psychological theory of consumer behaviour	Katona		Changes in consumption and investment methods
Exogenous theories	Sunspot theory	Jevons, Moore, Akerman	<p>The economic system is stable. The economy has a tendency towards a rapid growth. The economy is often exposed to shocks. Acceptance of the rational-expectations postulate</p>	Meteorological changes translating into changes in agricultural and industrial output
	Political cycle theory	Kalecki		Changes in the country's economic policy according to the government's needs (pre-election vs. Post-election policies)

Sustainable business-cycle theories	Monetarist model of nominal income	Friedman	<p>The economic system is stable. Economic equilibrium at each point of the business cycle Acceptance of the rational-expectations postulate</p>	Changes in money supply
	Real business-cycle theory	Kydland, Prescott		<p>Real-factor changes in the economy as a result of real shocks (mainly demand shocks: e.g. Unfavourable climatic conditions, fluctuations in agricultural production, changing energy prices, wars, political upheavals, changes in economic policy, technological revolutions)</p>

Source: authors' own study.

1.5. A country's stabilisation policy

There is a dispute in the literature and in the economy whether the state in the form of the government and the central bank can effectively counteract excessive decreases and increases in economic activity. There are fiscal and monetary instruments for implementing anti-cyclical policy, also known as stabilisation policy. Using these instruments is consistent with the Keynesian school, which favours government interventionism [Keynes 1936]. From the neoclassical point of view, the effectiveness of such actions seems to be limited, as they may lead to even greater deviations from the trend. Table 1.3 presents an overview of anti-cyclical policy instruments, together with the consequences of using them.

Table 1.3. The effects of using anti-cyclical policy instruments

Policy	Instrument	Direction	Effects					
			Market interest rate	Money supply	Demand	Inflation	Disposable personal income	Production
Monetary	Rediscount rate	Increase	Increase	Decrease	Decrease	Decrease	–	–
		Decrease	Decrease	Increase	Increase	Increase	–	–
	Required reserve ratio	Increase	Increase	Decrease	Decrease	Decrease	–	–
		Decrease	Decrease	Increase	Increase	Increase	–	–
Fiscal	Government spending	Increase	–	–	Increase	–	Increase	Increase
		Decrease	–	–	Decrease	Decrease	Decrease	–
	Tax rate	Increase	–	–	Decrease	Decrease	Decrease	–
		Decrease	–	–	Increase	–	Increase	Increase
	Transfers	Increase	–	–	Increase	–	Increase	Increase
		Decrease	–	–	Decrease	Decrease	Decrease	–

Source: authors' own study.

Implementing monetary policy manifests itself in using discount policy, controlling required reserves, and conducting open market operations. This has an influence on the level of money supply in the market and on the interest rate, which, depending on the intended result, encourages or discourages new investment.

The state's fiscal policy manifests itself in using such instruments as the level of government spending, tax rates, or money transfer. Their application determines the level of demand, and hence also the level of prices. When disposable personal income increases, companies are encouraged to increase their production.

However, as business-cycle theories demonstrate, the roots of economic crises are also sought in an incorrect policy of the financial sector, especially the banking sector. The cyclical nature of the banking market is often mentioned as one of the factors behind the global crisis of the late 2000s, which was first financial, and then affected the whole economy. The cyclical development of banks is reflected in a rapid growth of their assets during prosperity, and a definitely lower (or even inhibited) growth in the case of an economic downturn. These changes noticeably affect the development of the whole economy [Zygierewicz 2011, pp. 81–82].

Considering the nature of the banking sector's impact on the other sectors of the economy, solutions are being sought to moderate the cyclical character of the banking sector's development. To this end, it is stressed that it is necessary to activate the public sector, broadly understood, which would adjust financial-market regulations and improve banks' ability to absorb external shocks. There is a discussion regarding, among other things, the advisability (or rather a method) of creating capital requirements which are expected to protect banks from taking excessive risks [Zygierewicz 2011, pp. 93–99].

As mentioned earlier, the economy's cyclical nature does not mean that transition between particular phases of the cycle takes place at fixed time intervals. However, there are indicators that might be the first signal that economic conditions are changing. These are what is referred to as leading indices, such as indicators relating to permanent infrastructure (e.g. building permits, orders for fixed assets), as well as money supply, stock-market indices, and companies' human resources policy.

Another group of indicators informing about changes in the economy are those that are coincident with the course of the business cycle. Their characteristic feature is that they change relatively concurrently with business-cycle phases. This group includes rates of employment and unemployment, company profits, industrial output, the GDP level, personal income and the general level of prices.

The last group of indicators are those lagging in relation to the business cycle, or those whose change is delayed in relation to coincident indicators. Examples include stock levels, mortgage interest rates, earnings from employment, man-hour costs, and consumer credit levels.

It is also important to check whether there are any correlations between the indicators investigated. If a correlation is significant and variables show the same direction of change, we speak of pro-cyclical variables; if the directions are different, the variables are anti-cyclical.

Table 1.4. The cyclicity of selected business-cycle indicators

Indicator	Pro-cyclicity	Acyclicity	Anti-cyclicity
Leading	Money supply Share prices	Government spending	
Coincident	Interest rate Employment Production		Unemployment
Lagging	Inflation Consumption	Real wages	

Source: authors' own study.

Being guided by economic indicators and applying government anti-cyclical policy is aimed at fixing market failures which might lead to the emergence or intensification of crisis waves. However, pursuing the wrong policy might result in government failures. Increasingly often, it is also pointed out that, as a result of globalisation processes, business cycles cease to have a national character and occur on an international scale [Piech 2002].

1.6. Empirical studies on business cycles – a literature review

Processes occurring in the international arena might lead to the emergence of what is called a global business cycle, which is “a product of the business cycles of various countries worldwide” [Marczak and Piech 2009, p. 19]. The most significant contribution to this cycle is made by the economies whose activity and share in international trade are the greatest. An example of such countries is obviously the US, which has been profoundly shaping the global business cycle since the 1970s [Marczak and Piech 2009, p. 19; Piech 2003]. This process is strengthened by regional integration, an example of which is the European Union. Within this community, we can also observe a synchronisation of particular countries' business cycles, which is an effect of pursuing similar economic policies.

Numerous studies have been conducted to identify business cycles in particular economies and to determine the extent to which cycles in specific countries are synchronised. An overwhelming majority of these studies are based on secondary data, as the subject of the analysis concerns the national scale. The most common sources of data are generally available national or regional databases of statistical

Table 1.5. Selected studies on the nature of business cycles

Study	Aspects analysed	Period analysed	Country/region analysed	Type of data*	Indicators applied	Analytical tools
Analysis focused on one economy						
Skrzypczyński [2010]	Characteristic features of cyclical fluctuations in Poland and the matching between business cycles in Poland and in the euro zone	1995–2007	Poland	S	GDP (private consumption, investment, government spending, exports, imports), GDP deflator, CPI, manufacturing industries, unemployment rate, employment, nominal M3 money supply, real M3 money supply, nominal interest rate of 3M WIBOR, real interest rate of 3M WIBOR, WIG20 stock-market index	Five methods for estimating the cyclical component of real GDP: Hodrick-Prescott filter, modified Hodrick-Prescott filter, Christiano-Fitzgerald filter, SVAR model (Blanchard-Quah type), UCARIMA model consistent with Watson's specifications
Kijek [2013]	Cyclical changes in the condition of the manufacturing sector (chemical, wood-and-paper, electro-mechanical, light, food and manufacturing industries)	1998–2011	Poland	S	Five groups of indicators: company liquidity ratios, debt servicing capacity ratios, turnover ratios, profitability ratios, supplementary indicators (investment rate, sales growth index, and the number of companies as a share of net profit in the total number of companies in an industry)	Harmonic analysis of industry-condition indices, spectral and cross-spectral analysis of industry condition

Comparative analysis of countries						
Allug and Bildirici [2012]	Business-cycle phases in selected economies and their matching	1960–2009	Australia, Canada, US, Japan, UK, Austria, Finland, France, Germany, Greece, Italy, Netherlands, Spain, Sweden, Hong Kong, Malaysia, Singapore, South Korea, Taiwan, Argentina, Brazil, Chile, Mexico, Uruguay, Israel, Turkey, South Africa	\$	Quarterly GDP at constant prices, measured in national-currency units	Markov switching model
Barczyk et al. [2010]	Role of integration processes in business-cycle synchronisation	1995–2008	Belgium, France, Netherlands, Luxembourg, Germany, Italy, Denmark, UK, Spain, Portugal, Austria, Finland, Sweden, Czech Republic, Poland, Slovakia, Hungary, Slovenia, US, Japan	\$	Quarterly GDP at constant prices	Band Pass filter by Christiano-Fitzgerald
Konstantopoulou and Tsionas [2011]	Matching between business cycles in selected economies	1960–2009	Germany, France, Belgium, Netherlands, Austria, Spain, Greece, Ireland, Luxembourg, Italy, Finland, Portugal	\$	GDP	Correlation, autoregressive model of spread delay
Artis, Choudhary and Harischandra [2011]	Significance of shocks in international business-cycle formation	1880–2006	Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, Denmark, Finland, France, Germany, Greece, India, Italy, Japan, Netherlands, Norway, Portugal, Spain, Sri Lanka, Sweden, Switzerland, UK, US, Uruguay	\$	Real GDP per capita	Structural vector autoregression method

Xiashan [2007]	Business-cycle synchronisation in the euro zone	1970–2006	Germany, Italy, France, Austria, Belgium, Netherlands, Spain, Portugal, Finland, UK, Canada, US	S	Real GDP Gross fixed capital formation Industrial production Total volume of retail trade Employment	Business-cycle dating algorithm, Markov switching model
Artis and Zhang [1997]	Impact of the exchange-rate mechanism (LRM) of the European Monetary System (EMS) on the international economic situation in terms of the relationships and synchronisation of cyclical fluctuations between countries	1961–1993	US, Japan, Canada, UK, Finland, Norway, Sweden, Germany, France, Italy, Netherlands, Belgium, Spain, Portugal, Ireland	S	Monthly industrial output, seasonally adjusted	Phase-average-trend estimation

* S – secondary data.

Source: authors' own study.

offices and international institutions, such as the World Bank, the International Monetary Fund, or the Organisation for Economic Cooperation and Development. Although the scope of the analysis is similar, the methodology applied is changing dynamically. Most studies of business-cycle synchronisation employ econometric methods, and the models applied vary considerably. A short comparison of selected studies in this field is presented in Table 1.5.

Numerous studies on business-cycle synchronisation (e.g. Berge [2012]; Altug and Bildirici [2012]) have demonstrated that in the 1990s and 2000s the business cycles of particular economies displayed an increasing tendency towards synchronisation. Special attention was paid to the causes of synchronised business-cycle fluctuations, which were believed to stem from the globalisation process. Empirical studies proved that countries involved in an intense exchange of goods and services tend to synchronise their cycles. This hypothesis, however, was not confirmed in the case of financial transactions [Berge 2012, p. 26].

Attempting to formulate several stylised facts regarding the synchronisation of European countries' business cycles, it can be stated that [Barczyk et al. 2010, pp. 153–154]:

- a constant business-cycle correlation with euro-zone countries is exhibited by Germany, France, Italy, Belgium, Austria and, in some studies, the Netherlands,
- a relatively lower level of synchronisation can be noticed in countries which joined the EU later, namely Greece, Portugal, Ireland, and Finland,
- among the so-called new member states, the highest level of synchronisation with the countries of the monetary union is exhibited by Poland, Hungary, and Slovenia,
- the lowest degree of synchronisation, or even desynchronisation, can be seen in the Baltic states, i.e. Lithuania, Latvia, and Estonia,
- the majority of studies point to monetary integration as the cause of business-cycle convergence.

Recapitulation

Although research on business cycles has been conducted for decades, there are still different interpretations of not only their causes or but also their course [Polszakiewicz 2009]. This, together with dynamic changes on the world's political and economic map, has led to the emergence of new areas of research into cyclical fluctuations. The research has not only cognitive but, most of all, practical significance [Barczyk et al. 2010, p. 7]. Intense globalisation processes have resulted in

the thesis that the causes and mechanism of business cycles themselves and of their synchronisation between countries should be sought in international economic policy, in common (monetary or real, demand or supply) shocks and, increasingly, in particular countries' integration. The question regarding the determinism of business cycles still seems to be relevant, and the theories put forward to account for it are very complex and involve a large number of factors.

Efforts aimed at expanding the monetary union and the ability to seek sources of finance abroad have considerably increased the significance of international institutions (especially banks and other financial institutions). The latest economic crisis showed that economies' openness may result in market trends being transferred between countries, and thus in an increasingly fast cyclical convergence of economies. A pertinent question, therefore, would be whether we can speak of a global (or perhaps regional) business cycle.

Chapter 2

Economic crises – theoretical and empirical aspects

Marlena Dzikowska
Piotr Trąpczyński

The aim of this chapter is to present theoretical and empirical aspects of economic crises. The part regarding theoretical aspects delimits the notion of *economic crisis* and establishes a definition framework which will be applied in further parts of the present study. Furthermore, the chapter discusses the causes of economic crises and identifies the manifestations of this economic phenomenon, adopting the perspective of national economies, business entities, and consumers. The second part of the chapter, opening with a historical presentation of the main economic crises, discusses the results of empirical research on the influence of a crisis at the macro-, meso-, and microeconomic level. It additionally focuses on the results of previous research and operationalisation of variables used for analysing particular aspects of the issues investigated.

2.1. Economic crises – theoretical aspects

The word *crisis* originates from the Greek word *krisis* – a decision or judgement. The contemporary PWN encyclopedia [<http://encyklopedia.pwn.pl/haslo/4011371/kryzys.html>] defines *crisis* as “a period of collapse, a turning point, and a potential breakthrough in the functioning of a given social or political system”. This definition strongly emphasises the concept’s contemporary associations with a social and political dimension. A term directly related to social sciences is *economic crisis*, which closely refers to the subject of business cycles (see Chapter 1 for more

details). Sometimes the notion of *economic crisis* is associated, or even used interchangeably, with the terms *economic recession*, *economic crash*, *economic depression* or *economic slowdown*. For this reason, the first section of this part of the book sets a definition framework applied further on with reference to the term *economic crisis* and analyses its relationship with notions such as *economic recession*, *economic crash (economic slump)*, *economic depression*, and *economic slowdown*.

The subject of causes and manifestations of economic crises is closely related business-cycle theories. As the theories have been presented and discussed in section 1.3, the second section of this part of the book will only list the causes of crises with reference to business-cycle theories and present the symptoms of economic crises in relation to various macro- meso-, and microeconomic aspects of economic life.

2.1.1. Delimiting the concept of *economic crisis*

It can be safely assumed that an economic crisis, economic recession, economic crash, economic depression, and economic slowdown are reflected in the real sphere of the economy and in its weaker performance. Among the terms mentioned above, the simplest and least controversial is the definition of economic slowdown, which should be understood as a lower rate of economic growth. According to business-cycle theory, a recession is one of the phases in a classical business cycle (see section 1.3.1 for more details). In practice, an economic recession is usually seen as a period in which a country's economic activity is lowered for at least two consecutive quarters,¹ as reflected in a decrease in the real GDP value, i.e. the value of all goods and services produced in a given country, adjusted for the rate of inflation [Claessens, Kose and Terrones 2012; Krzak 2013]. Increasingly often, however, controversy over this definition is aroused when the real GDP level is regarded as the only criterion used for identifying periods of economic recession [The Economist 2008; Krzak 2013]. This is why the aforementioned organisation investigating business cycles in the US (the National Bureau of Economic Research) assumed that decreased economic activity delimiting periods of economic recession is reflected in the real GDP value, real wages, the level of employment, the industrial production index, and the volume of wholesale and retail sales [<http://www.nber.org/cycles/recessions.html>, date of access: August 2013]. In the literature we can also encounter a slightly more liberal approach

¹ In this monograph, we also accept the possibility of using the term with reference to a country's region or to a group of countries (e.g. an integration grouping).

according to which an economic recession is defined as a period when a country's economy develops more slowly than its long-term growth trend determining the available potential [The Economist 2008]. The significance of using this type of indicator is stressed especially with reference to dynamically developing countries. Nevertheless, this approach may undoubtedly involve difficulty and potential subjectivity in determining a prospective rate of growth. What is important, an economic recession is considered to be over when the level of the criteria used in its determination does not deteriorate further [<http://www.nber.org/cycles/recessions.html>, date of access: August 2013; Claessens, Kose and Terrones 2012].

Jasiński [2009, p. 271] is of the opinion that not only an economic recession but also an economic crash and depression consist in the real GDP level being lower for two consecutive quarters. He also stresses that an economic recession, crash, and depression differ from each other by their duration and the severity of the decrease. An economic crash involves a sudden and rapid² fall in the rate of GDP growth; and according to business-cycle theory, a depression is one of the phases in a classical business cycle (see section 1.3.1 for more details), a phase when the crisis reaches its lowest level, the production decrease is curbed, and employment, prices and rates of profit stabilise. It is generally accepted, however, that an economic depression is a long-term and deep economic recession [Jasiński 2009]; this definition does not cause much controversy. How, then, should we understand the term *economic crisis*, and what is the relationship between this term and the other concepts listed?

Although the term *economic crisis* has been used for many years in the literature on economics, political science, and social sciences in general, the concept is hardly ever delimited. Actually, a definition framework for the notion of *economic crisis* adopted in a given study is declared rather infrequently; indeed, many studies leave the term unexplained and use it intuitively.³ This is significant to the extent that, depending on the adopted definition and the criteria resulting from it, we can speak of this economic phenomenon taking place in a given country and period or not.

Jasiński [2009, p. 272] represents the view that the notion of *economic crisis* should be distinguished from *economic recession*. According to his definition, *economic crisis* means an economic system's inability to develop further or even continue to exist in its current form. Semantically, the definition does not seem so disparate from the generally accepted (also by Jasiński [2009, p. 271]) definition of economic recession. For it is difficult to assume that an economy that in real

² An arbitrary borderline is set at above 10%.

³ See e.g. Koryś [2010]; Allal-Chérif, Maira [2011]; Filippov, Kalotay [2011]; Makovec Brenčič, Pfajfar, Rašković [2012].

terms has been shrinking for two consecutive quarters could at the same time constitute a fully operational economic system capable of development, although undoubtedly an economic recession does not always involve an economic system's inability to exist in its present form. Piech [2012, pp. 36–37], in turn, distinguishes an economic recession from an economic crisis using the criterion of time, or more precisely, duration of the shrinking of GDP in real terms. As mentioned earlier, if an economic recession covers a period of at least two consecutive quarters, according to the definition proposed by Piech, an economic crisis involves at least a two-year decline in the real GDP value, annualised rather than measured on a quarterly basis. Additionally, adopting such a definition does not allow us to completely separate the terms *recession* and *economic crisis* from each other, because every economic recession that lasts at least eight quarters will be considered an economic crisis. At the same time, it may happen that during one economic crisis there occurs more than one economic recession.

The literature of the subject offers also other definitions of crisis, adopted according to the aim of the research conducted. For instance, for the purpose of their research, Pei and Adesnik [2000, p. 139] assumed that an economic crisis is a time when an economy's annual inflation rate exceeds 15% or when the annual growth rate of GDP is not positive, the latter condition applying to countries where the inflation rate is chronically high. Wague [2009, p. 82], in turn, stresses the international dimension of economic crisis and defines it as a sudden economic slump on a global scale, reflected in inhibited investment, limited access to credit, corporate bankruptcies, increased unemployment, destroyed parts of the banking sector, and a slowdown in international trade. Nosek and Pietrzak [2009, p. 83] view an economic crisis as a gradual or sudden event threatening various aspects of economic life and often involving a periodical decline in business activity.

As shown in the discussion above, the differences between adopted definitions of *economic crisis* focus mainly on its minimum duration and on potential indicators, the observation of which facilitates its identification. Greater controversy exists as to the relationship between the concept of *economic crisis* and the other terms discussed. Relevant conclusions drawn from the discussion above are presented in Figure 2.1.

To recapitulate, the authors of this book assume that the term *economic crisis* is inseparable from the terms *economic slowdown* and *economic crash*, and that it incorporates the term *economic depression*. In particular, the duration of an economic crisis might exceed the duration of one economic recession, understood as at least two consecutive quarters in which real GDP decreases. Additionally, for the purpose of this work, it is assumed that an economic crisis involves at least a one-year annualised decrease in the real GDP value and in other indicators of the economic situation.

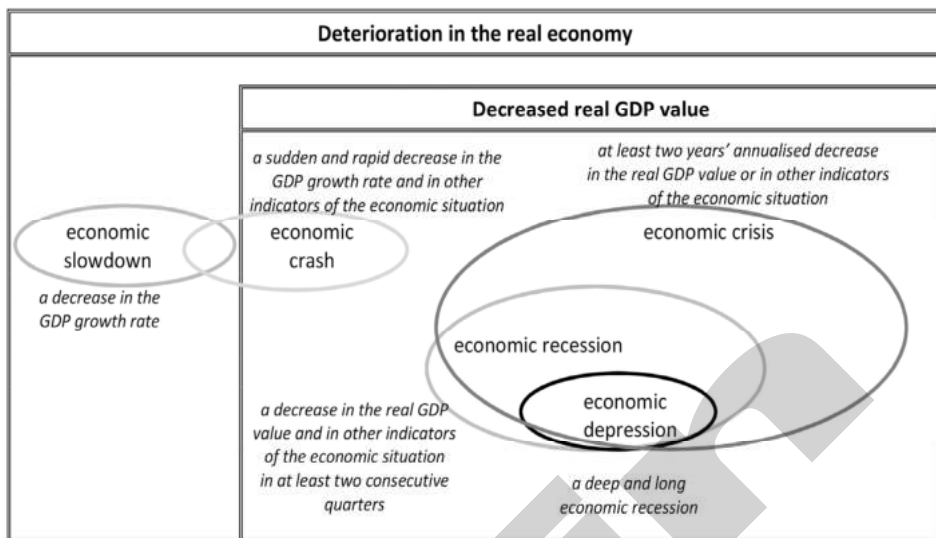


Figure 2.1. The relationship between the concept of economic crisis and selected economic terminology

Source: authors' own study.

2.1.2. The origins of economic crises

An economic recession is a period of companies' decreasing business activity, which involves rising unemployment, people's declining disposable income and limited purchases, falling government revenues, accompanied by a growing demand for government's social assistance for citizens. As concluded in the previous section, an economic recession may transform into an economic crisis, whose symptoms are more severe due to their longer duration. Economic recessions and the economic crises associated with them are part of business cycles. The pursuit of limiting the occurrence of economic crises and neutralising their symptoms has for years been attracting the attention of many economists and politicians who focus on the analysis of business cycles and their causes (see section 1.4 for more details). There has also been a long-standing dispute over the actual origins of crises and the right set of remedial and corrective measures, although such discussions intensify especially during economic downturns. Hence the numerous theoretical conceptions discussing the origins of business cycles, which are closely connected with the development of economics as an academic discipline and,

within it, the history of economic thought, and business-cycle theory. As the above conceptions are discussed in detail in section 1.4, in this part of the book they will only be grouped according to three areas in which the main causes of business cycles are sought. The areas identified are the financial market/finance (money), the state (government actions), and the goods and services market (supply/demand) and aspects related to them. Table 2.1 presents a division based on the above criterion of area. It should be emphasised at this point that not all of the conceptions and theories considered here referred directly to the causes of business cycles. Nevertheless, since they concern matters related to cyclical fluctuations, they also refer to the issue of origins of economic crises.

Table 2.1. A classification of economic conceptions, by origin of economic crises

Goods and services market	Finance	State
<i>Malthus</i> – insufficient consumption	<i>Mercantilists</i> – amount of money	<i>Physiocrats</i> – trade regulations
<i>Mill</i> – oversupply because of limited credit		<i>Classicists</i> – government interference
<i>Marx</i> – inefficiency of the capitalist market	<i>Kalecki</i> – fiscal and monetary policy	
<i>Schumpeter</i> – introduction of innovations	<i>Marshall</i> – excessive credit expansion	<i>Political business-cycle school</i> – national election
<i>Keynes</i> – demand shocks	<i>Monetarists</i> – monetary disruptions	
<i>Post-Keynesians</i> – changes in the size of investment outlays	<i>Neo-classicists</i> – monetary policy	
<i>Real business-cycle school</i> – supply shocks	<i>Austrian School</i> – government actions leading to excessive credit expansion	
<i>New Keynesian school</i> – supply shocks and demand shocks		

Source: authors' own study.

In economic reality, particular areas included in Table 2.1 (the financial market, the state, and the goods and services market) are actually interrelated. Within particular political and economic systems, the strength of these relationships may vary. In free-market economies, the relationships between government actions on the one hand and the goods and services market and the financial market on the

other are expected to ensure an efficient functioning of the markets, to provide protection from abuse and speculation, and to help satisfy social needs, broadly understood. Therefore, national authorities are responsible for legislation regulating these markets and for bodies enforcing its observance. Additionally, by implementing monetary policy, the government directly influences the financial market, and indirectly – the goods and services market. Fiscal-policy implementation, in turn, has a direct impact on the goods and services market, and indirectly – on the financial market. Furthermore, the financial market itself is strongly and directly related to the goods and services market. A significant issue is also the possibility of transmitting disruptions occurring in one area or its part⁴ to the whole economy. As theoretical conceptions presenting the origins of cyclical fluctuations are supposed to reflect economic reality, some of them take into consideration relationships between the identified areas, which is represented in Table 2.1 by merged cells assigned to particular areas.

Among the concepts presented in Table 2.1, it is hard to pinpoint one that would fully explain the origins of economic crises. It seems reasonable to treat at least some of them as mutually complementary. According to Table 2.1, the causes of economic crises include inefficiency of the free market, demand and supply shocks and disruptions, monetary disruptions including excessive fluctuations in the amount of money in the market, and an excessive credit expansion, which could be caused or reinforced by the government's wrong monetary policy and inappropriate interventions. However, these causes of crises are limited to stimuli endogenous to a given country. In reality, the majority of national economies are at present economically (through trade, investment, etc.) linked to other countries, and the intensity of these links, for different reasons, varies for particular partners. Therefore, stimuli exogenous to a country may occur as a result of disruptions in the economic situation being transmitted from a partner country. In such a case, we can speak of transmitting an economic crisis outside or infecting others with it⁵ [Piech 2012, p. 47]. Owing to the contemporary character of economic relationships between countries, the main transmission channels for these disruptions are flows of capital, as well as flows of goods and services, with regard to both their volume and their prices.⁶ In the case of capital flows, the impulses may be

⁴ E.g. demand/supply shocks related to a specific raw material, a crisis in a particular industry (see Chapter 3 for more details), a currency crisis, etc.

⁵ Owing to different speeds of impulse transmission, a distinction is often made between the uses of the terms *transmit* and *infect* with reference to an economic crisis. It is assumed that infecting refers to quicker transmission. See Piech [2012, p. 59].

⁶ As mass migrations are limited by many countries' legal systems, today's flows of people are considered to be a less significant factor transferring business cycles. The factor may prove particularly important for countries whose economy is heavily reliant on tourism.

transmitted through portfolio investment, foreign direct investment, foreign credit, and transfers, although in the latter case the impact is for many countries extremely limited. According to World Bank and International Monetary Fund data, in 2007 the market capitalisation of listed companies worldwide was approximately US\$64.5 trillion, and the value of portfolio investment in assets worldwide stood at about US\$901 billion, while the value of the world's foreign direct investment amounted to almost US\$2.5 trillion [<http://databank.worldbank.org>; <http://www.imf.org>; date of last access: March 2011]. These figures illustrate the scale of financial relationships in the world and the potential for transmitting cyclical impulses through these channels.

As for impulses transmitted because of flows of goods and services, these refer to drastic changes in volumes traded as part of a country's foreign trade, as well as to rapid changes in the prices of goods and services subject to this trade. The influence of the latter factor is particularly evident in the case of raw materials, whose prices – especially those of petrol, coal, and metal ores and alloys – are determined on world stock exchanges. The value of the world export of goods and services in 2014 was just over US\$19 trillion,⁷ with about 21% of the value being achieved through the sale of services abroad [<http://databank.worldbank.org>; date of access: March 2016]. It should also be noted that in 2014 the value of the world export of goods and services was almost eight times as high as the corresponding 1975 figure⁸. The increased scale of trade significantly facilitated the transmission of cyclical impulses within specific regions, and in some cases also between them.

2.1.3. Manifestations of economic crises

Although economic crises are perceived as a phenomenon affecting the entire economy, their impact on particular entities varies. Determining the influence of a given economic crisis on specific companies, industries or economies always requires conducting empirical research under conditions resembling a natural economic experiment, or using data that are equivalent to it. It is possible to present potential manifestations of economic crises on the basis of historical data and experience gained so far. These manifestations can be observed from different perspectives: the whole economy, industries, companies, and consumers. Further

⁷ To maintain comparability in the periods discussed, the values are presented in constant prices in US\$ 2005.

⁸ This was the year when the World Bank began to report data regarding the value of the world's export of services. The comparison was made for data expressed in constant prices (US\$ 2005).

in the chapter, we present an overview of potential symptoms of economic crises, taking into account the areas where their observation is possible. The presentation takes into account the perspectives of the whole national economy, companies, and consumers.⁹

In accordance with the definitions provided in section 2.1.1, from a macroeconomic perspective, the phenomenon of economic crisis manifests itself as a decrease in the real GDP value, real wages, employment, the industrial production index, the volume of wholesale and retail sales [<http://www.nber.org/cycles/recessions.html>, date of access: August 2013], as well as in the value of orders. While referring to the economy as a whole, these indicators reflect aspects related to companies and consumers. The level of employment, the level of real wages, and the volume of retail sales reflect people's professional activity, purchasing power, and level of consumption. At the same time, the real GDP value, the level of employment, the volume of wholesale sales, the industrial production index, and the value of orders represent the level of business entities' activity.

One of the manifestations of an economic crisis could also be an increased number of unpaid corporate and consumer loans. Additionally, since the condition of an economy depends largely on decisions made by business people and consumers, a country's economic situation can be reflected in their moods and expectations. Hence, the indicators describing the condition of an economy include also indices of business people's and consumers' attitudes and expectations.¹⁰ Owing to today's widespread international economic relations, another manifestation of an economic crisis could be significant changes in the volume of inward and/or outward foreign direct investment, changes in the volume of inward and/or outward foreign portfolio investment, and changes in the volume and value of exported and/or imported goods and services. It is worth stressing at this point that the scale and direction of changes will, in these cases, depend not only on the country's economic situation, but also on the economic situation of partner countries.

From a microeconomic perspective, an economic crisis may cause a drop in a company's turnover, a loss in its market share, and a deterioration in its profitability [Claessens, Kose, Terrones 2010]. Moreover, crisis phenomena have an impact on the value of company assets through interest rates, and on access to

⁹ The manifestations of business crises with regard to industries are not identified separately in the presentation because, in their entirety, they would constitute a repetition of the manifestations listed with reference to both the macroeconomic and the microeconomic sphere.

¹⁰ In Germany, information is announced regarding the values of the Ifo Business Climate Index and the GfK Consumer Sentiment Index. The US has the Conference Board Consumer Confidence Index and the NFIB Small Business Optimism Index. The European Union, in turn, announces its own consumer confidence index.

external sources of finance because of tightened creditworthiness quantification criteria, different credit terms, a limited inclination to grant further credit, or an insistence on its timely repayment [Zieliński 2009, pp. 114–118]. In the case of listed companies, it is also possible that a company's market capitalisation will drop rapidly, which on the one hand may involve the risk of being taken over by external capital and, on the other, may create opportunities for acquiring interesting business entities. Sometimes, a crisis-related strong reduction in demand leads to an increase in competition, a deterioration in the company's financial condition, and ultimately – to bankruptcy. Therefore, in a given economy during an economic crises, we can observe a higher number of company bankruptcies or a lower number of newly registered businesses [Królak 2013].

To respond to these phenomena, companies, among other things, decide to reduce costs, decrease production, reduce or suspend investment, enter foreign markets or withdraw from them, increase the share of equity in the sources of finance, restructure debts, reduce employment, and lower employees' wages [Akhter, Choudry 1993; Pearce, Michael 1997; Beaver, Ross 1999; Uslu 1999; Laitinen 2000; Zehir, Savi 2004; Zehir 2005; Spence, Crick 2009].

From a micro-microeconomic perspective, in addition to the aforementioned decreasing purchasing power and consumption, rising unemployment,¹¹ and deteriorating attitudes and expectations, we could mention less obvious manifestations of an economic crisis. During economic crises, we can observe, among other things, noticeable changes in criteria for evaluating goods and services [Pricop and Niculescu 2009], in discrepancies between men's and women's salaries [European Commission 2013], in flexible working hours [Curran and Zignago 2010], in the number of divorces [Blekesaune 2008] and births [Ahn and Mira 2002], and, in the case of some countries, in people's increased mortality [Cutler et al. 2000]. Research results point to links between various health and social problems on the one hand and long-term unemployment on the other [Bartley 2003; Blane, Netuveli and Stone 2007; Cable, Sacker and Bartley 2008], although in this case, we are dealing with a consequence, rather than a manifestation, of an economic crisis.

The majority of the economic crisis symptoms listed above involve a deterioration in the situation of the economy, companies, and consumers. However, although a crisis period is associated with a worse condition of the economy as a whole, the influence of a crisis is not homogenous from the perspective of single companies or consumers. Just as it is possible to identify industries that are more

¹¹ It is worth emphasising that the group most often affected by crisis-induced unemployment are groups of unqualified workers and people lacking job experience (see e.g. Vaitilingam [2012]).

or less susceptible to business-cycle changes, it is also possible to point to companies or people who are more or less effective at dealing with threats posed by an economic crisis. Sometimes, owing to changes (such as restructuring) forced by a crisis, business entities become more efficient and stronger, ultimately achieving a better competitive position than before the crisis, or they take advantage of that period to aggressively lower their costs. Some companies also use the recession period as a chance to grow or develop through takeovers, or as a stimulus to conclude new commercial contracts. Therefore, an economic crisis should not be perceived solely as a threat, although it is undoubtedly a period of dynamic change and transformation.

2.2. Economic crises – a historical perspective

The aim of this section is to place the issue of economic crisis in a historical context by providing an overview of selected economic crises that have occurred in the history of the global economy. In the last 450 years, the phenomenon of a global economic crisis has been observed over 70 times [Bochenek 2009, p. 54]. Indeed, an economic crisis could be seen as an inherent feature of the global economy [Plumpe 2011, p. 8]. Table 2.2 presents the biggest economic crises, their causes and consequences, not only noting that they go back to the sixteenth century, but also pointing to their similarities and dissimilarities.

Economic development has moved the focal point of analysis from factors exogenous to the economy (such as military conflicts or natural disasters) to causes associated with increasing industrialisation. Most of the nineteenth-century economic crises were caused by a dynamic development of industry, whose territorial expansion also constituted a transmission channel for economic slumps. At the end of the nineteenth century, the leading role in business-cycle development was assumed by the United States, which is why the origins of successive significant periods of economic downturn could be sought among the US economy's problems [Zelek 2011a, p. 28]. The Great Depression of 1929–1933, for one, which started on the New York Stock Exchange, contributed to a decline in industrial production throughout the world, demonstrating at the same time strong links between the capital market and the real economy.

Table 2.2. An overview of selected economic crises

Economic crisis	Year	Region	Causes	Consequences
Bankruptcy of Spain	1557	Spain	The Habsburgs' debt to German and Italian banks	Collapse of lending banks, decline in some social classes' standard of living
Crash on the Dutch stock exchange	1636–1637	Netherlands	Speculation in tulip-bulb shares	Approx. 20% decline in industrial production in the Netherlands
John Law's "financial system"	1720	France, UK	John Law's speculation in France and the UK (issue of South Sea Company shares)	Fall in share prices, bankruptcy of investors, approx. 7% decline in industrial production in France and the UK
British industrial crisis	1825	UK	Speculation in US cotton prices, overestimated investments in Latin America	UK's approx. 10% decline in industrial production
Great Depression	1929–1933	Global (mainly the US)	Stock-market speculation, shares overpriced, increase in investors' debt, fall in share prices, sell-off of shares on the New York Stock Exchange in October 1929	Decline in global industrial production of approx. 38%, and in foreign trade of 34%, 40 million unemployed worldwide
Oil crisis	1973–1976	Well-developed countries, highly dependent on prices of energy resources	OPEC countries' embargo on the US (in response to its involvement in the Israeli-Arab conflict), four-fold increase in oil prices within several months from October 1973 onwards	Approx. 5% fall in global GDP, declines on the London Stock Exchange, 76% decline in two years, inflation
Crash on the Japanese stock market and recession	1990–1991	Japan	Long-term speculation, in 1990 a drastic decline in share prices of property, Japanese banks dependent on the economic situation of developing countries, especially in Asia	Decrease in the GDP growth rate from 6% per year in the 1980s to 0% after 1990, onset of deflationary processes
Asian crisis	1997–1998	Southeast Asia (started in Thailand, then transmitted to the Philippines, Hong Kong, Indonesia, Malaysia, etc.)	Withdrawal of foreign investors, who lost control over the investment boom; current account deficit, high foreign-currency debt, liberalisation of national financial markets too fast	Approx. 5% fall in Southeast Asian countries' GDP in 1997–1998; declines on Asian stock exchanges (approx. 75% in Thailand, approx. 23% in Hong Kong, and approx. 60% in Singapore)

Korean crisis	1998	South Korea	Influx of foreign investment and an increase in demand for the local currency, hence an increased supply of money and credit expansion, a decline in the quality and profitability of investment projects, withdrawal of foreign investors	Approx. 5% fall in South Korea's GDP in 1998, doubled rate of inflation and tripled rate of unemployment in comparison with 1997
Mexican peso crisis	1994–1995	Mexico	Unexpected devaluation of the peso in December 1994 after riots over massive corruption	6% fall in Mexico's GDP between 1994 and 1995, rise in inflation, withdrawal of foreign direct investment
Russian financial crisis	1998	Russia, then crisis transmitted to neighbouring countries (Ukraine, Czech Republic, etc.)	Lack of effective economic reforms, devaluation of the ruble, political instability, results of a decline in gas prices	2% fall in Russia's GDP in 1998
Argentine great depression	1999	Argentina	Defeat in the Falklands, increase in the country's debt in the 1990s, high level of corruption; sell-off of bank shares in 1999 and the government's decision to freeze bank accounts (except the withdrawal of minor sums)	Riots, collapse of Fernando de la Rúa's cabinet, galloping inflation
Global financial crisis	2007–2010	Global	Speculation in property, inadequate mortgage lending regulations, liberal monetary policy in the US after the crisis of 2000	0.8% decrease in global GDP in 2009, increase in bankruptcies (including in the financial sector), increase in sovereign debt (especially in Greece, Ireland, Portugal, and Spain)

Source: authors' own study based on Barn [2011, pp. 1078–1081], Braunberger [2008], Grossman and Meissner [2010, pp. 320–328], Lee and Makhija [2009, pp. 554–555], IMF [2009, pp. 155–158], Plumpe [2011, pp. 6–11], Puls Biznesu 2009, Zelek [2011a, pp. 28–38], Zelek [2011b, pp. 39–43].

2.3. Economic crises – a review of extant empirical research

Empirical research into issues related to economic crises can be classified according to an adopted level of economic analysis.¹² This section discusses the results of empirical research divided according to levels of analysis adopted in economic sciences, namely macro-, meso- and microeconomic levels [Gorynia, Jankowska and Tarka 2013, p. 22]. In accordance with the adopted approach, we present studies devoted to the impact of a crisis on particular countries, sectors, and then companies. The purpose of this section is not to provide a comprehensive or exhaustive discussion of particular studies, but to select and discuss them in the context of the aim indicated.

2.3.1. A macroeconomic perspective

In empirical research concerning economic crises and adopting a macroeconomic perspective, researchers' attention usually focuses on the causes, symptoms, and effects of a specific economic slowdown. In the empirical studies presented in Table 2.3, the issues are related mainly to economic aspects, in particular the economic development of countries,¹³ or to political aspects.¹⁴ The predominance of these issues seems understandable in the context of the adopted macroeconomic level of analysis.

The review of economic-crisis studies presented in Table 2.3 in the context of national economies can be divided according to the level of development of the countries under analysis (e.g. those concentrated mainly on developing countries,¹⁵ developed ones,¹⁶ and countries undergoing transformation¹⁷) or according to the subject matter (e.g. studies focused primarily on economic or political issues). However, regardless of the adopted grouping criterion, the empirical studies analysed clearly take into consideration identical or very similar indicators with reference to various national economies and economic-crisis periods. Therefore, it seems advisable to take into account similar indicators reflecting the manifestations

¹² See Gorynia [1993, p. 505] for more details.

¹³ See e.g. Changyong, Jun and Chen [2012]; Filippov and Kalotay [2011]; Ene, Gheorghiu and Cristea [2011]; Devarajan and Kasekende [2011]; Julian [2000]; Olowu [1991].

¹⁴ See e.g. Devarajan and Kasekende [2011]; Julian [2000]; Pei and Adesnik [2000]; Olowu [1991].

¹⁵ See e.g. Ene, Gheorghiu and Cristea [2011]; Devarajan and Kasekende [2011]; Pei and Adesnik [2000]; Olowu [1991].

¹⁶ See e.g. Changyong, Jun and Chen [2012]; Julian [2000].

¹⁷ See e.g. Filippov and Kalotay [2011]; Ene, Gheorghiu and Cristea [2011].

Table 2.3. A review of selected empirical studies concerning economic crises in the context of national economies

Study	Aspects analysed	Period investigated	Country/ Region investigated	Type of data*	Indicators applied	Analytical tools
Changyong, Jun and Chen [2012]	Analysing the relationship between foreign debt, economic growth and economic crisis	2003–2008	U.S	S	Indicators of sovereign and consumer debt (values of market monetary instruments, mortgage credit, consumer credit, short- and long-term loans, short- and long-term savings and pecuniary values, short- and long-term commercial loans, short- and long-term debt of another type	Case study, theoretical model
Filippov and Kalotay [2011]	Analysing the impact of an economic crisis on the inflow of foreign direct investment to selected countries, and describing the reactions of multinational companies' foreign subsidiaries	2008–2009	New member states of the European Union (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia, Bulgaria, Romania)	S	Value and growth rate of foreign direct investment inflows, growth rate of industrial production, export growth rate, number of jobs created, investment value, number of jobs cut	Descriptive statistics
Ene, Gheorghiu and Cristea [2011]	Identifying the impact of a crisis on the national economy in terms of: ability to attract foreign investment, domestic banking sector, economic growth, labour market, government budget, capital market	2008–2010	Romania	S	Value of foreign direct investment inflows, real rate of economic growth, unemployment rate, level of government budget deficit, level of public debt, market capitalisation, market liquidity ratio	Case study
Devarajan and Kasekende [2011]	Determining the impact of an economic crisis on African countries, in particular on their level and rate of development; presenting and accounting for reactions to a crisis as regards national policies implemented	2000–2010, with particular emphasis on 2008–2010	Africa, African countries	S	Real GDP growth rate, real GDP per capita, share of foreign trade in GDP, foreign trade balance, balance of foreign direct investment, value of foreign-exchange reserves, indicators of countries' political and institutional evaluation	Descriptive statistics

Julian [2000]	Analysing the impact of an economic crisis on current account and export levels, debt level, collapse of the property market, and political instability	1995–1998	Taiwan	S	Value and growth rate of imports and exports, levels of balance of trade and balance of payments; current account level and value of foreign exchange reserves; value and growth rate of monetary indicators, deposits and bank loans; value and growth rate of GDP; budget deficit, industrial production, inflation and unemployment	Case study
Pei and Adesnik [2000]	Analysing the impact of economic crises on developing countries' political changes, in particular on changes of political systems and governments	1945–1998	Selected countries of Latin America (Argentina, Brazil, Bolivia, Chile, Colombia, Ecuador, Mexico, Paraguay, Uruguay, Venezuela) and Asia (India, Indonesia, Iran, Malaysia, Pakistan, Philippines, Singapore, South Korea, Taiwan, Thailand, Turkey)	S	GDP level, inflation rate, countries' political systems, cases of changed political systems, governments and ruling parties	Case studies
Olowu [1991]	Analysing African countries' reaction to a crisis and preparation of a model for an administrative reaction/response to an economic crisis in Africa	1981–1989	Ghana, Nigeria, Zimbabwe, Tanzania	S	GDP level, cases and types of administrative and institutional reforms, data on the production of selected goods, unemployment rate, inflation rate	Case studies

* S – secondary data.

Source: authors' own study.

of an economic crisis with reference to a larger group of national economies in order to determine the strength of a given economic slowdown in particular countries (see Chapter 6 for more details). In this context, the fact that the identified previous research employed only qualitative analyses based on case studies and descriptive statistics enables us to identify a research niche to fill.

2.3.2. A mesoeconomic perspective

The causes, symptoms, and effects of economic crises as part of particular national economies may vary considerably between various sectors.¹⁸ Table 2.4, showing an overview of economic-crisis research from the perspective of a selected industry, helps to explain the differences causing diverse susceptibility to the impact of an economic crisis, depending on sector-specific circumstances. Significant factors identified by research results include the debt level of companies operating in a given industry,¹⁹ the degree of dependence on imports,²⁰ the degree of dependence on raw materials prices,²¹ imperfect legislation,²² and the degree of decline in demand for goods produced in an industry.²³ At the same time, adopting a mesoeconomic perspective allows us to determine the impact of an economic crisis through an analysis of its specific symptoms. Previous studies, based solely on secondary data and using mostly descriptive statistics, have helped to identify a number of measures whose changes help to determine the occurrence of a crisis. These include the value of assets, the liquidity and profitability ratios of companies in an industry, the volume of production, the growth rate of a sector, the number of profitable companies or the number of bankruptcies in a sector, as well as sector-specific parameters, such as airlines' passenger load factors or commercial cargo capacity in the air transport industry.²⁴

At the same time, research results show a number of limitations that should be taken into account in future studies. First, the dominance of case studies allows for an in-depth discussion regarding the causes, manifestations, and possible solutions in the context of an economic crisis from the perspective of a particular industry, but makes it impossible to draw conclusions applicable to other contexts.

¹⁸ See Alber [2013], Huang and Kuo [2012] for more details.

¹⁹ See e.g. Ioan, Ulici and Schiau [2010]; Kildienė, Kaklauskas, Zavadskas [2011]; Suarez [2010].

²⁰ See e.g. Sato [2010].

²¹ See e.g. Marciszewska [2010].

²² See e.g. Suarez [2010].

²³ See e.g. Czapliński [2011], Sato [2010].

²⁴ See e.g. Marciszewska [2010].

Table 2.4. A review of selected empirical studies regarding economic crises in the context of selected industries

Study	Aspects analysed	Period analysed	Industry/Country analysed	Type of data*	Indicators applied	Analytical tools
Sato [2000]	Analysing the impact of an economic crisis on companies' economic performance, identifying adaptation measures, including reorientation of production to the market of spare parts and raw materials instead of finished products, and the reduction of labour costs through flexible forms of employment; determining prospects for further development	1997–1998	Metallurgical industry, Indonesia	S	Value of assets, volume of production, sales revenue, profits, level of employment, industry's growth rate	Descriptive statistics, correlation analysis
Ioan, Ulici and Schiau [2010]	Analysing the impact of a crisis on the cost of capital; analysing the causes and manifestations of the crisis, and its implications for the Romanian construction industry	2007–2009	Construction industry, Romania	S	Valuation of companies according to CAPM, WACC of companies listed on the Bucharest stock exchange	Descriptive statistics
Marciszewska [2010]	Analysing the development of selected indicators of airlines' condition during an economic crisis; analysing causes related to raw materials prices and demand; identifying trends in terms of corporate adaptation strategies	2007–2009	Air transport industry worldwide	S	Total number of air passengers, transport of goods in tonne-kilometres, air passenger load factor, commercial cargo capacity, number of bankruptcies in the industry	Descriptive statistics, case studies

Czapliński [2011]	Analysing the impact of an economic crisis on selected indicators at the level of the sector's companies, identifying the causes of vulnerability among the sector's companies to the impact of a crisis	2007–2009	Fish-processing industry, Poland	\$	Value of production, investment level, level of financial costs, share of profitable companies in the total number of companies in the sector	Descriptive statistics, case studies
Suarez [2010]	Analysing banks' and savings institutions' selected financial ratios, taking into account the economic crisis period; identifying the necessary reforms at the level of industry regulations	1996–2009	Banking, Spain	\$	Financial liquidity ratio, value of fixed assets financed with credit from banks (property market)	Descriptive statistics
Kildienė, Kaklauskas, Zavadskas [2011]	Analysing the effects of a crisis on the banking sector; proposals for systemic reforms	2007–2009	Construction industry, Europe	\$	Volume of production in the sector, number of building permits, change in construction costs, employment in the sector	Descriptive statistics

* \$ – secondary data.

Source: authors' own study.

Second, as the research methods predominantly relied on descriptive statistics, it was not possible to unequivocally identify the effect of the economic crisis on variables related to firms from a given sector. Third, it should be emphasised that, even within a single industry, susceptibility and responses to an economic crisis may vary between companies [Dubrovski 2007, p. 345], which requires that company-level variables should be taken into consideration.

2.3.3. A microeconomic perspective

From a microeconomic perspective, a crisis can be seen as an inevitable stage in a company's life cycle [Barczak and Bartusik 2011, p. 14]. At the same time, a crisis can be described as a situation that disrupts an organisation's normal functioning and is characterised by an ambivalence of development opportunities [Wawrzyniak 1999, p. 10]. Accumulated difficulties threaten the fulfilment of the company's basic functions in case of the organisation's inability to fix the current situation [Gierszewska 2002, p. 15]. While the company's crisis may result from endogenous causes,²⁵ research results point to a significant role of exogenous variables, particularly recessions and economic crises [Grądzki and Zakrzewska-Bielawska 2009, p. 17; Zelek 2002, pp. 67–68]. In this context, it is of utmost importance that the company should be able to respond properly to sudden and adverse changes in its environment.²⁶ Although the effects of an economic crisis are indeed negative for many companies, there are also firms that maintain or even increase their competitiveness, also in unfavourable external conditions [Tushman and Anderson 1986, p. 449]. The impact of a crisis on the company can also be dependent on the country of origin [Berrill and Kearney, 2011], the company's age [Burlita et al. 2011; Latham 2009; Shama 1993], the industry [Vissak 2011; Zelek and Maniak 2011], the adopted competitive strategy [Latham and Braun 2010], the company's size and degree of internationalisation [Antonioli et al. 2011], and the available resources and capabilities [Teece, Pisano and Shuen 1997; Türel, Türel and Needles 2012; Wu 2010]. At the same time, the results of some previous studies are contradictory. Tables 2.5 and 2.6 present a review of selected empirical studies on the impact of an economic crisis on the position of business entities. The studies were divided into two currents: those concerning the impact of an economic crisis on companies' economic performance (Table 2.5), and its effect on companies' international strategy (Table 2.6).

²⁵ E.g. errors in the corporate structure and strategy, resource deficit, or ineffective supervision mechanisms.

²⁶ However, adapting to unexpected changes in the environment may be particularly difficult due to the phenomenon of what is known as organisational inertia; see e.g. Ruef [1997].

Table 2.5. A review of selected empirical studies regarding the influence of an economic crisis on companies' economic performance

Study	Aspects analysed	Period analysed	Research sample description	Type of data*	Indicators applied	Analytical tools
Brojak-Trzaskowska and Porada-Rochon [2012]	Identifying economic-crisis symptoms in small and medium-sized enterprises	2008–2010	58 small and medium-sized enterprises in Zachodniopomorskie Province	P	Subjective assessment of decreased demand, decreased sales, deteriorated liquidity, increased costs, and increased debt	Descriptive statistics
Schollerova [2012]	Analysing changed basic efficiency categories perceived by companies during an economic crisis	2008–2009	Representative sample of Czech medium-sized and large companies (no numerical data) from various industries	P	Changes in the volume of sales, EBIT, research and development costs, and employment levels	Descriptive statistics
Türel, Türel and Needles [2012]	Comparing the influence of an economic crisis on companies' economic performance before and after the occurrence of the crisis	2005–2007 2007–2009	182 Turkish non-financial companies listed on the Istanbul Stock Exchange (ISE)	S	Cash flows from investments, growth in assets, shareholder profits	Descriptive statistics
Berrill and Kearney [2011]	Comparing the effect of a crisis on the economic performance of companies from developed and developing countries	2000–2009	Fortune Global 500 companies from 39 developed and developing countries	S	Earnings per share (based on MSCI, FTSE and Datastream indices), variability of profit	Descriptive statistics
Camargo et al. [2011]	Comparing the effect of a crisis on the economic performance of companies from developed and developing countries	2001–2007	Brazilian company from the cooling components distribution industry	S	Changes in the sales volume	Case study

Michał [2011]	Identifying the impact of a crisis on Wielkopolska companies' activities	2008–2010	1,000 Wielkopolska companies in a quantitative study, 40 companies in a qualitative study covering all PKD sections (with the exception of services)	P	Changes employment levels, target level of employment (by company department) sources of finance, expected changes in domestic and foreign orders	Descriptive statistics, case studies
Wójcicki [2011]	Analysing the impact of an economic crisis on companies' market value	2005–2010	Six Polish listed companies from the construction industry	S	Market value (calculated according to the option model)	Case study, descriptive statistics
Ziobło [2011]	Analysing the relationship between an economic crisis and the economic performance of the largest multinational corporations	2008–2009	87 largest global corporations from 20 industries	S	Value of sales, profit, company assets, market value	Descriptive statistics

* P – primary data, S – secondary data.

Source: authors' own study.

Table 2.6. A review of selected empirical studies regarding the influence of an economic crisis on companies' international strategy

Study	Aspects analysed	Period	Research sample	Type of data*	Indicators applied	Analytical tools
Kinkel [2012]	Analysis of contemporary trends and changes in the relocation of production during an economic crisis	1999–2009	1,484 German manufacturing companies	S	Company size (logarithm of the number of employees), sector, dummy variable indicating the geographical location (region), type of product (standardised/adapted to consumer needs), product complexity, production/order volume, type of competitive strategy, dummy variable indicating the producer's role (supplier of components/finished products), labour-output ratio (the share of labour costs in total costs and the share of low-skilled workers in total employment), export volume	Descriptive statistics, nonparametric tests, multiple regression
Obłój and Wąsowska [2012]	Analysis of the determinants of Polish foreign direct investment before and during an economic crisis	2007, 2010	Poland's outward foreign direct investment in 53 countries	S	Value of Poland's FDI in a given country, market size, market growth, availability of natural resources and technological resources, labour costs, geographical distance, cultural distance	Multiple regression
Williams and Martínez [2012]	Analysis of the impact of an economic crisis on foreign subsidiaries' ownership structure	2004–2009	624 Dutch direct investors in 66 host countries (76 observations in 2004, 86 in 2005, 137 in 2006, 136 in 2007, 134 in 2008, 55 in 2009)	S	Dummy variable indicating the ownership structure of foreign subsidiaries (majority / minority), efficiency of the host country's authorities, occurrence of an economic crisis (dummy variable), cultural distance, host country's market size, host country's reforms / legal acts attracting FDI, parent company's size, the industry (dummy variable: 1 – the mining industry, 0 – other)	Multiple regression

De Lemos and Hadjikhani [2011]	Analysis of the effect of international experience, of the degree of internationalisation, and of earlier performance on the performance in the post-crisis period	1998–2010	Two Portuguese banks	S	International experience, degree of internationalisation, economic performance in an earlier period	Case studies, multiple regression
Vissak [2011]	Analysis of the impact of an economic crisis on the internationalisation of Estonian companies	Until 2009	Estonia, two textile-industry companies, two casino-industry companies	S	Sales value, level of employment, qualitative data regarding remedial actions undertaken	Case studies
Annendola et al. [2012]	Impact of export activity on the ability to survive during a crisis	2002–2007 2008–2010	4,066 Italian companies (no data regarding industries or sizes)	S	Company size, company age, company productivity, profit before tax, liquidity, debt level, share of foreign capital, presence of foreign firms in the company investigated, presence of exports, ratio of research and development spending to sales, nominal variable defining the industry, dummy variable indicating the region	Multiple regression
Chung et al. [2010]	Determinants of changes in the strategies of multinational companies' foreign subsidiaries during the Asian crisis of 1997	1997–2001	1,519 manufacturing subsidiaries of 471 Japanese companies in 52 industries, in five Asian host countries	S	Expansion / reduction of subsidiaries' operations (a continuous variable encompassing changes in subsidiaries' sales and employment), importance of operational flexibility in relation to concentration on the host country's market, subsidiaries' sales profitability, change in the host country's institutional environment, change in the number of a company's subsidiaries in other countries, change in the share of exports in subsidiaries' sales in countries affected by a crisis, size of the subsidiaries and the parent company, parent company's local and international experience, subsidiary's age, nominal variables for the year, country, industry, and parent company	Descriptive statistics, multiple regression

Hyekiewicz and Kowalewski [2010]	Determinants of selecting the form of entering a foreign market during an economic crisis compared with the pre-crisis period	1995–2008	129 banks in OECD countries, with subsidiaries in Poland, Slovakia, Hungary, and the Czech Republic	S	Form of market entry (takeover, own subsidiary, branch, trade between the host country and the investor's country of origin, per capita income in the host country, difference in economic growth between the host country and the country of origin, inflation rate, geographical distance, interest rate, indicator of company concentration in the industry, host country's risk, degree of industry regulation, corporate tax rate)	Descriptive statistics, multiple regression
Jansson, Hilmansson and Sundberg [2010]	Impact of an economic crisis on exporters' competitiveness	2007–2008	203 small and medium-sized enterprises in southern Sweden undertaking export operations	P	Turnover, level of employment, number of foreign markets, degree of internationalisation (20 questions on a 7-point Likert scale), information on a given foreign market (5 open-ended questions), perceived international experience, organisation's ability to learn, relational ties, institutional gap, performance (another 124 questions on a 7-point Likert scale)	Descriptive statistics, factor analysis
Włodkiewicz-Dominirski [2010]	Impact of an economic crisis on the economic performance of exporting companies and those specialising in export (with more than a 50% share of exports in revenues)	First half of 2008, First half of 2009	14,897 Polish exporters (manufacturing industries; trade; transport; professional, scientific and technological activity)	S	Gross financial result (detailing profits from sales of products, commodities, and materials, other operating profits, profits from financial activities, extraordinary profits), gross turnover profitability, return on sales of products, commodities and materials	Descriptive statistics
Lee et al. [2009]	Impact of an economic crisis on export effectiveness before and after the economic crisis	1994–1997, 1997–2000	Korean manufacturing companies; 283 in the pre-crisis sample, 292 in the post-crisis sample	P	Share of exports in total sales, position in the domestic market, research and development investment, investment in advertising, company size, company's economic performance, exchange rate, number of competitors, number of foreign investors	Multiple regression
Lee and Makhija [2009]	Analysis of international companies' strategic flexibility value during an economic crisis	1996–1997, 1997–1998	455 companies investigated in 1996–1997, and 459 investigated in 1997–1998	S	Company value (expressed as Tobin's q), flexibility of export investment, FDI-related flexibility, interaction between the two types of flexibility, company size, company value from the previous period, the industry, capital intensity of the industry	Multiple regression

Wan and Yiu [2009]	Analysis of the impact of an economic crisis on the relationship between takeovers and the company's economic performance	1994–1996, 1997–1999, 2000–2002	234 companies (78 for each period) from Hong Kong and Singapore	S	Parent company's efficiency, free resources available to the company, company size, sales growth, share of takeovers in related industries, GDP growth, position in the <i>World Competitiveness</i> rankings, number and size of takeovers, change in product diversification	Random effects models
Chung and Beamish [2005]	Analysis of the impact of the form of foreign-market entry and the presence of parent-company executives on the survival of a foreign subsidiary during an economic crisis	1997–2001	3,625 (in the crisis-period sample) and 3,295 (in the stable-period sample) subsidiaries of Japanese companies in Indonesia, Thailand, Korea, Malaysia, and the Philippines	S	Survival of a foreign subsidiary (dummy variable), form of market entry (own subsidiary, joint venture, or takeover), number of managers sent from the parent company, size and potential of the foreign market, political risk, tax rates for export and import, trade flows as a percentage of GDP, company's industry, company's size and age, research and development spending in relation to sales, advertising expenditure in relation to sales, share of exports in sales, experience in the foreign market, foreign subsidiary's age and size	Multiple regression

* S – secondary data, P – primary data.

Source: authors' own study.

2.3.3.1. A crisis and companies' economic performance

Crisis phenomena have an effect on the value of company assets through interest rates, as well as on access to external sources of finance owing to tightened creditworthiness quantification criteria, different credit terms, a limited inclination to grant further credit, or an emphasis on its timely repayment [Zielinski 2009, pp. 114–118]. The impact of the economic situation is also reflected in companies' financial performance [Michoń 2011, p. 25].²⁷ In extreme cases, a deterioration in companies' financial situation leads to their bankruptcy.²⁸ Based on empirical research results, it can be observed that a crisis-induced decline in operating income affects companies regardless of their size (measured by the number of company employees). Nevertheless, in particular size-groups the decline may be more common [Burlita et al. 2011, p. 81]. At the same time, the same studies have shown that the executive staff of smaller companies sees the impact of a crisis on their company's condition as stronger. Research into Polish companies, however, points to the dominance of the negative impact of an economic crisis on companies' financial and non-financial performance. The results of previous studies focus particularly on a decline in orders and sales, on delayed or withheld payments [Orłowski et al. 2010, p. 35], on decreased company value [Wójciak 2011], increased costs [Grądzki and Zakrzewska-Bielawska 2009, p. 19], deteriorated liquidity and increased debt [Brojak-Trzaskowska and Porada-Rochoń 2012, p. 61].²⁹ On the other hand, Berrill and Kearney [2011, pp. 374–375] have observed an improvement in economic performance in the post-crisis period, with the relationship being stronger in the case of companies based in developing countries.

2.3.3.2. The influence of an economic crisis on a company's international strategy

Another research category at the microeconomic level refers to the interdependence between the impact of an economic crisis and a company's international

²⁷ According to National Bank of Poland data, Polish companies' 2008 profits fell by 19.5% in relation to the previous year [NBP 2009, p. 21].

²⁸ In 2008, the number of bankruptcies in the US grew by 41.1% on the previous year, in Europe by 10.9%, and in Japan by 15.7% [Credit Reform 2009, pp. 2, 15, 23]. In Poland, the number of bankruptcies in the first quarter of 2009 rose by 11% on the previous year [Adamiec and Russel 2009, p. 16].

²⁹ Similarly, studies of Czech companies point to the dominance of decreased profits and sales, and to increased research and development costs when the impact of the economic crisis was the greatest [Nečadová and Breňová 2010, pp. 135-137; Scholleova 2012, pp. 86-87].

strategy.³⁰ Recession in foreign markets and exchange-rate fluctuations contribute to a reduction in export activity [Kowalczyk 2012]. An inclination to export during an economic crisis, however, increases with an improving competitive position in the domestic market, as well as with research and development capabilities superior to those of the competition [Lee et al. 2009, pp. 11–12]. On the other hand, research points to the important role of export expansion in minimising the effects of a financial crisis.³¹ A study of Italian exporters showed that exporting companies have a better chance of surviving a crisis, a relationship which depended on the levels of indebtedness and liquidity [Amendola et al. 2012, p. 318]. Furthermore, exporters with a better knowledge of target markets and closer business relations in host countries are better at dealing with uncertainty associated with an economic crisis, at the same time achieving a better competitive position in the home country [Jansson, Hilmersson and Sandberg 2010, pp. 17–19]. An economic crisis has an impact on foreign direct investment as a more advanced, yet riskier, form of company internationalisation. In periods of crisis we can observe, among other things, a decrease in the value of global FDI [UNCTAD 2012].³² It is also worth noting that although the direction of changes in the global economy is in this case difficult to challenge, deviations from this may occur at the national level [UNCTAD 2009, p. 14; Filippov and Kalotay 2011, p. 321]. An economic crisis may also help to intensify the phenomenon of divestment [Filippov 2011, p. 12], especially in the manufacturing sectors most severely affected by recession. In view of existing studies, the role played by a multinational company's foreign subsidiaries is an important variable moderating the impact of an economic crisis on the scope of international activity. As for foreign subsidiaries oriented to export activity rather than to the development of the local market, their activity tended to be restricted, and the functions transferred to other subsidiaries [Chung et al. 2010, pp. 511–512]. Similarly, production investments and those supporting export may increase the parent company's operational flexibility during

³⁰ International strategy takes into account such strategic decisions as the choice of the foreign market, the choice of the form of entry, the choice of the time of entry, the choice of competitive strategy, international allocation of value chain modules, and coordination between a multinational company's units [Kutschker and Schmid 2008, p. 822].

³¹ The financial performance of Polish exporting companies decreased from PLN44.4 billion in the first half of 2008 to PLN34 billion in the first half of 2009, while companies specialising in exports (whose share of exports in their total revenues exceeds 50%) improved their financial performance in the same period from PLN9.2 billion to PLN12.2 billion [Wołodkiewicz-Donimirski 2010, pp. 42–44].

³² In new EU member states alone, the outflow of FDI decreased in 2008–2009 by as much as 93% [Kępka 2011, p. 25], because during a crisis companies limit investment in locations characterised by the environment's higher uncertainty and avoid riskier forms of entry [Hryckiewicz and Kowalewski 2010, p. 225].

a crisis [Lee and Makhija 2009, p. 551]. Another variable at the foreign-subsubsidiary level is the parent company's ownership interest, which is related to the extent of control exercised over the subsidiary. In view of existing studies, it can be stated that an economic crisis increases the tendency towards a higher ownership interest in a foreign investment [Williams and Martinez 2012, pp. 71–73].³³ Own subsidiaries have a greater chance of surviving than joint-venture companies or acquisitions [Chung and Beamish 2005, pp. 350–352]. However, the success of a company's international expansion during an economic crisis is determined by a number of other variables, which include cooperation with local and foreign partners [Vissak 2011], previous international experience [Figueira de Lemos and Hadjikhani 2011], the pre-crisis competitive position [Filippov and Kalotay 2011], and support from the authorities of the country of origin [Filippov 2011].³⁴

Recapitulation

This chapter has presented the theoretical and empirical aspects related to economic crises. The chapter constitutes an introduction to the research problem analysed in the present study. Most of all, it provides the definition framework for the term economic crisis as used in further parts of the book, discusses the manifestations of economic crises, and presents a review of selected empirical studies, in which researchers, regardless of the adopted level of economic analysis, focused on the phenomenon of economic crisis. From the perspective of design of empirical studies investigating the impact of an economic crisis on national economies, businesses, or consumers, it is particularly relevant what analytical tools and methods of operationalising variables have been used so far. It should be emphasised, however, that the previous literature in this area is characterised by its strongly situational nature, which often makes it impossible to extrapolate research-based conclusions to other contexts.

³³ What is more, the context of crisis decreased the significance of the risk related to the institutional efficiency of the host country, which in the pre-crisis period was a reason for limiting ownership in foreign subsidiaries.

³⁴ This support concerns, in particular, companies in industries which are crucial from the state's point of view [Filippov 2011, p.11].

Chapter 3

Industries as crisis participants and receptors

Barbara Jankowska
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The aim of this chapter is to present the industry dimension of economic crises. First, it defines the concept of *industry* and attempts to explain what an industry crisis is by showing its causes and manifestations. Then, it describes speculative bubbles as a phenomenon which could lead from an industry crisis to an economic one, and presents their causes, mechanism, and manifestations. The issue of speculative bubbles is discussed in conceptual and historical terms. The chapter also touches upon inter-industry effects, presenting them in the specific contexts of selected industries. In conclusion, the authors identify various types of industry crises.

3.1. An industry – a delimitation of the concept

The issue of distinguishing particular industries is referred to in the literature as industry delimitation [Gorynia 1993]. Vertically, industries are situated between the economy (macro level) and the company (micro level), i.e. at the meso level. With regard to the horizontal dimension, whose definition involves adopting a criterion on the basis of which a given company will belong to a specific industry, the literature offers several proposals (Table 3.1). The approaches to an industry shown in Table 3.1 are referred to as traditional.

Table 3.1. “Traditional” concepts of an industry

Author	Delimitation criterion	Definition of an industry	Critique of the theory
Marshall [1972]	Homogeneousness of manufacturing technology	Companies manufacturing products with the same technical characteristics [Marshall 1972, p. 69]	Goods may intersubstitutable, and identical products may be manufactured using different technologies
Chamberlin [1933]	Product substitutability	Groups of competing firms – producers of close substitutes [Hay, Morris 1979, p. 10]	No objective criteria for distinguishing close/distant substitutes
Robinson [1969]	Homogeneity of needs	Companies offering products in a continuous substitution chain; one chain contains products meeting the same needs, regardless of the technology applied and product characteristics [Robinson 1969, p. 17]	Invalidity of the thesis about the existence of a continuous substitution chain and occurrence of substitution gaps only at the points determining industry boundaries ¹
Von Stackelberg [1934], Abbott [1958]		An industry is a perfect market, characterised by homogeneous demand; the sum of such elementary markets creates a holistic market, which is an imperfect market [von Stackelberg 1934, p. 29; Abbott 1958, p. 96]	No objective criteria for distinguishing close/distant substitutes
Bain [1959], Porter [1999]	Product substitutability	A given industry is made up of producers of substitutes [Porter 1999]; Bain found that the boundaries of an industry market are determined by a high rate of cross-elasticity [Bain 1959, pp. 6–7]	No objective criteria for distinguishing close/distant substitutes; reservations about the concept of cross-elasticity of demand [Needham 1978]

Source: authors’ own study.

When defining industries, we can use one of the three criteria for establishing their boundaries: homogeneity of a product, homogeneity of a production technology, or homogeneity of needs. Some argue that an industry is a group of companies offering identical products; others interpret an industry as an industry market [Devine et al. 1979, pp. 31–32]. Marshall’s concept corresponds to the former

¹ At this point, we could quote Triffin, who observes that gas, coal, and electricity are substitutes as energy sources, but choosing a central-heating stove creates a substitution gap and breaks the substitution chain; therefore, should the providers of these products be seen as belonging to different industries? Another example given by Triffin are shopkeepers in the United States, who can be treated as a group, although the substitutability of their products is narrowed to a certain geographical area [Triffin 1940].

interpretation, while the other concepts, which focus on the demand side, represent the latter approach. As shown in Table 3.1, each of the approaches has certain weak points, which is why they could be regarded as complementary.

Some researchers point out that definitions of an industry will vary depending on the time horizon of the decision that must be taken by the company [Otta 1987, p. 37]. Therefore, of major significance to correctly defining an industry is the time horizon of the company's decision:

- the choice of prospective directions of specialisation (going beyond the investment cycle – strategic decisions) requires defining an industry as part of the need/technology relation;
- the choice of specific fields of specialisation (short-term, or operational, decisions) requires starting by determining a technology and then products that can be obtained thanks to this technology; a technology/product relation.

Other contemporary authors tackling the issue of defining an industry include Abell and Garamond [Curran and Goodfellow 1986], who proposed a three-dimensional concept of business:

- the dimension of the customer group, or who is to be served; different classification criteria can be used: demography, customer behaviour, etc.,
- the dimension of the function fulfilled for the customer, or what need should be met,
- the dimension of technology, or how to meet the customer's need.

A characteristic feature of Abell's approach is the distinction between *market*, *industry*, and *business*:

- *Business* is defined through the choice of a customer group, the functions fulfilled by the manufactured products or services, and the technologies used.
- *Industry* usually encompasses several businesses based on the same technology.
- *Market* is defined through the functions fulfilled for a specific customer group by means of all available technologies.

In Abell's approach, the notion of an industry is broader than that of business, but narrower than a market. Trying to define an industry, Kay also refers to the concept of market [Kay 1996, p. 178]. In his opinion, an industry is determined by the conditions of supply, based on the production technology, and defined by the markets chosen by companies. The industry in which the company operates is defined by the way production is organised, and involves a group of products sharing the same technology, supply, or distribution channels. Strategic groups comprise companies – direct competitors of a given company – and are determined by the way in which companies compete with each other. In the case of global industries, there may be numerous local markets and numerous strategic groups.

According to Kay, a company's most important task is to choose a market in terms of product and geographical location. The choice determines the company's sectoral affiliation and, further on, membership in a particular strategic group.

3.2. An industry crisis – a conceptualisation attempt

An industry crisis can be viewed from two perspectives. The first one treats a crisis as a disruption in the industry's life cycle. Such crises restrict their impact to one industry or to a network of related and supporting industries, but they do not paralyse the entire economy. They have short time spans, during which numerous competing companies leave the industry, with only a few industry leaders remaining (*shakeout*) [Klepper, Miller 1995].

An industry crisis may have an impact broader than even a network of related and supporting industries, and may move from the mesoeconomic to the macroeconomic level, exerting a negative influence on the entire economy. Such industry crises include speculative bubbles, currency crises, and banking crises.

3.2.1. An industry crisis as a disruption in an industry's life cycle

The functioning of industries is described using industry life cycle theory. The theory, which makes use of relevant indicators and findings on the product life cycle, shows how industries change over time. The changes are, by definition, evolutionary. The industry life cycle has been characterised in a synthetic and model-based way by Porter [1999, pp. 167–168]. Industries, just as products, go through several stages – introduction, growth, maturity, and decline – each of which corresponds to a specific rate of sales growth.

An evolutionary approach to the functioning of an industry, however, was not introduced by Porter. He drew on the achievements of other representatives of industrial economics. Observation of the industry life cycle began with a study of the car manufacturing industry in the United States [Abernathy 1978; Abernathy, Clark 1985; Abernathy and Utterback 1978].

As part of industry life cycle theory, we can identify two trends that attempt to explain industry evolution. One of them is organisation ecology (e.g. Hannan and Freeman [1977, 1989]; Lomi, Larsen and Freeman [2005]). The other trend focuses on skills (e.g. Teece, Pisano and Shuen [1997]; Wang and Ahmed [2007]; Zollo and Winter [2002]). Industry life cycle theory explains primarily changes in the number of companies in an industry by referring to technological factors

related to the reduced diversity of products and the economies of scale. Organisational ecology shows the change in the number of companies in industries as the effects of legitimation and density. As for the research trend focused on skills (e.g. Teece, Pisano and Shuen [1997]; Wang and Ahmed [2007]; Zollo and Winter [2002]), this investigates the company's experiences preceding its entry into the industry and complementary skills as factors accounting for the company's survival. Skills may be developed before the company joins a given industry by establishing relationships with entities which are already active in the industry, by employees' creating spin-off companies, or thanks to experiences transmitted from related industries (e.g. Bayus and Agarwal [2007]; Helfat and Lieberman [2002]; Klepper [2002a]). Industry life cycle theory explores the issue of industry-specific skills.

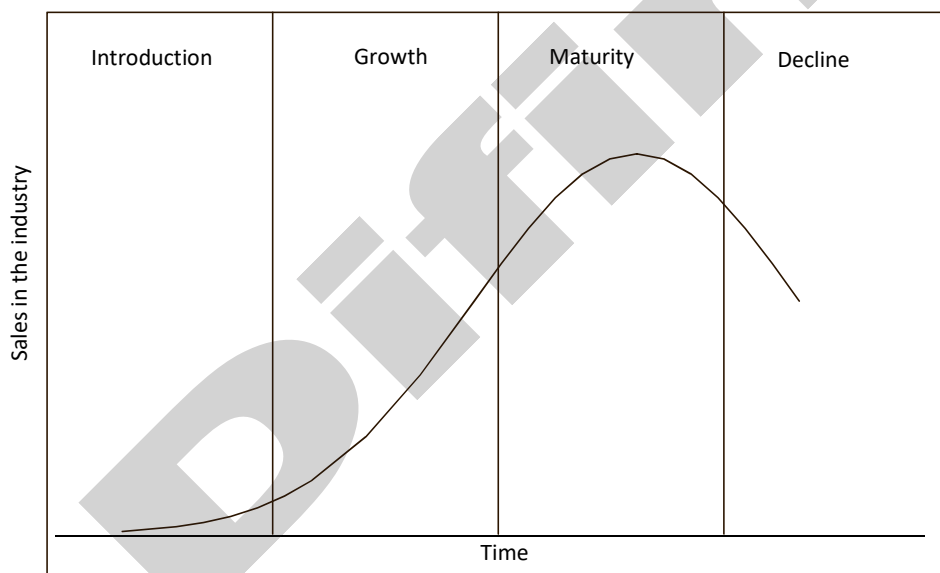


Figure 3.1. An industry life cycle

Source: Porter [1980, p. 156].

Porter notes that it is not so much determining the evolution path of an industry or sector that is important. What is significant is asking questions about what drives this evolution [Porter 1999, p. 169] and what gives it a certain character, as well as recognising indicators of the industry's climate of competition. The issue of industry evolution is related to the problem of industry crisis, as the group of factors driving industry evolution includes also ones that in addition to evolutionary

transformations may induce rapid changes in the competition environment of the industry's companies and deserve to be referred to as post-crisis factors.

3.2.1.1. The causes of crises limited to a specific industry – disruptions in the industry life cycle

The literature presents many causes of industry crises. They can be divided into two basic groups. One assumes that such a crisis is triggered by innovations. Therefore, when seeking explanations for disruptions in the industry life cycle, we can refer to Schumpeter and point to innovations as a factor responsible for discontinuities in the industry life cycle and the changing conditions in which companies compete. A primal factor in relation to innovation is technological developments that frequently take place in companies' environment [Utterback and Suárez 1993] and induce mass entries into the industry. Mass entries into an industry are encouraged by prospects of high profits, which, however, may prove deceptive. The growing number of players leads to intense rivalry [Aaker and Day 1986; Bertomeu 2009] and a decline in profitability.

According to the theory of radical innovation by Jovanovic and MacDonald [1994], a new industry forms as a result of introducing a groundbreaking invention. Companies join the industry until they can no longer expect profits. Subsequently, a new invention appears, and the industry is joined again by new, innovative companies. Innovators increase the scale of production and develop. At the same time, companies that failed to effectively implement innovative ideas are pushed out of the industry. This causes the industry's collapse, which ends when all non-innovative companies are forced to change their sector of operation [Klepper, Simons 2004, pp. 6–7].

Another approach is represented by Klepper, who believes that the market structure of a given industry and innovations evolve together. His theory assumes that an increase in a company's profits depends largely on its spending on research and development (R&D). With time, the industry is joined by new companies willing to commit significant resources to R&D. This increases the industry's production capacity, and the prices of products/services fall. To ensure business profitability, new companies additionally have to invest more in R&D. Other companies joining the industry are not able to catch up with their predecessors. Constantly falling prices force the least effective innovators to leave the industry. This causes an industry crisis, which lasts until all production is taken over by the most capable of the early innovators [Klepper, Simons 2004, p. 6].

Companies unable to standardise their products or introduce process innovation lose to companies which can adapt to new challenges. To keep pace with technological changes, participants in the industry have to possess technological

skills. Jovanovic and Macdonald [1994] show that, thanks to these skills, early innovators gain the first-move advantage, while the other players are forced to leave. Klepper [2002b] puts emphasis not on skills themselves, but on the economies of scale in research and development as a reason for leaving the industry. Typically, large companies, owing to large-scale production, also undertake research and development on a large scale.

The other group of theories explaining the causes of industry crises stresses the importance of factors related not to new technologies, but to the process of learning by doing [Klepper, Simons 2004, p. 5]. This approach to the causes of an industry crisis is represented by Carree and Thurik [2000]. In their view, the number of companies in an industry depends on the process of learning through practical actions, which leads to the lowering of marginal costs. This, in turn, attracts new entrepreneurs to the industry. With time, however, this process causes a fall in the rate of profit, thereby reducing the likelihood of attracting new companies to the industry. Increased price competition causes operating in a given industry to become no longer profitable, which is why some companies leave the industry [Carree, Thurik 2000, pp. 255–256].

The cause of turbulence in the functioning of an industry may be its deregulation. The 1980s deregulation of the banking industry first revived competition, and then increased the degree of the industry's concentration [Tóth 2012, p. 359]. The liberalisation of the United States' banking market caused some players to leave the industry – some had to declare bankruptcy, others entered into mergers or were taken over, which manifested itself through a 48% decrease in the number of banks in 1984–2003. These estimates have not been changed by the fact that the industry reported 3,000 new entries [Jones and Critchfield 2008]. Research into the banking industry shows that the industry's concentration results in a lower risk of its operation [Brewer and Jackson 2006; Beck, Demirgüç-Kunt and Levine 2006], which may be associated with a lower likelihood of crisis occurring on the industry market's supply side. A similar argument can be found in an article by Tóth [2012, p. 359] which demonstrates that this thesis applies also to other industries characterised by high moral hazard, e.g. the auditing industry. In industries like this, concentration goes hand in hand with industry participants' less risky behaviour and a more stable market [Tóth 2012, p. 359].

So far, we have pointed to technological factors and those regarding economic policy – industry deregulation – as variables that may disrupt the functioning of an industry. With reference to the interpretation of crisis as a disruption in the industry life cycle, it can be assumed that factors causing a crisis in an industry partly overlap with catalysts of industry evolution, i.e. with variables that cause changes in the pace and nature of the industry's development [Porter 1999, p. 170].

The set of these catalysts contains factors which are external and internal in relation to industries (Table 3.2).

Table 3.2. The causes of an industry crisis in terms of factors responsible for industry evolution

External catalysts	Internal catalysts
Demographic factors significant from the perspective of demand for products of the industry and its suppliers' industries	The industry's companies penetrating the purchaser group
Cultural factors related to purchasers' lifestyle, values, changes in taste, i.e. trends in purchaser needs, broadly interpreted	Expanding the scale of operations
Changes in the position of substitute products and complementary products	
Cost factors related to raw materials, components, and exchange rates	
Economic policy factors	

Source: authors' own study based on Porter [1999, pp. 171–189].

Demographic factors have a major impact on the long-term rate of industry development. Clearly, a decline in population can negatively translate into the number of an industry's customers. The negative impact of demography is stronger or weaker, depending on the income flexibility of demand for an industry's products. Cultural factors are also of paramount importance. Changes in the lifestyle, value system, or fashion translate into potential customers' needs. The disappearance of some needs calls into question the industry's further operation, or at least forces companies to undertake certain actions, which are usually innovation-related. The weakening of the market position of products which are complementary to a product made by companies from a specific industry may transmit negative trends to this industry. A mutual infection of industries will be all the stronger if there are more relationships connecting active entities in both mesosystems. The spreading of crisis phenomena is, by assumption, similar to the positive inter-sectoral effects that characterise related industries. We can similarly explain the catalysing of impediments to the functioning of a specific industry with changes in the supporting industries, i.e. in the industries of suppliers of raw materials, components, etc. This effect is evident in the case of related industries within a system of value creation.

An industry's condition is influenced by economic policy. Economic policy regulations may protect the industry's entities from substitutes, for instance. It may also be the case that repealing certain regulations or introducing new ones clearly hampers business activities by raising companies' costs within the industry. Sometimes, quality requirements or the necessity of obtaining special permits to conduct business may even discourage companies from continuing their activity within the industry.

Purchaser-group penetration by an industry's companies means that a further increase in demand is impossible. This is a characteristic feature of consumer durables industries. The danger of an industry's growth being halted requires that enterprises introduce innovations and deliberately reduce the product life cycle.

An industry's companies expanding the scale of operations may result in a higher degree of industry concentration, which in extreme cases may create an oligopoly. Increasing the degree of concentration accompanied by a decrease in demand for the industry's products may protect those still operating within the industry from losing profits. It matters a lot whether entering the industry is easy or difficult. If mobility barriers are low, the companies that have remained in the industry will not achieve above-average profits.

Additionally, the literature [Fein 1999, Jovanovic and Tse 2006] lists the following external causes of industry crises:

- consolidation among suppliers,
- changes in value chains,
- eliminating intermediaries from the chain of supplies and services,
- a fall in demand for a product in its maturity phase,
- external stakeholders' refusal to provide finance.

3.2.1.2. Manifestations of crises restricted to a specific industry

Indicators diagnosing industries' competitive situation can be treated as barometers of industry crises. A crisis is a clear and deep disruption in an industry's functioning and development dynamics. The occurrence of phenomena, events or factors referred to as critical influences the length of the industry life cycle and is reflected in the variables characterising the industry environment, regardless of its product specificity. These variables are the number and size of the industry's companies, the volume/value of sales, the volume/value of production, the level of the industry's entry and exit barriers, and the industry's average profitability.

A crisis that begins and ends within a given industry – i.e. one that is non-contagious and does not impair the entire economy – manifests itself by a lower level of product diversity and a gradual transition from product innovations to process innovations, which involves the development of companies' manufacturing

capacity. During a crisis, sales do not increase, the market is divided among the most efficient producers, and others leave the industry. Sometimes we even speak of a mass extinction of companies, which is when the number of companies declines substantially while production increases. Industry life cycle theory has shown that such situations are generally experienced by young industries, although they have also been found in mature industries [Bergek et al. 2008], such as the baby diaper industry [Elzinga and Mills 1996], the petroleum products industry [Arora 1997], and the turboprop aircraft engine industry [Bonaccorsi and Giuri 2001].

Disturbances in the functioning of an industry could manifest themselves through its consolidation. For example, in the 1980s, we could identify national leaders within the electromechanical industry, which offers systems of combined cycle gas turbine technology (CCGT). In the years 1970–1980, the industry's products were offered by between ten and twenty companies that conducted technology development experiments: General Electric and Westinghouse in North America; Siemens, ASEA, Brown Boveri, GEC and Alsthom in Europe; and Toshiba, Mitsubishi and Hitachi in Asia [Bergek et al. 2008, p. 336]. The radical technological changes introduced by this mature industry's participants, in particular by General Electric, led to changes in its structure and to the emergence of four leading players from among the companies that had already been active in this market: General Electric in North America; ABB (established by merging Swiss ABB and Swedish ASEA) and GEC Alsthom in Europe; and Japan's Mitsubishi corporation in Asia. The changes brought about by technological factors strongly differentiated the positions of companies operating already in the industry, and, interestingly, this did not involve any new participants entering the industry [Bergek et al. 2008, p. 370].

3.2.2. Speculative bubbles – from an industry crisis to an economic crisis

The term *speculative bubble* first appeared in the years 1711–1720, when the prices of shares in the South Sea Company – an English company with a monopoly on trade with South America – began to grow rapidly, reaching their highest level in 1720. The literature defines a speculative bubble as conducting multiple transactions at prices incompatible with the actual value of the goods they refer to [Garber 1990; Levine and Zajac, 2007]. The value of a product offered by a listed company significantly affects the company's value, which is estimated on the basis of anticipated financial surpluses. Kindleberger [1999] points out that speculative bubbles are “an upward price movement over an extended range that then implodes”. To ascertain the nature of a speculative bubble, it is advisable to read

a paper by O’Hara [2008], who constructs explanations for the formation of bubbles by referring to the rationality/irrationality of investors and markets. Her discussion can be represented graphically in the form of a matrix (Figure 3.2). By putting together two criteria in two variants, we get four possible combinations:

- I. rational investor and rational market – a combination consistent with the theses of neoclassical economics; the market perceived as an aggregate of participants who act completely rationally; rational expectations of investors who have the same information prevents the occurrence of bubbles. No transaction giving the seller an advantage at the purchaser’s expense is possible if both parties have the same information,
- II. rational investor, irrational market – particular individuals behave rationally, assuming that they are buying something in order to sell it at a higher price. However, since not everyone in the market may act like that, in the aggregate, the market as a sum of investors’ behaviour is irrational. Keynes [1964, p. 156] refers to such a situation as a beauty contest: investors buy company shares guided not by their own assessment, but by how the value of shares is estimated by other market players,
- III. irrational investor, rational market – the market will be rational if the number of irrational investors is low: in this case, speculative bubbles will not occur,
- IV. irrational investor, irrational market – a situation in which investors go on a spree of buying shares in companies from a specific industry, and although a further rise in prices is unlikely, the purchases continue to be made.

Speculative bubbles take place primarily in variants IV and II, and occasionally in variant III.

Market	Investor	
	Rational	Irrational
	Rational	Irrational
	I	III
	II	IV

Figure 3.2. A speculative bubble in terms of investor and market rationality

Source: study based on O’Hara [2008, pp. 3–6].

Speculative bubbles, i.e. market situations when the price of specific goods significantly exceeds their value, are characteristic of selected industries, such as the property industry, the securities market, or the industry of raw materials. Bubbles, depending on an industry’s links with the rest of the economy, can spread

across the whole economy. Before briefly describing the most famous speculative bubbles, it is advisable to discuss their causes and mechanism.

3.2.2.1. The causes of speculative bubbles

Speculative bubbles may be natural and unintended, but they may also be caused by the behaviour of some industries' participants' behaviour, which in turn may be influenced by certain external factors. Johnson et al. [2002, pp. 24–36] points to three categories of factors which may cause speculative bubbles: structural factors, cultural factors, and psychological factors. On this basis, Vasile et al. [2012] has expanded the list of psychological factors (Table 3.3).

Table 3.3. Factors causing speculative bubbles

Structural factors	The development of new technologies Prestige derived from success in business An increased amount of information on market and business trends Optimistic messages from business analysts Population growth – the baby boom The development of the pension-fund and investment-fund industries A decline in inflation and money illusion effect A growing popularity of electronic transactions and easier access to brokers The popularity and availability of gambling
Demographic factors	The development of the media industry and a significant role of the media in market-trend development The development of the new economy – lower inflation, globalisation, falling interest rates, privatisation, slimming of organisations, development of the services sector, boom in the ICT sector The public's increased interest in the securities market
Psychological factors	Convictions – people tend to deny everything that is inconsistent with their beliefs, and to believe whatever confirms their convictions Ignorance – people would rather invest \$1,000 in securities than in the purchase of material goods What we know seems less risky to us Herding behaviour – people imitate each other

Source: study based on Johnson et al. [2012, pp. 24–37] and Vasile et al. [2012].

Speculative bubbles may also be caused by low interest rates, which discourage investors from saving, or rather encourage them to borrow and invest in property or in securities associated with a specific industry. The occurrence of bubbles is an effect of investors' behaviour, which in turn may start inflationary trends, which is why inflation is sometimes seen as a factor responsible for the formation

of bubbles. This thesis is denied by White [2006], who shows that the crises of the 1920s and the 1990s in the United States took place despite low and stable prices. Sometimes it is pointed out that bubbles are caused by the behaviour of certain market players who take decisions on the basis of information regarding a short period of time, when the return on investment is very high, while ignoring a long-term perspective, or when these entities believe that purchasing something at a high price will allow them to resell it later at a higher price. The last explanation corresponds with the so-called greater fool theory.

Taking into account all of these factors, we can state, however, that the primary factor is certain human behaviour. What is crucial, therefore, is psychological and behavioural aspects. A very important thing is the perception of reality, i.e. stimulus reception and interpretation. Interpreting the world is determined by our experiences, knowledge, and emotions. Each person experiences a greater or lesser degree of cognitive dissonance, thus holding two opinions that, from a psychological point of view, are contradictory [Aronson 1969], which causes discomfort. To reduce it, people may avoid new situations or deliberately seek confirmation of the already held beliefs. The psychological and behavioural factors also include normative and informative conformity [Asch 1956]. To avoid being rejected or confronted by others, people will adopt the way of thinking typical of the group. Informative conformism means that a person who does not know how to behave adapts to the group, and may even express ideas that are contrary to his/her own convictions. Such factors may trigger the mechanism of a speculative bubble. Sometimes, bubbles are believed to be caused by government interference with specific industry markets, such as the property market in the United States, and the related liberalisation of loan regulations. To understand the causes of the US housing bubble which preceded the 2008 crisis, it is advisable to examine mortgage interest rates [Firlej 2011, p. 183]. From 2001, there was a significant increase in the number of home mortgages, which translated into an increase in property prices. Increased demand for property in the US was driven by the aforementioned liberalisation of loan regulations. As a result, mortgages were offered to those with a poor credit rating. People were also encouraged to take out a mortgage by low initial interest rates. After the end of the initial period, the rates increased, and getting a new mortgage was definitely more attractive. The high-risk loan market boomed, which, in turn, launched the phenomenon of mortgage securitisation, i.e. the process of transferring credit risk from lenders to investors. This led to a situation where a large proportion of higher-risk borrowers were unable to repay their loans owing to an increase in interest rates in 2006–2007. At the same time, property prices went down.

3.2.2.2. The mechanism and manifestations of a speculative bubble

According to George Soros, each bubble consists of a trend and a misconception that interact with each other [Soros 2008, p. XI]. People do not have full information, nor do they behave completely rationally. Human behaviour can be described by means of a cognitive function and a manipulative function, which are interrelated – people's expectations are dependent on perception, and the situation is influenced by investors' expectations. The perception of the world and its investor-effected change in time take place simultaneously, making planning difficult.

The human perception of reality is erroneous and subjective. In psychology, Merton wrote in 1949 about a self-fulfilling prophecy, which means that, by communicating with each other, people with misconceived notions about reality influence each other's decisions [Tyszką, Zaleśkiewicz 2001]. For instance, a group of people may be convinced that since an industry has growth prospects, they should purchase shares in companies operating in it. This group's behaviour could encourage others to do the same. This will fuel demand for shares in the industry's companies, and the prophecy will be fulfilled. If investors continue to behave like this long enough, a speculative bubble will form. George Soros also uses the term speculative mania, which he defines as a self-reinforcing and self-suppressing wave [Soros 2008, pp. 83–84]. First, the trend is not noticed at all; then the behaviour of the investors who have noticed the trend strengthens it. With time, the trend either grows or decreases, and an imbalance remains in the market. Investors' expectations are divorced from reality. Market participants lose their faith in the trend, although they still support it for some time. Finally, they abandon their false beliefs, and the industry sees a sharp decline in share prices.

Rodrigue [http://people.hofstra.edu/geotrans/eng/ch7en/conc7en/stages_in_a_bubble.html] characterises the mechanism of a speculative bubble by showing its subsequent phases (Table 3.4).

The mechanism of a speculative bubble enables it to move between industries, and globalisation helps it to spread across not only industry systems but also particular national economies. As bubbles in the financial market are associated with an increase in the share prices of real-economy companies, they move to specific industries because of the behaviour of investors who expect an increase in the prices of certain goods. The burst of a bubble leads to a drastic reduction in the prices of shares or goods offered by companies representing a specific industry, which in turn manifests itself through a wave of corporate bankruptcies. This could be observed in the late 1990s, and in the year 2000 during the dotcom crisis [Cochrane 2002], described in greater detail in section 3.2.2.3. Property bubbles manifest themselves through a large and rapid increase in property prices which significantly exceeds price increases within the limits of the inflation rate in other

markets. When prices rise too much, the bubble bursts and prices plummet, a phenomenon that differs from a cyclical price decrease following a boom period, when the correction happens less dramatically. The mechanism of the effects of a speculative bubble within a particular industry spreading to the whole economy is very simply presented by Latocha [2009, p. 6]. Mass purchases reduce people's financial resources, which lowers aggregate demand for goods and services and is reflected in a decreased consumption of goods and services, translating into growing stockpiles in companies' warehouses. In the face of residual supply of certain goods, particular companies' production decreases, reducing aggregate supply in the market. Companies cut workforce, increasing unemployment, which in turn adversely affects the level of consumption.

Table 3.4. Phases in the development of a speculative bubble

Phase	Description
Stealth	Very few investors interested in purchasing company shares related to a particular industry. Investing perceived as a type of gambling.
Awareness	New investors join in, expecting profits. The beginning of a visible upward trend.
Mania	More and more people decide to invest. The media launch campaigns to promote investing in the stock market. Investors include even people without knowledge or experience. Short-term profits obtainable here and now are the priority. The higher the price is, the more investments are made, and investors offer irrational justifications for their decisions, assuming a further upward trend. Towards the end of this phase, the more rational investors start selling their securities. Traditional valuation and calculation methods are rejected in favour of justifications for quick profits. The market is euphoric.
Blow-off	Investors notice that no further increase in share prices is possible; they also have difficulty selling them. A "revelation" comes, and the prices start plummeting.

Source: study based on http://people.hofstra.edu/geotrans/eng/ch7en/conc7en/stages_in_a_bubble.html

The mechanism of a speculative bubble and its spread to economic systems larger than an industry is simple. What is difficult is to predict when a particular bubble might burst. The price/earnings and price/book value ratios are of limited predictive value because they do not define the critical value beyond which the burst becomes more likely. Refraining earlier from the purchase of specific goods or company shares related to a specific industry could be a remedy, but at the same time this might stifle the boom in the industry too quickly and undermine the benefits for economic growth.

3.2.2.3. Speculative bubbles – a historical approach²

The tulip mania

Tulips were brought to Western Europe from Turkey in the sixteenth century. Initially, tulip bulbs were sold at low prices. However, when tulips came into fashion, their prices increased significantly. Until 1623, the price of one *Semper Augustus* bulb had been the equivalent of 2,000 British shillings, which was six times the average annual salary. Over the next ten years, the price increased more than five-fold, reaching a peak of 20,000 British shillings. At the time, such money could buy a house in the centre of Amsterdam. In 1637 the bubble burst, because no one was interested in purchasing tulips at such a high price, or rather in speculating. Within a few months, the market collapsed and many investors suffered heavy losses.

The Mississippi Company

In 1716, John Law, a Scottish businessman who arrived in France in 1714, persuaded the French government to establish a bank. The bank was to issue paper money to help the French government overcome financial problems. At that time, France controlled a colony in Louisiana, whose territory was larger than that of the whole of France. In 1717, John Law bought a controlling stake in the failing Mississippi Company and was granted a 25-year monopoly on trade with India and North America. Law's company bought other French trading firms, thus creating one large *Compagnie Perpetuelle des Indes*, which controlled all trade conducted by France outside Europe. To raise funds for the development of his business, Law issued Company shares, which could be paid for with bonds issued by the French government. France's sovereign debt was thus transferred to a private institution. As demand for Company shares kept growing, the bank issued more paper notes to finance the purchases made by citizens. By the end of 1719, the share price had increased twenty-fold in comparison with the day of issue.

This triggered a mechanism which, as we would say today, caused a speculative bubble:

- the higher demand for shares raised their prices,
- the higher share prices increased demand for money,
- the higher demand for money increased money supply,
- the higher money supply fuelled demand for shares.

² The discussion of the tulip mania, the Mississippi Company, and the South Sea Company is based on Mackay [1848], <http://www.econlib.org/library/Mackay/macEx4.html>, date of access: November 2013.

Some investors noticed that the increase in share prices was not reflected in the actual profits generated by the Company. Money in the form of gold started to be moved abroad. The Company's share price fell dramatically, in 1721 reaching its initial emission value.

The South Sea Company

The history of the South Sea Company is very similar to that of the Mississippi Company. Founded in 1711, the Company took over the British government's debt in exchange for gaining a monopoly on trade with South America. In 1720, the Company's share price started increasing significantly. A strong demand for the shares prompted the Board of the Company to issue more of them. In January 1720, the share price was 100 pounds, and in August 1,000 pounds. In the summer of that same year, the Board of the Company began selling its shares, which caused a sharp decline in share prices. This additionally tarnished the image of the British government, which in an attempt to prevent similar events in the future issued the Bubble Act, a law prohibiting the issuance of shares without the government's approval.

The railway mania

The term railway mania refers to a bubble that took place in 1840 in the UK. At that time, fascinated by the prospects of the development of rail transport, a large number of investors acquired shares in companies constructing railway lines. Entrepreneurs involved in the construction of railway lines needed large sums of money, which they obtained on the stock market. Overinvestment led to production overcapacity, falling profits, and numerous bankruptcies. The railway mania in the UK shares many similarities with the situation in the United States in 1873. Eighty companies involved in the construction of railway lines received land to build them, but half of the lines were not made. In 1873 the bubble burst.

The internet bubble³

The technological development at the turn of the twenty-first century fuelled what is referred to as the dotcom bubble. The expansion of internet technologies after 1995 – when Netscape, the first browser, started its activity on the Web – attracted the attention of many investors. The development of the internet company sector was heavily fuelled by venture capital and low interest rates, which characterised the US market in 1998–1999 and encouraged investors to take out loans for the development of companies in the ICT sector. Banks were willing to offer these

³ Based on Galbraith and Hale [2004]. See Ofek and Richardson [2003], Ljungqvist and Wilhelm [2003] for more details.

loans even to entrepreneurs without a business plan. Investors kept buying shares in companies which generated losses, hoping to make profits in the near future. The origins of the bubble, therefore, can be found in technological and economic factors, but also in computer users' concern that the year 2000 would bring serious dangers, which contributed to an increased demand for new computers and software. A combination of these factors caused a rise in IT companies' share prices. From January 1994 to February 2000, the NASDAQ composite index rose from 776.80 to 4,696.68, or by 605%, a surge caused by the increase in the high-tech share prices [Galbraith, Hale 2004, p. 2].

In 2000, many investors began to doubt the anticipated growth of internet companies and started to dispose of the shares. The trend grew so much that the NASDAQ index fell from almost 5,000 to approximately 2,000. Many companies went out of business [http://www.cnet.com/1990-11136_1-6278387-1.html?tag=-cnetfd.sd]. The most spectacular failures included those of Webvan (an online grocery store), Pets.com (a business selling pet supplies), and eToys.com (a website selling toys), who, having been acquired by another company, returned to the game. The companies that survived the wave of bankruptcies evolved and emerged stronger from the industry crisis; witness eBay, Google, and Amazon.

3.3. Inter-industry effects – links with the crisis contagion effect – results of selected studies

Research into inter-industry effects, i.e. phenomena occurring because of links between industries, has usually been conducted from the perspective of new industries and their learning from the experiences of mature industries. However, inter-industry effects also include the mutual contagion of industries during a crisis. The more the industries are interrelated, the stronger the phenomenon will be. Strong ties between industries are typical of those of them that make up a network of related and supporting industries, which are widely discussed by Porter as part of his diamond model [Porter 1990].

Industries that are highly capable of infecting other economic mesosystems with crisis phenomena include raw materials industries, in particular the industry focused on oil extraction. Turbulence in this industry affected the entire global economy. The largest ever oil crisis in the world's post-war history took place in 1974–1975. The literature is dominated by the view that the origin of the crisis was a four-fold increase in oil prices announced in 1973 by the Organisation of the Petroleum Exporting Countries (OPEC), at that time an insignificant organisation of oil exporting countries from the Middle East, South America, North

Africa, and Southeast Asia. The crisis was caused by decisions related to international economic policy. Soon, the price of oil per barrel rose from \$3 to \$12. What is more, oil production was reduced from 20.8 million to 15.8 million barrels per day [IEA, 2007, p. 18]. In addition, an embargo was imposed on oil deliveries to the United States, Western Europe, Japan, South Africa, Portugal, and Rhodesia (now Zimbabwe). According to OPEC's official position, this was a reaction to OECD countries' military involvement in the Arab-Israeli Yom Kippur war on the side of Israel [Piech 2000 pp. 165–166].

OPEC's decisions affected the situation of energy companies in OECD countries, which were forced to quickly search for new oilfields. The United States imposed oil prices: low for oil from old fields, and high for oil from newly discovered deposits. In the Japanese economy, emphasis shifted from energy-intensive industry investments to electronics.

The oil crisis of the 1970s significantly influenced also the automotive industry in Europe and the United States. Demand for cars with large engine capacity began to decline dramatically in favour of small, compact cars. Sales of Japanese, German, and French brands increased, which forced the Big Three (Chrysler, Ford, and General Motors) to start producing small American models. The effects of the oil crisis not only hit individual industries but also spread throughout the entire national economy, as mentioned in section 2.2. Within two years of the crisis, the world's inflation rate increased by 300%. The United States' GDP fell by 0.64%, Japan's by 2.23%, and the UK's by 1.7%. The largest falls in GDP were reported in Cyprus (16.91%) and Lebanon (30.3%). The rising inflation in OECD countries led to an economic downturn, a rise in unemployment, and reduced foreign trade. On the other hand, the economic situation of OPEC countries improved significantly. Bigger revenues (in the form of "petrodollars") from the sale of oil enabled Middle Eastern countries to enter a path of accelerated development [Piech 2000, pp. 167–169]. Despite the prevailing theory that the crisis started with the embargo imposed by OPEC, there is no full agreement about the issue among researchers. Hamilton [2003, 2013] is inclined to believe that the oil shock was caused by geopolitical factors. In his studies, he stresses that if it had been caused only by pure economic factors, this would not explain the embargo decision taken by the Arab oil producers who were OPEC members. Moreover, the embargo was initiated not by the biggest oil exporters, who could benefit from it the most, but by Arab countries with scarce resources and limited oil production. According to Hamilton, the oil shock of the 1970s had such severe consequences because it led to a significant reduction in consumption and investment. Barsky and Kilian [2001], in turn, emphasise the significance of economic factors, ascribing little importance to the Yom Kippur War. In their opinion, the 1974–1976 stagflation in the United States was caused by the expansionary monetary policy of 1971–1972.

Their work suggests, therefore, that geopolitical factors cannot be attributed the decisive role in causing the crisis. Middle Eastern oil producers considered the possibility of introducing the embargo before the war; and the embargo itself was lifted, even though the intended policy objectives had not been achieved.

Another raw materials industry which is of great importance to economies and which, owing to an extensive use of a raw material, may contribute to the spread of economic disturbances is the copper industry. Copper is an essential raw material used in telecommunications, energy, transport, health care, and construction. Turmoil in this market spreads to other industries, considerably affecting the macroeconomic situation. Nevertheless, interactions are also possible between crisis phenomena at the macro level and the situation in the copper industry. As early as 2008, there was a significant drop in copper prices due to the crisis, and then again in 2011 due to the economic slowdown in China, which is the main consumer and importer of copper in the global economy. Price reductions continued in the following years, and in 2015 copper was half as cheap as five years before. One of the major players in the industry is Poland's KGHM Polska Miedź SA. The reduction in copper prices had an adverse effect on KGHM Polska Miedź SA, not least because of the problems experienced by KGHM International Ltd, which had previously operated as Quadra FNX Mining Ltd. In 2012, KGHM took over Quadra FNX Mining Ltd, a Canadian company, thereby gaining access to the copper fields of the Sierra Gorda in Chile. KGHM's strategic move (strategic because it secured a resource base) turned out to be a heavy burden for the company's finances, especially in the face of an ongoing fall in copper prices. KGHM Polska Miedź SA closed the year 2015 with a loss of PLN5.012 billion at the consolidated level [<http://www.polskieradio.pl/42/1701/Artykul/1596179,KGHM-tlumaczy...>]. It would be premature to state that the investment in Chile and the friendly takeover of Quadra in Canada were ill-advised. However, a serious deterioration in KGHM's economic performance shows how closely the copper industry is linked to the macroeconomic situation in the markets of key consumers of raw materials. This example allows us to observe that it is not only industry crises that infect economies, and that crisis phenomena at the macroeconomic level may also affect the operation of entities with origins in a specific industry.

Another example of an industry whose perturbations radiate to the whole economy is the property industry. The mechanism of crisis contagion is related to the speculative bubble. Šliupas and Simanavičienė [2010] conducted a study on how a speculative bubble in the property industry affects the whole economy in countries undergoing transformation. The researchers focused their study on the realities of the Lithuanian economy, demonstrating that bubble formation is triggered by two categories of market participants: developers and development firms' customers. The former have more reliable information than the latter and set prices

in the market both for those who buy property to use it, and for those who acquire it as an investment. Bubbles form because of the short-sightedness of investors who, by borrowing capital to carry out their investment projects, lead to a property boom and an enormous increase in prices. The period of rising prices is longer than the time needed for prices to fall below the value of a given property. Šliupas and Simanavičienė [2010] conducted a logical analysis and applied a regression equation showing the relationship between property prices and variables such as GDP per capita, the real interest rate, the unemployment rate, and the indicator showing the share of the private sector's loans in GDP. Their research confirms that this indicator shows a strong positive correlation with a property price. In contrast, the correlation between a real interest rate and a property price is statistically significant and negative. The authors showed that tightened credit terms led to limited business activity in the construction and property industries, which had an adverse effect on business in other industries. Combined with a global slowdown, this resulted in a deep recession in Lithuania. Research on the same industry, but in the context of the New Zealand economy, was conducted by Herring [2006], who put forward a hypothesis about the short-sightedness of borrowers and lenders of loans for the purchase of property, an attitude that may cause a shock in the market. In his study, Herring explains why the property industry is so susceptible to the speculative bubble mechanism [Herring 2006, pp. 7–14]. Property has low liquidity; its short- and medium-term supply is fixed; property prices are sensitive to the level of GDP per capita, whose growth increases not only purchasing power but also the chances of obtaining a loan. Immigration processes are another important factor that can increase demand for property in specific locations and affect construction costs and land prices. In the face of a growing demand for property, these will increase as well, raising property prices again. Finally, as the author observes, an expected increase in property prices is a self-fulfilling prophecy.

3.4. Types of industry crises

Crises may occur in various industries, on a smaller or larger scale, and their causes may also be diverse. Using these criteria, we can divide crises into various types (see Table 3.5).

According to some researchers (e.g. Rosier, Dockès [1987, pp. 136–137]), an industry crisis may be favourable for particular sectors and the entire economy, as it fulfils two functions: economic regulation and production-system dynamisation. The former consists in eliminating excess capital accumulation, which leads to overproduction. The latter reactivates a new order of economic system, eliminates

ill-suited companies and industries from the system, and changes the capital committed. Morawski [2003, p. 14] notes that a crisis may eliminate speculative bubbles. The share valuation adjustment that takes place during a crisis lowers the values that were overestimated in the peak phase.

Table 3.5. Types of industry crises

Division criterion	Type of crisis
Industry affected	<ul style="list-style-type: none"> • Banking-industry crisis, • Oil-industry crisis, • Property-industry crisis, • Automotive-industry crisis, • Pharmaceutical-industry crisis, • Tyre-industry crisis, • Computer-industry crisis, etc.
Emergence	<ul style="list-style-type: none"> • Crisis as a result of “overpopulation” – a shock in the environment causes resource scarcity. The market can support only a limited number of companies within an industry. Exceeding this number leads to a crisis. • Crisis as a result of a technological revolution – the emergence of a new dominant product design enforces standardisation among companies in the industry. Reduced uncertainty regarding the product form shifts producers’ interest from product innovations to process innovations. This results in economies of scale. The companies that have not focused on product standardisation or have not increased their output have to leave the industry.
Course of the crisis	<ul style="list-style-type: none"> • “Shakeout” – big companies, which are usually more efficient and produce more, push out smaller manufacturers from the market while prices drop in the trough phase. • “Stakeout” – small and medium-sized enterprises have a greater ability to observe the market and adapt to existing conditions. As a result, smaller companies can remain profitable for a longer period while demand declines. In case of a slump, larger companies will either opt to leave the market earlier or imitate smaller rivals by drastically reducing capacity.
Industry maturity	<ul style="list-style-type: none"> • “Boom and bust” – usually applies to emerging markets and rapidly growing industries. An example of this type of crisis is the 1990s slump in the dotcom sector. During the peak phase, many new businesses were established, generating a large capacity surplus. Increasing competition and falling prices caused many companies to collapse. The few companies that survived did so only thanks to ruthless cost-cutting. • “Seismic shift” – refers to mature industries which have enjoyed a long period of high profitability, minimal competition and decent margins. Deregulation, globalisation, and the emergence of technological discontinuities may cause the favourable conditions to disappear, starting a cri-

	<p>sis, as exemplified by a pharmaceutical-industry crisis following the introduction of a managed health care system in the United States. Previously, in the absence of treatment-quality supervision, and owing to lack of accountability for the financial implications of treatment decisions, doctors did not take into consideration the price of drugs prescribed. The introduction of the price criterion significantly reduced pharmaceutical companies' profits.</p>
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Source: authors' own study based on literature research.

The industries that emerge unscathed from crises can be divided into two types:

- adaptive survivors – industries in which companies have introduced discipline to their operational processes and which can flexibly adapt to customers' changing needs and competitors' actions,
- aggressive amalgamators – industries in which entrepreneurs have developed adequate business models in a new environment, taken over emerging competitors, cut operational costs, and invested in new technologies, thereby achieving economies of scale [Day 1997].

Recapitulation

Presenting the industry dimension of an economic crisis is a considerable challenge. It is particularly difficult to approach the issue conceptually because of the specificity of the mesoeconomic level. As economic systems of individual business entities, industries take on many characteristics of companies, which makes some of the causes, manifestations, and consequences of industry crises identical to the causes, manifestations, and consequences of an economic crisis from the perspective of an individual company. This difficulty is confirmed by the present authors' literature studies, which demonstrate that the issue of crisis is discussed much more frequently and extensively from a microeconomic or macroeconomic perspective. From the industry perspective, a particularly important role is played by investment in research and development, technological transformation, and the resultant innovations. They can radically change competition conditions in particular industries, leading either to their strong growth or to their disappearance within the structure of the economy.

Chapter 4

The theoretical, empirical, and methodological aspects of company competitiveness

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The purpose of the present chapter is to discuss the theoretical, empirical, and methodological aspects of company competitiveness. The analysis of theoretical issues is intended to delimit the concept of company competitiveness and determine its dimensions and the relationships between them. In turn, a critical analysis of the existing literature on the empirical and methodological aspects of company competitiveness aims to identify the important aspects that should be taken into account when investigating company competitiveness and potential ways of conducting such analyses. Therefore, the purpose of this chapter is to structure the key aspects related to firm competitiveness. The first section of this part of the book discusses the issue of competition from the perspective of various trends in economics. Next, we present definitions of company competitiveness found in the literature, establish the meaning of the term adopted in further parts of the book, and discuss its various dimensions. The last section presents the most important issues related to companies' international competitiveness.

4.1. Competition¹

It is assumed that competing means rivalry aimed at defeating or gaining a competitive advantage over entities intent on achieving similar or identical objectives. In the economic sphere, competing entities include countries, regions, cities, sectors, companies, groups of people, and individuals. This rivalry may concern access to broadly-understood resources, goods and services, capital, power, recognition, position, or prestige.

Rivalry, which is often equated with the processes of competing, is the focus of attention in competition theory. The theory has been developing since the era of classical economics, and has been transforming in parallel with changes in the economic environment and with an economic paradigm which has been attempting to catch up with them. In classical economics, the focus was on the behaviour of representatives of the demand and the supply side of the economy, i.e. buyers and sellers. The area of analysis was restricted to the sphere of market exchange while ignoring its links with the manufacturing and organisational aspects of the company. The classicists' contribution to competition theory consists primarily of emphasising the significance of company behaviour in the market. Recognised by the classicists, the necessity of investigating companies' actions became an inspiration for Marx, who, just as Smith did, equated competition with rivalry between entrepreneurs [Smith 1954, p. 80]. It also inspired neoclassical economists, who continued the classicists' studies, although their focus of attention was competition as a state or structure of the market [McNulty 1968, p. 399].

Unlike the classicists and neo-classicists, who mainly performed a static analysis of competition, representatives of heterodox trends in economic theory, including especially those representing the Austrian School and evolutionary economics [Landreth, Colander 1998, p. 589; Mikosik 1993; Nelson, Winter 1982, p. 144], analyse competition in terms of a process. They concentrate on the operating mechanisms of economic systems (companies, industries, and entire national economies). Their focus of attention is market participants' behaviour leading to the formation of specific competition methods, a behaviour that is a result of adapting to the opportunities and limitations generated by the market environment, and of applying specific sources of potential advantage over rivals.

The interpretations of competition representing particular trends in economics are shown in Table 4.1.

¹ The present chapter contains parts of a study by Dzikowska [2012] and of a paper by Jankowska, Sulimowska-Formowicz [2010].

Table 4.1. Competition, as interpreted by various trends in economics

Trend	Competition – interpretation
Classical theory	<ul style="list-style-type: none"> • “Ordering force” of the actions of exchange participants: entrepreneurs and consumers; thanks to this force, resources are put to the most productive use, and individuals’ selfish actions contribute to general economic prosperity, • Rivalry between particular participants in economic life.
Marx theory	<ul style="list-style-type: none"> • Rivalry between capitalists – members of the same industry – establishes the market price of a given product, • Rivalry between capitals invested in different industries determines the profitability level of these industries, • A process leading to concentration of particular industries, whose structure acquires the characteristics of an oligopolistic market and monopoly.
Neo-classical theory	<ul style="list-style-type: none"> • A state of the market – ideal situation characterised by atomism on the supply side, • The opposite of a monopoly.
Game theory	<ul style="list-style-type: none"> • Conflict, cooperation, and collusion between participants in economic life, • Rivalry between market players, • Market structure – a context for explaining companies’ real behaviour.
J.M. Keynes/ Post-Keynesians	<ul style="list-style-type: none"> • Not an “ordering force” that performs an optimising action from the viewpoint of social well-being, • Its operation must be accompanied by government activity, • May strengthen powerful and large companies, and lead to industry monopolisation.
Concepts of strategic behaviour	<ul style="list-style-type: none"> • Not only an industry structure but also companies’ behaviour, • Companies’ involvement in competition; for some it means survival, for the weaker – “extinction” and being pushed out of the market.
Austrian School	<ul style="list-style-type: none"> • A process of departing from equilibrium as companies (i.e. The people who constitute them) try to achieve an ever-improving market (and thus financial) position, • Depending on the ability to adapt its offer to needs that are not always precisely articulated, the company wins or loses the competitive battle.
Evolutionary economics:	<ul style="list-style-type: none"> • A basic selection mechanism in the market environment
Schumpeterian trend	<ul style="list-style-type: none"> • A selection process in which entities, i.e. Companies, compete with each other by means of innovations.

Institutional trend	<ul style="list-style-type: none"> • A selection mechanism – companies undertake various actions, but only the most effective ones have a chance of survival, • It is not so much those that are best adapted as those that are better adapted than others that will survive.
Austrian subjectivists	<ul style="list-style-type: none"> • A process contributing to knowledge diffusion, and thus to the economic development of companies and countries.

Source: study based on Jankowska, Sulimowska-Formowicz [2010].

What is observable in the market, and is the essence of the competitive game, should be treated as a starting point for a discussion about company competitiveness. Without competition, the issue of competitiveness does not exist. The development of the competitiveness concept is based on the process of “evolution”, which can be observed within the scope of competition theory in general.

4.2. Company competitiveness – definitions²

Company competitiveness is defined in various ways. In general, competitiveness can be interpreted as the ability to compete, i.e. to operate and survive in a competitive environment [Gorynia 2002, p. 48]. Additionally, the term competitiveness means the skill of achieving or maintaining a competitive advantage, and as such can be treated as a synonym for a company’s competitive ability [Gorynia 2010, p. 77]. Therefore, competitiveness is an attribute of only some entities taking part in the competitive battle, or to be more precise, only those entities that are effective in this rivalry. Furthermore, this feature has a relative and comparative character,³ which means that the qualities of an entity whose competitiveness is analysed are always compared with those of another entity [Gorynia 2002, p. 49].

Some of the definitions of company competitiveness found in the literature focus on the products and services offered by business entities. From this perspective, the competitiveness of a company is presented as its ability to design, manufacture and sell products and services superior to those offered by competitors in terms of price criteria and non-price quality criteria [Ambastha and Momaya 2004]. A similar approach is represented by Pace and Stephan [1996], according to whom a company’s competitiveness means its ability to provide products and services for which customers or consumers are ready to pay a price including a reasonable profit for the producer.

² The present section contains parts of a study by Dzikowska [2012] and of a paper by Dzikowska [2014].

³ See Nowak [1985, p. 98] for more details about relative feature categories.

Other researchers point out that competitive companies are those which achieve an above-average improvement in the quality of goods and services and/or a reduction in relative costs, which allows them to increase profits and/or market share [Dunford, Louri and Rosenstock 2001, pp. 109–110]. Similarly, according to Gittus [1996], a company's competitiveness depends on its ability to reduce unit costs to a level where the company generates high profits and overtakes its competitors in the market.

These definitions of company competitiveness concentrate on the demand side of rivalry between economic entities. In other words, they focus on competition for consumers' demand for goods and services provided by the company.

According to Flak and Głód [2009, p. 38] company competitiveness is a multi-dimensional feature of the company, stemming both from its internal characteristics and from its ability to cope with external determinants existing in the environment. They also stress that competitiveness is a relative category which can be used to describe mutual relations between companies in a given sector. The significance of a company's ability to anticipate and react to changes occurring in the external environment is also emphasised in other definitions of company competitiveness. According to Chikán [2008], competitiveness means a company's ability to perceive changes in both the internal and the external environment, and to adapt to them in a way that enables the company to generate profits that guarantee its survival in the long term.

Moon and Newman [1995, p. 37] point out that the competitiveness of an organisation refers to its position relative to competitors. This aspect is also important from the perspective suggested by Jantoń-Drozdowska [1994, p. 18], for whom a company's competitiveness means its ability to enhance the efficiency of its internal functioning by strengthening and improving its market position. A company's competitive position is also emphasised by Feurer and Chaharbaghi [1994, p. 49], who believe that improving the competitiveness of a company means that it attains a better, more favourable competitive position.

In very broad terms, Burnewicz defines a company's competitiveness as its ability to effectively confront its rivals [1993, p. 23]. A similarly broad interpretation is offered by Stankiewicz [2005, p. 36]: it is an ability to effectively, profitably and economically pursue objectives in a competitive market. Finally, the aforementioned broad definition of competitiveness in general can also be applied to business entities. In this interpretation, companies are competitive if they have the ability to survive and develop in a competitive market [Gorynia 2002, p. 48]. A similar approach is represented by Pace and Stephan [1996, p. 8], who stress that a company's ability to provide products and services for which consumers or customers are prepared to pay a set price is its short-term competitiveness. In the long term, in a free-market system, the competitiveness of a company means its

ability to continuously conduct business, to protect its investments, to achieve returns on them, and to provide jobs in the future. Company development opportunities are also emphasised in the definition of competitiveness offered by Zahra [2000, p. 1]. He assumed that competitiveness means a company's creation of new growth opportunities that generate shareholder value. Nowakowski [2000, p. 32], in turn, defines a company's competitiveness as its ability to cope with competition from rivals, maintain and expand its market share, and in effect achieve satisfactory profits.

Table 4.2. Selected definitions of company competitiveness

Focus of attention	Representatives	Definition
Offer	Ambastha and Momaya [2004]	Company's ability to design, manufacture and sell products and services superior to those offered by competitors in terms of price criteria and non-price quality criteria
	Pace and Stephan [1996]	Ability to provide products and services for which customers or consumers are ready to pay a price including a reasonable profit for the producer
Costs	Dunford, Louri and Rosenstock [2001]	Ability to achieve an above-average improvement in the quality of goods and services and/or a reduction in relative costs, which allows them to increase profits and/or market share
	Gittus [1996]	Ability to reduce unit costs to a level where the company generates high profits and overtakes its competitors in the market
Internal and external environment	Flak and Głód [2009]	Multidimensional feature of the company, stemming both from its internal characteristics and from its ability to cope with external determinants existing in the environment
	Chikán [2008]	Company's ability to perceive changes in both the internal and the external environment, and to adapt to them in a way that enables the company to generate profits that guarantee its survival in the long term
Performance	Moon and Newman [1995]	Organisation's ability to achieve an advantageous position in relation to its competitors
	Jantoń-Drozdowska [1994]	Company's ability to enhance the efficiency of its internal functioning by strengthening and improving its market position
	Feurer and Chaharbaghi [1994]	Business entity's ability to attain a better, more favourable competitive position

Survival and development	Burnewicz [1993]	Company's ability to effectively confront its rivals
	Stankiewicz [2005]	Company's ability to effectively, profitably and economically pursue its objectives in a competitive market
	Gorynia [2002]	Ability to survive and develop in a competitive market
	Pace and Stephan [1996]	Organisation's ability to continuously conduct business, to protect its investments, to achieve returns on them, and to provide jobs in the future
	Zahra [2000]	Company's creation of new growth opportunities that generate shareholder value
	Nowakowski [2000]	Company's ability to cope with competition from rivals, maintain and expand its market share, and in effect achieve satisfactory profits

Source: authors' own study based on Dzikowska [2014].

There is no one, universally and commonly accepted, definition of company competitiveness. Therefore, the concept may be differently understood by various researchers or business entities' stakeholders. The definitions of company competitiveness presented in Table 4.2 demonstrate the wide diversity of approaches to the concept. Since competitiveness, as mentioned earlier, is a theoretical concept, measuring this characteristic in relation to other companies makes it necessary to divide it into concepts that can be operationalised [Gorynia 2002, pp. 60–61]. One of the reasons why there are so many different definitions of competitiveness is the fact that the adopted interpretation of the concept affects the set of indicators used to measure it. This set of indicators is, in turn, closely linked to the aim of the research and the perspective adopted in it. In the present study, it is assumed that the dimensions of company competitiveness are [Gorynia 2002, p. 68]:

- the company's competitive potential,
- the company's competitive strategy,
- the company's competitive position.

Listing the above dimensions of competitiveness is directly related to one of the existing classifications of competitiveness, namely to input competitiveness and output competitiveness (see section 4.2.4 for more details).

4.2.1. Competitive potential⁴

Competitive potential is the entirety of tangible and intangible resources required to operate and compete in a given market [Stankiewicz 2005, p. 93]. It is a primary

⁴ This section contains parts of a study by Dzikowska [2012].

factor determining the possibility of gaining, maintaining or increasing a competitive advantage over rivals. While this definition is relatively common in the literature, there are considerable differences in the classification of company resources, even within the same trends in understanding company competitiveness. The formation of the resource-based view within strategic management was accompanied by a particularly intensive development of these classifications.

Wernerfelt [1984, p. 172] described company resources as everything that can be perceived as a strong or weak side of the organisation, and classified them as tangible and intangible resources, which include: the brand name, in-house knowledge of technology, employees' skills, business contracts, machinery, procedures, capital, etc. Stankiewicz [2005, p. 105] also suggests adopting the division of resources into tangible and intangible, with tangible resources consisting of fixed assets, finances and stocks, and intangible resources including competencies, relationships, functional systems, attitudes, and opportunities. On the other hand, Barney [1991, p. 101] defined company resources as all the assets, abilities, organisational processes, attributes, information, knowledge, etc., controlled by the company and enabling it to develop and implement a strategy for improving its effectiveness and efficiency. In his study, he classified resources into three groups:

- physical capital resources,
- human capital resources,
- organisational capital resources.

Leaving aside Barney's definition of resources, the effects of his classification are identical to the division into tangible, intangible, and human resources. Grabowski [1994, pp. 171–183], in turn, classified the resources of a company into the following groups:

- primary resources,
- secondary resources,
- performance-related resources.

Primary resources are the entrepreneur's philosophy and the ability to accumulate know-how and other resources in the company's organisation. Secondary resources consist of material factors of production (tangible assets, materials, raw materials, components, and consumables), human resources, innovations, distribution channels, company organisation, and information resources. Performance-related resources encompass the company's image (in particular, brand awareness), purchaser's attitude (attachment) to the product, and customers' barriers to switching to other suppliers. Such a classification highlights the source of resources and the nature of their creation, but in terms of content it overlaps with the other classifications outlined above.

Assuming, regardless of the employed classification of company resources, that competitive potential is a source of potential value delivered to customers, we

could say that Grabowski's definition is extended beyond the company's total resources to include also the actions it takes. From this perspective, the competitive potential of a company can be seen as a specific firm's activities. Activities understood as competitive potential concern all of a company's areas of operation, thus covering the entire value chain of a given entity. Figure 4.1 presents the value chain of a company. Company activities are divided into two groups [Porter 2006a, p. 66]:

- primary activities – including activities directly related to the process of manufacturing a product and/or providing a service, selling it, delivering it to the purchaser, and providing service,
- secondary activities – including activities that are supplementary in relation to primary ones.

- service – providing services aimed at increasing or maintaining the value of a product and/or service,
- procurement – purchasing the factors of production needed to fulfil all the tasks performed by the company,
- technology development – know-how, procedures, technologies, and their development,
- human resource management – recruiting, employing, training and developing staff; remuneration system,
- firm infrastructure – management, planning, finance, accounting; complying with the law and following governmental guidelines,
- quality control – monitoring, controlling, testing, evaluating, verifying, and modifying work quality.

Not all elements of competitive potential are equally important; even among the same elements across industries there might be differences in terms of their significance. A study conducted by Dyer and Hatch [2006] on the American automotive industry shows that the kind of relationships with suppliers and the way they are managed influences company performance. Kusa stresses that managerial competence, the quality of products and services offered, and innovativeness are particularly important elements of tourism companies' competitive potential because they have the greatest impact on these companies' competitive position [Kusa, 2007]. Mandal, Thomas and Antunes [2009], in turn, point out that in the insurance industry even differences in the mental models adopted by a given company lead to long-term differences in performance.

Table 4.3 presents a review of selected empirical studies on competitive potential, taking into account the aspects analysed, the indicators used, and the analytical tools applied. The review makes it clear that while the investigated elements of companies' competitive potential cover a very broad spectrum and are highly diversified, the dominant way of operationalising competitive-potential indicators is using an ordinal scale. Such a solution allows us to adapt the applied research tool to any issue, although it involves the risk of research results being influenced by respondents' subjective opinions.

4.2.2. Competitive strategy⁵

Competitive strategy (business-level strategy) is an integrated and coordinated set of actions and obligations adopted by a company in order to gain a competitive advantage in a given market [Johnson, Scholes, Whittington 2008]. Another definition

⁵ The present section contains parts of a study by Dzikowska [2012].

Table 4.3. A review of empirical studies concerning competitive potential

Study	Aspect analysed	Indicators applied	Indicator operationalisation	Analytical tools
Giordina [2002]	Identifying a competitive gap in Polish companies' competitiveness before Poland's accession to the European Union	39 indicators related to competitive potential, showing the size, quality, and other characteristics of particular categories of financial, tangible, intangible, technological (production and management technologies) and human resources	Seven-point scale to evaluate the competitive-potential elements indicated in the study, in comparison with the key rival (0 – we are/will be the worst, 6 – we are/will be the best)	Descriptive statistics
George [2005]	Relationship between having free resources and private companies' performance	Cash reserves, ratio of debt to value of assets	Nominal data	Multiple regression
Schneider et al. [2005]	Relationship between leadership and quality of services on the one hand and business entities' performance on the other	Leadership	Five-point scale reflecting respondents' position on indicated opinions regarding particular elements of competitive potential (1 – to a very small extent, 5 – to a very large extent)	Structural model
Tanriverdi and Venkatraman [2005]	Relationship between business entities' combining and complementing each other's knowledge on the one hand and capital groups' performance on the other	Knowledge of products, customers, and management	Five-point scale reflecting respondents' attitude towards the competitive-potential elements indicated in the study (1 – unique in all or almost all business entities, 5 – common in all or almost all business entities)	Structural model
Kaemar et al. [2006]	Influence of staff turnover on a business entity's performance	Six-month rate of staff turnover, six-month rate of executive-staff turnover	Nominal data	Structural model
Collins and Smith [2006]	Relationship between IIR practices and the social climate on the one hand and knowledge creation and company performance on the other	Recruitment system, motivation system, staff cooperation, and knowledge diffusion	Five-point scale reflecting respondents' agreement with indicated opinions about particular elements of competitive potential (1 – completely disagree, 5 – completely agree)	Multiple regression

Coltman, Devinney and Midgeley [2011]	Influence of the customer relationship Management system on company performance	Skills and experience regarding the transformation of information into knowledge of customers; information infrastructure, organisational architecture CRM knowledge analysis skills, ability of the IT infrastructure to support CRM, organisational capacity to support CRM	Seven-point scale reflecting the evaluation of particular competitive-potential elements in comparison with the direct competitor (1 – much poorer, 7 – much better). Five-point scale reflecting respondents' agreement with indicated opinions about particular elements of competitive potential (1 – completely disagree, 5 – completely agree)	Structural model
Giorynia, Jankowska [2011]	Potential influence of Poland's accession to the euro zone on the competitiveness and internationalisation of Polish companies	Nine elements of competitive potential from the areas of financial and accounting resources	Five-point scale to evaluate particular elements of competitive potential in comparison with main rivals (1 – much worse than rivals, 5 – much better than rivals)	Descriptive statistics
Dzikowska [2014]	Influence of relocation on the competitiveness of Poland-based automotive and clothing companies	Tangible resources, human resources, intangible resources, financial resources, inbound logistics, outbound logistics, operations, marketing and sales, service, procurement, technology development, human resource management, firm infrastructure, quality control	Five-point scale to evaluate particular elements of competitive potential in comparison with main rivals (1 – much worse than rivals, 5 – much better than rivals)	Multiple regression

Source: authors' own study based on literature research.

of competitive strategy is that it is an answer to questions regarding the areas in which the company is to compete (markets and segments), the products that it is to offer, and the way to achieve a sustainable competitive advantage in specific markets [Gorynia 2007, p. 34]. Wheelen and Hunger, in turn, define this concept as a strategy focused on improving the competitive position of the products/services offered by a company or business entity in its market segment [Wheelen and Hunger 2008, p. 145]. Porter [2006b, p. 60] defines competitive strategy as a company's offensive or defensive actions aimed at maintaining its position in a given sector, effectively dealing with five competitive forces, and achieving a higher rate of return.

Every company competing in a given sector has a competitive strategy. The strategy can be formulated through a planning process and as a consequence of the activities of the company's various functional departments [Porter 2006b, p. 13], and is designed not only to match the conditions prevailing in the industry, but also to influence them so that they benefit the company [Porter 2006b, p. 28]. Porter presents three main types of an internally consistent competitive strategy whereby the company can achieve a competitive advantage [Porter 2006b, p. 60]: the strategy of cost leadership (low-cost strategy), the strategy of differentiation, and the strategy of concentration (market-niche strategy).

A company following the strategy of cost leadership aims to achieve a sustainable cost advantage over competitors, which enables it to offer lower prices than the competition, or to achieve higher profit margins at a similar price level. The offered goods and/or services are targeted at a wide group of purchasers and are characterised by a quality they find acceptable. This strategy involves the company taking actions aimed at reducing costs [Porter 2006b, p. 61]. Gaining a cost advantage over competitors may be a consequence of [Gorynia 2000, p. 15]:

- external causes, related to the company's position in the environment,
- internal causes, related to the method of resource allocation,
- the time factor.

Thanks to its favourable position in the environment, a company can gain primarily access to cheaper factors of production: labour, capital, and land. A significant factor in gaining a cost advantage over competitors is the allocation of company resources. It is important to be able to achieve economies of scale by focusing the resources on manufacturing and/or offering a particular product. The scale of operation also allows for more favourable contracts with suppliers and carriers. An appropriate allocation of resources may also help to achieve the benefits of coordination resulting from differences in the cost-effectiveness of various resource uses [Gorynia 2000, p. 17]. The last source of cost advantage over competitors may be time or, more specifically, what is called the experience (learning) effect. Experience makes manufacturing processes more efficient, improves the

efficiency of management and control in the company, increases specialisation, and enhances the efficiency with which equipment, resources, and materials are used. The time factor is extremely significant in the case of industries characterised by demand seasonality.

Following the strategy of differentiation means that, in the opinion of purchasers, a company's offer differs favourably in one or many aspects from rivals' offers, so it can be considered unique. Products/services offered by entities pursuing this strategy are targeted at a wide group of purchasers and stand out above competitors' offer, which justifies their higher price. The level of generated cost is not the primary strategic objective of these companies, although it cannot be ignored [Porter 2006b, p. 64]. Differentiation requires the company to choose one or several features that buyers consider relevant, and to consistently meet customer needs, taking into account specific characteristics of the product, e.g. its use value (higher quality, efficiency and durability, reliability, better performance, greater operational safety, etc.), the nature of the sales system (e.g. common and easy access, diverse forms of purchase, favourable payment terms), after-sales service (e.g. professional service, availability of spare parts), or even the symbolic value of the product/service.

The strategy of concentration means that the company consciously focuses on a specific segment (a purchaser group, a segment of the product range, or a geographical market), thanks to which it can offer products or services tailored specifically to the purchasers' needs. Companies using this strategy concentrate on a narrow target group, assuming that in this way they can serve it more efficiently and effectively than their competitors [Porter 2006b, p. 65]. The suitability and effectiveness of this strategy requires that there should be significant differences between the industry segment selected by the company and other segments. The differences may include non-standard customer needs or a unique manufacturing and distribution system. Within this narrow segment, the company may focus on low costs as part of its offer, on making it distinctive, or on both things at the same time.

Owing to the increasing level of competition, many businesses also use a hybrid strategy, which combines elements of the strategy of cost leadership and the strategy of differentiation as part of the offer targeted at both a wide and a narrow group of buyers. According to Porter, some business entities can effectively employ more than one type of the strategies he mentions. He stresses, however, that hardly ever is this possible or does this bring the expected results [Porter 2006b, pp. 60, 68–71].

Empirical research confirms that companies opting for a pure (non-hybrid) competitive strategy achieve better results, although there are some differences in this respect between industries [Thornhill and White 2007]. In turn, the empirical research conducted by Nandakumar, Ghobadian and O'Regan [2010] suggests

that in environments with a certain level of dynamism and hostility, certain types of competitive strategy lead to relatively better results than those of the competition. Namely, in an environment with a low level of hostility it is strategies of cost leadership, and in an environment with a high level of hostility it is strategies of differentiation, that lead to better results in comparison with rivals. Meanwhile, in a highly dynamic environment, better results are achieved thanks to strategies of cost leadership, whereas in an environment with a low dynamic of changes, it is strategies of differentiation that enable companies to improve their financial performance to a greater extent [Nandakumar, Ghobadian and O'Regan 2010]. The relationships between the employed competitive strategy, supply-chain strategy, environmental uncertainty, and company performance are also indicated in a study by Qi, Zhao and Sheu [2011]. The strategy of concentration, in turn, is particularly attractive to small and medium-sized enterprises, since it allows them to effectively fight off competition in selected segments, even when competing with larger entities [Porter and Caves 1977]. Furthermore, companies opting for this type of competitive strategy tend to choose segments based on non-price competition [Ward, Bickford and Keong Leong 1996]. In addition, empirical studies indicate that there is a positive correlation between using the strategy of concentration and achieving a high efficiency of actions regarding the coverage, speed and intensity of export activities [Zucchella and Palamara 2007].

The classification of competitive strategies proposed by Porter [2001, 2006b] was criticised, among others, by Kogut [1985, p. 16] for failing to formulate specific recommendations concerning their implementation in a real company. Nevertheless, Porter's classification of competitive strategies remains a dominant one in the literature, with various extensions that have appeared throughout the years. One of them is Bowman's strategy clock (Bowman and Faulkner 1996), which, despite functioning as a critique of Porter's classification [Bowman 2008, pp. 2–4], partially draws on it.

According to Bowman, a competitive company provides customers with a product and/or service that they need or desire, and it does so in a better or more efficient way than its rivals. Customers make their decisions after assessing the value offered by the product and/or service. This value is the ratio of the benefits of possessing and using the product/service to its price. Starting from here, on the basis of two variables (the benefits and the price offered), Bowman identifies eight possible options of competitive strategy:

- no-frills strategy – a low product/service price and a low level of the benefits offered; suitable for price-sensitive segments;
- low-price strategy – a price lower than that charged by rivals, who offer products/services with similar benefits;
- hybrid strategy – offering, at a lower price, valuable benefits of products and/or services that are different from those offered by rivals;

- differentiation strategy – offering, at a similar or slightly higher price, valuable benefits of products and/or services that are different from those offered by rivals;
- focused-differentiation strategy – offering, at a price higher than that charged by rivals, valuable benefits of products and/or services to a selected target group;
- three strategies leading to the company's final failure – offering benefits of products and/or services comparable to those offered by the competition, but at a higher price; offering smaller benefits of products and/or services than those offered by competition, but at a higher price; offering smaller benefits of products and/or services than those offered by the competition, but at a similar price.

While referring to the benefits offered by a product and/or service and to their price, Bowman's concept does not enable us to formulate any specific recommendations concerning the implementation of a given strategy in a real company, either. This is why its use for purposes other than classifying or describing a company's competitive strategy is rather limited. Furthermore, using this approach to competitive strategy is particularly difficult when customers and/or producers cannot identify the characteristics that determine the advantages of products and/or services, and thus the right price level. According to the results of empirical research conducted in 2004 in the United States, the majority of US customers were not able to identify the characteristics of products and/or services determining the price that they could pay for them. In addition, 50% of sellers were not able to identify the features of products and/or services that would justify their price [D'Aveni 2007, p. 112].

Trying to achieve their own objectives, companies use competitive strategy to present offers that are more attractive than rivals' in terms of price, quality, or other characteristics affecting the transaction decision. These consciously created features (tools and processes) that affect this decision are referred to as instruments of competition [Godziszewski 1999, p. 121; Haffer 2003, p. 169] and include, among other things [Stankiewicz 2005, pp. 244–245]: price of products and/or services, quality of products and/or services, uniqueness of the offer's other features in comparison with the competition, flexibility of adapting the offer to customer needs, breadth of the product range, frequency of introducing new products and/or services, convenience of access to products and/or services (time and place), payment terms, brand, corporate image, advertising, sales promotion, terms and length of the warranty, as well as scope, quality and price of after-sales service. These instruments of competition can be assessed in terms of their attractiveness in comparison with actions taken by the company's rivals (see e.g. Gorynia [2002]), or in relation to the significance of ways of developing competitive strategy as part of particular instruments (see e.g. Dess and Davis [1984]; Nayyar [1993];

Table 4.4. A review of empirical studies concerning competitive strategy

Study	Aspects analysed	Indicators applied	Indicator operationalisation	Analytical tools
Barrett, Balloun and Weinstein [2000]	Relationship between company entrepreneurship, competitive strategy, and company performance	Promotion expenditure, product quality and price	Respectively, a five-point scale to compare promotion expenditure in relation to sales with that of competitors (1 – much smaller, 5 – much larger); a three-point scale to compare quality with that of competitors' products (1 – worse products, 3 – better products); ratio of the price of the company's products to the price of competitors' products	Multiple regression
Gorymia [2002]	Identifying a competitive gap in Polish companies' competitiveness before Poland's accession to the European Union	15 instruments of competition: price, quality, modernity, comprehensiveness of the offer, packaging, timely deliveries, payment terms, advertising and sales promotion, frequency of introducing new products, distribution network convenient for the customer, range of after-sales service, quality of after-sales service, price of after-sales service, warranty terms and conditions, product brand	Seven-point scale to evaluate the indicated instruments of competition in relation to the key rival (0 – we are/will be the worst, 6 – we are/will be the best)	Descriptive statistics
Han and Kim [2003]	Relationship between marketing strategy and company performance	Product: product quality, level of product uniqueness, level of the company's commitment to product improvement Price: price level, how prices are established Product standardisation/adaptation and promotion	Five-point scale to compare the company's achievements with the average level of competing products from the developed countries (1 – worse than rivals', 5 – better than rivals') Price level compared with the average price level of competing products from developed countries (100%) Seven-point scale, where 1 – price setting based on market-orientation, 7 – price setting based on costs Seven-point scale, where 1 – completely customised, 7 – completely standardised	Factor analysis, cluster analysis

Relationship between leadership and service quality on the one hand and business entities' performance on the other	Service quality	Five-point scale reflecting respondents' evaluation of the indicated instruments of competition (1 – low, 5 – high)	Structural model
Schneider et al. [2005]	Relationship between the employed competitive strategy (cost-leadership strategy, differentiation strategy, and hybrid strategy) and company performance	The strategy of cost leadership: minimising general costs, minimising production costs, level of costs lower than that of the competition, economies of scale, process automation, improving efficiency, level of prices lower than that of the competition, cost standards, minimising advertising expenditure, cost centres The strategy of differentiation: intensive promotion, active dealers, advertising campaigns, brand image, complementary services	Multiple regression
Pertusa-Ortega, Molina-Azorin and Claver-Cortés [2009]	Relationship between functional strategies, competitive strategies, and the performance of family and non-family businesses	The strategy of cost leadership: price competition, efficiency in providing raw materials and components, reducing production costs, minimising operating costs The strategy of differentiation: advertising, development of innovative marketing techniques, control of distribution channels, the use of highly qualified dealers/agents, customer service, product quality	Multiple regression
Acquaah, Amoako-Gyampah and Jayaram [2011]	Potential influence of Poland's accession to the euro zone on the competitiveness and internationalisation of Polish companies	13 possible changes in competitive strategy: strategies highlighted according to the nature of competitive advantage: cost leadership, differentiation, nature of relations with other participants in the industry; the strategies of confrontation, competition, evasion, and their combinations	Descriptive statistics
Gorynia, Jankowska [2011]	Relationship between the conditions of the competitive environment, competitive strategy, and SMEs' performance	The strategy of cost leadership: level of operational efficiency, price competition, reducing the number of product features, reducing product costs The strategy of differentiation: new product development, brand awareness, innovativeness in marketing methods and techniques, advertising	Structural equations
Najib, Kiminami [2011]		Five-point scale reflecting the significance of particular instruments in strategy creation (1 – completely unimportant, 5 – very important)	Structural equations

Qi, Zhao and Sheu [2011]	Relationship between the employed competitive strategy, supply chain strategy, and company performance, taking into account the moderating influence of environmental uncertainty	<p>The strategy of differentiation: offering products with unique features, offering products with numerous features, offering products from a higher price segment, advertising, control over distribution channels</p> <p>The strategy of cost leadership: improving the production process and innovation, operational efficiency, purchasing cheap raw materials, level of prices lower than that of competitors, using economies of scale, reducing the number of product features, other ways of reducing production costs</p>	Seven-point scale to compare the company's achievements of with its main competitors	ANOVA, cluster analysis, structural modelling
Agic, Kurtović and Čičić [2012]	Relationship between company positioning, instruments of competition, and company performance	Level of product differentiation, promotion, distribution, price	Four-point scale reflecting the significance of particular instruments in the creation of company positioning	Structural equations
Parnell, Koseoglu and Long [2012]	Relationship between the employed competitive strategy and company performance, taking into account the impact of environmental uncertainty	<p>The strategy of cost leadership: efficiency in providing raw materials and components, finding ways to reduce costs, level of operational efficiency, level of manufacturing capacity utilisation, price competition</p> <p>The strategy of differentiation: using new methods and technologies to create a better product, developing new products, share of new products introduced into the market, number of new products offered on the market, intensity of marketing and advertising, development and use of dealers, strong brand awareness</p>	No data	ANOVA
Dzikowska [2014]	Impact of relocation on the competitiveness of Poland-based automotive and clothing companies	Uniqueness of the offer; quality of the offer; price of the offer; flexibility of the offer towards consumer needs; breadth of the offer; frequency of introducing new offers; payment terms; availability of the offer (time and place); brand; image; advertising; warranty terms and conditions; breadth, quality and price of after-sales service	Five-point scale to evaluate particular competition instruments in comparison with the main rivals (1 much worse than rivals, 5 much better than rivals)	Multiple regression

Source: authors' own study based on literature research.

Kotha and Vadlamani [1995]; Ward and Duray [2000]). While the former solution is most often used in research into, broadly understood, company competitiveness in general, the latter is usually employed in studies analysing how well a given type of competitive strategy is adapted to the environment and the company's performance. Table 4.4 presents a review of selected empirical studies on issues related to corporate competitive strategy.

4.2.3. A competitive position⁶

According to Simmonds [1986, p. 16], a company's competitive position in the industry is its strength in relation to direct competitors. This strength determines the level of profits or losses made by the company in the future. At the same time, therefore, a competitive position is the result of the market's (especially customers') assessment of products and/or services offered by the company [Grabowski 1994, p. 180]. In Porter's view, a competitive position reflects a continuous struggle between competitors, is dynamic in nature, and can be determined, say, by the company's choice of competitive strategy [Porter 2006b, p. 28]. Attaining a competitive position requires taking specific actions and decisions, both at the strategic and the operational level.

Stankiewicz [2005, p. 89] defines a company's competitive position as a product of competition – a result of competition achieved by the company in a given sector and considered in comparison with the results achieved by competitors. This definition should be supplemented by stating that a competitive position is given at a particular moment, as it changes over time: it may improve, remain unchanged, or deteriorate. According to Flak and Głód [2009, p. 75], in turn, a company's competitive position is a synthesis of its market and economic performance, resulting from the degree to which the company's capacity to compete at present and in the future is utilised.

Common features of the above definitions include the relative and evaluative character of the concept in relation to competitors, and its variability over time. Additionally, in the literature we can find publications in which researchers use the concept of competitive position in an intuitive way, without determining its specific meaning,⁷ or interchangeably with the concepts of strategic potential and competitive strategy.⁸

The term *competitive position* is frequently combined with the concept of competitive advantage. Each company has a certain competitive position in the market.

⁶ The present section uses parts of a study by Dzikowska [2012].

⁷ See e.g. Moutinho and Brownlie [1994], McCarthy and Norris [1999], Yadegarfar and Lodmira [2010].

⁸ See e.g. Attia and Hooley [2007].

The position may be favourable or unfavourable. Having a favourable competitive position means having a competitive advantage over a comparable rival. Hence, even though each company has a competitive position in the market, not every company has a competitive advantage. Having a favourable competitive position in the market involves gaining a competitive advantage and is seen as the cause of companies' success in it. Since achieving the best competitive position possible seems to be the most important goal of most businesses, gaining a competitive advantage could also be a goal pursued by all entrepreneurs. Nevertheless, certainly not all business entities in the market gain a competitive advantage in a short time.

Changes in a company's competitive position show whether its situation has improved or deteriorated over time in relation to its rivals. These changes are reflected by the indicators of the company's competitive position. Competitive-position indicators can be divided into three basic groups: financial results (e.g. profits, return on assets, return on investment, etc.), market results (e.g. profits, market share, etc.), and shareholder results (e.g. total shareholder return, economic value added, etc.) [Richard et al. 2009]. Additionally, these indicators may be expressed in objective (nominal values) or subjective terms (respondents' assessment on an ordinal scale). The former solution involves difficulty in data availability and performance comparability between companies operating in different industries.⁹ The latter approach, in turn, increases the likelihood of distorting the measurement of actual performance because of imperfections in human perception of phenomena [Gilovich, Griffin and Kahneman 2002].

While assessing changes in indicators of a company's competitive position is relatively simple and straightforward, changes in a competitive position itself are not always easy to notice. Therefore, taking into consideration the dynamic of changes in indicators allows us to observe changes in a competitive position over time. As for the issue of measuring a company's competitive position from the perspective of its indicators, there are three dominant approaches in the literature [Richard et al. 2009]:

- investigating a single indicator,¹⁰
- investigating multiple indicators, but treating them as separate dependent variables for the same model,¹¹
- investigating multiple indicators and aggregating them into one variable.¹²

⁹ Comparing the nominal results of companies operating within different industries may not allow us to consider the relative attractiveness of the industries or the life-cycle phases they are in. However, the literature stresses that business entities' performance is dependent on the conditions prevailing in the industry. See e.g. Schmalensee [1985]; Rumelt [1991]; Hawawini et al. [2003].

¹⁰ See e.g. Hawawini et al. [2003]; Spanos, Zaralis and Lioukas [2004].

¹¹ See e.g. Contractor, Kundu and Hsu [2003]; Baum and Wally [2003]; Acquaah, Amoako-Gyampah and Jayaram [2011].

¹² See e.g. Goerzin and Beamish [2003]; Agić, Kurtović and Čičić [2012]; Dzikowska [2015].

Table 4.5. A review of empirical studies concerning competitive position

Study	Aspects analysed	Indicators applied	Indicator operationalisation	Analytical tools
Barrett, Balloun, Weinstein [2000]	Relationship between a company's entrepreneurship, competitive strategy, and company performance	Comprehensive assessment of performance Comprehensive assessment of performance compared to competitors	Seven-point scale representing, respectively: 1 – very bad, 7 – very good; 1 – much worse, 7 – much better	Multiple regression
Grorynia [2002]	Identifying a competitive gap in the competitive position of Polish companies before Poland's accession to the European Union	Market share of the evaluated company Financial situation of the evaluated company	Seven-point scale reflecting respondents' opinions about the indicated measures of the competitive position (0 – we are/will be the worst, 6 – we are/will be the best)	Descriptive statistics
Han, Kim [2003]	Relationship between marketing strategy and company performance	Profitability Sales increase Overall performance Market share	Five-point scale representing, respectively: 1 – very low, 5 – very high; 1 > 15%; 2 > 5% and < 14%; 3 < 4% and > 4%; 4 < 5% and > 14%; 5 < 15%; 1 – very weak, 5 – very good; 1 < 1%; 2 > 1% and < 2%; 3 > 2% and < 5%; 4 > 5% and < 10%; 5 > 10%	Factor analysis, Cluster analysis
Hawawini et al. [2003]	Influence of inner organisational and industry factors on the performance of companies operating in various industries	Economic profit, total market value ¹	Nominal data	ANOVA
Contractor, Kundu and Hsu [2003]	Relationship between the internationalisation level and the performance of companies operating in selected service industries	Return on sales, return on assets	Nominal data	Multiple regression

¹ The former indicator takes into account capital costs and the differences in accountancy reporting systems. The latter is also referred to as market added value.

Gioezin and Beamish [2003]	Relationship between the dispersion of corporate resources in foreign markets, the environmental diversity of foreign markets, and company performance	Jensen's alpha index, Sharpe ratio, ratio of market price to book value	Nominal data	Structural model
Baum and Wally [2003]	Relationship between the speed of strategic decision-making, environmental and organizational factors, and company performance	Sales increase Employment increase Profitability	Sales increase as % Employment increase as % Net profit as % of asset value	Structural model
Spanos, Zaralis and Lioukas [2004]	Analysis of the impact of inter organizational and industry factors on the performance of companies operating in various industries	Profitability	Price-cost margin calculated according to the equation: added value – wages/sales value	Multiple regression
George [2005]	Relationship between having free resources and the performance of private companies	Gross profit (revenues – cost of goods sold)	Nominal data	Multiple regression
Schneider et al. [2005]	Relationship between leadership and service quality on the one hand and business entities' performance on the other	Average quarterly sales per employee	Nominal data	Structural model
Tanriverdi and Venkatraman [2005]	Relationship between the combining and complementarity of knowledge among business entities on the one hand and the performance of capital groups on the other	Return on assets, return on equity, Tobin's Q ratio	Nominal data	Structural model
Collins and Smith [2006]	Relationship between IIR practices and the social climate on the one hand and knowledge creation and company performance on the other	Share of revenues from new-product sales in total revenue, annual rate of sales growth	Nominal data	Multiple regression
Kaemar et al. [2006]	Impact of staff turnover on a business entity's performance	Revenue, profit	Nominal data	Structural model
Pertusa-Ortega, Molina-Azorin and Claver-Cortés [2009]	Relationship between the employed competitive strategy (cost leadership strategy, differentiation strategy, and hybrid strategy) and company performance	Sales growth, employment growth, increase in market share, pre-tax profits, cash flow return on investment	Seven-point scale allowing for evaluation in comparison with the main competitors (1 – much worse than competitors, 7 – much better than competitors)	Multiple regression

Acquaah, Amako-Gyamrah and Jayaram [2011]	Relationship between functional strategies, competitive strategies, and the performance of family and non-family businesses	Sales growth, profitability	Seven-point scale allowing for evaluation in comparison with the main competitors (1 – much worse than competitors, 7 – much better than competitors)	Multiple regression
Collman, Devimney and Midgley [2011]	Influence of the customer relationship management system on company performance	Return on investment (after tax), effectiveness in generating revenue from new products, reduction in the cost of transactions with customers, level of repeat business with valuable customers	Seven-point scale to measure the indicators of competitive position in the last three years in comparison with the industry leader (1 – much worse, 7 – much better)	Structural equations
Gorjnia, Jankowska [2011]	Potential influence of Poland's accession to the euro zone on the competitiveness and internationalisation of Polish companies	Market share Return on sales	Five-point scale allowing for evaluation in comparison with the main competitors (1 – much worse than competitors, 5 – much better than competitors)	Descriptive statistics
Najib, Kiminami [2011]	Relationship between the conditions of the competitive environment, competitive strategy, and smes' performance	Sales, profitability, market share, customer satisfaction	Five-point scale allowing for evaluation in comparison with the main competitors (1 – much worse than competitors, 5 – much better than competitors)	Structural equations
Qi, Zhao and Shou [2011]	Relationship between the employed competitive strategy, supply-chain strategy, and company performance, taking into account the moderating influence of environmental uncertainty	Return on investment, return on assets, market share, growth rate of return on investment, increase in return on assets, increase in market share	Seven-point scale allowing for evaluation in comparison with the main competitors (1 – much worse than competitors, 7 – much better than competitors)	ANOVA, cluster analysis, structural modelling
Agic, Kurtović and Čičić [2012]	Relationship between company positioning, instruments of competition, and company performance	Profits, sales, return on investment, market share	Seven-point scale allowing for evaluation in comparison with the main competitors (1 – much worse than competitors, 7 – much better than competitors)	Structural equations
Jankowska [2012]	Impact of competition on company competitiveness, innovativeness and internationalisation	Market share Return on sales	Five-point scale reflecting respondents' opinions (1 – completely disagree, 5 – completely agree)	Descriptive statistics

Parnell et al. [2012]	Relationship between the employed competitive strategy and company performance, taking into account the impact of environmental uncertainty	Sales growth, growth in profits before taxation, market share, return on assets, return on equity, return on sales, company's overall performance and success, competitive position	No data	ANOVA
Dziłkowska [2014]	Determinants of the competitive position of relocating Poland-based companies	Market share, sales growth rate, return on assets	Five-point scale allowing for evaluation in comparison with the main competitors (1 – much worse than competitors, 5 – much better than competitors)	Multiple regression

Source: authors' own study based on literature research.

Table 4.5 presents a review of selected empirical studies on issues related to the competitive position achieved by a company. While the list by no means exhausts the topic, it does indicate how much attention is paid to the broadly-understood economic performance of company operations. Among the studies listed, we can distinguish two areas related to the issue of a company's competitive position. These are external environmental (industry-related and macroeconomic) factors and the internal determinants of companies or business entities. From the perspective of meeting both cognitive and practical objectives, of particular significance are those studies that analyse both these issues.¹³ Such a holistic approach allows for a reliable mapping of a complex economic reality.

4.2.4. Relationships between the dimensions of competitiveness¹⁴

As mentioned earlier, it is assumed in the present study that company competitiveness is subject to deconstruction into dimensions including competitive potential, competitive strategy, and competitive position. Hence, company competitiveness concerns both the results themselves and the means used to achieve them. This assumption is consistent with the position represented by Buckley et al. [1988] that competitiveness covers both objectives and the means employed to achieve them.¹⁵ With regard to company performance, it is the matter of output competitiveness [Andreosso-O'Callaghan, Jacobson 1996; Hitchens et al. 2003], which can also be identified with a company's competitive position.¹⁶ In turn, the means used to achieve these results are referred to as input competitiveness [Andreosso-O'Callaghan, Jacobson 1996; Hitchens et al. 2003], which encompasses competitive strategy and competitive potential. While competitive potential can be understood as resources and/or practices used to create company competitiveness, competitive strategy can be seen as a broadly-understood statement concerning the company's competing method, objectives, and ways of achieving them. At the same time, the deconstruction of company competitiveness into such dimensions still does not enable us to measure them. Therefore, it is necessary to operationalise variables by means of indicators of variables. As is clear from the arguments in section 4.2.1, both the actions [Porter 1985] and the resources of the company [Wernerfelt 1984, 1995; Prahalad, Hamel 1990; Barney 1991, 2002; Barney,

¹³ See e.g. Baum and Wally [2003]; Goerzin and Beamish [2003]; Hawawini et al. [2003]; Spanos, Zaralis and Lioukas [2004]; Najib, Kiminami [2011]; Gorynia, Jankowska [2011].

¹⁴ The section uses parts of a paper by Dzikowska [2014].

¹⁵ See also Andreosso-O'Callaghan and Jacobson [1996]; Gorynia [2002]; Hitchens et al. [2003].

¹⁶ Input and output competitiveness in relation to national economies was discussed by e.g. Bieńkowski [1993], Misala and Ślusarczyk [1999] and Bossak [2001].

2009] can be used as indicators of its competitive potential. As for indicators of competitive strategy, it is possible to use instruments of competition such as price, quality, flexibility of the offer, brand, promotion, payment terms, etc. At the same time, competitive-position indicators include market share, return on assets, return on sales, sales growth rate, etc. [Kotabe al. 1998]. It is easy to notice that, once we adopt such a research perspective, the dimensions of competitiveness are linked with each other. A competitive position is the effect of using competitive potential in accordance with a competitive strategy that takes into account the conditions of the company's environment. Hence, in most general terms, it can be assumed that input competitiveness has an impact on output competitiveness. These relationships are shown in Figure 4.2.

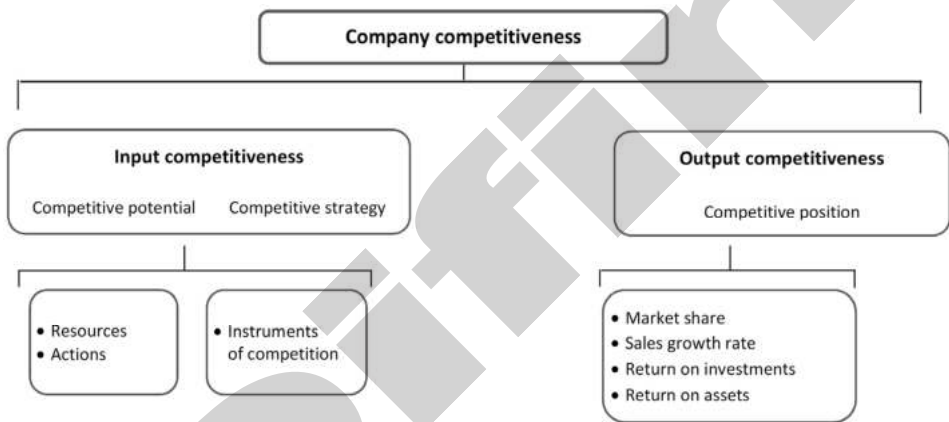


Figure 4.2. The concept of company competitiveness

Source: Dzikowska [2014].

4.3. International competitiveness

The issue of international competitiveness is very broad and multi-faceted. A starting point for discussing the subject could be the statement that the transformation of the global economy has changed the dimension of competition in national economies' markets. Liberalisation means that competition takes place not only between entities from the same country but also, increasingly frequently, with foreign entities. This is why competition is taking on an international dimension. The main manifestation of competitive battles which take place in national markets,

but which should actually be called international, is entry into these markets by foreign investors, in particular by entities making foreign direct investment. The “internationalisation” of competition in particular local markets is determined, among other things, by the extent to which the conditions prevailing in these markets correspond with investors’ reasons for their international expansion. To refer to Dunning’s set of investors’ reasons for international expansion (acquiring resources, getting into receptive markets, improving efficiency, and acquiring strategic resources) [Dunning 1993], it can be stated that – depending on the extent to which conditions in local markets (country-specific advantages) correspond with reasons for expansion – the intensity of competition in a given local market will be more or less international. This, in turn, determines the extent to which we can speak of the international competitiveness of companies operating in a given market.

In addition to the advantages characteristic of a given national market and reasons for international expansion, we can also identify a third set of factors, which are important when seeking an answer to the question if competition in the market will become even more international: these factors are the advantages specific to a company which has decided to embark on expansion. Alan Rugman [2010, p. 8] presents this in a matrix whose dimensions are country-specific advantages and company-specific advantages. In the basic version of the matrix, Rugman pointed to the advantages typical of the investor’s home country [1996]. However, the dimension of this matrix in the form of advantages characteristic of a given market may also be referred to countries hosting investment. The matrix of country-specific and firm-specific advantages shows that national markets with numerous and considerable advantages in relation to other markets will attract foreign investors. It can be stated, therefore, that they are characterised by the international nature of rivalry in particular industries. Consequently, with reference to the competitiveness of entities operating in such markets (even in the case of companies that do not operate beyond their home market), there is good reason to use the term *international competitiveness*.

International competitiveness can be perceived as a problem typical of industry markets on a national scale, but also as a phenomenon specific to particular industry markets on a global economic scale. When trying to determine the level of a company’s international competitiveness, we can therefore make comparisons between companies in the same industry which operate in a given local market and of which one has a foreign origin. Alternatively, we can make comparisons between companies in the same industry which are based in different countries, assuming that the area of competition is not just one national market, but the global market. A spatial delimitation of the area of competition, which is linked to the area of corporate international competitiveness development, is determined by

the nature of particular companies' competitive strategies – it may be multinational (multilocal) or global. In the former case, we speak of competing separately in every national market; in the latter – of an integrated approach globally. In both cases, companies take part in an international competitive game, which means that it is appropriate to use the term *international competitiveness*. The difference comes down to the choice of a reference point for assessing international competitiveness: the company compares its potential and position with another player from the same national market or with a rival whose field of operation has been delineated across the borders of national markets. What is significant for a company's behaviour in the process of competition (choosing between a multilocal and a global competitive strategy) is the industry's inclination towards globalisation. This is highlighted by Yip [1996], who points to those factors in his model that determine the extent to which an industry takes on a global character.

		Firm-specific advantages	
		small	big
Country-specific advantages	big	FDI motivated by the search for simple resources; receptive market; efficiency improvement	FDI motivated by the search for strategic resources
	small	absence of FDI	absence of FDI

Figure 4.3. The matrix of country and firm-specific advantages

Source: based on Rugman [2010, p.7].

Recapitulation

Company competitiveness is an issue that is defined, analysed, and used particularly frequently. The fact that entrepreneurs, researchers and politicians focus their attention on this aspect of business-entity operation is understandable for two reasons. Firstly, companies' long-term survival in the market depends on their gaining at least a minimum level¹⁷ of competitiveness. Secondly, the more competitive

¹⁷ A minimum level of competitiveness means that the company does not make a loss.

the company turns out to be, the greater benefits can be expected by its stakeholders, in particular shareholders, employees, and governments, to whom taxes will be paid. This chapter has presented some of the definitions available in the literature. They exhibit certain common features, namely multi-dimensionality and relativity. In further parts of this book, company competitiveness will be understood as two dimensions encompassing output competitiveness and input competitiveness, with input competitiveness covering competitive potential and competitive strategy.



Chapter 5

The global economic crisis

Marlena Dzikowska

Piotr Trąpczyński

This chapter focuses on the global economic crisis of the late 2000s. This part of the book serves, therefore, as a link between the topics explored in Chapters 1–3 and the research issues dealt with in the empirical part of the study in Chapters 6–7 and 9–11. The aim pursued in this chapter is to determine the duration and origins of the global economic crisis, and to outline the diversity of approaches employed in the analysis of the phenomenon. Based on selected economic indicators, the chapter ascertains the time frame of the global economic crisis, taking into consideration the global economy and the economy of the European Union. This is followed by a brief presentation of the origins of the global economic crisis and a review of selected empirical studies on its microeconomic manifestations.

5.1. The time frame of the global economic crisis

The rapid deterioration of the global economy that started in the late 2000s attracted the attention of politicians, economists, and the general public. As a result, many studies have been written recently on the global financial and economic crisis, especially on its causes (see e.g. Allen and Carletti [2010]; Merrouche and Nier [2010]; Szyszka [2011]), its impact on national economies (see e.g. Ngowi [2010]; Meyn and Kennan [2009]; Yilmaz [2013]), and its consequences (Allen and Carletti [2010]; Claessens, Kose and Terrones [2010]). Given the definition of economic crisis adopted in this study,¹ it would be advisable to establish the

¹ It is assumed that an economic crisis means at least one year's decrease in the annualised value of real GDP and in other indicators of the economic situation. See section 2.1.1 for more details.

time frame of the phenomenon. Table 5.1 features selected indicators describing economic activity in the world and in the European Union in the years 2000–2012. The table presents both nominal data and their changes rates in this period.

Although, globally, there were several economic slowdowns in the period under analysis,² a global economic crisis as defined in the present study took place only in 2009. That year saw a reduction in the value of real GDP, a reduction in the value of the export of goods and services, and an increase in the unemployment rate. It is worth emphasising that the global economic crisis of 2009 was preceded by a major economic slowdown visible in 2008. It was the year 2008 that brought a significant fall in the market capitalisation of the world's listed companies,³ as well as a reduction in the growth rates of GDP and of the export of goods and services. In 2010, the values of global GDP and of the export of goods and services exceeded those achieved in 2008. At the same time, even in 2012, the unemployment rate and the market capitalisation of listed companies looked worse than in 2007. Additionally, since global economic data are aggregated values of indicators for particular national economies, in certain countries the economic crisis may have lasted longer or may not have occurred at all. This is why establishing the time frame of the economic crises in particular countries requires a more detailed analysis.⁴

As mentioned in section 2.1.2, one of the transmission channels for disruptions in the economic situation is the international market of goods and services. Hence, Poland, partially owing to a significant concentration of international trade within the European Union,⁵ is highly sensitive to the economic situation of EU member states. From this perspective, it seems advisable to determine the time frame of the economic crisis which occurred within the European Union.

First of all, it is worth emphasising that the deterioration of economic-activity indicators which took place globally in 2009 was more noticeable for the European Union than in the case of global data. The dynamic of the European Union's deteriorating indicators was greater for all the variables analysed, pointing to the occurrence of a regional economic crisis. As was the case globally, the crisis was preceded by an economic downturn as early as 2008, and the relative decrease in the European Union's economic activity was, once again, greater than in the case of global economic data. Additionally, the European Union's unemployment rate rose

² It is assumed in this study that an economic slowdown is a reduction in the GDP growth rate. See section 2.1.1 for more details.

³ Empirical research results suggest that a significant deterioration in stock-market indices may signal a forthcoming deterioration in the real economy (see e.g. Comincioli [1995]; Hawksworth and Teh [2013]).

⁴ See Chapters 6 and 7 for more details.

⁵ See e.g. Dzikowska, Gorynia, Trąpczyński [2014] for more details.

Table 5.1. Selected indicators of economic activity in the years 2000–2012

Indicator	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Global GDP value [2005 US\$ billion, constant prices]	40871.61	41621.37	42489.00	43662.16	45472.65	47104.25	49029.32	50961.98	51703.44	50636.08	52701.46	54202.10	55425.40
Growth rate of global GDP	4.27%	1.83%	2.08%	2.76%	4.15%	3.59%	4.09%	3.94%	1.45%	-2.06%	4.08%	2.85%	2.26%
EU's GDP value [2005 US\$ billion, constant prices]	13042.87	13334.46	13514.54	13694.49	14040.54	14334.86	14814.34	15271.08	15339.81	14666.19	14973.31	15241.06	15174.64
Growth rate of the EU's GDP	3.80%	2.24%	1.35%	1.33%	2.53%	2.10%	3.34%	3.08%	0.45%	-4.39%	2.09%	1.79%	-0.44%
Value of the world's export of goods and services [2005 US\$ billion, constant prices]	9892.06	9962.23	10337.82	10824.48	11973.33	12895.62	14258.89	15404.39	15913.00	14248.85	16162.23	17258.62	17813.90
Growth rate of the value of the world's export of goods and services [year on year]	12.33%	0.71%	3.72%	4.76%	10.61%	7.70%	10.57%	8.03%	3.30%	-10.46%	13.43%	6.78%	3.22%
Value of the EU's export of goods and services [2005 US\$ billion, constant prices]	4098.12	4243.43	4342.09	4421.35	4781.58	5070.70	5553.12	5897.41	5980.80	5267.82	5826.42	6210.61	6350.90
Growth rate of the value of the EU's export of goods and services [year on year]	12.80%	3.55%	2.33%	1.83%	8.15%	6.05%	9.51%	6.20%	1.41%	-11.92%	10.60%	6.59%	2.26%

Market capitalisation of listed companies worldwide [US\$ billion, current prices]	48806.42	27906.27	23509.27	32036.19	38112.91	43209.74	53317.50	64471.81	34871.85	47380.72	54164.79	46499.12	53163.89
Growth rate of the market capitalisation of listed companies worldwide [year on year]		-13.40%	-15.76%	36.27%	18.97%	13.37%	23.39%	20.92%	-45.91%	35.87%	14.32%	-14.15%	14.33%
Market capitalisation of listed companies in the EU [US\$ billion, current prices]	7628.80	6869.37	5705.07	7932.71	9462.00	10211.59	13574.44	15697.71	7609.06	9880.21	10556.06	9360.26	10399.55
Growth rate of the market capitalisation of listed companies in the EU [year on year]		-19.27%	-16.95%	39.05%	19.28%	7.92%	32.93%	15.64%	-51.53%	29.85%	6.84%	-11.33%	11.10%
Unemployment rate worldwide [participation in the labour force, estimates of the International Labour Organisation]	6.36%	6.36%	6.49%	6.45%	6.31%	6.16%	5.90%	5.48%	5.69%	6.26%	6.11%	6.00%	6.00%
Changes in the unemployment rate worldwide [year on year]		0.00%	0.13%	-0.04%	-0.14%	-0.15%	-0.26%	-0.42%	0.21%	0.56%	-0.14%	-0.12%	0.00%
Unemployment rate in the EU [participation in the labour force, estimates of the International Labour Organisation]	9.21%	8.66%	9.05%	9.02%	9.17%	8.94%	8.22%	7.18%	6.97%	8.96%	9.64%	9.61%	10.51%
Changes in the EU's unemployment rate [year on year]		-0.55%	0.38%	-0.02%	0.15%	-0.24%	-0.71%	-1.05%	-0.20%	1.98%	0.68%	-0.02%	0.90%

Source: authors' own study based on World Development Indicators data [date of access: March 2016].

steadily in 2009–2010 and in 2012. In 2011, the market capitalisation of listed companies fell in relation to 2010 (again after 2008), and 2012 saw a decrease in the GDP value in comparison with the previous year. What is more, until 2012, the GDP of the European Union had been lower than the 2008 figure, and the market capitalisation of listed companies had not returned to the 2007 level. The value of the export of goods and services exceeded the 2008 volume as late as 2011. The above suggests that the European Union's economy was particularly severely affected during the global economic crisis and had greater difficulty recovering from it. Nevertheless, as in the case of global data, since aggregate values of indicators for particular national economies were used, in certain European Union countries the economic crisis may have lasted longer or may not have occurred at all, and establishing the time frames of economic crises in particular countries requires a more detailed analysis.⁶

5.2. The origins of the global economic crisis

The US economy's significant global role – mentioned in section 2.2 – and many links with other national economies became particularly apparent during the global financial crisis of 2008–2010. Its sources can be traced to the United States' excessively liberal monetary policy after the 2001 burst of the “internet bubble” [Zelek 2011b, p. 39]. Combined with a liberalisation of regulations protecting financial institutions against credit risk, the policy contributed to an unprecedented credit expansion that included uncreditworthy borrowers [Zioło 2011, p. 13]. At the same time, a long period of real interest rates that were kept at a low level encouraged financial institutions to look for relatively high nominal rates of return on investment [NBP 2009a], including in the form of high-risk financial instruments⁷ [Rymarczyk 2010, pp. 17–19]. An intense loan expansion in developed countries was also possible thanks to emerging economies' (in particular China's) accelerating process of joining the global economy in the previous decade [NBP 2009a].

These factors contributed to a global imbalance in the financial market. In the face of the US economy's overheating, interest rates were raised, reducing the

⁶ See Chapters 6 and 7 for more details.

⁷ The causes of the global economic crisis also include microeconomic factors related to financial institutions. The most important of them are a faulty incentive structure of consumers of financial services, institutions offering them, and their employees; errors in techniques of risk measurement, valuation and management; the wrong corporate-governance structure; as well as an imperfect regulatory system (including supervision policy) [NBP 2009a, pp. 6–7].

attractiveness of investing in property and contributing to a dramatic drop in property prices, as well as weakening borrowers' repayment capacity. Meanwhile, the moment difficulty arose in renewing short-term funding and in finding new sources of finance, banks which benefited from a high degree of leverage were forced to reduce debt [NBP 2009a, p. 8]. In other words, they withdrew the funds engaged in some investment projects to recover liquidity in order to repay obligations that became due. The result was a rapid outflow of capital from numerous markets, including emerging markets, and a decline in asset prices. The aforementioned high degree of leverage caused even a slight loss in the value of assets to create solvency problems for many financial institutions. Because of the bankruptcy of several major banks, as well as other banks' increasing risk of bankruptcy, the interbank market experienced a serious crisis of confidence.

The crisis in the financial sphere resulted in a collapse of the real economy, as reflected in reduced consumer spending, slowing business in property-related sectors (particularly in construction), as well as the growing debt of national economies seeking independence from private capital. In a relatively short time, the economic crisis was recognised as the world's most serious economic downturn since the 1930s. At the same time, the strength of this impact was not equal for all national economies. Although in 2009 over 40% of US and EU-15 companies were considering limiting their foreign direct investment because of the crisis, a similar intention was declared by fewer than 20% of companies from Central and Eastern Europe, and Latin America [UNCTAD 2009, p. 14]. Moreover, some studies show that, despite the negative impact of the global economic crisis, new EU member states were an attractive location for foreign investment in some industries, particularly in the outsourcing of business processes [Filippov and Kalotay 2011, p. 321].⁸

5.3. A review of research on microeconomic manifestations of the global economic crisis

With regard to the content of section 2.1.3, which discussed manifestations of economic crises, it is worth noting that while it is possible to identify the occurrence of a global economic crisis using basic economic indicators, it would be very difficult or even impossible to investigate the phenomenon from a global perspective, taking into account specific aspects of all national economies, industries, and companies. Determining the influence of an economic crisis on specific

⁸ See also Kinkel [2012].

companies, industries or economies always involves carrying out empirical research in the form of a “natural” economic experiment, or using data equivalent to it. Companies’ restrictions on reporting detailed economic information seriously hinder a thorough comparative analysis. Nonetheless, a relatively large number of publications have been written recently on companies’ situation in the time of the global economic crisis. Table 5.2 lists selected empirical studies on the issue.⁹ The studies can be divided, for instance, according to the field analysed. We can, therefore, identify research focusing on the activity of corporate functions, such as logistics (see e.g. Gąsowska [2010]), purchasing (see e.g. Allal-Chérif and Maira [2011]), human resources management (see e.g. HRM Partners [2009]; Kowalewski [2010]; Zagelmeyer and Heckmann [2013]), marketing (see e.g. Caescu and Dumitru [2011]; Lee, Chung and Taylor [2011]), and knowledge management (see e.g. Smuda [2011]; Antonioli et al. [2011]). Another criterion for classifying the studies presented in Table 5.2 may be companies’ attitude towards the phenomenon of global economic crisis. From this point of view, we can mention research into the impact of the global economic crisis on companies (see e.g. Leszczewska [2010]; Caescu and Dumitru [2011]), companies’ reaction to the global economic crisis and their remedial measures (see e.g. KPMG [2009]; Danielak [2010]; Kowalewski [2010]; Allal-Chérif and Maira [2011]; Lee, Chung and Taylor [2011]), and the effectiveness of specific solutions implemented by companies on account of operating under the conditions of a global economic crisis (see e.g. Gąsowska [2010]; Smuda [2011]; Zagelmeyer and Heckmann [2013]).

Studies adopting a microeconomic perspective and focusing on the impact of the global economic crisis on company activities are relatively numerous.¹⁰ At the same time, however, it should be noted that their conclusions remain fragmentary because they address selected, narrow issues and are strongly situational, which prevents them from being generalised to other contexts. What is more, one can observe the dominance of subjective measures of the variables investigated, which, particularly in the case of issues perceived by respondents as problematic from the company’s point of view, may not fully convey the actual impact of the crisis. In addition, very few studies explicitly refer the influence of the global economic crisis and companies’ actions taken during its course to economic efficiency (see e.g. Antonioli et al. [2011]). In view of the above, and in the light of the content of Chapter 4, what seems particularly interesting is studies that would allow us to compare the determinants of companies’ competitive position, broadly understood, during and after the crisis. However, at least in the Polish context, there is still a research gap in this field.

⁹ These studies constitute a supplement to the table in section 2.3.

¹⁰ See Tables 2.5, 2.6, and 5.2.

Table 5.2. A review of selected empirical research into companies' reaction to the global economic crisis

Study	Aspects analysed	Period	Research sample	Type of data*	Indicators applied	Analytical tools
Zagelmeyer and Heckmann [2013]	Influence of flexible forms of work/employment (including outsourcing through employment agencies, self-employment, and external companies) on business entities' resistance to the crisis	4th quarter of 2008 and 2nd quarter of 2009	8,000 companies operating in Germany	S	Dummy variable indicating the influence of the crisis on the company, dummy variables concerning the occurrence of problems with demand for products, finding employees, and financing the company's operations in the 12 months before the crisis	Regression equation
Allal-Chérif and Maïra [2011]	Presenting changes in the operation of purchasing and supplier-collaboration departments introduced in response to the economic crisis		12 departments of international companies based in France	P	Qualitative data concerning the operation of the purchasing department and the expectations regarding suppliers' collaboration with particular companies	Qualitative analysis using the expert method
Antonoli et al. [2011]	Analysing innovative activities in the pre-crisis period and during the crisis; analysing the determinants of companies' economic results during the crisis	2006–2008, 2009	555 companies (with at least 20 employees) from the manufacturing sector based in Italy's Emilia-Romagna region	P	Innovative activities' degree of adjustment to crisis conditions	Structural model
Caescu and Dumitru [2011]	Influence of the economic crisis on marketing decisions	2008–2010	27 Romanian companies (no information regarding sectors)	P	Marketing budget, marketing-mix budget, corporate strategic objectives (nominal variables)	Descriptive statistics
Lee, Chung and Taylor [2011]	Analysing changes in marketing strategy in the periods before and during the financial crisis	2005–2006, 2007–2008	2,480 newspaper advertisements of American companies from the financial services sector	S	Type of strategy (informational, emotional), type of argumentation (quality of services, innovativeness, financial value, family values, emotional value)	Content analysis

Danielak [2010]	Analysing the impact of the consequences of the economic crisis for small and medium-sized enterprises on the crisis	2010	120 companies from Poland's Lubuskie province	P	Companies' reactions to the economic crisis (reducing costs, suspending investment, reducing the scale of business, withdrawing from some markets, reducing employment, reducing supplies, withdrawing some products from the market, establishing informal relationships in order to survive)	Descriptive statistics
Gąsowska [2010]	Analysing the effects of logistics operations and solutions under the conditions of an economic crisis	2007–2009	37 manufacturing companies in north-eastern Poland	P	Logistics solutions	Descriptive statistics
Kowalewski [2010]	Identifying and assessing the scale of changes in companies' personnel policy, particularly in corporate culture	2007–2009	37 Polish companies	P	Corporate culture, areas of change in personnel policy	Descriptive statistics
Leszczewska [2010]	Diagnosing the economic situation and development prospects of small and medium-sized enterprises	2009	103 small and medium-sized enterprises from Poland's Podlaskie province	P	Employment, scale of operations, expansion methods	Descriptive statistics
HRM Partners [2010]	Analysing the impact of the crisis on HRM practices	2009	70 Polish companies (no data regarding industries or sizes)	P	Activities in the area of human resources management (including in relation to the scale and content of cuts in employment, wages, recruitment, and training)	Descriptive statistics
Smuda [2011]	Analysing the efficiency of intellectual capital during the crisis	2007–2009	40 Polish companies listed on newconnect	S	Indicators of the efficiency of equity, structural capital, and intellectual capital	Descriptive statistics
KPMG [2009]	Exploring the rationalisation activities undertaken by Polish companies as a result of the crisis	2006–2009	70 Polish companies (64% of them large, 36% small)	P	Plans for cost reduction, its level and type, activities in the area of human resources management, plans to optimise costs related to tax liabilities, degree of saving-innovative implementation, success factors, barriers to optimisation initiatives	Descriptive statistics

* S – secondary data, P – primary data.

Source: authors' own study.

Recapitulation

At the end of the first decade of the twenty-first century, a lot of attention was devoted to issues such as the pace of economic development, ways to lower the unemployment rate, and measures preventing the onset of an economic crisis whose scale and scope were comparable to the phenomenon that took place in the first decade of the second millenium. Although, according to the definition of economic crisis adopted here, a global economic crisis occurred only in 2009, many countries felt its consequences in the next few years. Even though its cause has already been identified as the occurrence of a global imbalance in the financial market and a resultant financial crisis, many issues related to the crisis require further analysis. The research gaps identified in this chapter include studies that would allow us to:

- identify the countries most negatively and least negatively hit by the global economic crisis, as well as those that had the most and the least difficulty in recovering at least to the pre-crisis level of economic development,
- ascertain the time frames of economic crises in particular countries,
- compare the determinants of companies' broadly-understood competitive position before the crisis, during its course, and after it.

Chapter 6

Economic changes during and after the global economic crisis – rankings of economies and industries¹

Marlena Dzikowska
Marian Gorynia
Barbara Jankowska

This chapter presents quantitative empirical research in which macro- and mesoeconomic levels of analysis were adopted. The studies play an introductory and supplementary role in relation to the microeconomic research presented later in the book. The analyses carried out in this chapter are based on secondary material gathered from international institutions' electronic databases and from statistical yearbooks of Poland's Central Statistical Office (GUS). Research relating to the national-economy level (using the linear ordering of objects) allowed us to identify the countries which the global economic crisis affected the most and the least negatively, as well as the countries that had the most and the least difficulty in returning at least to the pre-crisis levels of economic development. Another major objective of this chapter is to ascertain Poland's position in various rankings.

Conclusions drawn from mesoeconomic research allowed us to identify the industries affected the most and the least negatively by the economic crisis, and to name those sectors which had the most and the least difficulty returning to at least the pre-crisis level of development. Ultimately, this enabled us to select the industries covered by research conducted from a microeconomic perspective.

¹ Parts of this chapter were published in the *Ekonomista* journal (see Dzikowska, Gorynia, Jankowska [2015]).

6.1. Methods of the linear ordering of objects

The issue of classifying objects in a multidimensional space of features is studied by numerical taxonomy [Pociecha 2008, Hellwig 1990]. One of the research areas of numerical taxonomy are methods of the linear ordering of objects. Among methods of the linear ordering of objects, we can distinguish diagram methods, procedures based on a synthetic indicator, and iterative methods. Of special significance for the purpose of this chapter are synthetic-indicator procedures, which consist in projecting objects from a multidimensional space of features on a straight line constituting a synthetic indicator. In other words, they allow us to determine a hierarchy of objects, or to establish their order in relation to the multidimensional phenomenon of our interest.

As mentioned above, the use of such a method of the linear ordering of objects requires creating an aggregated, synthetic indicator which is a basis for hierarchising the objects analysed. The tradition of using such measures in economic research dates back to the 1960s.² Today, owing to their simplicity and ability to present complex phenomena, synthetic indicators are becoming increasingly popular in research focused on comparing the results achieved by particular national economies [OECD 2008, p. 13].

Individual qualitative and quantitative variables allow us to observe changes in the relative positions of objects (e.g. countries) within the investigated area at a given moment or over a longer period of time. Nevertheless, identifying trends in changes in the case of a complex phenomenon which is reflected by a group of variables may present some difficulty. As part of designing a synthetic indicator, individual variables which, in accordance with the conception, underlie the analysed phenomenon and enable its observation, are integrated into a single indicator representing the aspect concerned. The advantages of adopting such a solution include [Saisana and Tarantola 2002] ease of interpretation in comparison with a situation where separate variables are taken into consideration, no losses of input information, and the ability to use the indicator to observe changes over time.

The remaining key issue is to design an indicator which, on the one hand, should be in line with the theoretical foundations of the phenomenon and with the previous research practices in the field, and on the other hand, should help to achieve the purpose of the study [Rosen, 1991]. As mentioned earlier, the rankings presented in this chapter are intended to illustrate the scale of the adverse effect the economic crisis had on the economies and industries analysed, as well as the degree of difficulty these entities had in achieving at least the pre-crisis level of

² See Hellwig [1968].

development. Therefore, the research object itself and previous achievements in analysing the impact of economic crises on economies/industries (see section 2.3 for more details) provide a list of potential variables. However, there might be some limitations in this respect related to the availability of variables for the periods analysed.

In addition to determining the variables that make up a synthetic indicator, conducting a linear ordering of objects requires determining the nature of the variables, establishing their weights, as well as normalising and preparing an aggregate measure. Determining the nature of the variables involves indicating the direction of the relationship between the phenomenon examined (synthetic indicator) and a particular diagnostic feature (variable). If the relationship is positive, the variable constitutes a stimulant, and if it is negative, we are dealing with a destimulant.

The purpose of normalisation is to make variables mutually comparable. This is especially significant when particular diagnostic features represent very different entities, are expressed in different units of measurement, and are diverse in terms of value. Among normalisation methods, we can distinguish the ranking of variables, quotient transformations, standardisation, and unitarisation. According to Woźniak and Sikora [2006, p. 164], among methods of variable normalisation, the one with the best formal properties is the unitarisation method, and it is this method that will be used in our further analysis. Formulas 1 and 2 show the normalisation process for variables which are stimulants and destimulants, respectively.

$$\text{Stimulants:} \quad Z_{ij} = \frac{x_{ij} - \min_i \{x_{ij}\}}{\max_i \{x_{ij}\} - \min_i \{x_{ij}\}} \quad (1)$$

$$\text{Destimulants:} \quad Z_{ij} = \frac{\max_i \{x_{ij}\} - x_{ij}}{\max_i \{x_{ij}\} - \min_i \{x_{ij}\}} \quad (2)$$

where:

i – object number,

j – variable number,

x – observation,

Z – observation after unitarisation.

Given the purpose of the present chapter, our analysis will use a non-model aggregation formula. This type of aggregation methods consists in averaging the normalised values of variables, taking into account the weighting factors adopted. In the present study, we will use a non-model aggregate measure in which the arithmetic mean is calculated on the basis of unitarised diagnostic features. It will be expressed on a point scale with a span of $\langle 0; 100 \rangle$, and will take the form shown in Formula 3.

$$W_i = \frac{100}{m} \sum_{j=1}^m \alpha_j Z_{ij} \quad (3)$$

where:

- i – object number,
- j – variable number,
- m – number of diagnostic features,
- α_j – weight of the j -th variable,
- Z – observation after unitarisation,
- W_i – aggregate measure.

6.2. The construction of a synthetic indicator for economy rankings

To prepare data for analysis, we used electronic databases of World Development Indicators. Initially, the developed database contained information on 214 economies. However, since it was impossible to acquire the missing data, the initial database was limited to 52 countries. The following data were taken into account:

- GDP per capita, expressed in constant prices in US\$ 2005,
- unemployment rate, expressed as a proportion of the economy's entire workforce,
- market capitalisation of listed companies, expressed in current prices in US\$,
- export of goods and services, expressed in constant prices in US\$ 2005,
- net inward foreign direct investment, expressed in current prices in US\$.

Data on GDP per capita were included in the synthetic indicator, since they accurately reflect the overall state of the economy. The purpose of using such data as the unemployment rate and the market capitalisation of listed companies was to show the condition of companies operating in a given country in the period analysed. The levels of the export of goods and services and net inward foreign direct investment should help to demonstrate, on the one hand, companies' effectiveness abroad and foreign entities' interest in a given economy, and on the other hand, the intensity of a particular country's ties with other economies.

While selecting the factors to be used in the analysis, apart from taking into account the most important variables that help to illustrate the scale of economic changes during and after the global economic crisis, we also took into consideration the availability of data. Additionally, it was very important that the information to be used should be comparable even in the case of significantly different economies. For example, the purpose of taking into account indicators expressed in constant prices in US\$ 2005 was to ensure comparability of information, regardless of the currency used in a given country. In addition, the above data were

not presented in the ranking in nominal values, but were used to determine the changes that occurred in 2009/2012 as opposed to 2007. The choice of periods to be compared was intentional: the year 2007 was the point of reference, because it was the last calendar year whose results were not influenced by the global economic crisis. And taking into account the year 2009 was aimed at illustrating the cumulative negative impact of the crisis. The year 2012 was considered a year when the global economic crisis did not occur.

During the initial processing, all the data were transformed so that they could express differences between the information considered. The data concerning GDP per capita, the export of goods and services, and the market capitalisation of listed companies were converted into variables that constituted a percentage deviation of the 2009/2012 values as opposed to the 2007 level. The only exceptions in this regard were the variables concerning the unemployment rate and net inward foreign direct investment. While using a percentage deviation from the baseline in the case of the unemployment rate helps to describe the dynamic and direction of changes in companies' activities, this variable could not show the differences in the initial level. At the same time, although an increase in the unemployment rate from, say, 3% to 6% means a 100% rise in unemployment, this is much less of a threat to the economy than a 50% increase in unemployment in relation to the initial level of 12%. Consequently, when constructing the synthetic indicator, in this case we used a variable representing the difference between the unemployment rates of 2009/2012 and 2007. The same solution was used in the case of changes in the value of net inward foreign direct investment. In this case, the problem was not the inability to show the initial level but the negative values achieved by some of the countries under analysis, a consequence of significant divestments. Some controversy in this respect may also be caused by focusing on incoming investment instead of, for instance, outward foreign investment. A rationale for using information on net inward foreign direct investment was, on the one hand, its ability to show foreign business entities' interest in a given economy, and on the other, the fact that it reflects the inflow of capital which supports a country's development through investment. While using a percentage deviation from the baseline in the case of outward foreign investment would provide comparable data even for countries where the disproportion between nominal values is large, the very dynamic of such a variable would also result from the incremental characteristics of the economies concerned, particularly from their investment development paths.³ This aspect could not be taken into account in the analysis.

Additionally, during the construction of the synthetic indicator, it would be potentially interesting to take into account data regarding the level of public debt,

³ See Gorynia, Nowak and Wolniak [2010] for more details.

market monetary instruments and industrial output. However, data pertaining to these aspects were available for only a few countries, even among the initially selected 52 economies. Consequently, using these data would further reduce the number of economies included in the study. Table 6.1 presents the data used to prepare the variables included in the analysis, along with other empirical studies in which similar data were analysed.

Table 6.1. The variables used to construct the synthetic indicator

Data	Transformation	Studies using similar data
GDP per capita	Percentage deviation from the baseline	Devarajan and Kasekende [2011]
Value of the export of goods and services	Percentage deviation from the baseline	Filippov and Kalotay [2011]; Ene, Gheorghiu and Cristea [2011]; Julian [2000]
Unemployment rate	Difference in relation to the baseline	Ene, Gheorghiu and Cristea [2011]; Julian [2000]; Olowu [1991]
Market capitalisation of listed companies	Percentage deviation from the baseline	Ene, Gheorghiu and Cristea [2011]
Value of inward foreign direct investment	Difference in relation to the baseline	Filippov and Kalotay [2011]; Ene, Gheorghiu and Cristea [2011]

Source: authors' own study.

The above set of variables was revised in terms of sufficient spatial variability as the potential informational value of each of the characteristics analysed. As the variables included in the synthetic indicator should exhibit high variability (coefficient of variation not lower than the critical value of 0.2), in the initial stage of analysis we examined the coefficient of variation for pre-selected variables. The calculations were based on the coefficient of variation calculated according to Formula 4.

$$V_j = \frac{S_j}{\bar{x}_j}, \quad j = (1, 2, \dots, k) \quad (4),$$

where:

j – variable,

V_j – coefficient of variation of the variable analysed,

S_j – standard deviation of the variable analysed,

\bar{x}_j – arithmetic mean of the variable analysed.

The value of the coefficient of variation for all the variables included was higher than 0.2.

While developing the synthetic indicator of the scale of the negative impact that the crisis period had on the economic situation of the countries analysed, variables such as GDP per capita, the value of the export of goods and services, the market capitalisation of listed companies, and the value of inward foreign direct investment were taken into account as destimulants, whereas variables concerning the unemployment rate were used as a stimulant. During the analysis, input data were transformed into variables, the variables were standardised, and the indicator was calculated and ranked.

In the analysis, different weights were used for particular diagnostic features. The adoption of such a solution was justified, among other things, by using in the synthetic indicator a different number of variables concerning aspects of the economy in general than in the case of variables concerning business entities' activity and condition, and internationalisation issues. In addition, since the differences between the investigated periods were taken into account, there were very considerable differences between the countries in terms of the variable concerning net inward foreign direct investment. Failure to consider the weights delimiting the problems described above would distort the analysis. The weights used for particular variables are presented in Table 6.2.

Table 6.2. The weights given to the diagnostic features

Features	Weights
GDP per capita	0.34
Unemployment rate	0.18
Market capitalisation of listed companies	0.16
Value of the export of goods and services	0.23
Value of inward foreign direct investment	0.09

Source: authors' own study.

The rankings obtained thanks to the above methodology exhibited the properties of linear ordering; that is, each object had at least one neighbour but not more than two neighbours; if the neighbour of the i -th object was the i' -th object, then at the same time the neighbour of the i' -th object was the i -th object, and exactly two objects had only one neighbour.

6.3. A ranking of economies

The construction of the synthetic indicator is intended to illustrate the scale of economic changes during and after the global economic crisis in selected countries. As mentioned earlier, the point of reference is data from 2007, the last calendar year whose results were not affected by the global economic crisis.

In the case of a 2009 ranking, the indicator shows the scale of economic changes in a given country – expressed in terms of the diagnostic features taken into consideration and in comparison with the other countries included in the analysis – during the global economic crisis. The synthetic indicator for 2012, in turn, refers to a country's difficulty in returning at least to the pre-crisis level of economic development in terms of the diagnostic features and in comparison with the other countries included in the analysis. In other words, in this case, the synthetic indicator shows whether the post-crisis economic situation improved or deteriorated in relation to the reference point, which is the year 2007. A high value of the indicator/high position in the ranking means that – in comparison with the year 2007 in terms of the diagnostic features, and in comparison with the other countries included in the analysis – the economic situation of a given country deteriorated. The higher the indicator value/position, the greater the scale of negative changes, or the smaller the scale of positive changes in comparison with the other economies. Table 6.3 and Chart 6.1 present the values of the synthetic indicator for the year 2009, and Table 6.4 and Chart 6.2 for the year 2012.

Compared with 2007, in 2009 all the economies under analysis deteriorated in terms of at least one of the diagnostic features. In the case of 31 countries, the deterioration concerned all the features. These were the economies occupying positions 1–35 in the ranking presented in Table 6.3, with the exception of Italy, Iceland, Greece, and Germany. Compared to 2007, in 2009 Italy and Greece saw an increase in net inward foreign direct investment. It should be emphasised at this point that, in the period under discussion, both countries experienced a significant fall in the value of listed companies (in Italy, the drop amounted to approximately 70%, and in Greece to approximately 79% of the baseline) [World Development Indicators database]. It can be assumed, therefore, that a significant part of inward foreign direct investment was accounted for by foreign companies acquiring domestic entities rather than by new companies with foreign capital being located in these countries. In Germany, the value of net inward foreign direct investment increased as well, but the accompanying decline in the value of listed companies' market capitalisation was lower than in Italy and Greece, and amounted to about 38%. At the same time, the German economy reported a decrease in its unemployment rate. In Iceland, in turn, an improvement in the value of the diagnostic features manifested itself only through an increased value of exported

goods and services. In the case of the countries in positions 40–52 of the ranking, a deterioration in the diagnostic features occurred for a maximum of three variables.

Table 6.3. A ranking of the scales of economic changes during the global economic crisis

Ranking position	Economy	Indicator value	Ranking position	Economy	Indicator value	Ranking position	Economy	Indicator value
1	Estonia	98.07	19	Turkey	64.96	37	Israel	50.64
2	Lithuania	83.90	20	Singapore	64.78	38	New Zealand	49.80
3	Ireland	83.52	21	Mexico	64.72	39	Brazil	48.13
4	Spain	80.42	22	Portugal	62.70	40	Kazakhstan	45.55
5	UK	78.11	23	Netherlands	62.01	41	South Korea	44.67
6	Finland	76.07	24	Cyprus	60.93	42	Jordan	41.99
7	Italy	75.86	25	El Salvador	59.80	43	Malta	41.50
8	Iceland	74.86	26	Russia	59.68	44	Colombia	41.59
9	US	73.94	27	Belgium	59.40	45	Poland	38.81
10	Japan	71.71	28	Czech Republic	58.81	46	Morocco	38.10
11	Canada	70.82	29	Germany	57.72	47	Tunisia	35.18
12	Greece	69.64	30	Slovakia	57.04	48	Indonesia	34.31
13	Slovenia	69.11	31	Norway	56.33	49	Peru	33.86
14	Sweden	68.21	32	Hong Kong	55.19	50	Australia	30.83
15	Hungary	67.84	33	Malaysia	54.93	51	Mongolia	29.96
16	Austria	67.37	34	Thailand	53.40	52	Egypt	21.72
17	Denmark	67.19	35	Switzerland	52.72			
18	France	66.24	36	Chile	52.16			

Source: authors' own study based on World Development Indicators data.

Three countries at the top of the ranking – Estonia, Lithuania, and Ireland – are economies with very small domestic markets in relative terms, and with a high degree of dependence on the export of goods and services. In the case of Estonia, Lithuania, and Ireland, the export of goods and services expressed as a share of GDP in the years 2003–2007 accounted for 69%–78%, 79%–84% and 51%–60%, respectively [World Development Indicators database]. Therefore, the crisis-induced reduction in the international flow of goods and services was undoubtedly linked with the deterioration of all the diagnostic features.

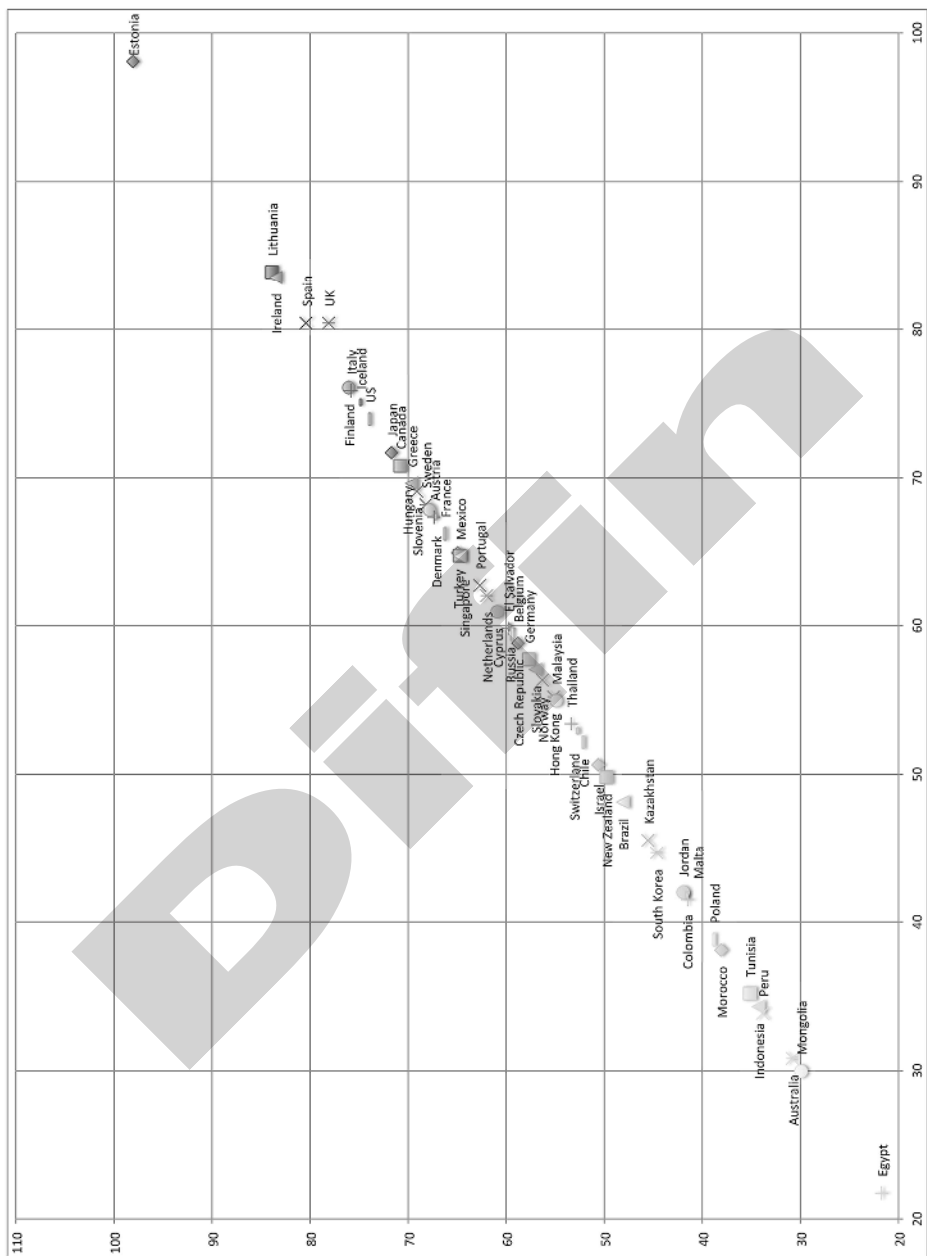


Chart 6.1. A ranking of the scales of economic changes during the global economic crisis

Source: authors' own study based on World Development Indicators data.

At the same time, the analyses suggest that in 2009, among the 26 European countries included in the ranking, Poland was in relative terms the economy least negatively affected by the global economic crisis. Among the countries analysed, the crisis exerted a less negative influence only on Egypt, Mongolia, Australia, Peru, Indonesia, Tunisia, and Morocco. In 2003–2007, within this group of countries, only Mongolia and Tunisia had a higher share of exported goods and services in their GDP than the Polish economy did. Nonetheless, if we compare the nominal values⁴ of the export of goods and services, we can see that the value of Polish exports in 2003–2007 was approximately eight times as high as the value of Tunisia's exports and about 80 times as high as that of Mongolia [World Development Indicators database].

Data concerning the value of exported goods and services in 2012 were not available in the case of 10 of the 52 economies originally included in the ranking⁵. To ensure full comparability of the synthetic indicators used, the number of countries featuring in Table 6.4 was limited. It should also be stressed that, while the 2009 ranking took into account the impact of the global economic crisis, the 2012 ranking reflects the countries' difficulty (or lack thereof) in recovering at least to the level of economic development achieved before the crisis.

Among the 42 economies analysed, there were five countries whose all diagnostic features deteriorated in comparison with the year 2007. These countries were: Greece, Italy, Finland, Canada, and Norway. At the same time, only one diagnostic feature improved in Spain, the UK, Ireland, Denmark, and France. In 2012, all of these countries achieved higher values of exported goods and services than in 2007; in percentage terms, the growth achieved single-digit values. In the Netherlands, Iceland, and Estonia the improvement also involved only the value of the export of goods and services, although in this case the increase was quite substantial, as it amounted to 13%, 24% and 28% of baseline values, respectively. At the same time, the 2012 performance of Colombia, South Korea, Chile, Singapore, and Malaysia improved in relation to 2007 in terms of all the areas included in the indicator. In Thailand, Turkey, and El Salvador the one variable that deteriorated concerned the value of net inward foreign direct investment in relative terms. Finally, it should be emphasised that in 2012, in all these economies, the value of the attracted foreign direct investment was positive, though lower than the value of the investment made in 2007.

⁴ The comparison was made between values expressed in constant prices in US\$ 2005.

⁵ In March 2014 this information was not available for Brazil, Cyprus, Hungary, Indonesia, Lithuania, Malta, Mongolia, Slovakia, Slovenia, and Tunisia.

Table 6.4. A ranking of the scales of economic changes after the global economic crisis

Ranking position	Economy	Indicator value	Ranking position	Economy	Indicator value	Ranking position	Economy	Indicator value
1	Greece	89.58	15	Belgium	54.08	29	Germany	38.96
2	Spain	70.49	16	Iceland	53.62	30	Israel	38.66
3	Italy	66.21	17	US	51.61	31	Australia	38.64
4	UK	64.89	18	Sweden	51.38	32	Hong Kong	36.08
5	Ireland	64.56	19	Switzerland	49.19	33	Malaysia	35.36
6	Finland	61.59	20	Estonia	48.25	34	Singapore	34.78
7	Portugal	58.50	21	Jordan	45.93	35	Chile	33.34
8	Canada	58.14	22	Egypt	45.58	36	Morocco	32.47
9	Denmark	57.49	23	New Zealand	44.60	37	Turkey	30.16
10	France	56.25	24	Czech Republic	44.20	38	Poland	29.72
11	Norway	55.65	25	Russia	43.98	39	Thailand	25.60
12	Netherlands	55.63	26	Kazakhstan	40.19	40	South Korea.	24.41
13	Austria	54.50	27	El Salvador	39.71	41	Colombia	20.31
14	Japan	54.32	28	Mexico	39.67	42	Peru	14.79

Source: authors' own study based on World Development Indicators data.

The top twenty of the ranking included as many as 17 European countries. This only confirms Europe's difficulty in overcoming the crisis – an issue highlighted in the press and in political discussions⁶ – and is indicative of some economic problems in those countries. In the context of the ranking, Poland stands out again among European countries, as it is the only European economy to be in the bottom ten of the list. This does not mean that Poland improved in terms of all the diagnostic features. The actual improvement in relative variables concerned GDP per capita and the export of goods and services (an increase of 17% and 24%, respectively, on the 2007 figures). At the same time, the unemployment rate rose by only 0.5%, and the value of net inward foreign direct investment in 2012 was lower than in 2007, yet positive, amounting to approximately US\$6.7 billion.

⁶ See e.g. Kozieł [2011]; Twaróg [2011]; Bielecki [2012]; Słojewska [2012].

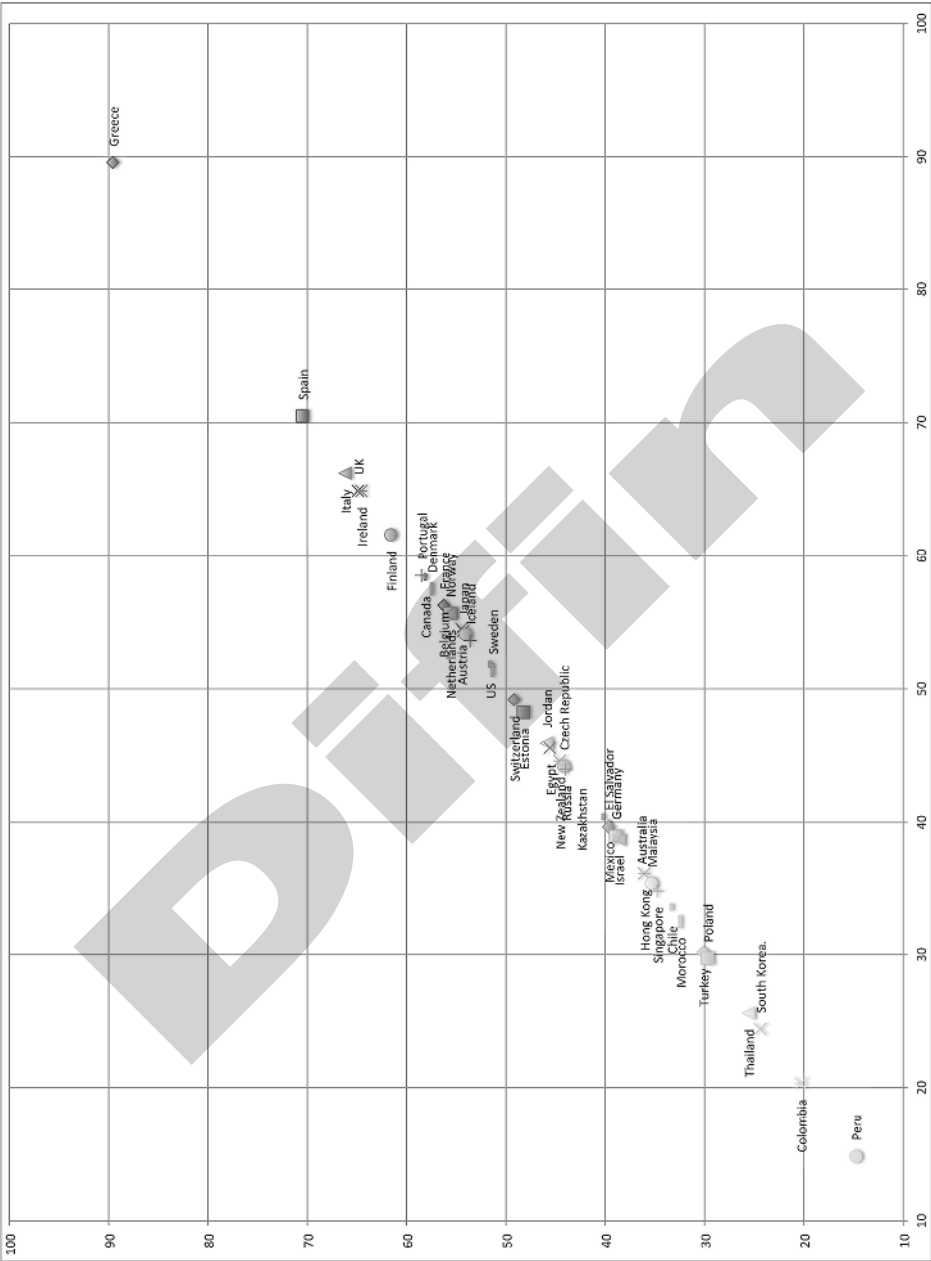


Chart 6.2. A ranking of the scales of economic changes after the global economic crisis

Source: authors' own study based on World Development Indicators data.

6.4. The construction of a synthetic indicator for industry rankings

To prepare data for this part of the analysis, we used information gathered by Poland's Central Statistical Office (GUS). Initially, the collected data concerned all sections and sectors of economic activity as part of manufacturing industries. However, since sections such as Agriculture, forestry, hunting and fishing, Construction, Trade and repair of motor vehicles, Transport and warehousing, Accommodation and catering, Information and communication, Professional scientific and technological activity, Administrative and supporting activity, Education, and Health care are focused primarily on servicing the domestic market, we decided to exclude them from the analysis. Therefore, the database consisted of information on 24 manufacturing industries, referred to as industries in the further part of this chapter. The list included the following data:

- number of employees, in thousands,
- revenues from total activity, in millions of zlotys,
- net value of fixed assets, in millions of zlotys,
- capital expenditures, in millions of zlotys,
- net financial performance, in millions of zlotys.

Data on the number of employees and on revenues from total activity were included in the synthetic indicator, because they reflect changes in the scale of companies' activity. Taking into account indicators such as the net value of fixed assets and capital expenditures was intended to show the level of investment in companies in the period analysed, thereby at least partially indicating their development potential. Taking into consideration net financial performance should, in turn, visualise the final financial results of business activity, and thus ascertain companies' effectiveness.

As with the ranking of economies, a criterion for selecting the factors used in the analysis was – apart from the most important variables illustrating the scale of changes in company operation during the global economic crisis – the availability of data and the prospect of using information that can be compared even in the case of industries which differ from each other significantly. Therefore, the above data were not included in the form of nominal values, but were used to describe the changes that occurred in 2009 and 2012 as opposed to the year 2007. During a preliminary processing, all the data were converted so that differences between them could be demonstrated. Data on the number of employees, revenues from total activity, net value of fixed assets, and capital expenditures were converted into variables that constituted a percentage deviation of the values achieved in 2009/2012 as opposed to the 2007 level. An exception in this regard was the net

financial performance variable. In the case of industries with negative net financial results in the period analysed, we used a variable constituting the difference between the results achieved in 2009/2012 and in 2007.

Table 6.5. The variables used to construct the synthetic indicator

Data	Transformation	Studies using similar data
Number of employees	Percentage deviation from the baseline	Sato [2000]; Kildienė, Kaklauskas, Zavadskas [2011]
Revenues from total activity	Percentage deviation from the baseline	Sato [2000]; Czapliński [2010]; Kildienė, Kaklauskas, Zavadskas [2011]
Net value of fixed assets	Percentage deviation from the baseline	Sato [2000]
Capital expenditures	Percentage deviation from the baseline	Czapliński [2010]
Net financial performance	Difference in relation to the baseline	Sato [2000]

Source: authors' own study.

As in the previous analysis, the set of variables presented above was revised in terms of sufficient variation as a potential informational value of each of the characteristics investigated. In the case of all variables included, the value of the coefficient of variation was greater than 0.2. When preparing the synthetic indicator of the scale of the negative impact the crisis had on the economic situation of the industries under study, we regarded all the analysed variables as destimulants. During the analysis, we converted the input data into variables which were standardised, calculated the indicator and ranked it. In the analysis, we gave identical weights to all diagnostic features.

The rankings obtained thanks to the above methodology exhibited the properties of linear ordering. That is, each object had at least one neighbour but not more than two neighbours; if the neighbour of the i -th object was the i' -th object, then at the same time the neighbour of the i' -th object was the i -th object, and exactly two objects had only one neighbour.

6.5. A ranking of industries

The construction of a synthetic indicator for this part of the analysis is intended to illustrate the scale of economic changes that occurred in selected industries during and after the global economic crisis. As mentioned earlier, the point of reference is data from the year 2007.

In the case of the 2009 ranking, the indicator shows the scale of economic changes in a given industry – which are expressed in terms of the applied diagnostic features and compared to the other industries included in the analysis – during the global economic crisis. As for 2012, the synthetic indicator represents the level of the industry's difficulty in returning at least to the pre-crisis level in terms of the diagnostic features considered and compared to the other industries included in the analysis. In other words, the synthetic indicator is expected to help identify the industries which can be regarded as potentially the most and the least negatively affected by the global economic crisis, as well as the industries whose economic situation after the crisis deteriorated or improved the most in relation to the reference point, which is the year 2007. A high value of the indicator / a high position in the ranking means that, compared to 2007, the economic situation of an industry deteriorated in terms of the diagnostic features used and in comparison with the other industries included in the analysis. The higher the value of the indicator / the higher the position, the greater the scale of negative changes or the smaller the scale of positive changes in comparison with the other industries. Table 6.6 and Chart 6.3 show the values of the synthetic indicator for 2009, and Table 6.7 and Chart 6.4 for the year 2012.

In 2009, compared to 2007, among the industries under analysis, the diagnostic features deteriorated most frequently in terms of employment level, capital expenditures, and net financial performance. Employment declined in 21 sectors, capital expenditures fell in 19 sectors, and net financial performance deteriorated in 15 sectors. At the same time, in the entire manufacturing section, the biggest decrease was in net financial performance (a decrease of approximately 27% in relation to 2007), capital expenditures (a fall of approximately 8%), and employment (a decline of just under 8%). We can say, therefore, that although the deterioration in net financial performance in the period analysed concerned fewer industries than the reduction in capital expenditures or the decline in the number of employees did, the strength of the negative changes in the former was significantly greater.

In the period under investigation, the manufacturing section also enjoyed a rise in the value of revenues from total activity, although the increase was small, amounting to just over 3%. There was a significant increase, however, in the net value of fixed assets, which rose by almost 13%. This means that in 2009 manufacturing

companies made considerable investment which exceeded the value of depreciated assets in the 2008–2009 period.

Table 6.6. A ranking of the scales of change in Polish manufacturing industries indicators during the global economic crisis

Ranking position	Industry	Indicator value
1	Manufacture of basic metals	89.18
2	Manufacture of leather and related products	77.71
3	Manufacture of wearing apparel	72.21
4	Manufacture of products of wood, cork, straw and wicker	68.52
5	Manufacture of other non-metallic mineral products	68.15
6	Manufacture of textiles	65.11
7	Repair and installation of machinery and equipment	62.69
8	Manufacture of motor vehicles, trailers and semi-trailers	62.43
9	Printing and reproduction of recorded media	61.79
10	Manufacture of machinery and equipment	60.50
11	Manufacture of tobacco products	60.10
12	Manufacture of other transport equipment	59.33
13	Manufacture of beverages	56.32
14	Manufacture of rubber and plastic products	54.37
15	Manufacture of chemicals and chemical products	53.00
16	Manufacture of electrical equipment	51.31
17	Manufacture of metal products	51.24
18	Manufacture of furniture	50.25
19	Manufacture of paper and paper products	47.54
20	Manufacture of food products	46.69
21	Manufacture of computers, electronic and optical products	44.42
22	Other manufacturing	42.30
23	Manufacture of pharmaceutical products	41.95
24	Manufacture of coke and refined petroleum products	40.68

Source: authors' own study based on GUS [2008, 2010] data.

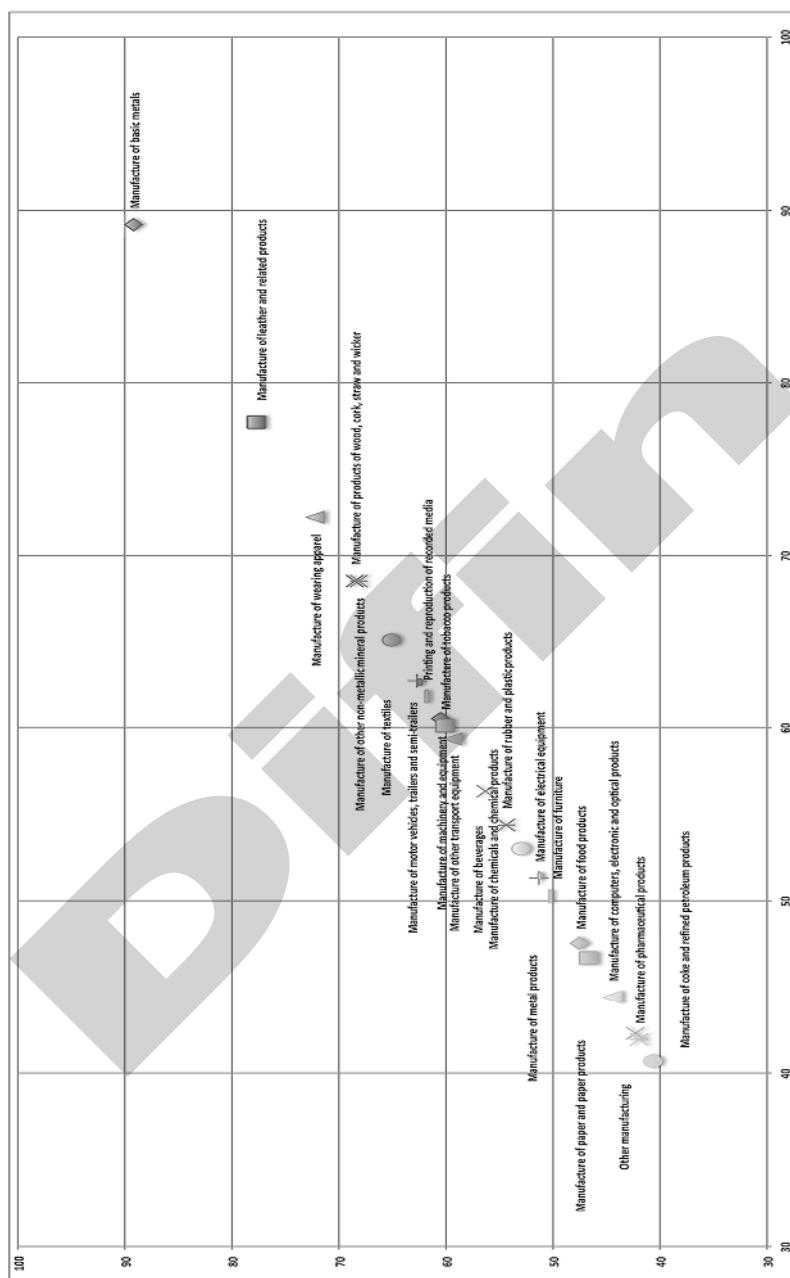


Chart 6.3. A ranking of the scales of changes in Polish manufacturing industries during the global economic crisis

Source: authors' own study based on GUS [2008, 2010] data.

In 2009, all diagnostic features deteriorated in only one sector: Manufacture of leather and leather products. In the case of seven other industries (Manufacture of textiles, Manufacture of clothing, Manufacture of wood, cork, straw and wicker products, Printing and reproduction of recorded media, Manufacture of products made of other non-metallic mineral raw materials, Manufacture of metals, and Repair, maintenance and installation of machinery and equipment), four of the five features deteriorated. At the same time, the list did not include a sector in which all of the diagnostic features improved. Three features improved in the case of Manufacture of paper and paper products, Manufacture of other transport equipment, and Manufacture of furniture.

In 2012, as in 2009, among the industries investigated, the diagnostic features deteriorated most frequently in terms of employment level, capital expenditures, and net financial performance. Nonetheless, the frequency of this phenomenon was lower than in 2009. Employment declined in 20 sectors, capital expenditures decreased in 14 sectors, and net financial performance deteriorated in 11 sectors. At the same time, within the entire manufacturing section, the greatest decline was in the value of capital expenditure (a reduction of approximately 12% in comparison with 2007). In the case of net financial performance and employment, the values decreased by about 9%. This means that in 2012, even in relation to 2009, the value of investment decreased by approximately 4%, and the level of employment rose by approximately 1%, although financial performance improved considerably (an increase of 25% in relation to 2009).

The value of revenues from total activity in the manufacturing section in 2012 increased by approximately 37% in comparison with 2007. A deterioration in this diagnostic feature took place only in the case of Manufacture of tobacco products and Manufacture of clothing. Simultaneously, the net value of fixed assets increased significantly, by about 32%. To recapitulate, on average, in the periods compared, the adjustment of companies operating within the Industrial manufacturing section to conditions changed by the global economic crisis required considerable investment, accompanied by an increase in revenues from total activity but also by a fall in the number of employees. Eventually, net financial performance deteriorated, as well.

In 2012, Manufacture of clothing was the only sector to report a deterioration in all diagnostic features. In turn, a deterioration in four diagnostic features occurred for Manufacture of beverages, Manufacture of leather and leather products, and Printing and reproduction of recorded media. At the same time, in as many as four sectors (Manufacture of paper and paper products, Manufacture of chemicals and chemical products, Manufacture of rubber and plastic products, Manufacture of metal products) there was an improvement in all the features, while in another three sectors (Manufacture of electrical equipment, Manufacture of other transport equipment, Other manufacturing) four of the five features improved.

Table 6.7. A ranking of the scales of change in Polish manufacturing industries after the global economic crisis

Ranking position	Industry	Indicator value
1	Manufacture of metals	82.97
2	Manufacture of clothing	78.87
3	Manufacture of leather and leather products	74.94
4	Manufacture of products made of other non-metallic raw materials	69.91
5	Manufacture of textiles	68.88
6	Manufacture of beverages	68.58
7	Manufacture of wood, cork, straw and wicker products	68.36
8	Manufacture of machinery and equipment	67.60
9	Manufacture of coke and refined petroleum products	66.00
10	Printing and reproduction of recorded media	62.73
11	Manufacture of furniture	62.23
12	Manufacture of pharmaceutical products	61.09
13	Manufacture of tobacco products	57.13
14	Repair, maintenance and installation of machinery and equipment	55.83
15	Manufacture of other transport equipment	55.11
16	Manufacture of computers, electronic and optical products	51.73
17	Manufacture of motor vehicles, trailers and semi-trailers	51.44
18	Manufacture of electrical equipment	51.39
19	Manufacture of chemicals and chemical products	49.11
20	Manufacture of food products	47.64
21	Manufacture of rubber and plastic products	47.08
22	Manufacture of metal products	45.96
23	Manufacture of paper and paper products	42.68
24	Other manufacturing	33.06

Source: authors' own study based on GUS [2008, 2010] data.

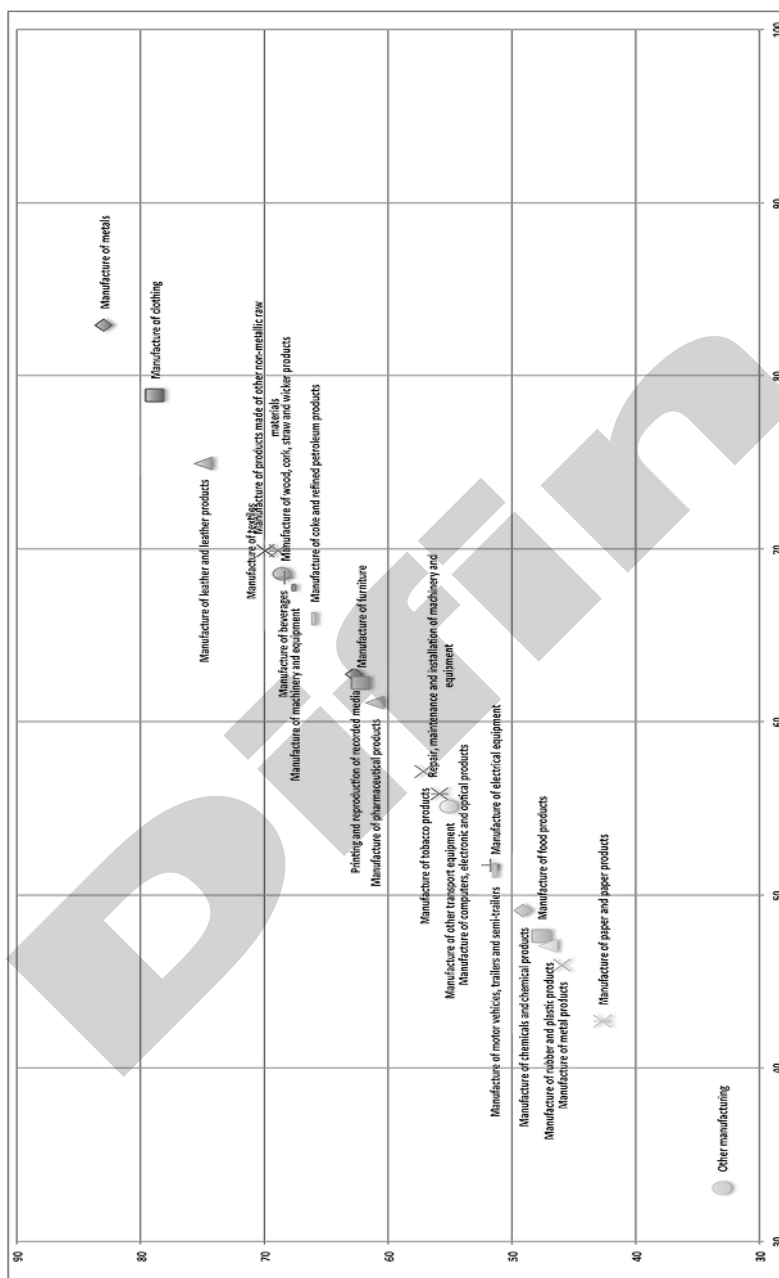


Chart 6.4. A ranking of the scales of changes in Polish manufacturing industries after the global economic crisis

Source: authors' own study based on GUS [2008, 2013] data.

Recapitulation

This chapter has presented the results of analyses aimed at identifying the countries in which the deterioration in economic conditions during and after the global economic crisis was the most and the least severe. In 2009, the largest relative declines in the features analysed were found in Estonia, Lithuania and Ireland, i.e. in countries with relatively small domestic markets and with a substantial share of exported products and services in their GDP. At the same time, the countries where the aspects under study deteriorated the least were Egypt, Mongolia and Australia. In the case of Egypt and Australia, the share of the export of goods and services in the countries' GDP was relatively small. While in Mongolia the share exceeded 50% of the country's GDP, it continued to be relatively small in nominal terms. At the same time, Poland turned out to be the European country least negatively affected by the global economic crisis.

In 2012, the biggest difficulty returning to the pre-crisis level of economic development was experienced by Greece, Spain, and Italy. These countries had serious economic and political problems. The economies which in 2012 improved their performance the most in terms of the analysed features in comparison to 2007 were Peru, Colombia, and South Korea. Once again, Poland proved to be the European country which returned to the pre-crisis level of economic development the fastest.

The research on the impact of the global economic crisis on industries examined companies operating in industries of the manufacturing section. In 2009, on average, the companies doing relatively best during the crisis were manufacturers of coke and refined petroleum products, pharmaceutical products, and products classified as "other". At the same time, the greatest average deterioration concerned manufacturers of metals, leather and leather goods, and clothing. It is also worth noting that, in 2009, a deterioration in at least a few of the aspects analysed was common among all of the sectors investigated. In 2012, the greatest average difficulty returning at least to the level of development achieved in 2007 was experienced by companies manufacturing metals, clothing, as well as leather and leather products. In the same period, in relative terms, the fastest average development was enjoyed by manufacturers of metal products, paper and paper products, and products classified as "other".

Chapter 7

The global economic crisis in selected national economies

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The present chapter focuses on the causes, the course, and the consequences of the economic crisis in particular countries identified as those that were most adversely affected by the global economic crisis and that experienced difficulty returning to the pre-crisis rate of development (see section 6.2). Additionally, the analysis covers Poland as the European country which dealt with the crisis relatively most effectively.

The following sections present the time frame, causes and manifestations of the crisis in successive economies. The analysis encompasses indicators analogous to those used in Chapter 5, such as the value of GDP, the rate of GDP growth, the value of exports, the growth rate of the value of exports, the market capitalisation of listed companies, and the growth rate of the market capitalisation of listed companies. Our discussion also takes into consideration companies. From this perspective, we discuss the impact the global economic crisis had on the economic situation of companies operating in particular countries and present the adjustment measures employed by the entities concerned.

7.1. Estonia

In 2000–2007, Estonia enjoyed an extremely dynamic economic growth. An increase in wages that was faster than productivity growth, accompanied by a double-digit

growth in Estonia's GDP, led, among other things, to an overvaluation of the Estonian currency and created a credit bubble [Gorzelak 2010, pp. 35–36]. In the case of Estonia, we can speak of the occurrence of the economic crisis in 2008, which was indicated by a 4.15% fall in the country's GDP, a reduced growth rate of the export of goods and services, more than a three-fold decrease in the market capitalisation of companies listed in Estonia, and a 0.80 percentage-point growth in the unemployment rate (see Table 7.1). This trend continued in 2009, when negative changes in GDP, in the export of goods and services, and in the unemployment rate were much greater. After 2009, the country began to slowly recover from the crisis. As part of its anti-crisis measures, the Estonian government decided to limit public spending. To this end, it introduced an austerity programme cutting pensions and public-administration spending, as well as eliminating sickness benefits for the first three days of illness. The government also obtained a loan of €550 million from the European Investment Bank (EIB) to co-finance European Union projects. It also started very actively using EU structural funds and offering export loan guarantees. The government introduced a new support system for the export companies affected the most by the crisis [Parts 2013, p. 273]. Another step taken by the Estonian authorities in response to the economic crisis was to initiate institutional reforms. These included simplifying the procedure for passing anti-crisis legislation and relaxing regulations on the involvement of state capital in companies [Gorzelak 2010, pp. 39–41; European Commission, 2011]. These actions produced partially positive results.

After 2009, the number of small and medium-sized enterprises that announced bankruptcy began to decline: 693 in 2009, 504 in 2010, and 256 in 2011. However, the number of companies going out of business was relatively small: up to 50 per 10,000 companies in 2009. This was caused by Estonian entrepreneurs' strong inclination to reorganise, rather than close, companies suffering from the crisis. According to a study by the European Commission, in 2010 as many as 63% of Estonians (with an average figure of 49% of EU citizens) believed that one should not establish a new company if the risk of failure was high. Estonia's cultural lack of tolerance towards failure is seen as a reason for local entrepreneurs' special efforts to survive [Rozeik 2013, pp. 7–9].

What is more, a study conducted by Saat, Tanning and Tanning [2013] suggests not only that, during the crisis, the number of companies that failed was very low, but also that the productivity of operating companies actually increased. This rise was particularly noticeable in the case of large enterprises which employed more than 250 people [Saat, Tanning and Tanning 2013, pp. 132–133]. What is more, some industries did not succumb to the crisis. A positive example is the transport industry, where the number of companies grew by almost 10% in 2008–2011 [Tanning and Tanning 2013, p. 135].

Table 7.1. Selected indicators of Estonia's economic activity in the years 2000–2012

Indicator	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
<i>Estonia's GDP value [2005 US\$ billion, constant prices]</i>	9.84	10.46	11.15	12.01	12.77	13.91	15.31	16.46	15.77	13.55	13.9	15.23	15.83
<i>Growth rate of Estonia's GDP</i>		6.28%	6.56%	7.77%	6.34%	8.85%	10.10%	7.49%	-4.15%	-14.10%	2.56%	9.56%	3.94%
<i>EU's GDP value [2005 US\$ billion, constant prices]</i>	12593.39	12850.26	13016.52	13209.69	13554.74	13851.35	14319.51	14777.78	14831.14	14158.62	14448.11	14685.96	14631.96
<i>Growth rate of the EU's GDP</i>		2.04%	1.29%	1.48%	2.61%	2.19%	3.38%	3.20%	0.36%	-4.53%	2.04%	1.65%	-0.37%
<i>Value of Estonia's export of goods and services [2005 US\$ billion, constant prices]</i>	7.29	7.59	7.38	7.95	9.11	10.81	11.46	11.88	12	9.45	11.69	14.42	15.24
<i>Growth rate of the value of Estonia's export of goods and services [year on year]</i>		4.02%	-2.67%	7.72%	14.53%	18.63%	6.09%	3.66%	0.99%	-21.25%	23.72%	23.36%	5.64%
<i>Value of the EU's export of goods and services [2005 US\$ billion, constant prices]</i>	4167.19	4327.2	4420.62	4508.59	4858.02	5149.76	5652.63	5975.24	6064.34	5354.35	5942.86	6319.77	6462.98
<i>Growth rate of the value of the EU's export of goods and services [year on year]</i>		3.84%	2.16%	1.99%	7.75%	6.01%	9.77%	5.71%	1.49%	-11.71%	10.99%	6.34%	2.27%
<i>Market capitalisation of listed companies in Estonia [US\$ billion, current prices]</i>	1.85	1.48	2.43	3.79	6.2	3.5	5.96	6.04	1.95	2.65	2.26	1.61	2.33

<i>Growth rate of the market capitalisation of listed companies in Estonia [year on year]</i>		-19.68%	63.89%	55.99%	63.64%	-43.65%	70.62%	1.24%	-67.69%	36.06%	-14.84%	-28.71%	44.73%
<i>Market capitalisation of listed companies in the EU [US\$ billion, current prices]</i>	8509.27	6869.37	5705.07	7932.71	9462	10211.59	13574.44	15697.71	7609.06	9880.21	10556.06	9360.26	10399.55
<i>Growth rate of the market capitalisation of listed companies in the EU [year on year]</i>		-19.27%	-16.95%	39.05%	19.28%	7.92%	32.93%	15.64%	-51.53%	29.85%	6.84%	-11.33%	11.10%
<i>Unemployment rate in Estonia [participation in the labour force, estimates of the International Labour Organisation]</i>	13.10%	12.40%	9.40%	10.70%	10.00%	7.90%	5.90%	4.70%	5.50%	13.80%	16.90%	12.50%	10.10%
<i>Changes in the unemployment rate in Estonia [year on year]</i>		-0.70%	-3.00%	1.30%	-0.70%	-2.10%	-2.00%	-1.20%	0.80%	8.30%	3.10%	-4.40%	-2.40%
<i>Unemployment rate in the EU [participation in the labour force, estimates of the International Labour Organisation]</i>	9.21%	8.66%	9.02%	9.02%	9.16%	8.92%	8.22%	7.17%	6.97%	8.95%	9.61%	9.63%	10.49%
<i>Changes in the EU's unemployment rate [year on year]</i>		-0.55%	0.36%	0.00%	0.14%	-0.24%	-0.70%	-1.05%	-0.20%	1.98%	0.66%	0.01%	0.86%

Source: authors' own study based on World Development Indicators data [date of access: October 2014].

In 2010, the value of Estonia's GDP began to rise, in 2012 reaching a level close to that from before the crisis. Having reached the highest level since 2000, unemployment started to fall, although in 2012 it was still twice as high as in the period immediately preceding the crisis. Another clearly negative indicator is the market capitalisation of listed companies, which, though preceded by a slight increase in 2009, in the years 2010–2011 was over three times as low as in 2006–2007.

In many studies, Estonia is held up as a model country that successfully weathered the latest economic crisis. However, given the selected indicators, it would be hard not to agree with Paul Krugman [2012], who pointed out that Estonia's economic performance cannot be seen as an economic triumph. This does not change the fact that, on the basis of our analyses (see section 6.2), it could be stated that Estonia was relatively successful in returning at least to the level of economic development achieved before the onset of the global economic crisis. This is particularly evident if we take into account the strength of the negative impact that the crisis had on the Estonian economy (cf Tables 6.3 and 6.4).

7.2. Lithuania

Similarly to Estonia, Lithuania reported very good economic results in the pre-crisis period. In 2004–2008, wages grew at the rate of about 16% annually [Purfield and Rosenberg 2010, p. 22]. This resulted in an excessive increase in consumption on credit. Moreover, a credit bubble formed because of property purchases on credit denominated in foreign currencies (local banks, dependent on their owners in Nordic and Western European countries, preferred to offer credit in foreign currencies). The situation was exacerbated by an overvalued Lithuanian litas and its fixed exchange rate peg to the euro [Gorzelak 2010; Račickas and Vasiliauskaitė 2010, p. 1015].

These factors contributed to the occurrence of a slight economic slowdown in 2007–2008. It was reflected in a reduced market capitalisation of listed companies and in an increased unemployment rate. Taking into account the other indicators of economic activity in Lithuania (presented in Table 7.2), we can conclude that the slowdown, as in the case of Estonia, proved to be a harbinger of the economic crisis [Račickas and Vasiliauskaitė 2010, p. 1016]. The 2009 crisis manifested itself as a decrease in GDP and in the value of the export of goods and services of more than an eighth, but also as an increase in the unemployment rate of almost 8 percentage points.

Table 7.2. Selected indicators of Lithuania's economic activity in the years 2000–2012

Indicator	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Lithuania's GDP value [2005 US\$ billion, constant prices]	17.92	19.13	20.45	22.54	24.2	26.09	28.13	30.9	31.8	27.12	27.48	29.13	30.2
Growth rate of Lithuania's GDP		6.74%	6.86%	10.25%	7.35%	7.80%	7.84%	9.84%	2.93%	-14.74%	1.33%	6.00%	3.70%
EU's GDP value [2005 US\$ billion, constant prices]	12593.39	12850.26	13016.52	13209.69	13554.74	13851.35	14319.51	14777.78	14831.14	14158.62	14448.11	14685.96	14631.96
Growth rate of the EU's GDP		2.04%	1.29%	1.48%	2.61%	2.19%	3.38%	3.20%	0.36%	-4.53%	2.04%	1.65%	-0.37%
Value of Lithuania's export of goods and services [2005 US\$ billion, constant prices]	7.85	9.52	11.37	12.15	12.69	14.94	16.73	17.23	19.22	16.77	19.51	b.d.	b.d.
Growth rate the value of Lithuania's export of goods and services [year on year]		21.22%	19.44%	6.80%	4.40%	17.74%	12.02%	2.97%	11.56%	-12.75%	16.31%	b.d.	b.d.
Value of the EU's export of goods and services [2005 US\$ billion, constant prices]	4167.19	4327.2	4420.62	4508.59	4858.02	5149.76	5652.63	5975.24	6064.34	5354.35	5942.86	6319.77	6462.98

<i>Growth rate of the value of the EU's export of goods and services [year on year]</i>		3.84%	2.16%	1.99%	7.75%	6.01%	9.77%	5.71%	1.49%	-11.71%	10.99%	6.34%	2.27%
<i>Market capitalisation of listed companies in Lithuania [US\$ billion, current prices]</i>	1.59	1.2	1.46	3.51	6.46	8.18	10.19	10.13	3.62	4.48	5.66	4.08	3.96
<i>Growth rate of the market capitalisation of listed companies in Lithuania [year on year]</i>		-24.45%	21.94%	140.01%	84.11%	26.61%	24.54%	-0.55%	-64.23%	23.49%	26.46%	-28.01%	-2.74%
<i>Market capitalisation of listed companies in the EU [US\$ billion, current prices]</i>	8509.27	6869.37	5705.07	7932.71	9462	10211.59	13574.44	15697.71	7609.06	9880.21	10556.06	9360.26	10399.55
<i>Growth rate of the market capitalisation of listed companies in the EU [year on year]</i>		-19.27%	-16.95%	39.05%	19.28%	7.92%	32.93%	15.64%	-51.53%	29.85%	6.84%	-11.33%	11.10%
<i>Unemployment rate in Lithuania [participation in the labour force, estimates of the</i>	15.90%	16.80%	13.00%	12.90%	11.30%	8.30%	5.60%	4.30%	5.80%	13.70%	17.80%	15.30%	13.20%

[illegible]

Source: authors' own study based on World Development Indicators data [date of access: October 2014].

Similarly to Estonia, after 2009 Lithuania began to report a better economic performance. The country increased public spending, launching several construction projects. It introduced a series of austerity measures such as increasing taxes and reducing public-sector wages by about 10–20%. It also offered a package of facilitation measures for entrepreneurs, including the possibility of introducing more flexible forms of employment. Additionally, the government began to make greater use of EU funds [Gorzalak 2010, p. 41; Purfield and Rosenberg 2010, pp. 20–21].

A study conducted by the World Bank found that in 2008 Lithuanian companies were hit by a significant reduction in demand and a resultant 48% decline in sales. In the face of declining revenues, entrepreneurs encountered problems with liquidity. The disturbances caused delays in payments made to the tax authorities and suppliers. More than 50% of Lithuanian companies reported payment delays of more than a week at that time. Half of these companies belonged to the construction industry, which was heavily hit by the crisis. In 2009, as part of remedial measures, almost a quarter of companies restructured their debt. In the chemical industry, the figure reached 31%, and in the electronics industry as much as 71% [Correa and Iootty 2010, pp. 7–12].

The financial crisis affected also the innovativeness of Lithuanian enterprises. Research conducted by Krusinskas, Lakstutiene and Norvaisiene [2015] points to the fact that in 2008–2010, only 59% of high-tech companies introduced innovations into their technological processes. In the years preceding the crisis, the indicator remained at 87%. The economic downturn caused both high-tech and services companies to focus to a larger extent on product innovation. Furthermore, Lithuanian companies' spending on research and development decreased by 7.7% in 2008 and accounted for about 0.20% of GDP, while the EU average was 1.20% [Krusinskas, Lakstutiene and Norvaisiene 2015, pp. 1014–1017].

The package of measures adopted by the government partially mitigated the effects of the crisis. After 2009, the market capitalisation of listed companies did not fall to the 2008 level, although it did not reach even half of its pre-crisis value. Similar observations can be made about the unemployment rate. Despite some improvement in this area, the unemployment rate in 2011–2012 remained three times as high as in 2006–2008. Among the indicators analysed, only the 2012 GDP value was close to that in 2007–2008. The growth rate of GDP, however, remained at a considerably lower level (approximately 3.7%) than Lithuania's rate of economic growth in 2001–2007.

7.3. Ireland

Significant negative changes in Ireland's economic indicators could be seen from 2008 onwards. Particularly unfavourable was the rate and direction of changes in the value of the market capitalisation of listed companies and in the level of unemployment. In 2009, the latter reached 12%, an increase of six percentage points on the previous year. From 2011 onwards, positive trends could be observed: GDP, the value of exported goods and services, as well as the market capitalisation of listed companies were higher than the year before. The problem that remained, however, was the high rate of unemployment.

Contrary to common opinions, the economic crisis in Ireland was not just transferred from other European countries, but was also caused by a classic speculative bubble in the housing market (see Chapter 3). According to available statistical data, property prices in Ireland were already falling when North America's largest banks were collapsing [European Commission 2012]. Ireland's credit to bank deposit ratio was 2:1, which illustrates the carelessness of the country's banking sector. The crisis was also caused by the wrong, overoptimistic policy of the central bank and the financial supervision authority. Neither institution warned in its reports of the worrying values of macro- and microeconomic indicators. In addition, governments' pro-cyclical policies, based on subsidies for the property market only aggravated the already difficult state of affairs.

In the years 2010–2013, Ireland received from the euro zone €85 billion of financial support, which was used to raise its economy's competitiveness. Average wages in Ireland dropped significantly, although the corporate income tax was not raised, which attracted the attention of foreign investors. In 2011, it was forecast that Ireland would become one of the fastest developing economies among those affected by the crisis, and the country was held up as an example of how to make use of financial assistance effectively [NBP 2011]. Nonetheless, 2012 data suggest that the country had considerable difficulty returning at least to the pre-crisis level of economic development (see section 6.2). Countries such as Estonia, Iceland and Portugal did much better in this respect (see Chart 6.2).

The situation of Irish companies during the crisis has been examined from different perspectives, including by Lawless and McCann [2013], who analysed the structure of loans given to small and medium-sized enterprises. Using secondary data on loans granted to small and medium-sized enterprises in 2008–2010 (by quarter), the researchers analysed the level, purpose, and repayment efficiency of loans by sector. The result of their empirical research suggested that the main factor influencing the efficiency of long-term loans was changes in the employment structure of particular sectors. Godart, Gorg and Aoife [2011] studied differences in

Table 7.3. Selected indicators of Ireland's economic activity in the years 2000–2012

Indicator	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
<i>Ireland's GDP value [2005 US\$ billion, constant prices]</i>	159.64	167.60	176.68	183.27	190.97	202.58	213.73	224.35	219.51	205.49	203.31	207.72	208.04
<i>Growth rate of Ireland's GDP</i>		4.99%	5.42%	3.73%	4.20%	6.08%	5.51%	4.97%	-2.16%	-6.38%	-1.06%	2.17%	0.16%
<i>EU's GDP value [2005 US\$ billion, constant prices]</i>	12593.39	12850.26	13016.52	13209.69	13554.74	13851.35	14319.51	14777.78	14831.14	14158.62	14448.11	14685.96	14631.96
<i>Growth rate of the EU's GDP</i>		2.04%	1.29%	1.48%	2.61%	2.19%	3.38%	3.20%	0.36%	-4.53%	2.04%	1.65%	-0.37%
<i>Value of Ireland's export of goods and services [2005 US\$ billion, constant prices]</i>	128.02	138.88	145.65	146.64	157.81	164.81	173.06	187.53	185.45	178.35	189.78	199.95	203.07
<i>Growth rate of the value of Ireland's export of goods and services [year on year]</i>		8.48%	4.88%	0.68%	7.61%	4.44%	5.01%	8.36%	-1.11%	-3.83%	6.41%	5.36%	1.56%
<i>Value of the EU's export of goods and services [2005 US\$ billion, constant prices]</i>	4167.19	4327.20	4420.62	4508.59	4858.02	5149.76	5652.63	5975.24	6064.34	5354.35	5942.86	6319.77	6462.98

<i>Growth rate of the value of the EU's export of goods and services [year on year]</i>	3.84%	2.16%	1.99%	7.75%	6.01%	9.77%	5.71%	1.49%	-11.71%	10.99%	6.34%	2.27%
<i>Market capitalisation of listed companies in Ireland [US\$ billion, current prices]</i>	81.88	75.30	60.38	85.07	114.09	114.13	163.36	144.03	49.40	61.29	108.05	109.01
<i>Growth rate of the market capitalisation of listed companies in Ireland [year on year]</i>	-8.04%	-19.81%	40.88%	34.11%	0.04%	43.13%	-11.83%	-65.70%	24.07%	-1.37%	78.75%	0.89%
<i>Market capitalisation of listed companies in the EU [US\$ billion, current prices]</i>	8509.27	6869.37	5705.07	7932.71	9462.00	10211.59	13574.44	15697.71	7609.06	9880.21	9360.26	10399.55
<i>Growth rate of the market capitalisation of listed companies in the EU [year on year]</i>	-19.27%	-16.95%	39.05%	19.28%	7.92%	32.93%	15.64%	-51.53%	29.85%	6.84%	-11.33%	11.10%
<i>Unemployment rate in Ireland [participation in the labour force, estimates of the International Labour Organisation]</i>	4.30%	3.70%	4.20%	4.50%	4.30%	4.30%	4.40%	4.60%	6.00%	12.00%	14.60%	14.70%

<i>Changes in the unemployment rate in Ireland [year on year]</i>		-0.60%	0.50%	0.30%	0.00%	-0.20%	0.10%	0.20%	1.40%	6.00%	1.90%	0.70%	0.10%
<i>Unemployment rate in the EU [participation in the labour force, estimates of the International Labour Organisation]</i>	9.21%	8.66%	9.02%	9.02%	9.16%	8.92%	8.22%	7.17%	6.97%	8.95%	9.61%	9.63%	10.49%
<i>Changes in the EU's unemployment rate [year on year]</i>		-0.55%	0.36%	0.00%	0.14%	-0.24%	-0.70%	-1.05%	-0.20%	1.98%	0.66%	0.01%	0.86%

Source: authors' own study based on World Development Indicators data [date of access: September 2014].

the behaviour of local companies and international corporations in the Irish market in 2008–2010. Their goal was to determine whether legal regulations regarding domestic and foreign entities should be identical. Using secondary data from the Amadeus database, they isolated 22,428 domestic companies and 1,727 foreign ones from both the service sector and the manufacturing sector. In their conclusions, Godart, Gorg and Aoife pointed out that their statistical analyses did not reveal any major differences in companies' strategy or behaviour, regardless of their origin, and suggested that no differentiation of legal regulations was needed.

7.4. Spain

Spain is one of those countries which experienced adverse changes in their economic situation relatively early, namely in 2008. Virtually all the indicators analysed in Table 7.4 deteriorated: the GDP value, the value of the export of goods and services, the market capitalisation of listed companies, and the unemployment rate. The indicators for Spain and the entire European Union show similar trends. It is worth noting, however, that the market capitalisation of listed companies in Spain was falling even in 2010–2012, and that the rate of these changes was increasingly smaller. Extremely unfavourable conditions included also Spain's unemployment rate, which started increasing in 2008 and crossed the threshold of 25% in 2012, while the EU average at the time was 10.49%.

The origin and course of the crisis in Spain were not surprising. Because of the economic boom of 2004–2007, it was decided in 2006 to liberalise construction-market regulations. This resulted in a significant increase in the sales of homes, many of which were purchased as an investment. The increase in demand for homes caused a parallel increase in demand for credit to finance these investments. The result was a speculative bubble in the property market (see Chapter 3 for more details), which burst in 2008. House prices fell dramatically, and unemployment increased substantially, especially in the construction sector [Sudria 2014]. The scale of the problem is reflected by changes in the number of people employed in the construction industry: in 2007 the industry employed 2.78 million people, and in 2012 just 1.16 million [INE 2014]. The indebted banking sector received a €100-billion bailout from the euro zone [European Commission 2014].

Additionally, the Spanish economy was extremely vulnerable to shocks caused by the global economic crisis, as it remained the EU's second country (after Germany) most open to trade cooperation with abroad. As a result, changes in the international arena had a powerful effect on Spain's social and economic policy.

Table 7.4. Selected indicators of Spain's economic activity in the years 2000–2012

Indicator	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Spain's GDP value [2005 US\$ billion, constant prices]	963.13	998.48	1025.54	1057.22	1091.68	1130.80	1176.89	1217.84	1228.70	1181.61	1179.23	1179.83	1160.46
Growth rate of Spain's GDP		3.67%	2.71%	3.09%	3.26%	3.58%	4.08%	3.48%	0.89%	-3.83%	-0.20%	0.03%	-1.64%
EU's GDP value [2005 US\$ billion, constant prices]	12593.39	12850.26	13016.52	13209.69	13554.74	13851.35	14319.51	14777.78	14831.14	14158.62	14448.11	14685.96	14631.96
Growth rate of the EU's GDP		2.04%	1.29%	1.48%	2.61%	2.19%	3.38%	3.20%	0.36%	-4.53%	2.04%	1.65%	-0.37%
Value of Spain's export of goods and services [2005 US\$ billion, constant prices]	246.72	257.04	262.07	271.68	283.04	290.24	309.66	330.47	327.10	294.37	328.82	353.85	361.31
Growth rate of the value of Spain's export of goods and services [year on year]		4.18%	1.96%	3.67%	4.18%	2.54%	6.69%	6.72%	-1.02%	-10.01%	11.70%	7.61%	2.11%
Value of the EU's export of goods and services [2005 US\$ billion, constant prices]	4167.19	4327.20	4420.62	4508.59	4858.02	5149.76	5652.63	5975.24	6064.34	5354.35	5942.86	6319.77	6462.98
Growth rate of the value of the EU's export of goods and services [year on year]		3.84%	2.16%	1.99%	7.75%	6.01%	9.77%	5.71%	1.49%	-11.71%	10.99%	6.34%	2.27%
Market capitalisation of listed companies in Spain [US\$ billion, current prices]	504.22	468.20	465.00	736.24	940.67	960.02	1323.09	1800.10	946.11	1297.23	1171.61	1030.95	995.09

<i>Growth rate of the market capitalisation of listed companies in Spain [year on year]</i>		-7.14%	-0.68%	56.18%	29.51%	2.06%	37.82%	36.05%	-47.44%	37.11%	-9.68%	-12.01%	-3.48%
<i>Market capitalisation of listed companies in the EU [US\$ billion, current prices]</i>	8509.27	6869.37	5705.07	7932.71	9462.00	10211.59	13574.44	15697.71	7609.06	9880.21	10556.06	9360.26	10399.55
<i>Growth rate of the market capitalisation of listed companies in the EU [year on year]</i>		-19.27%	-16.95%	39.05%	19.23%	7.92%	32.93%	15.64%	-51.53%	29.85%	6.84%	-11.33%	11.10%
<i>Unemployment rate in Spain [participation in the labour force, estimates of the International Labour Organisation]</i>	14.20%	10.60%	11.50%	11.50%	11.10%	9.30%	8.60%	8.40%	11.50%	18.10%	20.20%	21.80%	25.20%
<i>Changes in the unemployment rate in Spain [year on year]</i>		-3.60%	0.90%	0.00%	-0.40%	-1.80%	-0.70%	-0.20%	3.10%	6.60%	2.10%	1.60%	3.40%
<i>Unemployment rate in the EU [participation in the labour force, estimates of the International Labour Organisation]</i>	9.21%	8.66%	9.02%	9.02%	9.16%	8.92%	8.22%	7.17%	6.97%	8.95%	9.61%	9.63%	10.49%
<i>Changes in the EU's unemployment rate [year on year]</i>		-0.55%	0.36%	0.00%	0.14%	-0.24%	-0.70%	-1.05%	-0.20%	1.98%	0.66%	0.01%	0.86%

Source: authors' own study based on World Development Indicators data [date of access: September 2014].

In 2008, in response to the economic crisis, Prime Minister José Luis Rodríguez Zapatero introduced a stabilisation package to neutralise its negative impact on the economy. It was referred to as Plan E, although the full name was *Spanish Stimulus Plan for Growth and Jobs*. It consisted of four pillars: supporting families and businesses, reducing the rate of unemployment, supporting the economy with fiscal measures, and modernising the economy [Bernardino and de Vidades Carrasco 2014].

Very few studies focus directly on the impact that the crisis had on company activities in Spain. Most of them address the issue only indirectly, e.g. by analysing the influence of Plan E on the economy [Marczak 2011]. The situation of small and medium-sized enterprises has been analysed directly by Kokocińska and Rekowski [2013], and in regional terms by Li, Roca and Papaoikonomou [2011]. Kokocińska and Rekowski [2013] discuss the issue of changes in the employment structure of small and medium-sized enterprises in 2003–2010, comparing it with the situation in Poland, the UK, France, Germany, and Italy. The authors carry out a similar analysis of employee productivity in particular countries. Their conclusions refer separately to three groups of companies: micro, small, and medium-sized enterprises. In the period under investigation, the most stable situation was that of medium-sized enterprises, both in terms of employment and productivity. Empirical research results show that companies in Spain were characterised by the greatest fluctuations in this respect.

Li, Roca and Papaoikonomou [2011] studied trends in the agricultural and furniture sectors before and during the crisis (2004–2008) in Spain, especially in Catalonia. Their research sample comprised 786 agricultural-sector companies and 632 furniture-sector companies employing 3–100 people⁸⁰. The focus of analysis was the companies' financial statements from the above period. Both sectors proved to be very vulnerable to the effects of the crisis, as evidenced by their liquidity, profit rate, and cost structure.

7.5. The UK

The British economy is largely based on services, whose substantial share in the British GDP can be attributed mainly to the financial sector [Lechowicz 2013]. In the 1990s and 2000s, this industry brought Britain massive profits, which were then consumed or invested, among other things in property. Increased demand in the construction market and too little supply led to a significant appreciation in

⁸⁰ The research concerned only small and medium-sized enterprises. Companies employing 3–100 people accounted for over 70% of companies in the region.

property prices. This, in turn, raised an interest in credit for consumption and speculation, among both households and companies. Before long, a speculative bubble formed [Lechowicz 2013, pp. 92–93].

The ongoing global economic crisis and the phenomena described above slowed down the growth of the British economy in 2008. As can be seen in Table 7.5, that year the market capitalisation of listed companies dropped by half. The phenomenon, accompanied by a slight decrease in GDP, was a harbinger of a looming economic crisis. In 2009, the unemployment rate increased by 2.4 percentage points; the value of exported goods and services and the value of GDP declined by just over 8 and 5 percentage points, respectively.

Anti-crisis measures in the UK focused mainly on the financial sector. Most of all, the government intended to eliminate the risk of banks' insolvency by, among other things, increasing government deposit guarantees and lowering interest rates. It also introduced a number of savings: it limited government department budgets and reduced the nominal growth in benefits to 1% per year (with a 3% inflation rate). In addition, the government proposed a package supporting the competitiveness of small and medium-sized enterprises, including easier access to EIB loans through British banks, the ability for companies operating in the market for at least five years to obtain greater credit, and a programme of temporary guarantees for small exporters. Although the rescue plan ate up US\$700 billion, it did not produce as spectacular results as expected [Lechowicz 2013, pp. 99–100; Ministry of Economy, 2009, pp. 29–30].

According to a study by Ullah, North and Baldock [2011, p. 9], as many as 34% of small and medium-sized high-tech enterprises reported a significant drop in demand in 2007–2010, and a quarter of them suffered from limited access to external finance. These results are confirmed by research conducted by the OECD and the British Chambers of Commerce: in 2008, 54% of small and medium-sized enterprises received far fewer orders than in previous years. Only 13% of companies reported an increase in their number [OECD 2009, p. 18]. Bank of England data from 2014, in turn, point to a 16% decrease in the productivity of British companies in relation to the pre-crisis period [Barnett et al. 2014, p. 114]. Interestingly, as early as 2008, the productivity of companies in the UK was estimated to be about 15% lower than in the US and 10% lower than in Germany [Vaitilingam 2009, p. 30]. Disturbing data appear also in studies on company bankruptcies in the UK during the crisis. Compared to 2006, the number of company bankruptcies in 2008 and 2011 was, respectively, 30% and 50% higher. This strong growth trend continued until 2012 [OECD 2014, pp. 18–19].

The crisis also led to a decrease in the number of newly established limited liability companies. A study by Klapper and Love [2010] suggests that in 2008 their number dropped to 372,400, and in the following year fell by another 42,300 (in contrast, the 2007 figure was 449,700) [Klapper and Love 2010, p. 12].

Table 7.5. Selected indicators of the UK's economic activity in the years 2000–2012

Indicator	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
UK's GDP value (2005 US\$ billion, constant prices)	2005.8	2049.62	2096.67	2179.46	2248.62	2321.36	2385.31	2467.06	2448.08	2321.5	2360.03	2386.4	2393.03
Growth rate of the UK's GDP		2.18%	2.30%	3.95%	3.17%	3.23%	2.76%	3.43%	-0.77%	-5.17%	1.66%	1.12%	0.28%
EU's GDP value (2005 US\$ billion, constant prices)	12593.39	12850.26	13016.52	13209.69	13554.74	13851.35	14319.51	14777.78	14831.14	14158.62	14448.11	14685.96	14631.96
Growth rate of the EU's GDP		2.04%	1.29%	1.48%	2.61%	2.19%	3.38%	3.20%	0.36%	-4.53%	2.04%	1.65%	-0.37%
Value of the UK's export of goods and services (2005 US\$ billion, constant prices)	503.74	515.66	525.45	540.38	566.59	617.9	692.13	677.94	685.11	625.7	667.45	697.22	709.32
Growth rate of the value of the UK's export of goods and services (year on year)		2.37%	1.90%	2.84%	4.85%	9.06%	12.01%	-2.05%	1.06%	-8.67%	6.67%	4.46%	1.74%
Value of the EU's export of goods and services (2005 US\$ billion, constant prices)	4167.19	4327.2	4420.62	4508.59	4858.02	5149.76	5652.63	5975.24	6064.34	5354.35	5942.86	6319.77	6462.98
Growth rate of the value of the EU's export of goods and services (year on year)		3.84%	2.16%	1.99%	7.75%	6.01%	9.77%	5.71%	1.49%	-11.71%	10.99%	6.34%	2.27%
Market capitalisation of listed companies in the UK (US\$ billion, current prices)	2576.99	2164.72	1864.26	2460.06	2815.93	3058.18	3794.31	3858.51	1851.95	2796.44	3107.04	2903.18	3019.47

<i>Growth rate of the market capitalisation of listed companies in the UK [year on year]</i>		-16.00%	-13.88%	31.96%	14.47%	8.60%	24.07%	1.69%	-52.00%	51.00%	11.11%	-6.56%	4.01%
<i>Market capitalisation of listed companies in the EU [US\$ billion, current prices]</i>	8509.27	6869.37	5705.07	7932.71	9462	10211.59	13574.44	15697.71	7609.06	9880.21	10556.06	9360.26	10399.55
<i>Growth rate of the market capitalisation of listed companies in the EU [year on year]</i>		-19.27%	-16.95%	39.05%	19.28%	7.92%	32.93%	15.64%	-51.53%	29.85%	6.84%	-11.33%	11.10%
<i>Unemployment rate in the UK [participation in the labour force, estimates of the International Labour Organisation]</i>	5.60%	4.80%	5.10%	4.90%	4.70%	4.70%	5.50%	5.40%	5.40%	7.80%	7.80%	7.90%	7.90%
<i>Changes in the unemployment rate in the UK [year on year]</i>		-0.80%	0.30%	-0.20%	-0.20%	0.00%	0.80%	-0.10%	0.00%	2.40%	0.00%	0.10%	0.00%
<i>Unemployment rate in the EU [participation in the labour force, estimates of the International Labour Organisation]</i>	9.21%	8.66%	9.02%	9.02%	9.16%	8.92%	8.22%	7.17%	6.97%	8.95%	9.61%	9.63%	10.49%
<i>Changes in the EU's unemployment rate [year on year]</i>		-0.55%	0.36%	0.00%	0.14%	-0.24%	-0.70%	-1.05%	-0.20%	1.98%	0.66%	0.01%	0.86%

Source: authors' own study based on World Development Indicators data [date of access: October 2014].

After 2009, the economic performance of the UK began to improve. The values of GDP and the export of goods and services started to grow again year on year, and the unemployment rate decreased slightly. However, the pace of these changes was definitely slower than the growth rate of the economy from before the global economic crisis. In comparison, in 2007–2009 the growth rate of the UK's GDP was much lower than the growth achieved in 2010–2012. The country's difficulty in returning at least to the pre-crisis level of economic development is also shown in Table 6.2.

7.6. Finland

Although the Finnish economy was one of the most competitive in the European Union, the economic crisis caused its slump in 2009 [Index Mundi 2014]. This was not, however, the first crisis to hit Finland's economy so hard. In 1990–1993, the country's GDP declined significantly owing to an expansionary monetary policy and an excessive liberalisation of the capital market, particularly financial institutions' credit policy [Miyagawa and Morita 2009]. As for the global economic crisis, the negative development of key economic indicators in Finland occurred with some delay (see Table 7.6). In 2008, Finland's GDP growth slowed to 0.29%, and in 2009 it reached -8.54% [World Development Indicators 2014]. The decline in Finland's GDP was the largest since the civil war of 1918 [Repo 2010]. One of the key causes of such a considerable drop was the Finnish economy's strong dependence on export, resulting from the country's small domestic market [Repo 2010]. The value of Finland's export of goods and services decreased by over 21% in 2009 [World Development Indicators 2014]. In the following year, the economic situation improved, which was associated with an increase in foreign trade, as well as in inward and outward foreign investment. The recovery in export sales was an effect of Finland's relatively small dependence on trade with euro-zone countries [Moulds 2012]. On the other hand, its dependence on the Baltic states and G7 countries limited the growth potential of Finnish export sales [Steinbock 2011]. One of the indicators that reacted the fastest to world-economy phenomena was the market capitalisation of Finnish listed companies, which as early as 2008 decreased by 58.19% in relation to the previous year, only to continue its downward trend in the following year to the level of -41.04% [World Development Indicators 2014].

An unfavourable situation persisted also in the labour market, which reported an increase in unemployment in 2009–2010. A high level of unemployment limited the purchasing power of households, and lower consumption translated into

a slow GDP growth (see Table 7.6). A relatively slow recovery from the effects of the crisis was also caused by a decreased competitiveness of key export industries stemming from a 20% increase in the unit cost of labour in 2007–2011 [The Economist 2012]. The Finnish government raised VAT in 2010, although it simultaneously continued reducing income tax until 2011 [Laitamäki and Järvinen, 2013].

Despite a phase of economic growth in 2010–2011, the debt crisis in the euro zone had an adverse impact on the Finnish economy.⁸¹ In its struggle with a budget deficit, Finland did turn out to be particularly effective in comparison with other euro-zone countries: it met EU guidelines in this respect and maintained a high credit rating of triple A [Index Mundi 2014; Moulds 2012]. In 2012, however, there was another decline in GDP, the unemployment rate continued to be higher than before 2009, and indicators relating to the internationalisation of the Finnish economy once again detected negative changes (see Table 7.6). In particular, a limited inflow of foreign direct investment into Finland pointed, on the one hand, to this economy's persistent vulnerability to the recession in the euro zone, and on the other hand, to the necessity of intensifying support for inward foreign investment, including through the development of the Finnish innovation system [Steinbock 2011].

Cross-sectorally, during the economic crisis, companies from Finland's traditional export sectors reported the greatest decreases in their competitiveness. This concerned, in particular, the telecommunications sector, paper manufacturing, and shipbuilding [IHS Global 2014]. Additionally, in 2009 in Finland, companies' turnover in the industrial sector fell by 15.3% in comparison with the previous year, with companies from the electronic and electrical sectors reporting a decline of 33.1%, and those from the metallurgy industry of 21.1% [Statistics Finland 2010].

As early as 2008, the economic crisis contributed to a 2.2% decline in the number of newly established enterprises in relation to the previous year, while the number of company closures in the same period increased by 17.1% [Statistics Finland 2009]. In particular, small and medium-sized enterprises in Finland experienced limited access to credit, sometimes having to ask the government for financial assistance [OECD 2012].⁸² The proportion of companies facing unfavourable financing terms was 28% in 2009 and 24% in 2010. In addition, 2008–2009 saw a significant decrease in venture capital funding for new business projects [OECD 2012, p. 67]. When the impact of the crisis in Finland was at its peak in 2009, 21% of small and medium-sized enterprises reported liquidity problems,

⁸¹ The Finnish authorities adopted a critical stance towards providing assistance for the most indebted economies, thereby encouraging speculation about the possibility of Finland's leaving the euro zone [Raik 2013].

⁸² The share of small and medium-sized enterprises in Finland's loans fell from 27.1% in 2007 to 14.4% in 2010 [OECD 2012].

Table 7.6. Selected indicators of Finland's economic activity in the years 2000–2012

Indicator	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Finland's GDP value (2005 US\$ billion, constant prices)	171.94	175.87	179.09	182.69	190.23	195.78	204.41	215.32	215.95	197.51	204.15	209.92	207.81
Growth rate of Finland's GDP		2.28%	1.83%	2.01%	4.12%	2.92%	4.41%	5.34%	0.29%	-8.54%	3.36%	2.82%	-1.01%
EU's GDP value (2005 US\$ billion, constant prices)	12593.39	12850.26	13016.52	13209.69	13554.74	13851.35	14319.51	14777.78	14831.14	14158.62	14448.11	14685.96	14631.96
Growth rate of the EU's GDP		2.04%	1.29%	1.48%	2.61%	2.19%	3.38%	3.20%	0.36%	-4.53%	2.04%	1.65%	-0.37%
Value of Finland's export of goods and services (2005 US\$ billion, constant prices)	68.49	69.67	72	70.63	76.4	81.76	91.7	99.19	104.97	82.6	89.14	91.61	91.42
Growth rate of the value of Finland's export of goods and services [year on year]		1.71%	3.35%	-1.90%	8.17%	7.02%	12.15%	8.17%	5.82%	-21.31%	7.92%	2.76%	-0.21%
Value of the EU's export of goods and services (2005 US\$ billion, constant prices)	4167.19	4327.2	4420.62	4508.59	4858.02	5149.76	5652.63	5975.24	6064.34	5354.35	5942.86	6319.77	6462.98
Growth rate of the value of the EU's export of goods and services [year on year]		3.84%	2.16%	1.99%	7.75%	6.01%	9.77%	5.71%	1.49%	-11.71%	10.99%	6.34%	2.27%
Market capitalisation of listed companies in Finland (US\$ billion, current prices)	293.63	190.46	138.83	170.28	183.77	209.5	265.48	369.17	154.37	91.02	118.16	143.08	158.69

<i>Growth rate of the market capitalisation of listed companies in Finland [year on year]</i>	-35.14%	-27.11%	22.65%	7.92%	14.01%	26.72%	39.06%	-58.19%	-41.04%	29.82%	21.09%	10.91%
<i>Market capitalisation of listed companies in the EU [US\$ billion, current prices]</i>	8509.27	6869.37	5705.07	7932.71	9462	10211.59	13574.44	15697.71	7609.06	9880.21	9360.26	10399.55
<i>Growth rate of the market capitalisation of listed companies in the EU [year on year]</i>	-19.27%	-16.95%	39.05%	19.28%	7.92%	32.93%	15.64%	-51.53%	29.85%	6.84%	-11.33%	11.10%
<i>Unemployment rate in Finland [participation in the labour force, estimates of the International Labour Organisation]</i>	9.70%	9.10%	9.00%	9.00%	8.80%	8.40%	7.60%	6.80%	6.30%	8.20%	7.70%	7.60%
<i>Changes in the unemployment rate in Finland [year on year]</i>	-0.60%	-0.10%	0.00%	-0.20%	-0.40%	-0.80%	-0.80%	-0.80%	-0.50%	1.90%	-0.70%	-0.10%
<i>Unemployment rate in the EU [participation in the labour force, estimates of the International Labour Organisation]</i>	9.21%	8.66%	9.02%	9.02%	9.16%	8.92%	8.22%	7.17%	6.97%	8.95%	9.63%	10.49%
<i>Changes in the EU's unemployment rate [year on year]</i>	-0.55%	0.36%	0.00%	0.14%	-0.24%	-0.70%	-1.05%	-0.20%	1.98%	0.66%	0.01%	0.86%

Source: authors' own study based on World Development Indicators data [date of access: September 2014].

which afflicted especially the smallest firms. Owing to difficulty in investment project funding and uncertainty in the business environment, many Finnish companies suspended their long-term investment projects [OECD 2013]. During the downturn, Finnvera, a government agency established to finance export activities and promote entrepreneurship, served as a source of financial support. As a result, loan guarantees targeted at enterprises hit by the economic crisis increased from about €1.49 billion in 2007 to over €4 billion per year in 2008–2011 [OECD 2013, p. 102]⁸³. Although the solvency of Finland's financial institutions themselves remained at a safe level, dividends and new share issues were limited by Finnish banks due to their decreasing profits [Tervanen 2009].

Case studies of three Finnish companies suggest that, during the crisis, some Finnish companies limited investment in the development of human resources [Lähteenmäki and Viljanen 2009]. At the same time, the economic crisis served as a justification for changes in HRM strategy which were hard to accept by employees, and as an opportunity to increase the flexibility of employment policy. In fact, massive redundancies were made by leading companies in key export sectors, in particular by Nokia, Stora Enso, Componenta, and Metso [Viita 2012]. The economic crisis also manifested itself in a lower number of innovations developed by foreign subsidiaries of Finnish parent companies. Dachs, Stehrer and Zahradnik [2014, p. 191] point to the fact that, between 2007 and 2009, the number of Finnish companies' patents filed abroad fell by 8% compared to 1% in the case of German companies in the same period.

7.7. Italy

Although the first changes in Italy's economic situation could be seen as early as 2008, a significant deterioration in economic indicators took place in 2009, when the country's GDP fell by 5.49% in relation to the previous year, and the value of exported goods and services dropped by 17.51%. In 2010–2011, Italy saw another increase in the values of the indicators investigated: GDP, exports, and market capitalisation of listed companies. However, in 2012 this trend was not sustained, and the rate of development was negative again. Unlike Spain and Ireland, Italy kept the unemployment rate lower than the European Union average. In 2012, however, there was a noticeable increase (of 2.3 percentage points), which caused Italy's unemployment rate to exceed the EU average.

In 1992, Italy's public debt exceeded its GDP. Since then, the situation has not improved, and in 2010 the value of the debt was over 120% of GDP. A similar

⁸³ Between 2007 and 2009, the value of export credit guarantees for small and medium-sized enterprises in Finland doubled [OECD 2013].

situation was observed in Greece, but from the European perspective the scale of the Italian problem was much greater because Italy remained the third largest economy in the euro zone (after Germany and France). The problem with the Italian economy, as opposed to Spain's for instance, was not loans and credit incurred by citizens, but a growing sovereign debt caused by the need to settle existing financial obligations [Di Mascio, Natalini and Stolfi 2013]. As indicated in Table 7.7, Italy's GDP growth rate had been rather modest since 2000. This meant that requesting other loans, without limiting government spending, was virtually the only way to service the existing debt [Di Mascio, Natalini and Stolfi 2013]. In 2011, debt servicing was no longer possible, and Italy lost control of financial markets. This resulted in a considerable decline in investment (27.6%), especially foreign [Di Mascio, Natalini and Stolfi 2013]. At the same time, industrial output decreased by 24%, and more than 30,000 companies went out of business [Erixon 2012]. In effect, unemployment increased dramatically, exceeding 12% in 2012. To save the Italian economy, EU banks gave Italy over €600 billion in loans, of which €200 billion was granted to the government, €110 billion to the banking sector, and €300 billion to companies [Erixon 2012].

The situation of Italian companies and the influence of the crisis on their activities were studied, among others, by Giacosa and Mazzoleni [2011], who examined corporate strategy during the crisis. Giacosa and Mazzoleni [2011] analysed 98 Italian private companies which in 2009–2010 started restructuring their facilities in response to an unfavourable economic situation. The companies represented various sectors, but the majority of them manufactured clothing and footwear. The study focused on strategic changes and the effectiveness of their implementation in crisis conditions. Of the 98 companies surveyed, only 34 managed to satisfactorily change corporate strategy; the other restructuring projects resulted either in bankruptcy (six companies) or in the need to implement a new plan. Questioned about the cause of their growing problems, the companies always cited a loss in shareholder confidence and liquidity problems, while only 62% of them pointed to increasing economic difficulty.

Ferragina et al. [2012] investigated the relationship between companies' international operations and the bankruptcy rate among manufacturing companies in Italy in 2002–2010. The study was divided into two periods: before the crisis, covering the years 2002–2007, and during the crisis, spanning the years 2008–2010. In their analysis, the authors used secondary data from the Capitalia, AIDA and Mint-Italy databases. Their main interest was to find how companies' size, age, and financial situation influenced their foreign operations, and how this translated into their behaviour in the domestic market. In their conclusions, Ferragina et al. stress that companies involved only in exporting their products, without investing their capital in foreign markets, fared much better during the crisis than entities with a high level of internationalisation.

Table 7.7. Selected indicators of Italy's economic activity in the years 2000–2012

Indicator	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Italy's GDP value [2005 US\$ billion, constant prices]	1700.99	1732.67	1740.50	1739.69	1769.79	1786.28	1825.55	1856.28	1834.82	1734.00	1763.89	1771.81	1729.86
Growth rate of Italy's GDP		1.86%	0.45%	-0.05%	1.73%	0.93%	2.20%	1.68%	-1.16%	-5.49%	1.72%	0.45%	-2.37%
EU's GDP value [2005 US\$ billion, constant prices]	12593.39	12850.26	13016.52	13209.69	13554.74	13851.35	14319.51	14777.78	14831.14	14158.62	14448.11	14685.96	14631.96
Growth rate of the EU's GDP		2.04%	1.29%	1.48%	2.61%	2.19%	3.38%	3.20%	0.36%	-4.53%	2.04%	1.65%	-0.37%
Value of Italy's export of goods and services [2005 US\$ billion, constant prices]	427.22	439.06	425.84	420.54	446.84	462.17	501.09	532.40	517.34	426.78	475.25	504.85	515.64
Growth rate of the value of Italy's export of goods and services [year on year]		2.77%	-3.01%	-1.24%	6.25%	3.43%	8.42%	6.25%	-2.83%	-17.51%	11.36%	6.23%	2.14%
Value of the EU's export of goods and services [2005 US\$ billion, constant prices]	4167.19	4327.20	4420.62	4508.59	4858.02	5149.76	5652.63	5975.24	6064.34	5354.35	5942.86	6319.77	6462.98
Growth rate of the value of the EU's export of goods and services [year on year]		3.84%	2.16%	1.99%	7.75%	6.01%	9.77%	5.71%	1.49%	-11.71%	10.99%	6.34%	2.27%
Market capitalisation of listed companies in Italy [US\$ billion, current prices]	768.36	527.40	480.63	614.84	789.56	798.17	1026.64	1072.69	520.86	317.32	318.14	431.47	480.45

<i>Growth rate of the market capitalisation of listed companies in Italy [year on year]</i>	-31.36%	-8.87%	27.92%	28.42%	1.09%	28.62%	4.49%	-51.44%	-39.08%	0.26%	35.62%	11.35%
<i>Market capitalisation of listed companies in the EU [US\$ billion, current prices]</i>	8509.27	6869.37	5705.07	7932.71	9462.00	10211.59	13574.44	15697.71	7609.06	10556.06	9360.26	10399.55
<i>Growth rate of the market capitalisation of listed companies in the EU [year on year]</i>	-19.27%	-16.95%	39.05%	19.28%	7.92%	32.93%	15.64%	-51.53%	29.85%	6.84%	-11.33%	11.10%
<i>Unemployment rate in Italy [participation in the labour force, estimates of the International Labour Organisation]</i>	10.80%	9.60%	9.20%	8.90%	7.90%	7.70%	6.80%	6.10%	6.70%	8.40%	8.40%	10.70%
<i>Changes in the unemployment rate in Italy [year on year]</i>	-1.20%	-0.40%	-0.30%	-1.00%	-0.20%	-0.90%	-0.70%	0.60%	1.10%	0.60%	0.00%	2.30%
<i>Unemployment rate in the EU [participation in the labour force, estimates of the International Labour Organisation]</i>	9.21%	8.66%	9.02%	9.02%	9.16%	8.92%	8.22%	7.17%	6.97%	9.61%	9.63%	10.49%
<i>Changes in the EU's unemployment rate [year on year]</i>	-0.55%	0.36%	0.00%	0.14%	-0.24%	-0.70%	-1.05%	-0.20%	1.98%	0.66%	0.01%	0.86%

Source: authors' own study based on World Development Indicators data [date of access: September 2014].

7.8. Greece

Before the onset of the economic crisis in 2007–2008, Greece was one of the fastest growing economies in the euro zone, but it later reported the most spectacular decrease among these countries [Matsaganis 2013]⁸⁴. The origins of this fall can be sought in Greece's structural problems, which had been growing in the years preceding the recession. Greece was sometimes described as an uncompetitive economy with an inefficient industrial sector and a grey economy accounting for up to 25–30% of GDP [Mitsakis 2014]. Nelson, Belkin and Mix [2011], however, point out that in the early 2000s access to cheap finance was relatively easy, and admitting Greece to the euro zone in 2001 helped to increase investor confidence. In the euro zone, there was no clarity about the scale of the country's economic problems, such as an imperfect institutional environment (in particular a high level of corruption), an inefficient public sector, and last but not least, a high public debt [Markantonatou 2013].

Combined with a global economic recession, the weakness of the Greek economy contributed to a decline in domestic demand, which resulted in a lower level of output and, in consequence, redundancies and reduced consumer spending (see Table 7.8). This, again, decreased demand, generating a vicious circle [Folinas and Aidonis 2012]. As attempts were made to control the effects of the economic crisis, public debt in relation to GDP increased from 129.4% in 2009 to 160.2% in 2012 [Mitsakis 2014]. Faced with the threat of sovereign default, in 2010 Greece was the first country to turn to the International Monetary Fund for a bailout.⁸⁵

Greece's deteriorating economic situation was reflected in the state of the labour market. In 2009–2012, unemployment grew significantly (see Table 7.8). Matsaganis [2013] highlights the fact that unemployment dramatically affected those responsible for maintaining households.⁸⁶ Moreover, unlike in Portugal and Ireland, Greece's labour productivity steadily declined during the crisis [Markantonatou 2013]. The situation in the labour market was not helped by the Greek economy's decreasing level of internationalisation. Owing to its euro-zone membership, the country was unable to use currency depreciation to boost exports, which dropped markedly in 2009. Similarly, Greek imports had shown a steady downward trend until 2012 [World Development Indicators 2014]. In terms of foreign direct investment, there was a significant decline in both inflows and outflows

⁸⁴ In 2013, Greece's GDP, expressed in market prices, fell by 23.5% compared to the 2007 level.

⁸⁵ Owing to the ineffectiveness of anti-crisis measures, the International Monetary Fund's intervention was supplemented with support from the European Central Bank and euro-zone countries, which, however, ended in moderate success [Nelson, Belkin and Mix 2011].

⁸⁶ The employment rate for men aged 30–44 decreased from 93.8% in 2008 to 74.1% in 2013 [Matsaganis 2013].

of capital. In the former case, the decline became apparent as early as 2007, which was consistent with the global trend of reducing investment activity. As for capital outflows, the problems of the Greek economy lowered the competitiveness of Greek companies and limited their investment activity, not least in international markets.

The effects of the Greek economic crisis on companies are diverse across industries and sectors. As in other countries described above, the downturn affected particularly strongly small and medium-sized enterprises, 65,000 of which were liquidated in 2010 alone as a result of declining demand, growing lack of liquidity, and a simultaneous tightening of fiscal policy [Markantonatou 2013]. Compared to the previous year, in 2009 the construction sector alone saw a 21.36% decrease in the value of construction companies' output. At the same time, the decline was determined in a statistically significant way by variables related to companies' environment, not just by variables at the construction-sector level [Eriotis et al. 2013].

In addition to sectors whose development is strongly correlated with the business cycle (see Chapter 3 for more details), the crisis affected the Greek service companies as well. Among companies operating in the education sector, profitability in 2010, as measured by return on capital employed (ROCE), dropped to 4.2% compared with 45.9% in 2008 [Lacina and Vavřina 2013]. Similarly, in the case of professional, scientific, and technological services in the same period, the figure dropped from 37.9% to 6.5%. The banking sector reported massive withdrawals of deposits and an alarming proportion of bad debts in financial institutions' portfolios [Mitsakis 2014]. In their study of 53 companies operating in the logistics sector in 2011, Folinas and Aidonis [2012] found that the main manifestations of the crisis included a more rigorous selection of customers, reduced prices, suspended investment projects, a limited scale of company activities, and a reduced number of full-time and temporary personnel. According to the companies surveyed, the most important changes in the environment included, first of all, increased competition in the market and higher operating costs. In response to the negative impact of the economic crisis, 90% of the companies declared having optimised their internal functions, 70% introduced a stricter monitoring and vetting of their suppliers, 60% took measures to reduce downtime, 50% introduced new services, and another 50% responded by lowering their prices. With regard to companies' ability to tackle the impact of the economic crisis, Bekiaris, Efthymiou and Koutoupis [2013]⁸⁷ observe that numerous companies agreed with the view that the crisis was caused by their ineffective risk management. Thirty-six percent of the enterprises surveyed by the authors had only an informal risk management system, and just 31% a formal one, with the banking sector and the service sector having the highest formalisation level of these systems.

⁸⁷ A study conducted on a sample of 85 internal audits in Greek companies.

Table 7.8. Selected indicators of Greece's economic activity in the years 2000–2012

Indicator	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Greece's GDP value [2005 US\$ billion, constant prices]	196.96	205.22	212.28	224.9	234.72	240.08	253.3	262.25	261.69	253.48	240.95	223.83	208.22
Growth rate of Greece's GDP		4.20%	3.44%	5.94%	4.37%	2.28%	5.51%	3.54%	-0.22%	-3.14%	-4.94%	-7.11%	-6.97%
EU's GDP value [2005 US\$ billion, constant prices]	12593.39	12850.26	13016.52	13209.69	13554.74	13851.35	14319.51	14777.78	14831.14	14158.62	14448.11	14685.96	14631.96
Growth rate of the EU's GDP		2.04%	1.29%	1.48%	2.61%	2.19%	3.38%	3.20%	0.36%	-4.53%	2.04%	1.65%	-0.37%
Value of Greece's export of goods and services [2005 US\$ billion, constant prices]	49.16	49.15	45.02	46.34	54.36	55.72	58.12	62.26	63.3	51.01	53.65	53.83	52.9
Growth rate of the value of Greece's export of goods and services [year on year]		-0.01%	-8.39%	2.92%	17.31%	2.50%	4.31%	7.12%	1.66%	-19.42%	5.19%	0.33%	-1.73%
Value of the EU's export of goods and services [2005 US\$ billion, constant prices]	4167.19	4327.2	4420.62	4508.59	4858.02	5149.76	5652.63	5975.24	6064.34	5354.35	5942.86	6319.77	6462.98
Growth rate of the value of the EU's export of goods and services [year on year]		3.84%	2.16%	1.99%	7.75%	6.01%	9.77%	5.71%	1.49%	-11.71%	10.99%	6.34%	2.27%
Market capitalisation of listed companies in Greece [US\$ billion, current prices]	110.84	86.54	68.74	106.84	125.24	145.01	208.28	264.94	90.4	54.72	72.64	33.65	44.58

<i>Growth rate of the market capitalisation of listed companies in Greece [year on year]</i>		-21.92%	-20.57%	55.43%	17.22%	15.79%	43.63%	27.20%	-65.88%	-39.47%	32.75%	-53.68%	32.50%
<i>Market capitalisation of listed companies in the EU [US\$ billion, current prices]</i>	8509.27	6869.37	5705.07	7932.71	9462	10211.59	13574.44	15697.71	7609.06	9880.21	10556.06	9360.26	10399.55
<i>Growth rate of the market capitalisation of listed companies in the EU [year on year]</i>		-19.27%	-16.95%	39.05%	19.28%	7.92%	32.93%	15.64%	-51.53%	29.85%	6.84%	-11.33%	11.10%
<i>Unemployment rate in Greece [participation in the labour force, estimates of the International Labour Organisation]</i>	11.10%	10.20%	10.30%	9.70%	10.50%	9.80%	8.90%	8.30%	7.70%	9.50%	12.50%	17.70%	24.20%
<i>Changes in the unemployment rate in Greece [year on year]</i>		-0.90%	0.10%	-0.60%	0.80%	-0.70%	-0.90%	-0.60%	-0.60%	1.80%	3.00%	5.20%	6.50%
<i>Unemployment rate in the EU [participation in the labour force, estimates of the International Labour Organisation]</i>	9.21%	8.66%	9.02%	9.02%	9.16%	8.92%	8.22%	7.17%	6.97%	8.95%	9.61%	9.63%	10.49%
<i>Changes in the EU's unemployment rate [year on year]</i>		-0.55%	0.36%	0.00%	0.14%	-0.24%	-0.70%	-1.05%	-0.20%	1.98%	0.66%	0.01%	0.86%

Source: authors' own study based on World Development Indicators data [date of access: September 2014].

7.9. Poland

An economic crisis in Poland's free-market economy is nothing new, because as early as 2000–2002 there was a slowdown ending a period of rapid economic growth which had lasted since the beginning of the country's systemic transformation [Zelek 2011c]. In mid-2008, Poland noticed the effects of the global financial crisis, which initially affected mostly capital markets, but gradually spread to the real economy [Rachwał 2011]⁸⁸. This over 18-month phase of economic slowdown began with a sudden reversal of the zloty's appreciation trend, which reduced investment, favouring export activity but increasing the value of the country's foreign debt in zlotys [NBP 2009]. The deepening recession in euro-zone countries began to gradually hamper Polish export sales, thereby affecting business activity in the industrial sector.

A popular concept used in the public sphere was that of a “green island”, which Poland actually became, given its positive GDP growth, a unique phenomenon in the European Union in 2009 [Sawicka 2010]. This does not change the fact that symptoms of Poland's economic slowdown were visible on many planes. First, the country's GDP growth clearly slowed down, reaching 2.63% in 2009 (see Table 7.9). This result, still positive, was a reason for referring to Poland as a country particularly resistant to the effects of the global economic crisis, a country whose economic policy was best adapted to the external conditions [Zelek 2011d]. One of the factors determining a rapid improvement in the GDP growth rate in 2010 was an increase in consumer spending and in export sales. On the other hand, the labour market saw an increase in the unemployment rate in relation to the period before the effects of the global economic crisis occurred. In 2009, a 14.37% rise in inflation was reported, which may have partly been caused by the rising prices of raw materials worldwide. We should also note the symptoms of the crisis in public finance. As in other countries, a decreased rate of economic growth in Poland put pressure on public finance, which was reflected in a growing budget deficit and, consequently, public debt. Unlike some developed countries which tried to counter the effects of the crisis by means of rescue operations, the Polish government at the time announced that it would reduce budget expenditure and tighten public finance discipline. The economic slowdown, however, revealed some structural weaknesses in the public finance sector, unnoticeable in a period of dynamic growth. Poland's budget deficit reached the highest level since the beginning of systemic transformation, putting the country among the EU economies with the most dangerous budget structure [Zelek 2011d]. At the same time, it was necessary to take action to support Polish companies during the economic downturn. Therefore, at

⁸⁸ The transmission of the global economic crisis to Poland is a confirmation of the Polish economy's increasing convergence with global trends since 2000 [Zelek and Maniak 2011].

the beginning of 2009, changes were introduced into the law on the tax on goods and services and the law on freedom of economic activity in order to facilitate setting up and running a business [Oniszczyk-Jastrzabek and Gutowski 2010].

Some of the notable signs of the economic crisis in Poland were also the declines in the country's capital market in 2008. Facing the collapse of developed countries' markets and the need to liquidate some assets, investors withdrew from emerging markets, thus contributing to rapid declines in Central and Eastern Europe as well [Zelek 2011d]. The market capitalisation of listed companies started to grow again as soon as 2009–2010 (see Table 7.9). At the same time, there was a noticeable decrease in indicators of the Polish economy's active and passive internationalisation, resulting on the one hand from the deterioration of Polish companies' economic condition,⁸⁹ and on the other from a global decline in the movement of goods and services and in foreign direct investment.

In the Polish context, the economic crisis has been the subject of studies devoted to its effect on various aspects of companies' activity and to their adjustment reactions. The global economic crisis exerted an influence of varying degree on the condition of Polish companies in various sectors. A correlation analysis of the growth rate of selected industries and Poland's GDP growth rate in 1995–2007 points to a particular vulnerability of the construction and automotive industries to cyclical changes; it also shows a relative resilience of the pharmaceutical and food industries [PricewaterhouseCoopers 2009, p. 17]. The financial crisis which began in 2007–2008 had a diverse influence on the economic performance of companies included in the Warsaw Stock Exchange industry indices. An analysis conducted by PricewaterhouseCoopers [2009, pp. 20–21] highlights a good performance of companies in sectors such as telecommunications, media and information technology, as well as the stability of the food sector. On the other hand, there are significant declines in the value of companies in industries such as property development, construction,⁹⁰ banking, and fuels. However, a study conducted by the National Bank of Poland [2010, p. 11] suggests that the sectors most hit by the crisis in 2010 were the investment industry, manufacturing and construction, while the energy industry, mining and quarrying demonstrated the greatest resilience. According to the Polish Agency for Enterprise Development [2010, p. 37] data on the survival rate of Poland's small and medium-sized enterprises in the long term (2004–2009) by PKD section, until 2009 the highest survival rate had been exhibited by companies in the health-care section (66.7%), whereas for transport, property and corporate services, other services and industry the figures were between 35.7% and 37.5%. The lowest survival rates were those of retail-sector companies (24.9%), and hotels and restaurants (17.2%).

⁸⁹ See point 1.2.

⁹⁰ See also Wójciak [2011].

Table 7.9. Selected indicators of Poland's economic activity in the years 2000–2012

Indicator	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Poland's GDP value [2005 US\$ billion, constant prices]	262.99	266.16	270.00	279.62	293.98	304.41	323.26	346.54	360.13	369.61	383.29	402.48	408.77
Growth rate of Poland's GDP	4.26%	1.21%	1.44%	3.36%	5.14%	3.55%	6.19%	7.20%	3.92%	2.63%	3.70%	5.01%	1.56%
EU's GDP value [2005 US\$ billion, constant prices]	13042.87	13334.46	13514.54	13694.49	14040.54	14334.86	14814.34	15271.08	15339.81	14666.19	14973.31	15241.06	15174.64
Growth rate of the EU's GDP	3.89%	2.24%	1.35%	1.33%	2.53%	2.10%	3.34%	3.08%	0.45%	-4.39%	2.09%	1.79%	-0.44%
Value of Poland's export of goods and services [2005 US\$ billion, constant prices]	74.89	77.23	80.95	92.37	96.89	106.31	122.93	135.45	144.95	135.84	153.32	165.37	172.95
Growth rate of the value of Poland's export of goods and services [year on year]	23.21%	3.12%	4.82%	14.10%	4.89%	9.73%	15.63%	10.19%	7.01%	-6.28%	12.86%	7.86%	4.58%
Value of the EU's export of goods and services [2005 US\$ billion, constant prices]	4098.12	4243.43	4342.09	4421.35	4781.58	5070.70	5553.12	5897.41	5980.80	5267.82	5826.42	6210.61	6350.90
Growth rate of the value of the EU's export of goods and services [year on year]	12.80%	3.55%	2.33%	1.83%	8.15%	6.05%	9.51%	6.20%	1.41%	-11.92%	10.60%	6.59%	2.26%
Market capitalisation of listed companies in Poland [US\$ billion, current prices]	31.28	26.02	28.75	37.16	71.10	93.87	149.05	207.32	90.23	135.28	190.23	138.25	177.73

<i>Growth rate of the market capitalisation of listed companies in Poland [year on year]</i>	-16.83%	10.51%	29.27%	91.32%	32.03%	58.78%	39.09%	-56.48%	49.92%	40.63%	-27.33%	28.56%
<i>Market capitalisation of listed companies in the EU [US\$ billion, current prices]</i>	8509.27	6869.37	5705.07	7932.71	9462.00	10211.59	13574.44	15697.71	9880.21	10556.06	9360.26	10399.55
<i>Growth rate of the market capitalisation of listed companies in the EU [year on year]</i>	-19.27%	-16.95%	39.05%	19.28%	7.92%	32.93%	15.64%	-51.53%	29.85%	6.84%	-11.33%	11.10%
<i>Unemployment rate in Poland [participation in the labour force, estimates of the International Labour Organisation]</i>	16.10	18.20	19.90	19.60	19.00	17.70	13.80	9.60	7.10	8.20	9.60	10.10
<i>Changes in the unemployment rate in Poland [year on year]</i>	2.10	1.70	-0.30	-0.60	-1.30	-3.90	-4.20	-2.50	1.10	1.40	0.00	0.50
<i>Unemployment rate in the EU [participation in the labour force, estimates of the International Labour Organisation]</i>	9.21	8.66	9.05	9.02	9.17	8.94	8.22	7.18	6.97	8.96	9.61	10.51
<i>Changes in the EU's unemployment rate [year on year]</i>	-0.55	0.38	-0.02	0.15	-0.24	-0.71	-1.05	-0.20	1.98	0.68	-0.02	0.90

Source: authors' own study based on World Development Indicators data [date of access: March 2016].

Studies on the effects of the crisis on Polish companies form a relatively coherent picture. Zelek [2011c], who examined 202 companies in Zachodniopomorskie Province in 2007–2010, found that 22.6% of them were of the opinion that their economic condition had deteriorated, though only 2.1% of them viewed that period as the worst in their history. At the same time, the way Polish managers perceived the impact of the crisis depended on the company's age. In companies operating for 10 years, the percentage of decidedly negative opinions about the crisis' influence on the company was higher. Similarly, companies with up to 49 employees also perceived the degree to which they had been affected by the crisis as higher. The survey results also indicated that the years 2007–2008 saw the largest percentage of companies which reported a deterioration in indicators such as the level of profits (20% of companies), current liquidity (62.5% of companies), and the value of assets (26.9 % of companies). In 2008–2009 and in 2009–2010, a marked improvement took place only in terms of company liquidity. For the other indicators, stagnation continued to be the dominant trend.

Similar conclusions can be drawn from a study by Zelek and Maniak [2011] conducted on a sample of 56 companies in Zachodniopomorskie Province, 50% of whom perceived the impact of the economic crisis as rather negative, and 25% as definitely negative⁹¹. At the same time, respondents pointed to the fact that the downturn was reflected to the largest extent in increased operating costs, reduced business revenues and operating profits, as well as in increased debt, staff turnover, and employee concerns.⁹² Another symptom of the economic crisis was an 11% decline in the value of all companies' investment outlays in 2009 in relation to 2008 [Sawicka 2010].

As for adjustment measures taken by Polish companies as a direct consequence of unfavourable competitive conditions, according to a study by KPMG [2009], in the first quarter of 2009 nearly 80% of Polish companies took action to reduce operating costs. At the same time, the vast majority of companies took parallel action focused on increasing market share [KPMG 2009, p. 40]. Much less frequent was the tendency to build competitive potential in the long term due to a higher risk of such actions under the conditions of limited access to sources of finance. Similar conclusions can be drawn from a study by Danielak [2010, pp. 274–278] according to which, during the economic downturn, Polish companies concentrated on reducing costs, employment and the scale of their operations, as well as on withdrawing from selected markets. Also studies by Orłowski et al.

⁹¹ In the case of 45 small and medium-sized enterprises in the sample, this effect was up to 30%.

⁹² Similarly, in a study of the impact of the economic crisis in 2008–2010 on the condition of 30 Polish small and medium-sized enterprises, the predominant negative effects were a lower number of orders and a fall in sales, indicated by 85% of the companies surveyed [Orłowski et al. 2010].

[2010] and by Zelek and Maniak [2011] showed that, among SMEs, defensive actions predominated over offensive ones, e.g. acquiring a competitor or changing corporate strategy. According to Lachowska [2011, pp. 113–117], companies perceived strategy changes, the search for new markets, reorganisation, acquisitions of competitors, and services outsourcing as ineffective.

Defensive actions predominate also in the area of human resources management⁹³. Leszczewska's study [2010, pp. 32–34]⁹⁴ showed, however, that although approximately 40% of the small and medium-sized enterprises under analysis planned dismissals in 2010, nearly 45% intended to increase the scale of their operations. Additionally, Kowalewski [2010, p. 98]⁹⁵ stresses the importance of a strong corporate culture as a resource that increases companies' adaptability in an environment of uncertainty: 60% of companies with a weak culture had deep concerns over the consequences of the economic crisis, while in the case of a moderately strong or strong culture the percentage of similar responses was 25%, with 38% declaring no such concerns. As far as marketing strategy is concerned, among the adjustment measures in other corporate functions, Gąsowska [2010, pp. 73–75] highlights supply-chain optimisation as a *sine qua non* for improving competitiveness in crisis conditions. In this context, cooperation with other entities in the supply chain may constitute a source of process innovations [Boćko 2009, p. 16; Brojak-Trzaskowska and Porada-Rochoń 2012, p. 63]. Finally, at the corporate-strategy level, the economic crisis caused some companies to diversify their activities [Kochanowska 2010] or rationalise their product-market portfolios [Kilar 2011].

Recapitulation

The above comparison of the causes, the course, and the consequences of the economic crisis in particular countries and in companies based in them demonstrates a high diversity of particular entities' economic situation during the crisis. This is evidenced by the historical values of particular variables at the level of national

⁹³ In the first quarter of 2009, 59% of companies froze or reduced recruitment, while 33% made inefficient employees redundant [HRM Partners 2009, p. 10].

⁹⁴ The study, conducted in the second quarter of 2009, included 103 small and medium-sized enterprises in Podlaskie Province. Among the companies surveyed, 68% operated in the service sector, 45.6% in the retail sector, and 15.6% in the manufacturing sector.

⁹⁵ The study was conducted in 2010 on a sample of 31 business entities, 74% of which were manufacturing companies, and the others operated in the service sector. Sixty-eight percent of the companies surveyed employed 50–249 people.

economies, and by the varying degrees of vulnerability to the crisis, although there were also differences at the level of adjustment reactions on the part of national economies and companies.

The Baltic states, such as Estonia and Lithuania, are examples of countries that reported very good economic results before the crisis, which is why the 2008 economic collapse in these countries was so unexpected. After years of continuous economic growth, the so-called Baltic tigers suffered a decline in the majority of economic-activity indicators. An additional challenge was the rate of negative changes: in 2009, both countries experienced an almost 15% decrease in GDP and an 8% increase in the unemployment rate. However, both managed to overcome the crisis quickly, make up for the losses, and join the euro zone in 2011 (Estonia) and 2015 (Lithuania).

The crisis in the UK, unlike the Baltic states, was not so severe. The majority of key economic indicators deteriorated only a little. The UK may, however, serve as an example of a country which, though affected by the crisis to a much lesser degree, is slow in returning to the level from before the economic crisis. If we compare the UK's selected economic results with those of Estonia and Lithuania, we can see that it was less affected by the economic crisis of 2009 than the Baltic states were. On the other hand, the speed of positive changes after the crisis continues to be much lower in the UK than in Lithuania or Estonia.

The so-called speculative bubble was one of the main causes of the deterioration in Ireland's economic situation. Lack of a proper reaction on the part of the government and financial institutions resulted in the country's substantial debt, which in turn meant that Ireland was forced to seek an EU bailout. Spain, on the other hand, is a typical example of a country where excessive deregulation in the construction market and the banking sector's reckless policy caused the bubble to burst. Owing to a high degree of the Spanish economy's openness, problems soon spread to its other areas, causing a deep economic crisis. However, changes introduced by the government did not produce immediate results. Similarly, Finland's high level of economic integration with other economies, not least with the G7 countries and the Baltic states, constituted a transmission channel for the economic crisis, contributing to a dramatic plunge in many economic indicators, most of all the GDP level. A decrease in the competitiveness of particular sectors of the economy slowed down the process of recovering from the crisis.

In the context of the ongoing euro-zone debt crisis, which is an extension of the unfavourable changes in the global economy that started during the financial crisis of 2007–2008, it would be advisable to pay special attention to the role of particular governments' management practices and their effectiveness. One of the key factors determining the development of the crisis in Italy was the amount of public debt. Italy's serious problem was not so much the private sector's loans as

the inability to service the country's ever-growing debt. Italy received a sizeable EU bailout, which was used to support different areas of its economy. Likewise, Greece reported a substantial decline in key economic indicators, despite a period of dynamic growth that preceded the crisis. The country's high level of debt, which was considerable even before the crisis deepened, exacerbated the problems once economic recession had struck.

Against the background of the national economies above, the situation of Poland seems unique. First, rather than a negative GDP growth rate, only a growth slowdown was reported which was an extension of an earlier downward trend in the Polish economy. This was because the situation in the euro zone limited Polish export sales, and consequently reduced business activity in the industrial sector. Despite a restrictive policy in the public-finance sector in the face of the economic crisis, Poland's budget deficit reached a dangerous level.

Chapter 8

The methodology of empirical research

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The present chapter discusses the methodology of the quantitative empirical research conducted as part of the project at a microeconomic level. In particular, on the basis of the literature, it identifies the research problem, justifies the choice of the topic, and formulates research hypotheses. The chapter also describes the general population of the companies investigated and discusses the research tool employed.

8.1. The research problem and a justification for choosing the topic

It is particularly difficult for a company to recognise and adapt to dramatic and sudden changes in the environment [Carroll 1984; Tripsas, Gavetti 2000]. While some companies maintain or increase their competitiveness even during economic crises [Abernathy, Clark 1985; Tushman, Anderson 1986], others are not able to adapt to new conditions so quickly. Microeconomic analyses focusing on the effects of economic crises are especially important and interesting, as companies are business entities whose reactions to threats and opportunities presented by crises strongly affect the economy's ability to recover from the crisis and continue to grow. At the same time, neither the impact of an economic crisis nor reactions to it are identical for all companies [Shama 1993; Latham 2009; Simon 2010; Dooley et al. 2010]. From a microeconomic perspective, the impact of a crisis on a company may depend, among other things, on its age [Latham 2009], on the

competitive strategy applied [Latham and Braun 2010], on the uniqueness and value of the company's resources [Teece, Pisano and Shuen 1997; Wu 2010; Wewerawardena al. 2007], on the entity's size, and on its level of internationalisation [Antonioli et al. 2011]. At the same time, the results of some previous empirical studies are contradictory. While some researchers suggest that economic crises threaten the survival of all companies [Latham 2009], others stress that such periods are characterised by the coexistence of both opportunities and threats [Kirzner 1973; Covina and Slevin 1991; Gilbert 2006]. There are also discussions concerning the characteristics of those companies that are most severely affected by the crisis phenomena in question. However, the limited number of empirical studies and their strongly situational character make it impossible to provide unambiguous answers in this respect.

The research problems undertaken as part of the empirical study presented here are the international competitiveness of Polish companies, as well as changes – induced by the global economic crisis – in the impact of endogenous and exogenous determinants on the level of these companies' competitiveness. The main (cognitive) objective pursued in the study is to identify and interpret the relationships between the crisis phenomena observed in the global economy and the behaviour of Polish companies. In particular, our intention is to examine the relationship between Polish companies' international competitive position and its endogenous and exogenous determinants during the global economic crisis (2009), during the occurrence of its consequences (2010), and after the crisis (the years 2011–2013).

The study attempts to assess the far-reaching consequences, for Polish companies' international competitive position, of demand factors, competition intensity in the sector, external resource factors, the company's internationalisation level and its input competitiveness, but also to determine how their significance changed during the global economic crisis. Understanding how an economic crisis affects a company's ability to build its competitiveness, to compete, to survive and to develop will advance knowledge in the field of the theory of the firm. Empirical research results should also help to identify entrepreneurs' expectations regarding support tools during economic crises and determine which of them may be the most effective. Additionally, research findings may allow us to formulate guidelines for diagnosing, remedying or preventing the effects of an economic crisis, the need for which is indicated in the literature [Pearce and Robbins 2006, p. 202]. At the same time, the study will create an opportunity to compare the results of analyses carried out on a large number of Polish companies with the results of studies conducted in other countries or on other crises.

Adopting the solution applied by Miller and Leiblein [1996] and by Lee and Makhija [2009], we will prepare separate regression equations and apply an identical set of explanatory variables (determinants) for the years under investigation,

where 2009 will represent the period of the global economic crisis, the year 2010 – the period of its consequences, and the years 2011–2013 – the period after its occurrence. As the first signs of the global crisis were visible in the Polish economy as late as the second half of 2008, this year will not be included in the analysis. At the same time, owing to a relatively strong economic growth reported in 2011, the year is treated as a period of relative prosperity.

8.2. Research hypotheses

Studies on company competitiveness are extremely numerous. However, as emphasised in Chapter 4, they often focus on partial analyses, taking into account only specific dimensions of competitiveness or even their selected aspects. Previous empirical studies on company competitiveness during economic crises are similar in this respect. They focus on those performance measures that represent the company's competitive position [see e.g. Sato 2000; Köksal and Özgül 2007; Lee and Makhija 2009; Antonioli et al. 2011]. In our opinion, however, company competitiveness should be analysed in all possible dimensions. Therefore, drawing on the achievements of diverse but interrelated research trends, we will employ research apparatus that will enable us to take into account the comprehensiveness and multidimensionality of company competitiveness.

The research hypotheses were formulated by synthesising selected theoretical aspects developed as part of the concept of the value chain [Porter 1985], the resource-based theory [Wernerfelt 1984, 1995; Prahalad, Hamel 1990; Barney 1991, 2002; Barney, Clark 2009], industry economics [Bain 1959; Porter 1990], and international business.

The hypotheses are divided into two groups. The first one consists of the determinants of international competitive position in general, while the other includes hypotheses comparing the period of prosperity and that of the global economic crisis.

8.2.1. The determinants of a company's international competitive position

According to Porter's [1985] concept of the value chain, a company can be seen as a set of related activities that generate an economic value. A company can perform these activities in a better or cheaper way than its competitors do. The configuration of these actions is, in turn, defined by competitive strategy. It is actions,

then, that are the source of a company's competitive advantage [Porter 1985, 1991]. On the other hand, representatives of the resource-based theory [Wernerfelt 1984, 1995; Barney 1991] assert that differences between companies' performance are a consequence of an unequal distribution of resources (among competing companies) which are at least semi-permanently assigned⁹⁶ to a given company. What is more, according to the resource-based theory, it is resources that are responsible for creating value in a company, thus constituting a source of competitive advantage. The more valuable, rare, non-imitable, non-substitutable, and well-organised the company's resources are, the more stable its competitive advantage will be [Wernerfelt 1984; Barney 1991]. It is assumed in the study that, during a company competitiveness analysis, what is important is not just the resources owned, but also the actions needed to exploit them. A mere possession of resources, without the actions required to use them, does not enable a company to fulfil its objectives, for example – as suggested by the resource-based theory (see Barney [1991]) – to improve its efficiency and effectiveness. This approach was also emphasised by Porter [1991, p. 108], who stated that resources matter only when they are used to perform certain actions. On the other hand, it is difficult to speak of generating economic value in a company (or to speak in general of a business entity) by referring only to the actions performed, because all of them require or constitute the use of specific resources. Additionally, the characteristics of resources can affect the quality of the tasks performed.

Having a competitive advantage is reflected in output competitiveness: a company with a competitive advantage has a good competitive position (better than those of its rivals), while a company without a competitive advantage is characterised by a weak competitive position (its performance is poorer than those of its rivals) [Porter 1991]. It should be additionally emphasised that an attractive competitive position is a result rather than a cause [Porter 1991], although if we consider the factor of time, a past position can be treated as a determinant of one's current or future competitive position. Therefore, a company's unique advantage, which is crucial for achieving a competitive success [Porter 1991], may result from the company's resources or actions (competitive potential) and from the strategy of their configuration (competitive strategy), which together constitute output competitiveness. Hence, the first research hypothesis is:

H1: The higher the company's input competitiveness, the better its competitive position.

However, the company's results are not just a direct consequence of its actions and resources. Industry economics and concepts based on it emphasise the impact

⁹⁶ Their sale/purchase is impossible, or at least greatly restricted.

of industry factors on business entities' situation. Thus interpreted, the environment exerts a strong influence on companies [Porter 1990]. From this perspective, one of the determinants of a company's competitive position could be the intensification of competition in the industry or the competitive conditions in the country or region. To put it simply, the effect of competition on the competitive position could be both positive and negative. In particular, competition may have an influence on the importance ascribed to innovativeness in the company and on its improvement, as competition stimulates further development and progress [Porter 1991]. Intense competition may also lead to poorer financial performance and, consequently, reduce the resources available to the company for its further development. This issue is particularly significant for companies whose customers are price-sensitive. At the same time, owing to a high specialisation and diversification of companies' offers, even entities operating within one industry do not always experience the same level of competition intensity. Depending on the similarity of offers, competition will be stronger or weaker. In the present study, it is assumed that although, in the long term, intense competition may help intensify efforts aimed at innovativeness and company improvement, in the short term it tends to make a favorable competitive position harder to achieve. Hence, research hypothesis 2 is:

H2: The more intense the competition within an industry, the worse the company's competitive position.

Another industry factor which could affect a company's competitiveness, in particular its competitive position, is demand factors [Bain 1959; Porter 1990]. These factors can be identified with the customers' bargaining power and are reflected by the stimuli that determine its level, but they can also be understood more broadly. In the context of Porter's diamond model [1990], market demand factors understood as the structure and level of demand may stimulate specific companies' innovation activity. At the same time, demand factors may directly restrict the volume of sales that can be achieved in the short term and the related indicators of competitive position. Hence the third research hypothesis, which is:

H3: The more favourable the company's demand factors, the better its competitive position.

According to the resource-based theory, the resources exploited by a company may have an influence on its competitiveness [Wernerfelt 1984, 1995; Prahalad, Hamel 1990; Barney 1991, 2002; Barney, Clark 2009]. At the same time, the resources that are responsible for generating economic value can be seen as a source of competitive advantage. Economic value can be understood as the difference between the price that customers are willing to pay for a product or service and

the costs of preparing and delivering the offer [Peteraf, Barney 2003]. In line with the resource-based theory, the present study assumes that companies are heterogeneous in terms of the resources owned, and these can be perceived as a source of competitive advantage. It is also assumed that the availability of at least some resources, broadly understood, is an external factor typical of a given environment. This assumption remains consistent with arguments stressed in industry economics [Bain 1959, Porter 1990]. As noted by Porter [1991], company competitiveness may result both from a particular entity's environment and from its interior. The influence exerted by the environment may be related, for instance, to the market of the resources on which the company is dependent. As a company's competitive position is expressed by indicators of company performance, it is strongly dependent not only on the price of the offer, but also on the costs of its delivery. These costs depend, among other things, on the efficiency and price of the resources offered on the market. Hence, external resource factors may directly affect companies' competitive position. Accordingly, the fourth research hypothesis is:

H4: The more favourable the company's external resource factors, the better its competitive position.

A large number of studies in the field of international business focus on the relationship between the broadly-understood internationalisation of companies and their performance. However, conclusions regarding this issue are also contradictory. While some studies indicate that the relationship between the above aspects is linear and positive (see e.g. Vernon [1971]; Grant [1987]) or negative (see e.g. Collins [1990]), the results of other analyses have confirmed the existence of a relationship that is U-shaped (see e.g. Qian 1997; Pattnaik, Elango 2009), inverted-U-shaped (see e.g. Ramaswamy 1995; Gomes, Ramaswamy 1999), or S-shaped (see e.g. Contractor et al. 2003).

Since our empirical study concerns companies based in Poland, it is also necessary to take into account the Polish context of company internationalisation. In Poland, in the period of socialism, companies were obliged to carry out international transactions through specialised foreign-trade enterprises. As a result, the internationalisation of Polish private companies was marginal, and state-owned companies rarely carried out transactions on the basis of economic calculation. In 1988, there were only 767 companies in the Polish market that were authorised to trade with foreign partners, and a very limited number of foreign business entities, while the share of private companies in commerce amounted to only 5% [Cieřlik 2010]. The situation changed completely in 1989. Since then, the number of Polish companies involved in foreign trade has increased significantly, and many new foreign players have appeared in the market. Companies have to compete with

foreign rivals, both in the domestic market and abroad. Nonetheless, their experience in this area, at least in the initial stage of transformation, was very limited, and the quantity of available resources was often small. Hence the assumption that Poland-based companies which have achieved success in terms of expansion into foreign markets can reap the benefits of, say, the positive effects of scale and scope. The fifth research hypothesis, then, is:

H5: The higher the company's internationalisation level, the better its competitive position.

The relationships considered in the above hypotheses are presented in Figure 8.1.

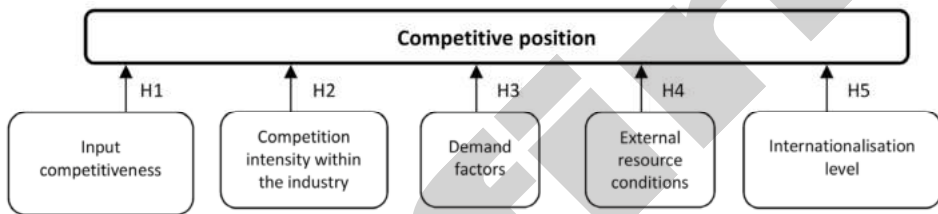


Figure 8.1. A scheme of the relationships investigated – the determinants of a company's international competitive position

Source: authors' own study.

8.2.2. A comparison between the periods of prosperity and the global economic crisis

Since the methodology adopted for the purpose of this project will allow us to compare the determinants of a company's international competitive position in the periods of prosperity and the global economic crisis, an additional set of hypotheses related to the issue was formulated as part of the project. According to research results which emphasised the advisability of analysing more positive or more negative relationships between the same variables for different external conditions [see e.g. Bergh 1995; Hitt et al. 2000; Lee et al. 2009], we formulated hypotheses relating to the strength of relationships between variables in the periods of prosperity and the global economic crisis.

The importance of input competitiveness as a determinant of a company's competitive position was presented to support the first research hypothesis. Nonetheless, taking into account the conditions of the global economic crisis requires

additional information. As highlighted in section 2.1.3, an economic crisis has an impact on consumers. This influence may be psychological in nature, but it can also spread to the real sphere. As Shama [1978] points out, during economic crises consumers' job security decreases. To maintain their current standard of living, they need to work more; sometimes they take less pleasure from the purchases made. Therefore, very often, as a result of an economic crisis, customers not only reduce demand but permanently or temporarily change their buying habits [Köksal and Özgül 2007; Latham and Braun 2010]. These behavioural changes are a form of adaptation to changing economic conditions [Ang et al. 2000; Ang 2001; Żurawicki and Braidot 2005], although an economic crisis does not necessarily entail a lower level of consumer expectations regarding the offer [Wiśniewska 2009]. Very often, customers' ability to respond to changing market conditions [Peters 1992; Chen and Hambrick 1995; Dean, Brown and Bamford 1998] can help the company deal with the crisis. Companies that effectively adapt their activities can maintain, or even improve, their performance during an economic crisis [Köksal and Özgül, 2007]. A company's ability to react to changing conditions is part of its input competitiveness. The latter, according to the line of argument presented by these authors, is interpreted as competitive potential and corporate competitive strategy. It should be observed, therefore, that input competitiveness becomes even more significant during economic crises, because at that time consumers become more sensitive to signals sent by the company. Hence, the sixth hypothesis is:

H6: The influence of the global economic crisis will strengthen the positive relationship between the company's input competitiveness and its competitive position.

As mentioned in the justification for formulating the third research hypothesis, the demand factors characteristic of a given company may reduce the volume of sales achievable in the short term and the related competitive-position indicators. At the same time, it is widely recognised that during an economic crisis or recession demand for goods, services and raw materials tends to decrease [Schedel, Patton and Riggs 1976; Kogut 1991; Shama 1993]. A drop in demand which is not accompanied by a proportional reduction in costs or an increase in the profit margin will aggravate the company's economic situation. To maintain or to improve its competitive position, a company needs to retain its current customer base while maintaining or increasing its sales, or to attract new customers. An alternative solution would be for the company to lose contracts of a lower value than those lost by its direct rivals. Both solutions are very difficult to achieve when competition in the industry is growing because of a general decrease in demand caused by the crisis. Additionally, during a crisis business entities are restricted in their ability

to support customers, as they themselves are exposed to less favourable operating conditions. This is why demand conditions will be less significant for maintaining or achieving an attractive competitive position during the global economic crisis. Hence the seventh hypothesis:

H7: The influence of the global economic crisis will weaken the positive relationship between the company's external demand factors and its competitive position.

The importance of external resource factors for company competitiveness was demonstrated as part of the justification for formulating the fourth research hypothesis. Nevertheless, with reference to the global economic crisis, it is worth noting that during the crisis a considerable number of Polish companies decided to reduce or give up their investment in the development of competitive potential. Instances of such behaviour include suspending the recruitment of new employees, or in some cases reducing employment [HRM Partners 2009, p. 10; Danielak 2010, pp. 274–278], as well as suspending or reducing spending on new technologies, training and staff development [Orłowski et al. 2010, pp. 38–40; Burlita et al. 2011, pp. 113–117]. It seems, therefore, that in the said period the degree to which companies were dependent on external resource conditions decreased and, as a result, the role played by these factors in improving company competitiveness decreased. The eighth research hypothesis, then, is:

H8: The influence of the global economic crisis will weaken the positive relationship between the company's external resource conditions and its competitive position.

According to some studies, a properly prepared internationalisation strategy enables companies to react quickly to an unexpected drop in demand or to a sudden rise in the prices of production factors in domestic and international markets. This is so because a company can shift sales to more favourable markets or move production to a cheaper location [Dunning 1980; Kogut, Kulatilaka 1994; Campa 1994; Roberts and Tybout 1997]. This, in turn, suggests that a company's high level of internationalisation should have a positive impact on its competitive position during an economic crisis. In addition, it is pointed out that companies that achieve worse results in the domestic market than expected (because of an economic crisis) may be more interested in internationalisation, especially in entering markets that are in the growth phase of the business cycle [Caruana, Ewing and Ramaseshan 2000; Wennberg and Holmquist 2008]. Nonetheless, in the case of the global economic crisis, Poland's situation may be quite the reverse, because the decline in demand from "old" EU member states (the main direction of Polish companies' international expansion) was stronger than it was the case in Poland

[Wąsowska, Obłój 2012]. Moreover, the results of some empirical studies suggest that the industries most severely affected by the global economic crisis were heavily involved in international operations and had a strongly developed international manufacturing network [OECD 2010, p. 34]. On the other hand, the influence of the global economic crisis on Poland-based and internationalised companies was partly neutralised by the depreciation of the zloty against major international currencies (the dollar, euro, and Swiss franc). Based on this reasoning, the ninth research hypothesis was as follows:

H9: The influence of the global economic crisis will weaken the positive relationship between the company's internationalisation level and its competitive position.

The relationships considered in the above hypotheses are presented in Figure 8.2.

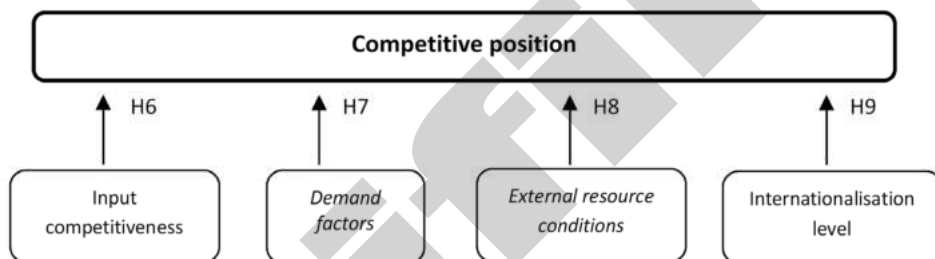


Figure 8.2. A scheme of the relationships investigated – the periods of prosperity and the global economic crisis

Source: authors' own study.

8.3. The research sample and research tools

By combining both a quantitative and a qualitative approach, we applied a mixed methods study in our empirical research [Tashakkori and Teddlie 1998], and used a planned, dominant, sequential QUANTITATIVE → qualitative research model.

The quantitative microeconomic research, contextually adopting an industry perspective, was based on primary data collected through a survey of Polish companies operating in selected industries and on secondary data collected from electronic databases. The deciding factor for including particular companies in the study was their belonging to deliberately selected industries and being registered in Poland, regardless of the source of capital. When designing this part of the

study, we used information collected by Poland's Central Statistical Office (GUS). As mentioned in Chapter 6, owing to their primary focus on domestic market servicing, we decided to exclude from the analysis the following sections: Agriculture, forestry, hunting and fishing, Construction, Trade and repair of motor vehicles, Transport and warehousing, Accommodation and catering, Information and communication, Professional scientific and technological activity, Administrative and supporting activity, Education, and Health care. Industries were defined at the sector level. Within 24 manufacturing industries, we identified the industries affected the most and the least by the global economic crisis (see section 6.4 for more details).

Table 8.1 presents data on the number of business entities registered in Poland and operating as part of the manufacturing section in 2012. The order in which particular sectors are listed depends on their position in the ranking of the scales of changes in Polish manufacturing industries after the onset of the global economic crisis. In total, within the manufacturing section in Poland in 2012, there were 18,776 business entities, the value of whose sold output amounted to approximately PLN985,320 million.

On the basis of rankings determining the scale of changes in Polish manufacturing sectors during and after the global economic crisis (see section 6.4 for more details), we calculated the arithmetic mean of positions taken by a given industry in the rankings. This way, we identified, respectively, the three and the four industries dealing with the global economic crisis the most and the least effectively. Sectors such as Manufacture of metals, Manufacture of clothing, and Manufacture of leather and leather products were identified as those doing the worst in crisis conditions, while Manufacture of food products, Manufacture of metal products, Manufacture of paper and paper products, and Other manufacturing were identified as the best in the ranking. Altogether, the seven identified sectors accounted for about 44% of companies registered in Poland and operating within the manufacturing section. The estimated share of the value of these companies' sold output in the entire section was about 36%. As there were no significant differences in how well these sectors dealt with the economic downturn, we decided to treat these industries as a general population. A company's belonging to a certain industry was determined by its assigned PKD (Polish Classification of Activities) code. Consequently, the companies included in the analysis were those operating in section C and sectors 10, 14, 15, 17, 24, 25 and 32. At the stage of research sample identification we did not take into account groups, and consequently types

Table 8.1. The number of business entities within Poland's manufacturing section in 2012.

Industry	Position in ranking 2	Position in ranking 1	Number of companies*	Value of sold output [PLNm]*	Number of employees ['000]**	Value of exports [current prices, PLNm]	Value of imports [current prices, PLNm]
Manufacture of basic metals	1	1	1272	45195.3	63.6	17696.4	9284.6
Manufacture of wearing apparel	2	3	13246	8226.3	105.3	3442.6	1766.9
Manufacture of leather and related products	3	2	2788	3791.5	26.1	1956.6	1158.0
Manufacture of other non-metallic mineral products	4	5	8830	43777.5	133.5	9488.2	6681.0
Manufacture of textiles	5	6	4363	9352.3	48.6	5149.9	3796.7
Manufacture of beverages	6	13	529	19675.8	25.6	1556.9	2793.8
Manufacture of products of wood, cork, straw and wicker	7	4	17150	29560.2	121.5	8587.1	3099.2
Manufacture of machinery and equipment	8	10	4922	39103.9	127.0	17722.1	9068.8
Manufacture of coke and refined petroleum products	9	24	140	91471.4	13.4	19428.7	67214.1
Printing and reproduction of recorded media	10	9	8650	11302.9	47.8	1976.8	1962.2
Manufacture of furniture	11	18	14702	28787.8	155.0	16956.3	4194.7
Manufacture of pharmaceutical products	12	23	310	10973.5	22.3	4376.4	5563.8

Manufacture of tobacco products	13	11	26	3697.6	5.3	1065.6	1448.5
Repair and installation of machinery and equipment	14	7	24239	25695.6	114.4	5603.3	6652.4
Manufacture of other transport equipment	15	12	1359	16194.5	43.7	16694.3	13015.8
Manufacture of computers, electronic and optical products	16	21	2786	34742.8	59.3	19535.4	29137.7
Manufacture of motor vehicles, trailers and semi-trailers	17	8	1362	103050.7	155.8	83934.4	51205.6
Manufacture of electrical equipment	18	16	2151	43098.7	95.0	27736.8	17281.2
Manufacture of chemicals and chemical products	19	15	2079	57866.0	76.3	22328.8	16388.3
Manufacture of food products	20	20	15197	178492.5	406.6	38247.2	27494.5
Manufacture of rubber and plastic products	21	14	8398	64086.7	176.0	27189.8	22074.3
Manufacture of metal products	22	17	30635	78404.9	295.8	27850.2	17531.4
Manufacture of paper and paper products	23	19	2564	29309.7	55.3	11691.7	8107.0
Other manufacturing	24	22	13078	9262.5	52.0	5969.3	2880.4

* Entities operating during the year.

** Annual averages.

Source: authors' own study based on GUS [2013] data.

of activity that could be separated from the viewpoint of the manufacturing process, purpose of production, nature of the service, or recipients of the service. Such a solution was adopted to reduce the number of layers in the sample. Increasing their number would have excessively expanded sample sizes or reduced the representativeness of the study. The electronic database that was used contained 2,676 records⁹⁷ of companies from selected industries for which data were available for the financial years 2009–2013. Thus created, the database was used to conduct a pilot study and the study proper.

Preparing a survey questionnaire required particular attention. First, we conducted a review of literature on measures representing the aspects analysed that had been used in previous studies. The resultant questionnaire was presented to representatives of companies operating in the industries selected for the study. Consequently, the initial version of the questionnaire was tested in terms of face validity, as well as question clarity and unambiguity, and updated following respondents' comments. Subsequently, a pilot study was carried out on 154⁹⁸ companies, which allowed us to prepare the final version of the questionnaire.

The first part of the questionnaire contained demographic questions. In the second part of the survey, respondents were asked to assess aspects of company competitiveness in the years 2009–2013. These questions used a seven-point scale with the range of <-3;3>, where the -3 response = "The company was much worse than its competitors", and the 3 response = "The company was much better than its competitors". In the third part, the questions concerned the level of company internationalisation, the intensity of competition in the industry, demand factors, and external resource conditions in 2009–2013. For the questions regarding demand factors and external resource conditions, a seven-point scale with the range of <-3;3> was used as well, where the -3 answer = "The conditions were very unfavourable" and the 3 answer = "The conditions were very favourable". The fourth part of the survey referred to changes that took place outside the company in particular years and to the surveyed companies' internal operations. With reference to the changes, a seven-point scale was used with the range of <-3;3>, where the -3 response = "There was a very considerable decline" and the 3 answer = "There was a very considerable growth". For the questions concerning company actions, a six-point scale was used with the range of <0;5>, where the 0 response = "They were not used at all" and the 5 answer = "They were used to a very large extent". The questionnaire ended with a set of identification questions.

⁹⁷ This figure does not take into account information on companies under liquidation.

⁹⁸ The number of the companies interviewed.

With regard to the industries analysed, the electronic databases contained records including the required contact details and financial data for 2,522⁹⁹ companies, which were contacted in order to conduct an interview. As a result, in July and August 2015 data were collected on more than 750 companies using the CATI method. With reference to the research problem concerned, the number of fully completed questionnaires was 701, which allowed us to estimate the real response rate at approximately 25%. After being collected, the data were checked, reduced, encoded and entered into the Statistica 12 program for analysis. The statistical tools employed in the project include descriptive statistics and methods of multi-dimensional data analysis, with particular emphasis on multiple regression and cluster analysis.

Adopting the solution used by Miller and Leiblein [1996] and by Lee and Mahija [2009], we prepared separate models of the determinants of company competitive position for particular years representing the periods of prosperity and the global economic crisis. As the first signs of the impact of the global economic crisis became apparent in Poland only in the second half of 2008, this period was excluded from the analysis. The year 2009 was identified as the period of the global economic crisis (see section 5.1 for more details). The year 2010 was considered to be the time when the occurrence of the global economic crisis could have an impact on companies. Owing to an economic growth of 5.01% and the lack of increase in unemployment (see Table 9.27), the year 2011 was considered a period of relative prosperity. In the years 2012–2013, in turn, Poland saw an economic slowdown, which was reflected in a reduced rate of economic growth and an increased unemployment rate. The phenomenon must have been caused by the European Union's economic problems (an economic slowdown in developed countries and major economic problems in the PIGS countries).

Our qualitative research is based on primary and secondary materials (see Chapter 10 for more details). It constitutes an attempt to exemplify the results of the quantitative research (complementarity) and to expand the scope of the information obtained through it (expansion) [Greene et al. 1989].

Recapitulation

The empirical study presented here focuses on the company as the object of analysis, hence it refers directly to the theory of the firm. In addition, since it is assumed in the study that the industry environment partially determines company behaviour,

⁹⁹ Such is the size of the database after removing from it the entities included in the pilot study.

we contextually adopted the mesoeconomic perspective, which points to links with industry economics. The issue of competitiveness, in turn, is set in the context of strategic management, which encompasses resource theory and the concept of the value chain. Additionally, the study concerns the issue of company internationalisation, which is part of the sub-discipline of international business. Finally, issues related to the phases of economic growth and recession refer to business-cycle research, which is part of the research area of macroeconomics. From this perspective, the research problem of this study is related to three levels of economic analysis: the macroeconomic level refers to the state of the national economy in the periods of prosperity and the global economic crisis; the mesoeconomic level refers to the situation of the investigated industries, as well as to their vulnerability and response to the global economic crisis; and the microeconomic level refers to the actions undertaken by companies in the periods of a rapid economic growth and the global economic crisis. The empirical research methodology presented in this chapter is intended to help to examine the research problem and evaluate the research hypotheses presented above.

Chapter 9

The competitive position of companies during and after the global economic crisis – the results of quantitative research

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This chapter presents the results of empirical research based on primary sources and conducted from a microeconomic perspective. In particular, we describe the research sample and the descriptive statistics of variables related to the indicators of input and output competitiveness and the company's external determinants. Furthermore, based on the results of a multiple regression analysis, the chapter evaluates the research hypotheses formulated in section 8.6.

9.1. A description of the research sample

As part of a preliminary data analysis, it was checked whether the sample contained an error caused by respondents' non-participation in the study (non-response bias). Since the research focused on the issue of competitive position, we decided to find especially whether, at the time of the study, the companies investigated differed in a statistically significant way (in terms of objective indicators of output competitiveness) from the entities that did not participate in it. Table 9.1 presents non-parametric test results for variables such as the profit margin, sales growth rate, and return on equity in 2013, i.e. the latest period for which financial data were available. The results of the analysis suggest that, in terms of the above criteria, the differences between the companies that participated in the study and those that did not provide any information are statistically insignificant.

Table 9.1. A Mann-Whitney U test – the year 2013 [N = 2522]

	Sum of ranks		U	With corrections	p	Sample size	
	Group 1	Group 2				Group 1	Group 2
Profit margin	867884.00	2313619.00	621833.00	-1.00	0.32	701	1821
Sales growth rate	910588.50	2270914.50	611983.50	1.60	0.11	701	1821
Return on equity	868137.50	2313365.50	622086.50	-0.99	0.32	701	1821

Source: authors' own study.

Among the entities surveyed, we can find micro, small, medium-sized and large companies.¹ The diversity of the research sample in terms of entity size in particular years² is presented in Table 9.2. In 2009 and 2010, the SME sector including micro firms accounted for approximately 79% of the sample; in the following years, the figure was about 78%, and in 2013 it fluctuated around 77%. Throughout the whole period under analysis, 40 companies (about 6% of the population) changed the employment level to an extent that changed the size category in which the entities had been included.

Table 9.2. The structure of the research sample, by employment level [N = 701]

	2009		2010		2011		2012		2013	
	Number	Share	Number	Share	Number	Share	Number	Share	Number	Share
<i>Micro</i>	43	6.13%	45	6.42%	51	7.28%	55	7.85%	55	7.85%
<i>Small</i>	223	31.81%	220	31.38%	210	29.96%	208	29.67%	209	29.81%
<i>Medium</i>	287	40.94%	288	41.08%	286	40.80%	281	40.09%	277	39.51%
<i>Large</i>	148	21.11%	148	21.11%	154	21.97%	157	22.40%	160	22.82%
Total:	701	100.00%	701	100.00%	701	100.00%	701	100.00%	701	100.00%

Source: authors' own study.

¹ The size of companies was determined exclusively on the basis of their levels of employment. In the further analysis, micro, small and medium-sized enterprises were included in the SME sector; in the tables, the sector is marked with the letter S. The results for large companies are in the rows/columns marked with the letter L, and total results for the entire research population are marked with the letter T.

² Owing to changes in the number of employees in particular years, an entity could be transferred to a different size category.

As explained in section 8.7, the survey covered companies representing the three industries dealing most effectively and the four industries dealing least effectively with the global economic crisis (see sections 6.5 and 8.7 for more details). The sectors: Manufacture of metals – sector 24, Manufacture of clothes – sector 14, and Manufacture of leather and leather products – sector 15 were the industries doing the worst in crisis conditions. The sectors: Manufacture of food products – sector 10, Manufacture of metal products – sector 25, Manufacture of paper and paper products – sector 17, and Other manufacturing – sector 32, were identified as the best at dealing with the crisis. The industry structure of the companies surveyed is presented in Chart 9.1. The proportion of companies from sectors doing the worst during the economic crisis was 9%, while companies from industries faring the best accounted for 91% of those surveyed.

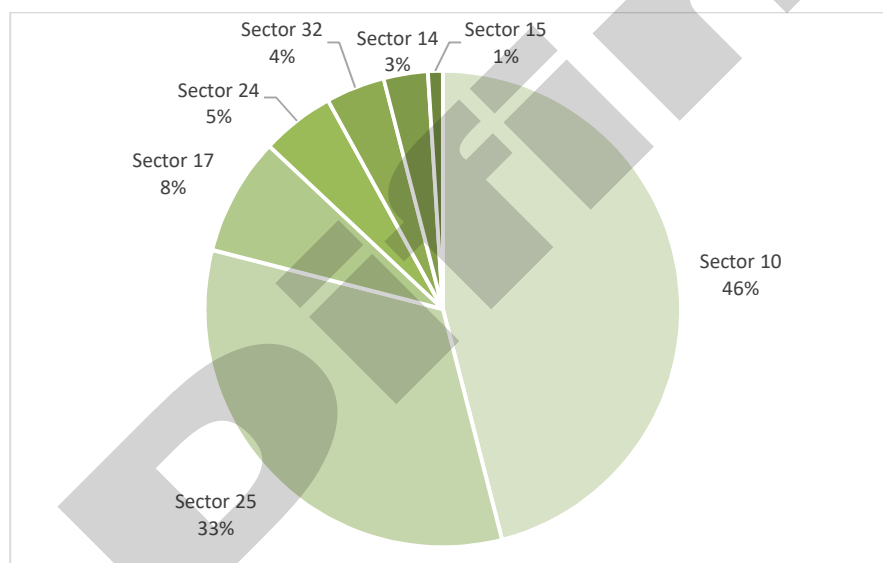


Chart 9.1. The industry structure of the population under analysis – PKD sectors [N = 701]

Source: authors' own study.

Table 9.3 presents data concerning the number and share of companies of a specific size in industries identified as dealing the best and the worst with the global economic crisis. Throughout the whole period under analysis, the biggest differences in the proportion of companies of a given size within the “best” and the “worst” performing industries existed among companies employing 50–249 people (medium-sized enterprises). In the case of this category, for all the years

covered, the difference between the groups was approximately 10%, and it started decreasing from 2011 onwards. A larger share of medium-sized enterprises was characteristic of the group of industries identified as those doing the best during the global economic crisis. At the same time, within the structure of the “worst” performing industries throughout the period analysed, the share of micro and small enterprises was several percentage points higher than that of medium-sized companies, and by 2011 this had also been true of the largest companies. It is worth adding that the total share of SMEs in both groups of industries did not differ significantly (the difference was about 3% in 2009–2010, and it declined even more over the following years).

Table 9.3. The number and share of companies of a specific size in industries performing the best and the worst during the global economic crisis [N = 701]

		2009	2010	2011	2012	2013
Industries performing the best during the global economic crisis	Micro	38 (5.99%)	40 (6.31%)	44 (6.94%)	48 (7.57%)	48 (7.57%)
	Small	197 (31.07%)	194 (30.60%)	187 (29.50%)	184 (29.02%)	185 (29.18%)
	Medium-sized	267 (42.11%)	268 (42.27%)	265 (41.80%)	260 (41.01%)	256 (40.38%)
	Large	132 (20.82%)	132 (20.82%)	138 (21.77%)	142 (22.40%)	145 (22.87%)
Industries performing the worst during the global economic crisis	Micro	5 (7.46%)	5 (7.46%)	7 (10.45%)	7 (10.45%)	7 (10.45%)
	Small	26 (38.81%)	26 (38.81%)	23 (34.33%)	24 (35.82%)	24 (35.82%)
	Medium-sized	20 (29.85%)	20 (29.85%)	21 (31.34%)	21 (31.34%)	21 (31.34%)
	Large	16 (23.88%)	16 (23.88%)	16 (23.88%)	15 (22.39%)	15 (22.39%)

Source: authors' own study.

As part of the study, we examined the organisational characteristics of the companies analysed. In particular, we obtained information on their participation in an international or Polish capital group, on changes in the position of Chairperson or Managing Director, and on changes in their organisational structure. Relevant data are presented in Table 9.4.

Table 9.4. The organisational characteristics of the research sample (%) [N = 701]

		2009	2010	2011	2012	2013
Membership of an international capital group	S	21.16	21.34	21.02	20.96	21.07
	L	41.22	40.54	40.91	40.76	39.38
	T	25.39	25.39	25.39	25.39	25.25
Membership of a Polish capital group	S	27.67	28.21	28.34	28.49	28.47
	L	33.78	33.78	33.77	33.12	33.13
	T	28.96	29.39	29.53	29.53	29.53
Change of the Chairperson / Managing Director	S	2.55	1.63	3.66	3.31	2.04
	L	4.76	4.05	1.95	7.64	5.63
	T	3.02	2.14	3.28	4.28	2.85
Change in the organisational structure	S	1.99	2.90	1.83	1.10	1.48
	L	10.81	12.84	8.44	4.46	3.13
	T	3.86	4.99	3.28	1.85	1.85

Source: authors' own study.

About 25% of the companies are entities that were part of an international group in 2009–2013. However, if we take into account the companies' size, we will see that the rate was higher in the case of large companies (approximately 41% of entities of this size). Membership of a Polish capital group was indicated by approximately 29% of the population investigated; again, however, for large companies the rate was higher, amounting to almost 34%, and in the case of companies representing the SME sector it was about 28%.

Changing the Chairperson or Managing Director in 2009, 2011 and 2013 took place in approximately 3% of the companies surveyed. In 2010, changes in these positions concerned a little more than 2% of the population, and in 2011 just over 4%. As part of the analysed categories of company size, this ratio ranged between 2 and 9%, depending on the company size. The highest percentage of changes in

the position of Chairman or Managing Director could be seen in 2012 in the sector of large companies.

The year 2009 saw a change primarily in the organisational structure of large companies (about 11% of responses). A year later, even a greater number of companies reported having made such changes: the percentage was almost 13%. SMEs took such decisions far less frequently: they concerned about 2% of small firms in 2009 and 2011, 3% in 2010, and about 1% in 2012–2013. Throughout the whole research sample, we can see that changes in the organisational structure slowed down between 2011 to 2013.

In some economies, the global economic crisis required providing public financial assistance. The respondents were asked to indicate whether they made use of such support. Data concerning the proportion of companies that used public aid or support during this period are shown in Table 9.5. In the whole period under study, about 30% of the companies were given public financial aid. The percentage was slightly lower in 2009 and 2011. Moreover, the proportion of companies declaring the use of this solution was higher among large companies, reaching the level of about 40% in 2010, 2012 and 2013.

Table 9.5. The proportion of companies using public financial aid or support (%)
[N = 701]

		2009	2010	2011	2012	2013
Public aid or support use in particular years	S	27.85	30.56	28.70	34.01	29.57
	L	32.43	38.51	25.97	40.13	38.13
	T	28.82	32.24	28.10	35.38	31.53

Source: authors' own study.

It should be noted at this point that, although the proportion of companies using public financial aid in 2009 and 2010 is very similar, there were changes in the extent to which the solution was adopted within the population examined. Approximately 17% of the companies used these funds in both 2009 and 2011. However, about 12% of the entities that used this solution during the global economic crisis did not do so in 2011. On the other hand, about 11% of the companies not receiving financial assistance in 2009 used this solution in 2011.

The respondents were also asked to indicate the strength and direction of the impact the global economic crisis had on their activities. The question used a seven-point rating scale, where -3 meant that the crisis had had a very negative impact on the company's activity, and 3 meant that the impact had been very positive. The number of respondents' choices are shown in Table 9.6.

Table 9.6. The strength and direction of the impact of the global economic crisis – self-evaluation [N = 701]

Strength and direction of impact	S*		L*		T*	
	Number of responses	Share in category	Number of responses	Share in category	Number of responses	Share in category
<i>Very negative (-3)</i>	9	1.66%	1	0.63%	10	1.43%
<i>Negative (-2)</i>	55	10.17%	10	6.25%	65	9.27%
<i>Slightly negative (-1)</i>	104	19.22%	39	24.38%	143	20.40%
<i>Neutral (0)</i>	345	63.77%	106	66.25%	451	64.34%
<i>Slightly positive (1)</i>	16	2.96%	3	1.88%	19	2.71%
<i>Positive (2)</i>	12	2.22%	1	0.63%	13	1.85%
<i>Very positive (3)</i>	0	0.00%	0	0.00%	0	0.00%
Total:	541	100.00%	160	100.00%	701	100.00%

* Since self-evaluation was tied to an entity rather than a specific year, company size was determined using the most up-to-date available data concerning the number of employees (the year 2013).
S – SME-sector entities, L – large entities, T – total.

Source: authors' own study.

The majority of respondents (64.34% of the total) perceived the impact of the global economic crisis as neutral for their companies' operations. Such an evaluation was particularly popular with large companies (66.25%) and SME-sector entities. This does not seem very surprising, given that the Polish economy weathered the crisis relatively successfully. The second most frequent answer was a slightly negative impact, which occurred in 104 (19.22%) small firms and 39 (24.38%) large companies. Additionally, a negative or very negative effect of the global economic crisis was indicated by just over 10% of the population investigated, while a positive or very positive impact was felt only by fewer than 2% of the companies.

As the survey covered industries that were identified as performing the best and the worst during the global economic crisis, Table 9.7 shows the numbers of respondents' answers self-evaluating the impact of the crisis according to the industry criterion. Within the group of companies operating in the sectors performing the worst during the global economic crisis, the proportion of entities which regarded the impact of the crisis as negative was almost 45%, while within the group of companies representing "the best industries" the proportion was lower than 30%. Significant differences in the numbers of selected answers within both groups are also apparent in the case of a neutral impact.

Table 9.7. The strength and direction of the impact of the global economic crisis (industries) [N = 701]

	The weakest industries		The best industries		T	
Strength and direction of impact	Number of responses	Share in category	Number of responses	Share in category	Number of responses	Share in category
<i>Very negative (-3)</i>	2	2.99%	8	1.26%	10	1.43%
<i>Negative (-2)</i>	7	10.45%	58	9.15%	65	9.27%
<i>Slightly negative (-1)</i>	21	31.34%	122	19.24%	143	20.40%
<i>Neutral (0)</i>	35	52.24%	416	65.62%	451	64.34%
<i>Slightly positive (1)</i>	2	2.99%	17	2.68%	19	2.71%
<i>Positive (2)</i>	0	0.00%	13	2.05%	13	1.85%
<i>Very positive (3)</i>	0	0.00%	0	0.00%	0	0.00%
Total:	67	100.00%	634	100.00%	701	100.00%

Source: authors' own study.

In our further analysis, we decided to verify whether the industries identified as performing the best or the worst during the global economic crisis differed in a statistically significant way in terms of the self-evaluation of the impact that the crisis had on companies operating within them. To explore the issue, we used a nonparametric Mann-Whitney U test for two independent samples. The results of the analysis are presented in Table 9.8. It can be noted with a <0.05 significance level that the difference in the self-evaluation of the impact that the global economic crisis had on the activities of the companies under analysis is statistically significant within the two groups.

Table 9.8. The self evaluation of the impact that the global economic crisis had on the best and the weakest industries – a Mann-Whitney U test [N =701]

Sum of ranks		U	With corrections	p	Number of companies	
Best industries	Weakest industries				Best industries	Weakest industries
225754	20297	18019	2.40	0.02	634	67

Source: authors' own study.

9.2. Indicators of the analysed companies' competitive position

The competitive position of the companies surveyed was evaluated by means of five subjective³ indicators: profitability, sales growth rate, market share, overall financial situation, and customer satisfaction. Representatives of the companies were asked to rate the specified measures on a seven-point scale in comparison with their direct competitors. The evaluation was carried out for particular years (2009–2013). The means and standard deviations of ratings within company-size categories and in total are shown in Table 9.9. Looking at the average ratings across the whole research sample, without a breakdown into SMEs and large companies, we can find that, regardless of the year analysed, the most highly rated was customer satisfaction (average rating: 0.98 in 2009, and 1.00 in 2013), which means that, on average, this indicator of competitive position was slightly better for the entire population than for direct competitors. It is also worth noting that the mean ratings of competitive-position indicators were significantly better in the case of large companies – this group's average ratings were invariably over 1.00 or close to 2.00 – and significantly less favourable in the case of the SME sector (the group's average ratings never reached the value of 1.00).

Taking into consideration the time factor, we should note that, in the case of all the groups, the average ratings of the 2009 competitive-position indicators were the lowest in the entire period investigated. Relatively large differences in this respect can be seen in profitability, sales growth rate, and market share. These are also the indicators for which the variability of average ratings within the groups in 2010–2013 was relatively the highest. It could also be added that, throughout the whole period, all the measures used were accompanied by relatively high values of standard deviation, which is evidence of a fairly large spread of ratings within the categories considered.

Table 9.9. Ratings of competitive-position indicators [N = 701]

		2009		2010		2011		2012		2013	
		m	SD	m	SD	m	SD	m	SD	m	SD
Profitability	S	0.35	1.43	0.50	1.33	0.45	1.35	0.54	1.38	0.67	1.39
	L	1.32	1.50	1.32	1.48	1.36	1.51	1.47	1.42	1.56	1.55
	T	0.56	1.50	0.68	1.40	0.65	1.44	0.75	1.45	0.87	1.48

³ See section 4.2.3 for more details.

Sales growth rate	S	0.46	1.45	0.58	1.36	0.49	1.37	0.55	1.42	0.69	1.38
	L	1.51	1.45	1.45	1.53	1.34	1.53	1.59	1.47	1.58	1.54
	T	0.69	1.51	0.76	1.44	0.68	1.45	0.78	1.49	0.89	1.47
Market share	S	0.38	1.41	0.50	1.32	0.47	1.38	0.52	1.41	0.67	1.40
	L	1.35	1.45	1.34	1.45	1.35	1.53	1.50	1.38	1.59	1.55
	T	0.58	1.48	0.67	1.39	0.66	1.46	0.74	1.46	0.88	1.48
Overall financial situation	S	0.48	1.46	0.56	1.35	0.59	1.41	0.53	1.39	0.64	1.44
	L	1.52	1.47	1.45	1.53	1.55	1.48	1.50	1.41	1.59	1.56
	T	0.70	1.53	0.75	1.43	0.80	1.48	0.75	1.45	0.86	1.52
Customer satisfaction	S	0.80	0.81	0.81	0.81	0.81	0.80	0.81	0.80	0.81	0.80
	L	1.67	0.99	1.66	0.96	1.64	0.98	1.66	0.98	1.65	0.98
	T	0.98	0.92	0.99	0.91	1.00	0.91	1.00	0.91	1.00	0.91

Source: authors' own study.

As 2009 is treated as the year when the global economic crisis occurred, and 2011 represents a year of relative prosperity (see Chapter 8 for more details), we decided to examine in greater detail the assessment of and changes in competitive-position indicators for these periods (Table 9.10). In both these years, the majority of the enterprises under analysis assessed the indicators as at least slightly better than those of the closest competitors (at least 55% of indications within all categories for 2009 and at least 56% of indications for 2011). In addition, compared to 2009, in 2011 the proportion of such ratings slightly increased for all measures except profitability. The proportion of enterprises rated at most as slightly inferior to the closest rivals in the period of relative prosperity fell slightly in comparison with the period of the global economic crisis in terms of profitability and overall financial situation (a decline of 0.71% and 1.72%, respectively). At the same time, the proportion of companies rated like this in terms of sales growth and market share increased (a growth of 2.00% and 2.28%, respectively).

Dynamically, compared to 2009, the year 2011 saw many changes in the ratings of four of the five measures (the exception was the level of customer satisfaction). The proportion of companies whose ratings changed were, respectively, about 68%, 61%, 63% and 54% for profitability, sales growth rate, market share, and overall financial situation. At the same time, in the case of profitability, market share, and the overall financial situation in 2011, an improvement in the rating was much more frequent than a deterioration.

Table 9.10. Ratings of competitive-position indicators – a dynamic approach, 2009–2011 [N = 701]

	2009			2011			2009 vs 2011		
	Better	Compara- ble	Worse	Better	Compara- ble	Worse	Improve- ment	No change	Deteriora- tion
Profitability	395 (56.35%)	129 (18.40%)	177 (25.25%)	394 (56.21%)	135 (19.26%)	172 (24.54%)	251 (35.81%)	227 (32.38%)	223 (31.81%)
Sales growth rate	403 (57.49%)	130 (18.54%)	168 (23.97%)	408 (58.20%)	111 (15.83%)	182 (25.96%)	209 (29.81%)	273 (38.94%)	219 (31.24%)
Market share	391 (55.78%)	142 (20.26%)	168 (23.97%)	405 (57.77%)	112 (15.98%)	184 (26.25%)	238 (33.95%)	260 (37.09%)	203 (28.96%)
Overall financial situation	418 (59.63%)	100 (14.27%)	183 (26.11%)	427 (60.91%)	103 (14.69%)	171 (24.39%)	207 (29.53%)	324 (46.22%)	170 (24.25%)
Customer satisfaction	460 (65.62%)	240 (34.24%)	1 (0.0%)	467 (66.62%)	234 (33.38%)	0 (0.00%)	8 (1.14%)	692 (98.72%)	1 (0.14%)

Source: authors' own study.

9.3. Indicators of the analysed companies' input competitiveness

The assessment conducted as part of the study covered 13 elements of competitive potential – a company's resources and actions, and 13 elements of competitive strategy – instruments of competition (see Chapter 4 for more details). Respondents were asked to rate the indicators (using a seven-point scale) in relation to direct competitors, where the -3 rating meant that the company was much worse than its competitors, and the 3 rating represented the opinion that the company was much better than its competitors in terms of the aspect concerned. The means and standard deviations of indicators within company categories are shown in Tables 9.11 and 9.12.

Within the entire research sample, the best average rating was given to actions related to manufacturing, particularly to its efficiency (the average rating of 0.92 in 2009 and 1.04 in 2013), and to procurement, seen from the perspective of its efficiency (the average rating of 0.92 in 2009 and 1.04 in 2013). The average rating of these indicators is relatively high in the case of both large companies and the SME sector, no matter if it takes into account the crisis period (2009) or

a period of relative prosperity (2011). As we move away in time from the crisis, we can see a general improvement in the elements of the companies' competitive potential, with the most positive changes being characteristic of intangible resources (the average rating of 0.68 in 2009 and 1.00 in 2013) and service (the average rating of 0.48 in 2009 and 0.81 in 2013), which suggests that these elements are potentially sensitive to the impact of a crisis. On average, entities representing the SME sector indicated, however, that service (its efficiency and effectiveness) and quality control (its efficiency) are not strong elements of their competitive potential (the average rating of service was 0.22 in 2009 and 0.59 in 2013; the average rating of quality control was 0.21 in 2009, and it increased to 0.51 in 2013). The average ratings for large companies – whether we consider 2009 or the subsequent years – are again more positive than those for the group of micro, small and medium-sized enterprises.

On average, the weakest elements of large companies' competitive potential in particular years in terms of the measures considered were financial resources in 2009 (the average rating of 1.31); technology in 2010 (the average rating of 1.30); and human resources and human resources management in 2011 (in both cases, the average rating of 1.34). Human resources remained on average the weakest component of competitive potential also in 2013 (the average rating of 1.35). It is worth emphasising at this point that all the lowest average ratings still represent a level of performance that is at least slightly better within the assessed areas than that of the closest competitors.

Table 9.11. Ratings of elements of competitive potential [N = 701]

		2009		2010		2011		2012		2013	
		m	SD	m	SD	m	SD	m	SD	m	SD
Tangible resources (available machines, assets, infrastructure)	S	0.47	0.92	0.58	0.97	0.61	0.97	0.66	1.02	0.70	1.03
	L	1.32	1.21	1.50	1.16	1.51	1.11	1.59	1.08	1.59	1.15
	T	0.65	1.05	0.78	1.08	0.81	1.07	0.87	1.10	0.90	1.13
Human resources	S	0.52	0.84	0.52	0.83	0.53	0.83	0.54	0.83	0.55	0.84
	L	1.33	1.19	1.33	1.18	1.34	1.19	1.35	1.18	1.33	1.18
	T	0.69	0.98	0.69	0.98	0.71	0.98	0.72	0.98	0.73	0.98
Intangible resources (knowledge, brand, patents, etc.)	S	0.51	0.91	0.59	0.94	0.65	0.96	0.71	1.01	0.78	1.03
	L	1.34	1.19	1.51	1.12	1.57	1.08	1.68	1.05	1.72	1.04
	T	0.68	1.03	0.78	1.06	0.85	1.06	0.93	1.10	1.00	1.11

Financial resources	S	0.43	0.98	0.52	0.96	0.56	0.96	0.59	1.00	0.63	0.98
	L	1.31	1.22	1.42	1.14	1.48	1.11	1.54	1.09	1.56	1.12
	T	0.62	1.09	0.71	1.07	0.76	1.06	0.80	1.10	0.85	1.09
Logistics (efficiency)	S	0.52	0.79	0.45	0.82	0.58	0.85	0.62	0.90	0.76	1.02
	L	1.37	1.07	1.33	1.13	1.44	1.08	1.57	1.02	1.70	1.03
	T	0.70	0.93	0.64	0.97	0.76	0.97	0.83	1.01	0.98	1.09
Manufacturing (efficiency)	S	0.74	1.02	0.77	1.00	0.81	0.99	0.90	1.02	0.89	0.99
	L	1.57	1.13	1.66	1.17	1.62	1.19	1.63	1.20	1.58	1.18
	T	0.92	1.10	0.96	1.10	0.99	1.09	1.06	1.10	1.05	1.08
Marketing and sales (efficiency and effectiveness)	S	0.39	1.32	0.47	1.29	0.50	1.31	0.59	1.30	0.59	1.21
	L	1.54	1.43	1.59	1.41	1.56	1.40	1.62	1.38	1.59	1.39
	T	0.63	1.42	0.71	1.39	0.73	1.40	0.82	1.39	0.82	1.32
Service (efficiency and effectiveness)	S	0.22	1.19	0.34	1.19	0.37	1.21	0.46	1.23	0.58	1.19
	L	1.43	1.37	1.48	1.41	1.45	1.38	1.53	1.36	1.58	1.37
	T	0.48	1.32	0.58	1.33	0.61	1.33	0.70	1.34	0.81	1.30
Procurement (efficiency)	S	0.74	1.00	0.80	0.89	0.80	0.97	0.85	0.89	0.88	0.94
	L	1.57	1.14	1.58	1.07	1.59	1.20	1.58	1.13	1.58	1.14
	T	0.92	1.09	0.97	0.98	0.97	1.07	1.01	0.99	1.04	1.03
Technology (advancement and efficiency)	S	0.48	0.92	0.41	0.90	0.49	0.96	0.60	0.99	0.73	1.01
	L	1.33	1.21	1.30	1.18	1.36	1.14	1.52	1.14	1.60	1.14
	T	0.66	1.05	0.60	1.03	0.68	1.07	0.81	1.09	0.93	1.11
Human resources management (efficiency)	S	0.54	0.85	0.53	0.84	0.57	0.86	0.57	0.84	0.58	0.83
	L	1.36	1.20	1.35	1.18	1.34	1.17	1.40	1.15	1.35	1.15
	T	0.71	0.99	0.70	0.98	0.74	0.99	0.75	0.98	0.75	0.97
Corporate management systems (efficiency and effectiveness)	S	0.40	1.30	0.48	1.28	0.50	1.29	0.61	1.28	0.60	1.20
	L	1.54	1.39	1.57	1.40	1.56	1.38	1.64	1.34	1.58	1.38
	T	0.64	1.40	0.71	1.38	0.74	1.38	0.84	1.37	0.83	1.31
Quality control (efficiency)	S	0.21	1.17	0.36	1.21	0.33	1.18	0.50	1.25	0.51	1.20
	L	1.38	1.40	1.49	1.42	1.40	1.40	1.56	1.37	1.51	1.36
	T	0.46	1.31	0.60	1.34	0.57	1.31	0.74	1.35	0.74	1.31

Source: authors' own study.

As for components of competitive strategy, the following instruments of competition were considered: level of product uniqueness; product quality; price; brand and image; customisation; terms of payment; terms and length of warranty; breadth and availability of the offer; breadth, quality and price of after-sales service; level of advertising expenditure; level of company commitment to introducing product enhancement; and frequency of introducing new offers. In 2009, the highest average rating was given to product customisation (1.21), which, on average, was a strength of the competitive strategies of large companies, but also micro, small and medium-sized enterprises in the years covered by the study, with SMEs' clear tendency towards positive changes (the average rating of 1.02 in 2009 and 1.06 in 2013). In 2009, the investigated companies were, on average, the weakest from the viewpoint of the terms and length of warranty as well as the availability of the offer (the average ratings of 0.35 and 0.41, respectively), with the former being evaluated, on average, far worse by SMEs. The average rating of these instruments of competition increasingly improved as we moved away from the year 2009. With regard to competitive-strategy elements tied to company innovativeness, the average level of company commitment to introducing product enhancement was rated increasingly better with time – in 2009 the average rating was lower than in 2010–2013 – which is evident in the case of large companies, but also micro, small, and medium-sized enterprises. As far as the frequency of introducing new offers is concerned, there was an improvement in the average rating for the whole research sample and the SME sector. In the case of large companies, however, the trend is not so positive.

Table 9.12. Ratings of instruments of competition [N = 701]

		2009		2010		2011		2012		2013	
		m	SD	m	SD	m	SD	m	SD	m	SD
Level of product uniqueness	S	0.53	0.87	0.50	0.86	0.62	0.90	0.73	0.95	0.83	0.97
	L	1.43	1.08	1.45	1.02	1.54	0.95	1.66	0.96	1.73	0.96
	T	0.72	0.99	0.70	0.98	0.82	0.99	0.94	1.03	1.03	1.04
Product quality	S	0.60	0.79	0.63	0.76	0.68	0.77	0.77	0.80	0.90	0.92
	L	1.45	1.10	1.50	1.02	1.49	0.96	1.61	0.88	1.76	0.96
	T	0.78	0.93	0.81	0.90	0.86	0.88	0.96	0.89	1.10	1.00
Product price	S	0.47	1.43	0.61	1.33	0.53	1.23	0.55	1.27	0.61	1.23
	L	1.53	1.48	1.50	1.50	1.32	1.37	1.41	1.32	1.47	1.27
	T	0.70	1.50	0.80	1.41	0.71	1.31	0.74	1.33	0.80	1.29

Level of company commitment to introducing product enhancement	S	0.57	0.79	0.59	0.77	0.67	0.75	0.74	0.80	0.79	0.82
	L	1.42	1.08	1.47	1.00	1.51	0.95	1.59	0.86	1.64	0.89
	T	0.75	0.93	0.78	0.90	0.85	0.87	0.93	0.89	0.98	0.91
Product customisation	S	1.02	0.82	1.04	0.82	1.05	0.81	1.06	0.81	1.06	0.82
	L	1.91	0.85	1.89	0.85	1.88	0.85	1.89	0.84	1.87	0.84
	T	1.21	0.90	1.22	0.90	1.23	0.89	1.24	0.89	1.24	0.89
Breadth of the offer	S	0.88	0.91	0.88	0.92	0.99	0.88	1.06	0.82	1.09	0.79
	L	1.61	0.84	1.63	0.84	1.71	0.82	1.69	0.83	1.66	0.83
	T	1.04	0.94	1.03	0.95	1.15	0.92	1.20	0.87	1.22	0.84
Frequency of introducing new offers	S	0.66	0.84	0.64	0.84	0.71	0.83	0.77	0.82	0.80	0.78
	L	1.28	0.85	1.28	0.81	1.24	0.81	1.20	0.83	1.16	0.82
	T	0.79	0.88	0.78	0.87	0.83	0.85	0.86	0.84	0.88	0.80
Terms of payment	S	0.34	0.55	0.32	0.54	0.35	0.54	0.37	0.56	0.42	0.58
	L	0.82	0.92	0.80	0.91	0.79	0.90	0.82	0.90	0.83	0.91
	T	0.44	0.68	0.42	0.66	0.45	0.67	0.47	0.68	0.51	0.69
Availability of the offer (time and place)	S	0.25	0.67	0.20	0.64	0.30	0.65	0.56	0.84	0.80	0.94
	L	1.01	1.06	0.97	1.08	1.01	1.06	1.44	1.12	1.61	1.08
	T	0.41	0.83	0.36	0.82	0.45	0.82	0.75	0.98	0.99	1.03
Brand and image	S	0.89	0.90	0.91	0.87	0.91	0.90	0.87	0.86	0.87	0.86
	L	1.80	0.94	1.82	0.91	1.79	0.97	1.73	0.96	1.72	0.95
	T	1.09	0.98	1.10	0.95	1.10	0.98	1.06	0.95	1.06	0.95
Level of advertising expenditure	S	0.41	1.19	0.47	1.15	0.41	1.07	0.50	1.08	0.51	1.05
	L	1.45	1.30	1.49	1.25	1.48	1.23	1.52	1.22	1.49	1.22
	T	0.63	1.29	0.68	1.25	0.65	1.19	0.73	1.19	0.73	1.17
Terms and length of warranty	S	0.15	0.99	0.26	1.03	0.33	0.98	0.60	1.05	0.64	0.99
	L	1.07	1.11	1.18	1.14	1.29	1.22	1.54	1.17	1.54	1.25
	T	0.35	1.08	0.46	1.12	0.54	1.11	0.81	1.15	0.85	1.12
Breadth, quality and price of after-sales service	S	0.22	1.07	0.35	1.03	0.41	1.04	0.50	0.95	0.65	0.92
	L	1.22	1.14	1.28	1.11	1.39	1.27	1.38	1.12	1.49	1.13
	T	0.43	1.16	0.55	1.11	0.62	1.17	0.70	1.05	0.84	1.03

Source: authors' own study.

9.4. The companies' internationalisation level

The internationalisation of the surveyed companies was examined in terms of its depth and width. The depth of internationalisation was measured using an estimated share of imports in the company's purchases in particular years and an estimated share of exports in its sales (including the EU market). The width of internationalisation was determined using an estimated number of markets in which the company was present in particular years. The means and standard deviations of these indicators within company categories are shown in Table 9.13.

Table 9.13. Indicators of the internationalisation level (%) [N = 701]

		2009		2010		2011		2012		2013	
		m	SD	m	SD	m	SD	m	SD	m	SD
Estimated share of imports in the company's purchases in particular years (including the EU market)	S	4.68	13.73	4.67	13.67	4.77	13.97	4.76	13.91	4.80	14.05
	L	3.95	11.15	4.01	11.19	3.97	11.04	3.95	11.10	4.09	11.12
	T	4.52	13.23	4.53	13.19	4.59	13.39	4.58	13.33	4.64	13.44
Estimated share of exports in the company's sales (including the EU market)	S	15.06	21.40	15.45	21.44	15.85	22.06	16.19	22.26	16.48	22.66
	L	19.73	19.94	19.60	19.26	20.24	20.05	20.27	19.75	20.16	20.11
	T	16.05	21.19	16.32	21.06	16.81	21.71	17.11	21.79	17.32	22.16
Estimated number of foreign markets in which the company was present	S	2.79	5.15	2.85	5.20	2.89	5.23	2.97	5.34	3.01	5.43
	L	5.01	8.45	5.07	8.50	5.14	8.44	5.25	8.51	5.19	8.51
	T	3.26	6.07	3.32	6.11	3.38	6.15	3.48	6.27	3.51	6.33

Source: authors' own study.

The sample shows that, on average, the companies' exports are greater than their imports – the average estimated share of exports in the companies' sales fluctuated around 16%, and exhibited an upward trend as we moved away from 2009 (Table 9.13). In the case of large companies, the average export involvement was greater than in the case of micro, small and medium-sized enterprises, although in both groups the indicator's positive growth trend was apparent in subsequent years. The average share of imports in the surveyed companies' purchases was between 4.52% in 2009 and 4.64% in 2013, so it generally increased in the 2009–2013

period. At the same time, the indicator was lower for large companies and higher for companies in the SME sector.

On average, in the entire period under study, the companies operated in three foreign markets; for large companies, this indicator oscillates around five, while for companies in the SME sector it is just over three. In particular years, the surveyed companies reported, on average, a slight but steady increase in the number of foreign markets they were present in. It is worth noting that the standard deviation values for this variable are high, which, on the one hand, is evidence of a wide divergence in the surveyed companies' answers, and on the other, is a consequence of not using an ordinal scale for these questions.

9.5. The external determinants of the companies' operations

With regard to the external determinants of the surveyed companies' operations, the respondents were asked, among other things, to evaluate the external demand conditions and resource conditions characteristic of a given entity, as well as the intensity of competition in the industry. To evaluate demand and supply conditions, a seven-point scale was used, where the -3 rating meant that the conditions were very unfavourable, and the 3 rating indicated that the conditions were very favourable. As for the intensity of competition, we also used a seven-point scale, where the -3 rating meant that competition was very weak, and the 3 rating indicated that competition was very strong. Tables 9.14, 9.16, and 9.17 present mean ratings and standard deviations for indicators of external demand determinants, resource determinants, and the intensity of competition in the industry.

In 2009, which represents the time of the global economic crisis, the analysed companies reported, on average, unfavourable external demand conditions in terms of the size of orders placed and the market growth rate. Throughout the whole sample under study, the average rating of the size of customers' orders was -0.12, and for SMEs it was -0.35. The average market growth rate in 2009, in turn, was rated at -0.26 for the whole sample and -0.41 for companies in the SME sector. For the group of small enterprises, the average rating pointing to unfavourable conditions in terms of market growth rate continued until 2012. A significant improvement in this respect in relation to the group's average rating was visible in 2013. Throughout the whole period under analysis, large companies, on average, did not perceive external demand conditions as unfavourable. What is more, in the same period, in the case of the group of large companies, the average rating of each of these measures gradually increased.

Table 9.14. Ratings of indicators of external demand determinants

		2009		2010		2011		2012		2013	
		m	SD	m	SD	m	SD	m	SD	m	SD
Size of customers' orders	S	-0.35	1.37	0.18	1.22	0.03	1.44	0.14	1.48	0.70	1.33
	L	0.72	1.61	0.75	1.59	0.98	1.51	1.08	1.45	1.26	1.54
	T	-0.12	1.49	0.30	1.33	0.24	1.50	0.35	1.52	0.83	1.40
Number of customers	S	0.09	0.99	0.45	0.99	0.37	1.11	0.44	1.16	0.82	1.13
	L	1.05	1.27	1.05	1.26	1.21	1.27	1.26	1.23	1.40	1.27
	T	0.29	1.12	0.58	1.08	0.55	1.20	0.62	1.22	0.96	1.19
Market growth rate	S	-0.41	0.81	-0.21	0.82	-0.18	0.87	-0.17	0.95	0.08	1.00
	L	0.30	1.11	0.32	1.05	0.53	1.01	0.54	0.98	0.68	1.00
	T	-0.26	0.93	-0.10	0.90	-0.03	0.95	-0.01	1.00	0.22	1.03

Source: authors' own study.

As part of an additional analysis using a nonparametric test of dependent samples (Wilcoxon test), we verified the occurrence of statistically significant differences in ratings of external demand conditions during the crisis (2009) and relative prosperity (2011). Differences in all three measures were statistically significant. Within the analysed population, an improvement in demand conditions in 2011 in comparison with 2009 was particularly frequently reported in terms of the size of customers' orders (about 43% of the companies surveyed). Additionally, improved conditions in terms of the number of customers and market growth rate became apparent in the responses of about 35% and 34% of respondents, respectively.

Among the resources considered were infrastructure, technology, capital, and human resources. For each of them, respondents were asked to assess its availability, quality, and price in relation to the environment in which the company operated. The 12 indicators obtained as a result were used to evaluate external resource determinants.

The average ratings of the applied measures demonstrate that unfavourable external resource conditions included the price of borrowed capital in 2009–2011 and the availability of adequate infrastructure in 2009–2010. The average unfavourable rating of the price of borrowed capital was also visible throughout the whole analysed period in the case of the SME group. As the group accounted for more than two thirds of the sample, unfavourable ratings are also visible for the entire population. With regard to the availability of adequate infrastructure, it is

also worthwhile to note a significant improvement in the average rating for the year 2013. The value of the indicator was 2, which was equivalent to a favourable assessment of the conditions.

Table 9.15. Ratings of indicators of external demand determinants in the periods of the global economic crisis and relative prosperity – a dynamic approach [N = 701]

	2009			2011					Differences
	Unfavourable	Neutral	Favourable	Unfavourable	Neutral	Favourable	Improvement in conditions	Deterioration in conditions	Wilcoxon test*
Size of customers' orders	256	207	238	228	163	310	303	181	Significant
Number of customers	172	239	290	146	199	356	244	144	Significant
Market growth rate	293	296	112	229	292	180	238	123	Significant

* Significance level for $p < 0.05$.

Source: authors' own study.

As for the availability and skills of potential employees, average ratings tend to be positive (about 1.00). An interesting phenomenon are the deteriorating conditions for doing business owing to potential employees' pay demands: in 2012 and 2013, these indicators received, on average, less positive ratings for the entire sample and for each company category than they did in previous years (far below 1.00). This may suggest that the improving economic situation in the market was associated with companies' greater demand for human resources. In this situation, it was possible for potential employees to make greater wage demands. As for determinants relating to the availability of adequate technology, a positive average trend could be seen in particular years. Conditions related to the price of required technology were perceived as favourable, particularly by large companies in 2009 and 2010. This may suggest that, in the crisis period, purchasers of technology had to make financial savings, which translated into a decline in its price.

Table 9.16. Ratings of indicators of external resource determinants [N = 701]

		2009		2010		2011		2012		2013	
		m	SD	m	SD	m	SD	m	SD	m	SD
Number of suppliers (of materials, raw materials and components) available in the market	S	1.30	0.80	1.34	0.76	1.53	0.75	1.69	0.70	1.69	0.67
	L	1.35	0.66	1.43	0.67	1.59	0.67	1.72	0.67	1.71	0.68
	T	1.31	0.77	1.36	0.74	1.54	0.73	1.69	0.70	1.69	0.67
Quality of suppliers (of materials, raw materials and components) available in the market	S	1.29	0.75	1.37	0.73	1.52	0.72	1.62	0.69	1.62	0.68
	L	1.43	0.67	1.52	0.65	1.77	0.62	1.80	0.62	1.78	0.63
	T	1.32	0.73	1.40	0.72	1.57	0.70	1.66	0.68	1.65	0.67
Prices charged by available suppliers	S	0.94	0.85	1.00	0.83	0.51	0.70	1.35	0.83	1.39	0.81
	L	1.11	0.82	1.24	0.66	1.01	0.75	1.58	0.75	1.61	0.76
	T	0.98	0.85	1.05	0.80	0.62	0.74	1.40	0.82	1.44	0.80
Availability of potential employees	S	1.25	1.09	1.27	1.06	1.27	1.07	1.27	1.05	1.25	1.08
	L	1.26	1.07	1.26	1.06	1.31	1.03	1.31	1.01	1.26	1.04
	T	1.25	1.09	1.27	1.06	1.28	1.06	1.28	1.04	1.25	1.07
Potential employees' wage demands	S	1.22	1.06	1.22	1.04	1.19	1.07	0.41	0.94	0.43	0.92
	L	1.14	0.93	1.13	0.93	1.10	0.95	0.50	0.93	0.53	0.96
	T	1.20	1.03	1.20	1.02	1.17	1.04	0.43	0.94	0.45	0.93
Potential employees' skills	S	1.25	1.05	1.26	1.04	1.19	1.09	1.20	1.05	0.32	1.03
	L	1.26	1.03	1.26	1.02	1.21	1.05	1.25	1.01	0.31	1.05
	T	1.25	1.04	1.26	1.03	1.20	1.08	1.21	1.04	0.32	1.03
Availability of borrowed capital (e.g. loans, bond issue, etc.)	S	0.07	0.82	0.15	0.78	0.31	0.75	0.24	0.79	0.17	0.85
	L	0.16	0.99	0.26	1.00	0.46	0.96	0.43	0.91	0.33	0.99
	T	0.09	0.86	0.17	0.83	0.34	0.81	0.29	0.82	0.21	0.89

Interest on borrowed capital	S	-0.89	0.83	-0.52	0.94	-0.66	0.77	-0.34	0.89	-0.41	0.91
	L	-0.80	1.00	-0.48	0.98	-0.53	0.95	0.34	0.91	0.23	0.99
	T	-0.87	0.87	-0.51	0.94	-0.63	0.82	-0.19	0.94	-0.27	0.97
Availability of required infrastructure (roads, buildings, utilities, telecommunications)	S	0.45	1.16	0.51	1.13	0.80	1.06	1.30	0.89	1.43	0.91
	L	0.65	1.02	0.68	1.04	0.97	0.94	1.37	0.85	1.39	0.92
	T	0.50	1.13	0.54	1.11	0.83	1.04	1.32	0.88	1.42	0.91
Quality of required infrastructure (roads, buildings, utilities, telecommunications)	S	-0.18	1.25	-0.42	1.16	0.46	1.28	1.91	1.02	1.97	1.03
	L	-0.16	1.08	-0.26	1.12	0.05	1.01	2.16	0.87	2.19	0.92
	T	-0.17	1.22	-0.39	1.15	0.37	1.24	1.96	0.99	2.02	1.01
Availability of adequate technology in the market	S	1.00	0.94	1.06	0.93	1.31	0.90	1.51	0.92	1.61	0.92
	L	1.13	1.09	1.20	1.06	1.43	1.04	1.64	1.03	1.68	1.05
	T	1.03	0.97	1.09	0.96	1.34	0.93	1.54	0.94	1.62	0.95
Prices of adequate technology	S	0.43	1.09	0.48	1.08	0.30	0.94	0.50	0.95	0.60	0.95
	L	1.07	1.11	1.14	1.08	0.51	1.17	0.73	1.14	0.76	1.15
	T	0.57	1.12	0.62	1.11	0.34	1.00	0.55	1.00	0.64	1.00

Source: authors' own study.

Throughout the whole period under analysis, the average rating of the intensity of competition in the industry was close to 2.00, which means a high level of competition intensity. Nonetheless, the indicator was significantly higher for the years 2011–2013. At the same time, this trend was accompanied by a reduction in the value of standard deviation for all groups in comparison to 2009–2010. On average, SMEs rated competition intensity in their industries slightly higher than large companies did. In addition, both groups of companies indicated that in the crisis year competition intensity was lower than in the post-crisis period. In 2009 and 2011 (Table 9.18), the population was dominated by companies which found the intensity of competition to be at least higher than moderate (84% in 2009 and 95.44% in 2011). An increased competition intensity in the years concerned was also reported by about 17% of the companies surveyed.

Table 9.17. Competition intensity ratings in the industry [N = 701]

		2009		2010		2011		2012		2013	
		m	SD	m	SD	m	SD	m	SD	m	SD
Competition intensity in the industry	S	1.80	1.06	1.83	1.03	1.95	0.90	1.90	0.86	1.94	0.91
	L	1.43	1.07	1.45	1.04	1.76	0.83	1.78	0.85	1.76	0.87
	T	1.72	1.07	1.75	1.05	1.91	0.89	1.88	0.86	1.90	0.90

Source: authors' own study.

Table 9.18. Ratings of competition intensity in the industry in the periods of the global economic crisis and relative prosperity – a dynamic approach [N = 701]

	2009			2011			2009 vs 2011		
	Low	Moder-ate	High	Low	Moder-ate	High	Decrease	No change	Increase
Competition intensity in the industry	6 (0.86%)	106 (15.12%)	589 (84.02%)	3 (0.43%)	29 (4.14%)	669 (95.44%)	1 (0.14%)	584 (83.31%)	116 (16.55%)

Source: authors' own study.

9.6. Internal determinants of the analysed companies' actions

According to the results of our literature research (see Chapter 2 for more details), during the economic crisis companies may change the intensity of using specific actions. This natural solution is a consequence of adapting to the company's changing internal and external conditions. In the survey, respondents were asked to rate the intensity of using 38 types of actions on a six-point scale, where 0 meant that a given action was not taken at all, and 5 meant that an action was used to a very significant extent. Table 9.19 presents the differences in the intensity of taking the proposed actions in the periods of the global economic crisis (2009) and relative prosperity (2011). As part of an analysis using a nonparametric test of dependent samples (Wilcoxon test), we verified the occurrence of statistically significant differences in the intensity of using particular actions in the periods analysed. The differences in the intensity of using 12 of the 38 proposed actions

turned out to be statistically insignificant. Further analysis will focus on the action types which were most frequently used during the global economic crisis, and on those for which the differences in the level of their use in the years under study were the greatest.

Table 9.19. Differences in the intensity of companies' actions in the periods of the global economic crisis and relative prosperity [N = 701]

	2009		2011					Differences
	Those not using	Average for those using	Those not using	Average for those using	Increase in use	No changes in use	Decrease in use	Wilcoxon test*
Limiting current areas of activity	696	3.80	696	3.20	5	691	5	Insignificant
Entering new areas of activity	623	4.45	604	4.21	35	646	20	Significant
Taking over another company	685	4.75	691	4.50	10	675	16	Insignificant
Merging with another company	694	4.57	691	4.60	10	684	7	Insignificant
Replacing executive staff	653	4.10	652	4.20	43	619	39	Insignificant
Increasing control over actions performed	29	4.11	4	4.31	103	594	4	Significant
Increasing the significance of planning in actions performed	49	4.16	22	4.28	115	579	7	Significant
Introducing new technologies or manufacturing methods	148	4.08	165	4.12	88	520	93	Insignificant
Shortening the manufacturing process	98	3.89	64	4.04	168	443	90	Significant
Reducing employment through layoffs	700	4.00	653	4.60	48	653	0	Significant

or by limiting working time								
Eliminating unprofitable products	368	4.56	412	4.62	98	472	131	Significant
Introducing new products into the current area of activity	353	4.57	305	4.57	102	558	41	Significant
Improving the quality of current products	163	3.97	94	3.78	163	420	118	Significant
Improving customer retention	10	3.35	2	3.51	161	445	95	Significant
Increasing the number of new customers	10	3.54	2	3.64	149	446	106	Significant
Changing the current methods of product distribution	68	2.78	67	3.09	175	494	32	Significant
Entering new product markets	342	3.21	251	3.45	225	388	88	Significant
Withdrawing from current product markets	366	1.54	376	1.39	161	362	178	Insignificant
Entering new foreign markets	695	3.83	655	4.30	45	652	4	Significant
Withdrawing from current foreign markets	698	4.33	684	4.35	16	683	2	Significant
Reducing production costs	151	4.05	166	4.09	82	525	94	Insignificant
Reducing administration costs	484	2.71	443	3.14	154	500	47	Significant
Reducing management costs	268	1.52	274	1.48	218	261	222	Insignificant
Reducing financial costs	380	3.13	281	3.45	181	443	77	Significant

Selling off inventory	23	3.44	205	3.46	189	170	342	Significant
Selling off tangible assets	146	3.58	333	3.82	173	231	297	Significant
Selling off and leasing back tangible assets	425	3.44	531	4.32	128	371	202	Insignificant
Purchasing tangible assets	497	4.39	475	4.43	95	543	63	Significant
Purchasing and leasing tangible assets	624	4.09	609	3.67	47	607	47	Insignificant
Using government financial assistance	498	4.50	504	4.65	108	486	107	Insignificant
Negotiating more favourable financial agreements	12	3.93	5	3.99	78	593	30	Significant
Deferring the payment of bills	23	3.86	19	4.08	167	508	26	Significant
Debt restructuring	645	1.63	611	3.83	86	576	39	Significant
Seeking new sources of credit	508	4.12	551	4.01	65	523	113	Significant
Providing new guarantees/collateral for loans	524	4.12	593	3.99	44	540	117	Significant
Providing new guarantors	597	4.20	647	4.06	25	599	77	Significant
Raising new capital from current shareholders	649	2.37	644	2.72	22	673	6	Significant
Raising new capital from new shareholders	655	2.35	658	2.81	16	677	8	Insignificant

* Significance level for $p < 0.05$.

Source: authors' own study.

In the period of the global economic crisis, the investigated companies most often used actions oriented towards:

- improving customer retention (used by approximately 98% of companies in the survey),
- increasing the number of new clients (approximately 98%),
- negotiating more favourable financial agreements (approximately 98%),
- selling off inventory (approximately 97%),
- deferring the payment of bills (approximately 97%),
- increasing control over actions performed (approximately 96%),
- increasing the significance of planning in actions performed (approximately 93%),
- changing the current model of product distribution (approximately 90%),
- shortening the manufacturing process (approximately 86%),
- selling off tangible assets (approximately 79%).

For all these types of action, the differences regarding the intensity of their use in the years 2009 and 2011 were statistically significant.

As for actions focused on decreasing the value of assets (selling off inventory and selling off tangible assets), it should be noted that the period under analysis saw numerous changes in the intensity of their use. Differences in this respect occurred in the case of, respectively, around 76% and 67% of the population surveyed. At the same time, there was a visible decline in the intensity of using these types of action – the proportion of companies which decreased the intensity of their use was, respectively, 49% and 42% of the companies analysed.

Numerous changes in the intensity of actions performed took place also in relation to moves focused on customers (improved customer retention and an increased number of new customers). Changes in this area took place at approximately 37% and 36% of the companies, respectively. Nonetheless, unlike actions focused on reducing the value of assets, during relative prosperity, (2011) actions aimed at retaining and attracting customers gained in the intensity of use (an increase in the intensity of use concerned, respectively, about 23% and 21% of the population under study). A similar trend could be observed in relation to operational activities (changing the current methods of product distribution and shortening the manufacturing process), strategic management activities (increasing control over actions performed and increasing the significance of planning in actions performed), as well as those related to financial issues (negotiating more favourable financial agreements and deferring the payment of bills).

Among the companies surveyed, changes consisting in the reduction of employment by laying off staff or reducing working time in the period under analysis were visible in the case of only about 7% of the sample (48 entities). Nevertheless, the changes are worth highlighting because all of them reflected an increased use of this type of actions. Additionally, their average intensity among the companies

applying these actions in 2011 was 4.5, which is a very high level of intensity. These results confirm the fact that changes consisting in reducing employment occur with a delay in relation to the economic crisis.

With regard to differences in the intensity of using particular types of action in the periods of the global economic crisis and relative prosperity, the following four types of the surveyed companies' activity deserve our attention:

- eliminating unprofitable products,
- seeking new sources of credit,
- providing new guarantees/collateral for loans,
- providing new guarantors.

Within the analysed sample, all of the above are characterised by a much more frequent decrease than increase in the intensity of their use during relative prosperity. The intensity of their use decreased in the case of about 19%, 16%, 17% and 11% of the research sample, respectively.

9.7. The competitive position of companies during and after the global economic crisis – a multiple regression model

Table 9.20 presents the operationalisation of the variables used in regression equations. For all composite variables, we tested the reliability of the scales using Cronbach's alpha. In each case, its value exceeded the limit level of 0.7 set in the literature [Bland, Altman 1997]. In the equations, we used both data obtained from respondents and secondary data obtained from electronic databases (financial data). This is why the results of the study were not distorted by common method bias, which could overstate the strength of the relationships between variables [Campbell & Fiske 1959].

Table 9.20. Operationalisation of variables in the models

Variable	Operationalisation
Dependent variable	
Company's competitive position	<p>The variable is a composite of five items measuring a company's competitive position on a seven-point scale, where -3 = "The company was much worse than competitors" and 3 = "The company was much better than competitors".</p> <p>The rated indicators were: profitability, sales growth rate, market share, overall financial situation, customer satisfaction.</p> <p>Cronbach's alfa: 2009 = 0.96; 2010 = 0.95; 2011 = 0.95; 2012 = 0.94; 2013 = 0.95.</p>

Independent variables	
Input competitiveness	<p>The variable is a composite of 26 items measuring input competitiveness on a seven-point scale, where -3 = “The company was much worse than competitors” and 3 = “The company was much better than competitors”</p> <p>The rated indicators were:</p> <ul style="list-style-type: none"> resources: material resources, human resources, intangible resources (knowledge, brand, patents, etc.), financial resources; skills in: logistics (efficiency), manufacturing (efficiency), marketing and sales (efficiency and effectiveness), service (efficiency and effectiveness), procurement (efficiency), technology (advancement and efficiency), human resources management (efficiency), corporate management systems (efficiency and effectiveness), quality control (efficiency); instruments of competition: level of product uniqueness, product quality, product price, company’s commitment to product enhancement, product customisation, breadth of the offer, frequency of introducing new offers, payment terms, availability of the offer, brand and image, advertising expenditure, terms and length of warranty, quality and price of after-sales service. <p>Cronbach’s alpha: 2009 = 0.98; 2010 0.98; 2011 = 0.98; 2012 = 0.98; 2013 = 0.98</p>
Competition intensity	<p>A single-item variable measuring competition intensity on a seven-point scale, where -3 = “The level of competition was very low” and 3 = “Competition was very intense”</p>
Demand factors	<p>The variable is a composite of three items measuring demand factors on a seven-point scale, where -3 = “Conditions were very unfavourable” and 3 = “Conditions were very favourable”</p> <p>The rated indicators were: order size, market growth rate, number of customers.</p> <p>Cronbach’s alpha: 2009 = 0.89; 2010 = 0.92; 2011 = 0.91; 2012 = 0.92; 2013 = 0.94</p>
Resource conditions	<p>The variable is a composite of 12 items measuring resource conditions on a seven-point scale, where -3 = “Conditions were very unfavourable” and 3 = “Conditions were very favourable”</p> <p>The rated indicators were: number of suppliers (of materials, raw materials and components) available in the market, quality of suppliers (of materials, raw materials and components) available in the market, prices charged by available suppliers, availability of potential employees, potential employees’ wage demands, potential employees’ skills, availability of borrowed capital (e.g. loans, bond issue, etc.), interest on borrowed capital, availability of required infrastructure (roads, buildings, utilities, telecommunications), quality of required infrastructure (roads, buildings, utilities, telecommunications), availability of adequate technology in the market, prices of adequate technology.</p> <p>Cronbach’s alpha: 2009 = 0.73; 2010 = 0.72; 2011 = 0.71; 2012 = 0.73; 2013 = 0.72</p>
Internationalisation level	<p>Estimated share of exports in the company’s sales (value in the range of <0,1>)</p>
	<p>Number of foreign markets where the company sold its products</p>

Control variables	
Age	Duration (number of years) of the company's activity in relation to the year of the interview (2015)
Size	Company size based on the number of employees, measured on a four-point scale (1 = micro-company – up to 9 employees, 2 = small company – 10–49 employees, 3 = medium-sized company – 50–249 employees, 4 = large company – 250 employees or more)
	Value of assets in PLN'000s
Employment structure	Share of office staff in the total number of employees
Membership of a capital group	Dummy variable indicating if a company is a member of a (Polish or foreign) capital group (1)
Foreign capital	Dummy variable indicating if a company has more than a 50% share of foreign capital in its equity (1)
Profit margin	Indicator calculated on the basis of EBIT and company revenues (EBIT/revenues)
Sales growth rate	Indicator calculated on the basis of company revenues (year to year)
Return on equity	Indicator calculated on the basis of EBIT and the company's equity (EBIT/equity)
Industry	Dummy variable indicating if a company belongs to the industries identified as those performing the best during and after the crisis (1)

Source: authors' own study.

As can be seen in Table 9.20, the conducted regression analyses included a number of control variables. Their purpose was to identify the impact exerted on the dependent variable by factors not included in the hypotheses presented. In the literature, we can find research results suggesting that the impact of a crisis on companies may depend, among other things, on the business entity's age [Latham 2009] or size [Antonioli et al. 2011]. Additionally, we decided to check in our study the significance of a company's membership of a capital group, because, on the one hand, this factor may influence the availability of resources and, on the other, it may reduce the flexibility of the analysed entities. Since the study covered companies registered in Poland, we also investigated a significant (over 50%) involvement of foreign capital in company finance. As we analysed companies from various industries, the variable representing the analysed entities' area of activity was also taken into account in regression equations; the variable indicates their belonging to the industries which were affected the most or the least negatively by the global economic crisis. At the same time, since the analyses used a subjective measure of companies' competitive position, the model also checked its relationships with objective, single-item variables representing aspects related to output

competitiveness. As these variables are based on the analysed companies' financial information, they do not take into consideration performance of competitors (they are not relative) and, in accordance with the adopted definition of competitive position, they could not be used directly as its measures. Nonetheless, taking them into account in the model will allow us to verify whether the entities evaluated as more competitive in particular periods in the sample under analysis, were in fact characterised by better financial results, at least in some respects.

Tables 9.21–9.25 show correlation matrices of variables for the years 2009–2013. The study did not identify the occurrence of a potential problem of dependent-variable collinearity (see Hair et al. 1995) with the exception of two pairs of variables: input competitiveness and demand factors, as well as the share of exports in sales and the number of foreign markets. In both cases, correlation between the variables is justified. Demand factors faced by a company depend to a large extent on the applied instruments of competition (competitive strategy) and on the competitive potential used to prepare the offer. The better the company's offer turns out to be, the more favourable demand conditions the firm should face. In turn, correlation between the second pair of variables can be justified by the fact that they reflect the same phenomenon, namely company internationalisation. This is why we additionally analysed variance inflation factors for the prepared models (see Table 9.26). The values of indicators for all variables (including the pairs identified earlier) are significantly below the level signalling the occurrence of problems related to collinearity of variables. Therefore, all the variables were taken into account in the prepared equations. In the analyses, we employed models of multiple regression using the method of least squares. With respect to the entire period under analysis, further in the chapter five models are presented, each of which presents all the variables included in the study for particular years. The results of the analyses are shown in Table 9.27.

For all the models presented, the F-test values point to statistically significant linear regressions. What is more, the R-squared value indicates that all the equations account for about 80% of variation in the company's competitive position. In all models, there were statistically significant dependent variables, and the analysis of tolerance and of the variance inflation factor did not show a redundancy of independent variables. Furthermore, the Durbin-Watson test results for all models were close to 2, indicating that there were no significant problems with autocorrelation residues in the equations. At the same time, for all the models, the expected value of the random component was 0. Hence, models 2 and 4 fit the empirical data very well.

Table 9.21. A matrix of correlation of variables – the year 2009 [N = 701]

		Mean	Standard deviation	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Competitive position	0.70	1.30	1.00																
2	Age	22.33	13.90	0.12	1.00															
3	Size (employment)	2.77	0.85	0.39	0.32	1.00														
4	Size (assets)	59778.46	165438.70	0.25	0.13	0.36	1.00													
5	Employment structure	16.00	7.70	-0.11	-0.09	-0.33	-0.03	1.00												
6	Membership of a capital group	0.54	0.50	0.06	-0.03	0.25	0.22	-0.06	1.00											
7	Foreign capital	0.28	0.45	0.13	-0.07	0.24	0.22	-0.04	0.43	1.00										
8	Margin	0.03	0.81	0.14	0.03	0.04	0.02	0.00	0.05	0.00	1.00									
9	Sales growth rate	1.24	17.16	-0.03	-0.06	0.05	0.05	0.04	0.02	-0.00	-0.01	1.00								
10	Return on equity	0.16	1.06	0.17	-0.03	0.02	0.00	-0.02	-0.01	0.01	0.03	0.01	1.00							
11	Industry	0.90	0.29	0.08	-0.01	0.03	0.00	0.02	0.00	0.03	0.01	0.02	0.01	1.00						
12	Input competitiveness	0.69	0.92	0.90	0.15	0.48	0.37	-0.10	0.16	0.23	0.11	0.00	0.15	0.07	1.00					
13	Competition intensity	1.72	1.07	-0.11	-0.03	-0.19	-0.07	0.10	-0.08	-0.13	0.00	0.01	-0.01	0.01	-0.10	1.00				

14	Demand factors	0.30	0.78	0.66	0.11	0.29	0.36	-0.02	0.06	0.10	0.08	-0.01	0.11	0.00	0.63	-0.07	1.00		
15	Resource conditions	1.22	0.66	0.09	-0.02	0.09	0.12	-0.03	0.05	0.04	-0.03	-0.02	0.05	-0.03	0.10	0.02	0.06	1.00	
16	Internationalisation (export intensity)	16.05	21.20	0.09	0.03	0.17	0.07	-0.02	0.17	0.27	0.01	0.07	0.01	-0.11	0.14	-0.06	0.06	-0.04	1.00
17	Internationalisation (number of foreign markets)	3.26	6.07	0.14	0.07	0.22	0.08	-0.02	0.17	0.14	0.01	0.02	0.00	0.00	0.18	-0.03	0.09	0.01	0.52
																			1.00

A correlation coefficient with an absolute value of more than 0.07 is statistically significant at $p < 0.05$.

Source: authors' own study.

Table 9.22. A matrix of correlation of variables – the year 2010 [N = 701]

		Mean	Standard deviation	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Competitive position	0.77	1.22	1.00																
2	Age	22.23	13.90	0.11	1.00															
3	Size (employment)	2.77	0.85	0.39	0.31	1.00														
4	Size (assets))	63886.27	179325.20	0.27	0.13	0.35	1.00													
5	Employment structure	15.74	6.45	-0.13	-0.13	-0.39	-0.02	1.00												
6	Membership of a capital group	0.55	0.50	0.10	-0.03	0.24	0.21	-0.04	1.00											
7	Foreign capital	0.28	0.45	0.16	-0.07	0.23	0.21	-0.04	0.42	1.00										
8	Margin	-0.02	0.97	0.16	0.03	0.03	-0.02	-0.01	-0.04	0.03	1.00									
9	Sales growth rate	0.17	1.04	0.00	-0.05	-0.07	-0.02	0.04	-0.01	0.02	0.07	1.00								
10	Return on equity	0.20	2.80	0.01	-0.04	0.02	0.03	0.02	0.01	0.10	0.22	0.02	1.00							
11	Industry	0.90	0.29	0.11	-0.01	0.03	0.00	0.01	0.01	0.03	0.05	-0.01	0.01	1.00						
12	Input competitiveness	0.74	0.90	0.87	0.15	0.50	0.36	-0.11	0.18	0.25	0.11	-0.04	-0.01	0.08	1.00					

13	Competition intensity	1.75	1.05	-0.11	-0.02	-0.20	-0.05	0.10	-0.08	-0.14	-0.02	0.03	0.06	0.01	-0.12	1.00			
14	Demand factors	0.46	0.78	0.64	0.08	0.21	0.31	-0.03	0.03	0.05	0.11	0.01	0.04	0.03	0.55	-0.04	1.00		
15	Resource conditions	1.26	0.64	0.13	-0.02	0.10	0.13	-0.03	0.06	0.05	0.03	0.04	0.01	-0.02	0.12	-0.01	0.06	1.00	
16	Internationalisation (export intensity)	16.32	21.08	0.06	0.02	0.16	0.06	0.01	0.16	0.27	0.02	-0.02	0.02	-0.09	0.14	-0.10	0.01	-0.07	1.00
17	Internationalisation (number of foreign markets)	3.32	6.12	0.13	0.07	0.22	0.08	-0.01	0.16	0.14	0.03	-0.03	0.01	0.00	0.19	-0.04	0.03	0.00	0.54
																			1.00

A correlation coefficient with an absolute value of more than 0.07 is statistically significant at $p < 0.05$.

Source: authors' own study.

Table 9.23. A matrix of correlation of variables – the year 2011 [N = 701]

	Mean	Standard deviation	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 Competitive position	0.76	1.24	1.00																
2 Age	22.33	13.90	0.13	1.00															
3 Size (employment)	2.77	0.87	0.39	0.31	1.00														
4 Size (assets)	73651.14	204875.06	0.26	0.13	0.35	1.00													
5 Employment structure	15.73	6.48	-0.11	-0.13	-0.39	-0.01	1.00												
6 Membership of a capital group	0.55	0.50	0.14	-0.03	0.25	0.22	-0.04	1.00											
7 Foreign capital	0.28	0.45	0.20	-0.07	0.23	0.21	-0.03	0.42	1.00										
8 Margin	-0.08	2.27	0.11	0.04	0.06	0.02	-0.03	0.05	-0.05	1.00									
9 Sales growth rate	0.36	4.10	-0.06	-0.02	0.06	0.14	0.02	0.05	-0.02	0.01	1.00								
10 Return on equity	0.10	1.03	0.20	-0.01	0.06	0.02	0.00	0.00	0.08	0.01	0.02	1.00							
11 Industry	0.90	0.29	0.08	-0.01	0.03	-0.01	0.00	0.01	0.03	-0.01	-0.12	0.00	1.00						
12 Input competitiveness	0.78	0.89	0.85	0.15	0.50	0.37	-0.10	0.20	0.27	0.09	-0.04	0.14	0.08	1.00					

13	Competition intensity	1.91	0.89	-0.08	-0.01	-0.16	0.01	0.09	-0.05	-0.12	-0.06	0.04	0.03	0.00	-0.09	1.00			
14	Demand factors	0.49	0.81	0.71	0.13	0.34	0.27	-0.11	0.13	0.14	0.08	-0.03	0.17	0.05	0.63	-0.05	1.00		
15	Resource conditions	1.23	0.63	0.15	0.02	0.14	0.16	-0.06	0.08	0.04	0.07	0.02	0.08	0.00	0.14	-0.05	0.08	1.00	
16	Internationalisation (export intensity)	16.81	21.72	0.11	0.02	0.16	0.06	0.01	0.16	0.26	0.04	0.03	0.05	-0.12	0.16	-0.06	0.11	-0.02	1.00
17	Internationalisation (number of foreign markets)	3.38	6.16	0.15	0.07	0.22	0.08	0.00	0.17	0.14	0.03	0.01	0.02	0.00	0.21	-0.02	0.13	0.03	0.54
																			1.00

A correlation coefficient with an absolute value of more than 0.07 is statistically significant at $p < 0.05$.

Source: authors' own study.

Table 9.24. A matrix of correlation of variables – the year 2012 [N = 701]

		Mean	Standard deviation	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Competitive position	0.81	1.24	1.00																
2	Age	22.35	13.90	0.13	1.00															
3	Size (employment)	2.77	0.89	0.42	0.31	1.00														
4	Size (assets))	76063.49	201115.01	0.31	0.14	0.36	1.00													
5	Employment structure	15.68	6.51	-0.10	-0.12	-0.40	-0.01	1.00												
6	Membership of a capital group	0.55	0.50	0.17	-0.03	0.24	0.22	-0.03	1.00											
7	Foreign capital	0.28	0.45	0.20	-0.07	0.23	0.21	-0.03	0.42	1.00										
8	Margin	-0.06	1.19	0.19	0.05	0.07	0.03	-0.03	0.00	-0.04	1.00									
9	Sales growth rate	0.08	0.44	0.12	0.02	0.03	0.01	-0.01	0.05	-0.01	0.14	1.00								
10	Return on equity	0.07	1.26	0.18	0.00	0.01	0.03	-0.02	0.06	0.06	0.07	0.09	1.00							
11	Industry	0.90	0.29	0.09	-0.01	0.04	0.00	-0.01	0.01	0.03	0.08	0.05	0.11	1.00						
12	Input competitiveness	0.86	0.90	0.86	0.13	0.51	0.40	-0.10	0.20	0.27	0.12	0.07	0.13	0.09	1.00					

13	Competition intensity	1.88	0.86	-0.08	0.02	-0.07	0.03	0.07	-0.01	-0.12	-0.01	-0.01	-0.07	0.00	-0.07	1.00			
14	Demand factors	0.54	0.81	0.74	0.12	0.34	0.30	-0.10	0.14	0.15	0.12	0.06	0.15	0.05	0.66	-0.04	1.00		
15	Resource conditions	1.28	0.59	0.12	0.01	0.09	0.16	0.00	0.07	0.04	0.03	0.08	-0.02	-0.01	0.11	0.00	0.06	1.00	
16	Internationalisation (export intensity)	17.13	21.81	0.15	0.02	0.16	0.08	0.02	0.17	0.26	0.07	-0.03	-0.01	-0.11	0.19	-0.05	0.17	-0.03	1.00
17	Internationalisation (number of foreign markets)	3.48	6.27	0.17	0.07	0.22	0.09	0.00	0.17	0.14	0.05	-0.01	0.00	-0.01	0.23	-0.01	0.19	0.00	0.55
																			1.00

A correlation coefficient with an absolute value of more than 0.07 is statistically significant at $p < 0.05$.

Source: authors' own study.

Table 9.25. A matrix of correlation of variables – the year 2013 [N = 701]

	Mean	Standard deviation	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 Competitive position	0.90	1.27	1.00																
2 Age	22.33	13.90	0.10	1.00															
3 Size (employment)	2.77	0.89	0.42	0.31	1.00														
4 Size (assets))	79523.42	209267.50	0.29	0.14	0.36	1.00													
5 Employment structure	15.82	7.61	-0.12	-0.10	-0.36	-0.01	1.00												
6 Membership of a capital group	0.55	0.50	0.13	-0.03	0.23	0.22	-0.01	1.00											
7 Foreign capital	0.28	0.45	0.20	-0.07	0.23	0.22	-0.04	0.42	1.00										
8 Margin	0.01	1.63	0.10	0.01	0.04	0.02	-0.04	0.04	-0.02	1.00									
9 Sales growth rate	0.02	0.42	0.13	0.00	0.02	0.03	0.00	0.07	0.05	0.03	1.00								
10 Return on equity	-0.11	8.01	0.01	-0.12	-0.01	0.01	-0.04	0.05	0.02	0.00	0.01	1.00							
11 Industry	0.90	0.29	0.14	-0.01	0.04	0.00	0.00	0.01	0.03	0.01	-0.02	-0.01	1.00						
12 Input competitive-ness	0.91	0.91	0.87	0.12	0.50	0.40	-0.10	0.20	0.28	0.09	0.11	-0.03	0.09	1.00					

13	Competition intensity	1.90	0.90	-0.14	0.01	-0.10	0.02	0.05	-0.01	-0.09	-0.06	0.09	-0.01	-0.03	-0.10	1.00			
14	Demand factors	0.74	0.83	0.75	0.07	0.28	0.23	-0.06	0.09	0.12	0.05	0.12	0.00	0.07	0.63	-0.08	1.00		
15	Resource conditions	1.13	0.58	0.11	0.01	0.08	0.17	0.04	0.07	0.02	0.04	0.02	0.01	-0.01	0.10	0.02	0.10	1.00	
16	Internationalisation (export intensity)	17.22	22.18	0.17	0.02	0.16	0.07	0.02	0.16	0.25	-0.01	0.07	-0.11	-0.10	0.21	-0.03	0.16	-0.01	1.00
17	Internationalisation (number of foreign markets)	3.51	6.34	0.18	0.07	0.22	0.09	0.01	0.16	0.13	-0.01	0.03	0.00	-0.01	0.24	-0.02	0.17	0.02	0.56
																			1.00

A correlation coefficient with an absolute value of more than 0.07 is statistically significant at $p < 0.05$.

Source: authors' own study.

Table 9.26. Variance inflation factor (VIF) [N=701]

Year	2009			2010			2011			2012			2013		
	Model	Model 1		Model 2			Model 3			Model 4			Model 5		
Indicator		Tolerance	VIF	Tolerance	VIF		Tolerance	VIF		Tolerance	VIF		Tolerance	VIF	
Age		0.86	1.17	0.87	1.15		0.87	1.15		0.87	1.14		0.86	1.16	
Size (employment)		0.55	1.82	0.52	1.94		0.52	1.92		0.52	1.94		0.54	1.84	
Size (assets))		0.75	1.33	0.76	1.31		0.76	1.31		0.76	1.32		0.76	1.32	
Employment structure		0.87	1.15	0.82	1.22		0.81	1.24		0.79	1.26		0.83	1.20	
Membership of a capital group		0.77	1.30	0.77	1.29		0.77	1.30		0.77	1.30		0.78	1.29	
Foreign capital		0.72	1.40	0.71	1.41		0.71	1.40		0.72	1.38		0.73	1.37	
Margin		0.98	1.02	0.92	1.09		0.97	1.03		0.95	1.05		0.98	1.02	
Sales growth rate		0.98	1.02	0.98	1.02		0.94	1.06		0.96	1.04		0.97	1.04	
Return on equity		0.97	1.03	0.92	1.08		0.95	1.05		0.95	1.06		0.96	1.04	
Industry		0.97	1.03	0.97	1.03		0.96	1.04		0.95	1.05		0.97	1.03	
Input competitiveness		0.47	2.12	0.50	1.99		0.47	2.14		0.43	2.33		0.44	2.29	
Competition intensity		0.95	1.05	0.94	1.06		0.95	1.05		0.97	1.03		0.96	1.05	
Demand factors		0.57	1.77	0.65	1.54		0.58	1.71		0.54	1.87		0.57	1.74	
Resource conditions		0.97	1.04	0.95	1.05		0.94	1.06		0.96	1.04		0.95	1.05	
Internationalisation (export intensity)		0.66	1.52	0.64	1.55		0.64	1.56		0.63	1.59		0.61	1.63	
Internationalisation (number of foreign markets)		0.69	1.46	0.67	1.50		0.67	1.50		0.66	1.52		0.65	1.53	

Source: authors' own study.

Table 9.27. Multiple regression using least squares – the competitive position of a company [N=701]

Indicator	Model 1 – 2009			Model 2 – 2010			Model 3 – 2011			Model 4 – 2012			Model 5 – 2013		
	Beta	Standard error	t(684)	Beta	Standard error	t(684)	Beta	Standard error	t(684)	Beta	Standard error	t(684)	Beta	Standard error	t(684)
Age	-0.00	0.00	-0.82	-0.00	0.00	-0.72	0.00	0.00	0.10	0.00	0.00	0.80	0.00	0.00	-0.07
Size (employment)	-0.03	0.03	-1.00	-0.07**	0.03	-2.10	-0.06*	0.03	-1.83	-0.03	0.03	-1.02	0.00	0.03	0.14
Size (assets))	-0.00***	0.00	-5.06	-0.00***	0.00	-3.61	-0.00***	0.00	-3.66	-0.00**	-0.00	-2.29	-0.00***	0.00	-2.86
Employment structure	-0.01**	0.00	-2.34	-	0.01***	-3.43	0.00	0.00	-1.13	-0.00	0.00	-0.12	0.00	0.00	-1.53
Membership of a capital group	-0.12**	0.05	-2.61	-0.04	0.04	-0.86	-0.02	0.05	-0.49	0.02	0.05	0.40	-0.06	0.04	-1.47
Foreign capital	-0.13**	0.05	-2.43	-0.06	0.05	-1.12	-0.01	0.06	-0.17	-0.03	0.05	-0.63	-0.02	0.05	-0.34
Margin	0.06**	0.02	2.38	0.05**	0.02	2.41	0.01	0.01	1.32	0.07***	0.02	4.09	0.02	0.01	1.34
Sales growth rate	-0.00	0.00	-1.49	0.02	0.02	1.29	0.00	0.01	-0.60	0.11**	0.05	2.25	0.09*	0.05	1.84
Return on equity	0.03*	0.02	1.73	0.00	0.01	0.47	0.07**	0.02	3.08	0.03**	0.02	2.05	0.00	0.00	1.60
Industry	0.09	0.07	1.37	0.16**	0.07	2.42	0.04	0.07	0.60	0.01	0.07	0.19	0.20**	0.07	3.06
Input competitiveness	1.18***	0.03	37.84	1.07***	0.03	34.61	1.00***	0.04	28.29	0.93***	0.04	26.69	0.96***	0.03	29.88
Competition intensity	-0.04**	0.02	-2.08	-0.03*	0.02	-1.79	-0.00	0.02	-0.02	-0.03	0.02	-1.35	-0.05**	0.02	-2.30
Demand factors	0.27***	0.03	8.02	0.37***	0.03	11.85	0.44***	0.03	12.89	0.46***	0.03	13.35	0.50***	0.03	16.45

Resource conditions	0.01	0.03	0.45	0.03	0.03	0.80	0.03	0.04	0.92	0.06*	0.04	1.71	0.01	0.03	0.22
Internationalisation (export intensity)	-0.00	0.00	-0.89	-0.00**	0.00	-2.56	-0.00*	0.00	-1.84	-0.00*	0.00	-1.70	-0.00	0.00	-1.27
Internationalisation (number of foreign markets)	0.00	0.00	0.53	0.00	0.00	1.26	0.00	0.00	0.18	-0.00	0.00	-0.75	-0.00	0.00	-1.15
Intercept	0.13	0.13	1.00	0.18	0.14	1.29	0.00	0.15	0.00	-0.15	0.15	-1.00	-0.28**	0.13	-2.21
F-test statistic value	226.33			197.67			167.39			182.78			228.41		
Standard error of estimate	0.52			0.52			0.57			0.55			0.51		
R-squared	0.84			0.82			0.80			0.81			0.84		
Adjusted R-squared	0.84			0.82			0.79			0.81			0.84		
Durbin-Watson statistic	1.89			1.9			1.97			1.90			1.77		
GDP growth rate	2.63			3.70			5.01			1.56			1.26		
Unemployment rate	8.20			9.60			9.60			10.10			10.40		
Market capitalisation of listed companies	150,961,530,000			190,705,940,000			138,244,230,000			177,408,380,000			204,542,550,000		

***, **, * denote the statistical significance of a variable at $p < 0.001$; $p < 0.01$; $p < 0.05$, $p < 0.10$, respectively.

Source: authors' own study based on empirical research data and World Development Indicators 2015 data [date of access: March 2016].

The analysis provides no basis for rejecting the first research hypothesis (The higher the input competitiveness of a company, the better its competitive position.). In 2009–2013, there was a statistically significant, strong and positive correlation in the sample between input competitiveness and the competitive position achieved by the companies under study (the correlation coefficient was in the range of $<0.9; 0.85>$, see Tables 9.21–9.25). In addition, this relationship was statistically significant in the prepared regression equation, which takes into account the effect of the other variables. In all the models, input competitiveness was characterised by the highest slope coefficient value. This is indicative of a strong positive relationship between the elements of competitive potential and competitive strategy on the one hand, and company performance on the other. Additionally, with regard to the sixth research hypothesis (The influence of the global economic crisis will strengthen the positive relationship between the company's input competitiveness and its competitive position.), there is no basis for rejecting it either. The survey results do show that a positive relationship between a company's input competitiveness (encompassing resources, skills, and instruments of competition) and its competitive position was stronger in 2009, a year that is perceived as a period representing the impact of the global economic crisis. In particular, this is determined by changes in correlation coefficients resulting from a comparison of Tables 9.21 and 9.22 (in 2009 the coefficient was 0.90; in 2011 it was 0.85), and by differences in this variable's coefficients in regression analyses (in model 1 it amounted to 1.18, and in model 3 it reached the value of 1.00). Especially the latter results are very significant, as they take into consideration the relationships of competitive position with other independent variables. Undoubtedly, accumulating resources, skills, and instruments of competition into one variable limits the possibility of pinpointing the most important elements of the relationships in question and potential changes in this area. Nevertheless, an argument in favour of such a solution is the collinearity of these aspects, which is grounded in management theories (see justification of hypothesis 1), has been reported in other empirical studies concerning competitiveness (see: Dzikowska [2014]), and has also taken place in this study in the context of the above issues.

From a microeconomic perspective, the research results suggest that, to achieve an attractive competitive position, it is very important to have a good competitive potential (resources and skills), as well as a competitive strategy expressed through instruments of competition. These factors undoubtedly have a considerable impact on the attractiveness of a company's offer, but they are also significant for its cost position. This relation is indicated by statistically significant and positive relationships in particular years between input competitiveness and the margin achieved by the companies analysed, and between input competitiveness and

return on equity. In the light of these arguments, special significance is gained by actions related to a company's long-term development of competitive potential.

In its original version, the second hypothesis (The more intense the competition within an industry, the worse the company's competitive position.) is rejected. However, this is not because of the lack of a statistically significant negative relationship between the intensity of competition in an industry and a company's competitive position during the global economic crisis, but because of the insignificance of this relationship in the period representing a time of relative prosperity (the year 2011). The results of the study suggest that there are grounds for rejecting the statement that, in the short term, intense rivalry always makes it difficult for a company to achieve a favourable competitive position rather than stimulate its further development and progress. While this statement proved to be true during the global economic crisis, it was false in a period of relative prosperity. It is possible, therefore, that while intensifying competition under normal conditions encourages improvements, under adverse or difficult economic conditions it contributes to business entities' poorer performance. Such an explanation is suggested by a statistically significant relationship between the variables for 2009–2010 (a period representing the occurrence of the impact of the global economic crisis and its consequences) and for 2013, when the rate of economic growth and the rate of unemployment were indicative of an economic slowdown. Average competition intensity ratings for the whole period ranged within $<1.72; 1.91>$. At the same time, it cannot be stated that, for the period when the relationship was statistically significant (the years 2009–2011 and 2013), the ratings were always higher/lower than in the rest of the period.

On the basis of our analyses, we cannot reject the third research hypothesis (The more favourable the company's demand factors, the better its competitive position.). In all the models, the relationship between demand factors and a company's competitive position was statistically significant and positive. Nor is there a reason for rejecting the seventh research hypothesis (The influence of the global economic crisis will weaken the positive relationship between the company's external demand factors and its competitive position.). A statistically significant positive relationship between a company's demand conditions and its competitive position within the analysed sample occurred both in the period representing the global economic crisis and during relative prosperity. In addition, the strength of this relationship was higher in the latter period. The difference in this respect was visible throughout the whole period in which the influence of the global economic crisis and its consequences was assumed when compared to the post-crisis period (2011), irrespective of the occurrence of the economic slowdown (2012–2013). As for the correlation coefficients of the variables for data from the years 2009–2010, they were 0.66 and 0.64, respectively; and for data from the years 2011–2013, they

were within the range of $<0.71; 0.75>$. Furthermore, taking into account the relationships between a company's competitive position and the other independent variables only highlights the existing contrast (statistically significant slope coefficients for data from the years 2009–2010 were 0.27 and 0.37, respectively; and for data from the years 2011–2013, they were 0.44, 0.46, and 0.50, respectively).

With regard to the fourth research hypothesis (The more favourable the company's external resource factors, the better its competitive position.), it can be observed that the correlation analysis allows us to identify a statistically significant, positive relationship between competitive position and external resource conditions. Additionally, with reference to the eighth research hypothesis (The influence of the global economic crisis will weaken the positive relationship between the company's external resource conditions and its competitive position.), it should be noted that the relationship is also a little stronger for the year 2011 than for the 2009 data (the correlation coefficient is 0.15 and 0.09, respectively). Nonetheless, taking into account the links between a company's competitive position with the other independent variables makes the relationship concerned no longer statistically significant. For this reason, the fourth and eighth hypotheses are rejected.

With reference to the analyses carried out, it can be observed that economic policy measures aimed at strengthening companies' competitive position should help them improve their competitive potential (resources, skills, and instruments of competition) and should support demand factors. In addition, these aspects proved to be very important for companies' situation during both the global economic crisis and relative prosperity. At the same time, the results of the study clearly show that efforts to improve external resource conditions – encompassing the availability, quality, and prices of factors of production, broadly defined – were not sufficient to improve the output competitiveness of the analysed entities during both the global economic crisis and relative prosperity.

To evaluate the fifth (The higher the company's internationalisation level, the better its competitive position.) and the ninth hypotheses (The influence of the global economic crisis will weaken the positive relationship between the company's internationalisation level and its competitive position.), we used two variables. On the one hand, we examined the relationship between a company's internationalisation level as a share of exports in its sales and the entity's competitive position. On the other hand, we analysed the relationship between internationalisation expressed as the number of foreign markets in which a company operates and its competitive position. A correlation analysis suggests that there is a statistically significant and positive relationship between, on the one hand, both the share of exports and the number of foreign markets where the company is present and, on the other, the company's competitive position (with the exception of the share of exports in 2010, see Tables 9.21–9.25). Additionally, this relationship was

weaker in the period when the impact of the global economic crisis and its consequences was assumed (2009–2010) than in the post-crisis period (2011–2013). This indicates that, in accordance with the arguments presented in section 8.6, within the analysed sample, companies characterised by a lower level of internationalisation during the global economic crisis had a slightly better competitive position. Nonetheless, after considering the effect of the other independent variables as part of the regression models, the relationships between the two independent variables reflecting a company's internationalisation and its competitive position proved to be statistically insignificant or negative. This is why the fifth and the ninth hypotheses are rejected.

Owing to their statistical significance, some of the control variables taken into account in the models need to be commented upon. In the year 2009, which represents the occurrence of the global economic crisis, a worse competitive position was achieved by entities that belonged to capital groups, that were financed by foreign capital, and that were characterised by a higher value of assets and a higher share of office workers in total employment. On the one hand, this may be indicative of a lower flexibility of business entities operating as part of organised groups. On the other, the statistical significance of the variables mentioned within model 1 is consistent with empirical research results suggesting that the entities affected by the global economic crisis the most were heavily involved in international operations and had a highly developed international manufacturing network [OECD 2010, p. 34; Ferragina et al. 2012]. An argument in favour of such an explanation could also be the statistical insignificance of the majority of the variables in model 3 (with the exception of the variables representing the size of the entities under analysis), representing a period of relative prosperity, and in models referring to subsequent years.

For the whole period investigated, there was a statistically significant and negative relationship between a company's size, expressed as the value of its assets, and its competitive position. The relationship can be interpreted as indicative of larger entities' limited flexibility towards market changes. However, this is just a possible explanation, difficult to verify without a thorough analysis of companies' complete financial data.

Within each of the models, there was a statistically significant and positive relationship between at least one of the indicators of the companies' financial situation and their competitive position. The statistical significance and positive direction of the relationship suggest that the subjective measure used in the study did help to identify those entities which, at least from the financial point of view, performed better than not only their closest competitors but also all the entities examined.

Recapitulation

The research sample used in the quantitative study presented here is large and highly diversified. The study covered companies representing seven industries. Within the sample, the proportion of companies from the industries that performed the worst and the best during the crisis was 9% and 91%, respectively. Moreover, the companies surveyed included predominantly medium-sized (50–249 employees) and small (10–49 employees) enterprises; about 25% of the respondents operated as part of international capital groups.

The majority of the respondents sampled perceived the impact of the global economic crisis as neutral for their companies' activities (64.34% of the total research population). Such an assessment was particularly popular among large companies (66.25% of responses) and SMEs. Nonetheless, the sample showed statistically significant differences in the self-evaluation of the impact that the global economic crisis had on the activities of the analysed companies as part of groups of the industries that performed the best and the worst during the global economic crisis.

Subjective ratings of the companies' competitive-position indicators show that, on average, the respondents sampled perceived their companies as slightly better than their direct competitors. What is noticeable is that the average ratings of larger companies' competitive-position indicators are higher than those of SMEs. Dynamically, in comparison with 2009, the year 2011 saw many changes in the evaluation of four of the five competitive-position measures applied (the exception was the level of customer satisfaction). In the case of profitability, market share, and the overall financial situation, the year 2011 was characterised by a much more frequent improvement in the rating than by its deterioration. In 2009 and 2011, the majority of the companies assessed the indicators of output competitiveness that were taken into account in the study as at least slightly better than those of the closest competitors (more than 55% of responses within all categories for the year 2009, and more than 56% of responses for 2011). Moreover, in comparison with 2009, the year 2011 saw a slight increase in the share of such ratings in all measures except profitability.

The information on the internal and external determinants of the companies surveyed that has been presented in this chapter was used to evaluate the nine research hypotheses formulated in section 8.6. Our study demonstrated that, within the research sample, the companies characterised by a better input competitiveness and more favourable demand conditions achieved a better competitive position in the periods of both the global economic crisis and relative prosperity. At the same time, the impact of the former variable was stronger during the global

economic crisis, while the influence of demand conditions proved to be stronger in the period of prosperity. Additionally, during the occurrence of the global economic crisis, its consequences (the years 2009–2010), and a considerable economic slowdown (2013), entities exposed to intense competition within their industry achieved a worse competitive position. The results of the study did not allow us to evaluate as positive the impact that a company's unique resource conditions and internationalisation level have on its output competitiveness.



Chapter 10

The impact of the global economic crisis on Polish companies' activities – case studies

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The following case studies of the nSense and CDRL S.A. companies are based on data obtained from their managers and boards of directors. The data were acquired by means of an interview questionnaire with questions concerning all the sections of this study and were supplemented with direct interviews aimed at extending some of the topics contained in the questionnaire. Finally, in order to obtain information on industries' functioning in Poland, two databases were used: Pont Info Gospodarka, which contains information collected by the Central Statistical Office (GUS), and Amadeus, which contains detailed financial analyses of companies doing business in Europe. Additionally, we used press materials available in the media.

The purpose of the present qualitative analysis is to supplement the quantitative study and to fully understand the relationships investigated [Creswell & Plano Clark 2007]. Qualitative research allows us to examine a phenomenon in its proper context, providing a more detailed description and exemplifying the relationships described as part of quantitative research. At the same time, collecting qualitative data makes it possible to triangulate the conclusions formulated in the earlier stages of the research process. Furthermore, a case study analysis allows us to verify whether the conclusions and observations based on a quantitative analysis are confirmed by the selected business cases.

10.1. The impact of the crisis on the activity of a services-industry company – the case of F-Secure

F-Secure Cyber Security Service, formerly known as nSense, is an international company operating in Denmark, Finland, Norway, and Poland. Its main activity, related to consultancy in the area of IT, involves analysing and assessing the safety of IT systems used in other companies. The firm provides services at various levels of company activity, including:

- the strategic level (*trusted advisor*) – it provides advisory and coaching services in the field of security management, and helps to develop plans for improving company security;
- the operational level (*enabler*) – it provides incident-handling services and implements safety standards;
- the control level – it analyses and tests the vulnerability of systems, as well as implements tools and security management solutions.

nSense Polska became part of an international capital group in 2010. After the incorporation, there was no need to change the branch's organisational structure or managing directors. These positions are still held by Dominik Sadowczyk and Leszek Tasiemski. The Poznań branch is quite small: in 2010 it employed six people, and in subsequent years the number increased, reaching 13 in 2013. The majority of staff focus on the company's core business, and only one employee is responsible for the company's administration.

10.1.1. The industry's situation in Poland

Despite the relatively difficult economic situation, IT consulting (which is the company's core area of activity) developed quite well in Poland. This is evidenced by financial data available for this sector. In 2009–2011, the number of registered and active business entities employing at least nine people was 85, 91 and 106, respectively. The number of people employed in this area of activity was on the rise, too. This increase is significant, as in 2011 it was approximately 35%, which, given a slower increase in the number of companies, is evidence of the growing scale of their operations [Pont Info Gospodarka, 2015].

The 2009–2011 perspective shows that the year 2010 was slightly worse for the industry than the previous one, although the change was not very dramatic. This is quite clearly demonstrated by some indicators. Revenues from the sale of services increased. Although the increase was about 20%, it was visible mainly in 2011; previously, there was a slight decline in revenues. It was similar in the case

of net and gross profit rates. Simultaneously, companies in this industry intensified their activities abroad. In 2009, the share of exports in total revenues was 12%, in 2010 as much as 16%, and in the following year 21%. Selected indicators of the industry's development are presented in Table 10.1.

Table 10.1. Selected indicators for IT consulting activities in the years 2007–2011

Indicator	2007	2008	2009	2010	2011
<i>Net profit</i>	5.90%	3.00%	3.19%	3.17%	3.92%
<i>Growth rate of net profit</i>		-2.90%	0.19%	-0.02%	0.75%
<i>Gross profit</i>	7.67%	4.25%	4.07%	3.81%	4.95%
<i>Growth rate of gross profit</i>		-3.42%	-0.18%	-0.26%	1.14%
<i>Total revenues, in PLNm</i>	979.13	1811.57	1779.47	1680.94	2041.49
<i>Growth rate of total revenues</i>		85.02%	-1.77%	-5.54%	21.14%
<i>Number of business entities</i>	57	93	85	91	106
<i>Growth rate of the number of business entities</i>		63.16%	-8.60%	7.06%	16.48%
<i>Number of employees</i>	3467	4614	4466	4376	5928
<i>Growth rate of the number of employees</i>		33.08%	-3.21%	-2.02%	35.47%
<i>Return on equity</i>	9.00%	7.69%	3.43%	3.56%	11.81%
<i>Growth rate of return on equity</i>		-1.31%	-4.26%	0.13%	8.25%
<i>Share of export sales in total revenues</i>	2.57%	10.69%	12%	16%	21%
<i>Growth rate of the share of export sales in total revenues</i>		8.12%	1.31%	4%	5%

The growth rate is calculated on a year-on-year basis. The data concern companies employing over nine people.

Source: authors' own study based on Pont Info Gospodarka [2015].

10.1.2. The internationalisation of the company's activity

Unlike the majority of companies that provide IT consulting services, nSense Polska is highly internationalised. All of its activities are foreign-market oriented. The company currently provides services only in northern Europe, namely in Denmark and Finland. The company made its first transaction in foreign markets in 2009.

As mentioned earlier, all of its revenues are generated abroad. However, the pace of foreign expansion is not very high: in 2010–2013 the company operated in only two countries, without perceiving the need to broaden its portfolio of foreign markets.

In foreign markets, the company undertakes almost a full range of activities: it provides all the services but is not directly involved in sales. Sales, including looking for customers, is the responsibility of the parent company, while the Polish subsidiary is in charge of what is provided for in the contract, i.e. both services related to the company's own products and, for example, consulting services for external customers. The Polish company, therefore, provides internal services for its parent company and external services, contacting directly customers won in the foreign market.

Adopting such an internationalisation strategy was largely due to the conditions prevailing in foreign markets. In all the years, demand for services was on the rise, as evidenced by an increase in the average volume of orders. This was quickly reflected in the company's revenues. In 2012, they amounted to almost €340,000, and a year later to almost €545,000. Nevertheless, the company remains very cautious in its international operations. Its high dependence on the parent company means that its activities in foreign markets are highly controlled. The Polish subsidiary is not afraid of competition, but it does not take active measures to increase its international market share.

10.1.3. The external environment in the company's functioning

According to the company's executives, its external environment did not have an adverse effect on its functioning. The company was not affected by any negative changes in the context of either macroeconomic factors or the closer competitive environment.

In the context of this industry, the competitive environment largely depends on the bargaining power of customers and competitors, and to a smaller extent on suppliers. Even though its customers' requirements with regard to both the quality and the price of services seemed high, the company was able to meet them, because the necessary infrastructure and technology were available to it. In 2009–2013, contrary to customers' expectations, the company managed to raise the average price of its services. This was possible, among other things, thanks to very weak, virtually non-existent, competition. The company did not lose customer confidence, nor did it have problems with debt collection.

In the macroeconomic context, of particular importance is the fact that the company's activity is in fact carried out entirely abroad. Despite some uncertainty over exchange rates, the company was not adversely affected by any fluctuations related to this.

10.1.4. The impact of the global economic crisis on the company's activity

On the basis of this study, it can be stated that the company did not feel the impact of the global economic crisis on its operation. This is clearly reflected in many aspects of the company's activity. It had no difficulty retaining its customers; both their number and the range of the company's services were large enough to be considered satisfactory. On the other hand, the company's development was not dynamic enough for us to say that the economic situation created extraordinary opportunities for development.

Despite the economic crisis, nSense Polska was a company that had no difficulty in conducting its current operations or planning its future development. It never had to limit the scope of its activities or to lay off staff. What is more, it consistently launched new products as part of the existing area of operation. The company did not need to introduce crisis management, nor did it make significant changes in the way it was managed. Thanks to the company's good financial position, the structure of its costs did not have to be revised. The firm did not seek new ways of raising external finance, either from shareholders or in the form of credit or deferred payments. In 2012 and 2013, it used public aid, although the purpose was to develop the company rather than improve its situation.

Although the company did not embark on geographical expansion, it did broaden the scope of its activities. Initially, it mostly controlled and conducted penetration tests at their clients' place. With time, it introduced new services, for instance IT services as part of internal cooperation within the company. The firm formed an incident response centre, an entity responsible for handling incidents experienced by clients. However, the unit's scope and capabilities were limited. At present, the company intends to establish an independent round-the-clock incidence response centre to be located in Poznań. It has introduced a wide range of new technologies, which is crucial, given the industry's specificity. Although in many other industries expenditure on staff development has been reduced, nSense has managed to maintain a satisfactory staff-training budget, or even larger than in previous years. Because of its employees' growing financial requirements, the company also increased their remuneration.

It is puzzling why a company whose core business is consulting did not suffer the consequences of the economic crisis, especially as the firm's activity focused on foreign markets only. The company itself seeks the causes of this in the specificity of its activities. Even though these include consulting services, their importance to customers is high enough for companies not to limit their budget expenditure for this area. As has been mentioned, nSense is in the business of the security of

IT systems, which in many industries are a key element of company activity. One of the firm's main target groups are banks, for whom safety and operational stability are the highest priority.

These factors allowed both the Polish company and the entire group to experience systematic growth. Given the industry's financial performance, presented in Table 10.1, it can be stated that the company was in a very good situation. Every year, its net profit rate exceeded 15%. In the period investigated, especially in 2012 and 2013, nSense invested in fixed assets. At that time, the company's return on assets was more than 30%, and its return on equity was over 40%. Its parent company reported similar results: its net profit rate also exceeded 15%, and its return on assets and return on equity were 30%. Table 10.2 presents selected indicators for nSense Polska in 2012–2013.

Table 10.2. Selected indicators for nSense Polska in the years 2012–2013

Indicator	2012	2013
Net profit	16.58%	18.58%
Growth rate of net profit		2.00%
Gross profit	n/a	n/a
Growth rate of gross profit		–
Total revenues, in PLNm	1.387	2.261
Growth rate of total revenues		63.01%
Number of employees	10	13
Growth rate of the number of employees		30.00%
Return on equity	49.57%	52.57%
Growth rate of return on equity		3.00%
Share of export sales in total revenues	100%	100%
Growth rate of the share of export sales in total revenues		0%

The growth rate is calculated on a year-on-year basis.

n/a – data not available.

Source: authors' own study based on Amadeus [2015].

10.2. The impact of the crisis on the activity of a retail-industry company – the case of CDRL S.A.

10.2.1. The situation of the clothing industry during the crisis

Based in Pianowo, CDRL S.A. is a leading Polish as well as Central and Eastern European distributor of children's clothes sold under its own brand, Coccodrillo, a registered trademark in over 40 countries [CDRL S.A. 2015a]. The company offers a variety of garments, underwear, footwear, accessories, and toys for children aged 0–14. The company's business model consists of designing clothes, outsourcing their production mainly to external Asian entities, and distributing them under its own brand in Poland and abroad. The company's internationalisation, therefore, has two aspects: outsourcing production to entities in the Far East and internationalising sales operations. In 2014, for instance, 67% of sales were generated through Polish shops, 16% through a franchise network abroad, 13% through export from Poland, and 3% through the internet channel.

CDRL S.A. operates in the clothing retail sector, in which the impact of the economic crisis became apparent in a number of ways. Many Polish clothing companies developed their business by satisfying demand in the domestic market and meeting customers' basic needs through an efficient organisation of logistics, which involved the development of a chain of their own shops, franchises, and cheaper sources of supply abroad [Gazeta Finansowa 2009]. At the same time, because of the economic crisis and reduced demand, poor quality of product management increased inventory levels and decreased cash flow, which, given limited access to finance, could result in insolvency and bankruptcy. At this point, we should make a distinction between domestic competitors and international networks which, with their funds as well as marketing and organisational capabilities provided by the headquarters, were characterised by a greater ability to deal with unfavourable changes in the environment.

General financial data available for Poland's clothing retail sector, which is CDRL S.A.'s main area of business, help us obtain a more accurate picture of the situation in the sector during the economic crisis. In 2007–2011, the number of registered and active business entities that employed at least nine people rose to 174 in 2008, only to report a steady decline in 2009–2011 [Pont Info Gospodarka 2015]. The number of companies in the industry can, therefore, be considered high. This fragmentation, combined with a substantial price pressure intensified by the economic crisis, stimulates intense competition in the sector. It should also be noted that the entry barriers of the clothing retail sector are relatively low, which increases the number of small local entities. There is also the threat of new

entries posed by international fashion chains which extend their offer to include children's clothes.

A similar observation could be made about the number of people employed in this area of business. The negative impact of the crisis is also reflected in the industry's reduced revenues since 2009, which is evidence of limited demand. At the same time, as early as 2008, there was a fall in gross profit and net profit rates, lasting until 2010 and indicative of symptoms pertaining to the cost side of business operations. In 2008–2009, we could also see companies in the industry limit their overseas operations. The share of exports in total revenues fell from 9.21% in 2008 to 7.69% in 2009, and then increased slightly to 8.04% in 2010. Selected indicators of the industry's development are presented in Table 10.3.

Table 10.3. Selected indicators for clothing retail activities in Poland in the years 2009–2011

Indicator	2007	2008	2009	2010	2011
<i>Net profit</i>	5.02%	3.09%	-1.28%	5.04%	3.70%
<i>Growth rate of net profit</i>		-1.93%	-4.37%	6.32%	-1.34%
<i>Gross profit</i>	6.44%	4.51%	-0.58%	5.98%	4.47%
<i>Growth rate of gross profit</i>		-1.93%	-5.09%	6.56%	-1.51%
<i>Total revenues, in PLNm</i>	3732.23	4449.49	4222.75	4334.38	3836.42
<i>Growth rate of total revenues</i>		19%	-5%	3%	-11%
<i>Number of business entities</i>	148	174	165	163	158
<i>Growth rate of the number of business entities</i>		18%	-5%	-1%	-3%
<i>Number of employees</i>	9390	11314	9858	9155	7819
<i>Growth rate of the number of employees</i>		20%	-13%	-7%	-15%
<i>Return on equity</i>	15.70%	11.81%	-4.65%	18.29%	11.79%
<i>Growth rate of return on equity</i>		-3.89%	-16.46%	22.94%	-6.50%
<i>Share of export sales in total revenues</i>	12.00%	9.21%	7.69%	8.04%	9.99%
<i>Growth rate of the share of export sales in total revenues</i>		-2.79%	-1.52%	0.35%	1.95%

The growth rate is calculated on a year-on-year basis. The data concern companies employing over nine people.

Source: authors' own study based on Pont Info Gospodarka [2015].

Compared with the general situation in Poland's clothing retail sector after 2009, the year when the adverse impact of the environment was felt most strongly, CDRL S.A.'s available results on the one hand point to a temporary increase in revenues between 2010 and 2012 (see Table 10.4). On the other hand, compared to 2010, in 2011 the company reported a fall in its profits, current liquidity, profit margins, and solvency ratio. In 2011 the US\$ exchange rate deteriorated, translating into higher prices of goods. Besides, a more expensive euro led to an increase in the cost of renting retail space, mostly euro-denominated.

Table 10.4. Selected financial indicators for CDRL S.A. in the years 2010–2014

Indicator	2008	2009	2010	2011	2012	2013	2014
<i>Total revenues (in PLN'000)</i>	86378.6	101773.3	100991.2	119000.0	115441.0	148719.0	158434.0
<i>Profit before tax (in PLN'000)</i>	4105.4	3655.9	6752.5	1093.0	5167.0	4239.0	13613.0
<i>Assets (in PLN'000)</i>	50105.0	57749.0	66737.3	86614.0	86129.0	78830.0	111001.0
<i>Current ratio</i>	1.88	1.84	1.86	1.55	1.68	1.44	2.00
<i>Net profit margin</i>	3.96%	2.72%	5.74%	0.23%	3.17%	2.04%	7.19%
<i>ROE</i>	18.69%	13.29%	22.98%	1.23%	14.00%	10.5%	20.90%

Source: authors' own study based on CDRL S.A. [2015d].

10.2.2. The internationalisation of CDRL S.A.'s activity

The internationalisation of CDRL S.A. commenced in 2002, just after its launch as a limited liability company. In the opinion of the firm's executives, who intended to make it a global company, foreign expansion was primarily aimed at increasing its sales and profits by developing its markets, geographically diversifying its activity, as well as forestalling competitors' moves [CDRL S.A. 2015a]. At that point, CDRL S.A. started to export to countries such as Russia, Lithuania, Latvia, Slovakia, Ukraine, and the Czech Republic. A year later, with the development of a network of new stores in Poland, the company established trade cooperation with new partners from Hungary and Russia [CDRL S.A. 2015b]. The following year, it developed cooperation with new foreign customers in Germany, Estonia, and Romania. The year 2005 saw the beginning of cooperation with partners in Croatia, Switzerland, Bulgaria, Ireland, Slovenia, Sweden, and Moldova. This coincided

with the signing of the first agency contract, resulting in the launch of the brand's three new stores. In 2006, the development of CDRL S.A.'s retail outlets in Poland and an agency network was accompanied by the signing of commercial contracts with partners in Kazakhstan, Spain, and Mongolia, and in 2007 also in Belarus, Egypt, New Zealand, Canada, Mexico, and the United Arab Emirates. By 2008, the company had established export contacts with 29 foreign partners.

The dynamic of the expansion did not change in 2009, when a subsidiary was established from scratch in the Czech Republic in order to expand the sales network, which could be regarded as a natural consequence of the previous seven-year export activity as part of CDRL S.A.'s model of expansion into foreign markets. The subsidiary sells all of its products in the Czech market [CDRL SA 2014]. The company developed so that it could achieve the economies of scale of production, increase its share in international markets, and expand into neighbouring markets thanks to its presence in the Czech Republic. Equally significant was its greater control of distribution channels, impossible to achieve as part of the original model of export. According to CDRL S.A., the Czech market was characterised by geographical and cultural proximity to Poland, which is undoubtedly an effect of the country's EU membership. A major factor behind the decision was also the company's previous experience in a country where CDRL S.A.'s own subsidiary was established, as well as the expected market growth, although these variables were less significant than this market's proximity.

Despite the recession in European markets, in 2010 the number of stores in Poland alone exceeded 162 and in foreign markets 41. Simultaneously, the company launched sales through an online store in Poland [CDRL S.A. 2015b]. In the next two years, the number of stores increased only to 167 in Poland, but to as many as 127 abroad (including 14 outside the European Union). In 2011–2012, exports accounted for approximately 26% of CDRL S.A.'s total sales, while 95% of procurement took place through imports [CDRL S.A. 2014]. At the same time, to expand the network of stores in Romania, another subsidiary was established. In 2013, the online sales channel was extended to include the Czech and German markets, and the number of stores increased to 187 in Poland and 155 abroad (including 20 outside the European Union). So far, CDRL S.A.'s export activity has focused on the countries of Central and Eastern Europe. Its model of expansion is based on the assumption that, in a given country, there should be one official, exclusive, financially independent distributor acting on its own behalf. International expansion is two-way: in the European Union, CDRL S.A. prefers to develop a franchise network, while in non-EU countries it operates with the help of foreign representatives because of the lack of free bilateral movement of goods and the fact that these transactions are difficult to manage. The representatives can be defined as entities operating in a given wholesale market or as owners of multi-brand stores.

Paradoxically, CDRL S.A.'s high degree of involvement in operations in foreign markets did not turn out to be beneficial during the economic crisis. Owing to a weaker Polish zloty, the manufacturing outsourced to Asian entities became relatively more expensive, because producers were paid in US dollars. As for overseas sales, the currencies of the Central and Eastern European countries where the company's activity is focused also fell against the US dollar, which led to a decline in orders because of a relative increase in the purchase price for foreign clients.

The period under study saw a reduction in the number of CDRL S.A.'s foreign markets. In 2009–2011, their number fell from 23 to 21, and then to 19 [CDRL S.A. 2015d]. This was due to the company's withdrawal from several markets each year, although in 2009 it entered two new markets, and in 2010 another one. The end of cooperation, however, was not directly linked to the economic downturn, as it affected small purchasers and only infrequent transactions.

10.2.3. The external environment and CDRL S.A.'s operation during the crisis

In the opinion of CDRL S.A. executives, the symptoms of the economic crisis were visible at various levels of the company's business environment [CDRL S.A. 2015d]. Firstly, especially after 2009, the company experienced a decline in orders from customers; however, the situation remained unfavourable in the following years, too. The fall in demand was visible mainly on the part of foreign partners, whereas the situation in the domestic market remained relatively stable. A similar observation could be made about medium-sized orders. In 2010–2011, the company also experienced a decrease in the number of customers, mostly in export markets. The decline in demand was the strongest in Russia and Ukraine, but also in Bulgaria, the Czech Republic, and Slovakia, particularly in 2009. Another significant challenge for the company was customer expectations with regard to product prices, expectations which were particularly apparent in 2009 but remained high until 2012. Additionally, in 2012 the VAT rate for baby clothes increased from 8% to 23%. In this situation, the company made efforts to reduce production costs so that the tax increase would not adversely affect the attractiveness of its offer in the eyes of customers. Interestingly, CDRL S.A. only slightly felt an increase in interest on external capital. Furthermore, there was a small increase in overdue payments in 2009, after which time the situation practically had not changed until 2013, when it finally improved. In 2009, however, CDRL S.A. perceived the situation in the currency market as unfavourable. The weakening of the Polish currency had a negative impact on manufacturing costs in US dollars and

on the cost of the lease of commercial premises in euros. What is interesting, the company's debt during the crisis was not substantial. It increased with some delay as late as 2011, only to fall in the post-crisis years of 2012 and 2013. Similarly, the inventory level rose slightly in 2010–2012, and dropped significantly as early as 2013, when the company was reducing the inventories built up because of a decline in export sales during the crisis years. The cash that was released was used to repay some of the loans and to improve liquidity. The rate of inventory turnover had decreased continuously until 2012, and the situation improved only in 2013.

In the context of the economic crisis, it is also important to take into consideration CDRL S.A.'s resources and activities affecting its position in the market. The company perceives its technological capabilities (understood as the ratio of R&D spending to sales), management skills (in particular, experienced and qualified staff), and ability to adapt its offer to target markets as comparable with those of its main competitors [CDRL S.A. 2014; CDRL S.A. 2015d]. The same is true of its material and financial resources, as well as the efficiency of its logistical and manufacturing processes. On the other hand, a considerable advantage is the breadth of its offer and quality of its products. As for some other benefits that CDRL S.A. can offer to its business partners, the company makes sure that its terms of payment are favourable while satisfying trading partners' higher expectations in this respect than in the Polish market [CDRL S.A. 2015d]. The company also highly evaluated the extent to which the sales and marketing experience gained in Poland was useful in the country of its largest investment. During the downturn, the company sought to increase control over its actions in various countries. In particular, it increased control of its franchise network in Romania and the Czech Republic with a view to improving sales. In the face of uncertainty in its business environment, CDRL S.A. placed greater emphasis on planning its activities. At the same time, it changed its model of product distribution, from a wholesale distribution system to franchising. Both in Poland and abroad, the majority of franchisees were former wholesale customers. This change was effected by the economic crisis, because in Poland the development of own stores slowed down, leading to an increase in the number of agency stores. CDRL S.A. wanted to limit the number of contracts denominated in euros. In the case of foreign markets, during the crisis existing sales representatives from the European Union experienced a drop in sales owing to a relatively high price of products purchased in US dollars. The accumulated inventories of goods from previous seasons led to a decline in orders for new collections. It was then that the company replaced the wholesale sales model with franchise, which, in the case of CDRL S.A. meant being paid by foreign representatives for the goods sold rather than for the whole delivery. In the case of exports, recipients had to pay a deposit and then made part of the payment immediately before the shipment of goods. Only some orders could be credited.

Measures taken to optimise the company's activity included shortening the manufacturing process in the years 2012 and 2013. In 2012, the adaptation measures included layoffs, although it is worth noting that at the time of the strongest impact of the economic crisis, the company managed to avoid this kind of reactive actions. Additionally, the redundancies were made for objective reasons, such as optimising logistics and warehousing. Similarly, the CDRL S.A. benefited to a limited extent from reduced costs; only in 2010 and 2012 were more intense actions taken in this area, such as changing the banks providing credit. The company conducted negotiations in order to obtain more favourable financing agreements, trying, especially in 2010–2011, to restructure its debt by seeking new sources of credit [CDRL S.A. 2015d].

To summarise, CDRL S.A. perceives the problems it experienced during the crisis as minor, which applies to both its operational activity and its ability to raise the funds and resources allowing it to continue its growth and expansion. As for the strength and direction of the influence the global economic crisis had on CDRL S.A.'s activity, the company's executives are of the opinion that the negative impact was limited.

Recapitulation

The above case studies differ in some respects. The companies they discuss belong (in the case of CDRL S.A.) to the retail industry or (in the case of nSense) to the service industry. They also differ in the scale of their operations (which is far greater in the case of the clothing company), in experience (which also works to CDRL S.A.'s advantage), and in the degree of involvement in foreign markets. nSense is a relatively young company operating in a dynamically developing industry. CDRL S.A. operates in the clothing retail sector, which is much more developed and stable than the IT consulting industry. Despite temporary problems resulting from an unfavourable general economic situation, neither company felt a substantial adverse effect of the economic crisis on its current activity or development strategy.

It is worth noting that the limited perceived effect of the crisis on the condition of the two companies was accompanied by a simultaneous adaptation of staff policy and financial management, which helped them in some way to maintain a relatively constant competitive position. On the other hand, an interesting finding is the fact that some of the companies' actions coinciding with the economic crisis were not directly linked with the downturn in international markets. Instead, such

actions were taken for independent reasons as part of relations with other entities in international markets. Clarifying the issue of a company's vulnerability to an economic crisis (which would go beyond the known factors associated with its sector) and distinguishing between active and reactive actions, but also between intentional and accidental ones, as variables that soften or exacerbate the effect of the crisis, goes beyond the scope of this study and could constitute an interesting area of further research.



Conclusion

Examining Polish companies' international competitive position during the global economic crisis, with consideration given to the endogenous and exogenous determinants of this position, was an ambitious and important goal that had not been pursued in previous studies.

Recognising and adapting to dramatic and sudden environmental changes is particularly hard for companies [Carroll 1984; Tripsas, Gavetti 2000]. Microeconomic analyses focusing on the effects of economic crises are relevant and interesting because companies are entities whose reactions to the threats and opportunities created by crises strongly affect the economy's ability to recover from them and to grow further. At the same time, neither the impact of an economic crisis nor reactions to it are identical for all companies [Shama 1993; Latham 2009; Simon 2010; Dooley, Yan, Mohan, Gopalakrishnan 2010].

From a microeconomic perspective, the influence of the crisis on companies may depend, among other things, on the company's age [Latham 2009], the type of its competitive strategy [Latham, Braun 2010], the uniqueness and value of its resources [Teece, Pisano, Shuen 1997; Wu 2010; Weerawardena, Sullivan Mort, Liesch, Knight 2007], its size and level of internationalisation [Antonioli, Bianchi, Mazzanti, Montresor, Pini 2011]. At the same time, the results of some previous empirical research are contradictory. While some researchers suggest that economic crises threaten the survival of all companies [Latham 2009], others observe that such periods present both opportunities and threats [Kirzner 1973; Covin, Slevin 1991; Gilbert 2006]. There are also discussions going on about the characteristics of the companies most severely hit by the crisis phenomena discussed here. The limited number of empirical studies and their strongly situational character make it impossible to provide unambiguous answers in this respect. One of the reasons for the small number of studies investigating this issue is the need to carry out experiments in natural conditions and to have access to data which are not always collected on a regular basis.

Research into company competitiveness is extremely extensive. However, such empirical studies frequently focus on partial analyses that take into account only specific dimensions of competitiveness or their selected aspects, whereas company competitiveness should be considered through all its multidimensional aspects. Existing empirical studies on company competitiveness during economic crises are similar in this respect. Their main focus has been on performance measures that represent a company's competitive position [see e.g. Sato 2000; Köksal, Özgül 2007; Lee, Makhija 2009; Antonioli, Bianchi, Mazzanti, Montresor, Pini, 2011]. This is why the present authors believe that this project is unique thanks to the comprehensive and multidimensional nature of its research techniques, drawing on the achievements of diverse, but interrelated, research trends.

So far, research conducted from the mesoeconomic perspective has largely been based on secondary data, taking the form of quantitative and qualitative studies. The analyses carried out have covered, among other things, the European construction industry [Kildiene et al. 2011], the world's air transport industry [Marciszewska 2010], Indonesia's metallurgical industry [Sato 2000], and the fish processing industry in Poland [Czapliński 2011]. Additionally, other studies have shown that the industries which are more sensitive to cyclical changes or more adversely affected by an economic crisis include construction, the automotive industry [PWC 2009, p. 17; NBP 2010, p.11], manufacturing industries [NBP 2010, p. 11] and, in the case of the largest global companies, the automotive, financial, and aerospace industries [Dzikowska, Jankowska 2012]. It should be emphasised, however, that even companies operating in the same industry may be characterised by different reactions and different levels of susceptibility to an economic crisis [Dubrovski 2007].

In the most general terms, from a microeconomic perspective, the economic crisis may adversely affect the company's turnover, market share, and profits [Claessens et al. 2010]. Additionally, crisis phenomena have an impact on the value of the company's assets through interest rates, as well as on its access to external sources of finance owing to tightened methods of quantifying creditworthiness, different credit terms, less inclination to grant further credit, or an insistence on their timely servicing [Zielinski 2009, pp. 114–118]. Sometimes, a strong reduction in demand caused by a crisis increases competition, exacerbates the company's financial condition, and ultimately leads to its bankruptcy. In response to these phenomena, companies decide, among other things, to lower costs, decrease production, reduce or suspend investment, enter or withdraw from foreign markets, increase the share of equity in the sources of finance, restructure debts, reduce employment, and lower wages [Akhter, Choudry 1993; Pearce, Michael 1997; Beaver, Ross 1999; Uslu 1999; Laitinen 2000; Zehir, Savi 2004; Zehir, 2005; Spence, Crick 2009].

Although, as mentioned earlier, for some Polish companies the global economic crisis became an opportunity to purchase foreign assets more cheaply, the crisis also involved certain risks. According to NBP data, in 2008 Polish corporate profits fell by 19.5% compared to the previous year [NBP 2009, p. 21]. Other empirical studies have shown a decline in companies' operating revenues in 2007–2010 [Burlita et al. 2011]. A negative impact of the economic crisis on Polish companies' financial performance did not spare exporters, whose total revenues in the first half of 2009 decreased by 23% in comparison with the analogous period in 2008. At the same time, the influence was not identical for all entities, because companies whose share of exports in total revenues exceeded 70% in the same period increased their revenues by 32.61% [Wołodkiewicz-Donimirski 2010]. What is more, in the first quarter of 2009 the number of bankruptcies in Poland increased by 11% in relation to the same period in 2008 [Adamiec, Russel 2009, p. 16]. Furthermore, the negative effects of the crisis on Polish companies include a fall in the quantity of orders and sales, as well as delayed or withheld payments [Orłowski et al. 2010], a decline in the company's value, and an increase in costs [Grądzki, Zakrzewska-Bielawska 2009, p. 19; Brojak-Trzaskowska, Porada-Ruchoń 2012, p. 61]. Changes in the conditions of operation caused Polish companies to react. The reactions included efforts to lower operating costs [KPMG 2009; Orłowski et al. 2010], reduce investment expenditures, seek new industries [Orłowski et al. 2010] or focus on core product segments [KPMG 2009], and intensify activities in existing markets [Orłowski et al. 2010].

As part of their focus on saving and lowering operating costs, companies limited expenditure on services, reduced capital expenditure, froze or reduced recruitment processes, and sometimes opted for lay-offs [HRM Partners 2009; Orłowski et al. 2010]. However, they were much less likely to build their long-term competitive potential. This is all the more surprising that foreign studies indicate that competitive potential may determine companies' ability to survive the recession and build a competitive position in the post-crisis period [Antonioli et al. 2011, p. 30; Köksal, Özgül 2007, p. 338]. It should be stressed, however, that the studies concerning the Polish market were carried out on relatively small samples and as such may not show all companies' reactions. Undoubtedly, however, the changes taking place should be reflected by appropriate changes in the assessment of competitive potential.

Actions aimed at intensifying operations in existing and/or new markets included adjusting prices, streamlining distribution, improving the product offer [KPMG 2009, p. 40; Burlita et al. 2011], introducing new products, intensifying marketing activities, and building customer relations [Burlita et al. 2011]. Therefore, also among Polish companies' instruments of competition, we could observe changes that should be reflected in an appropriately changed assessment of competitive strategy.

The above data suggest that the described actions performed by companies can be analysed from the perspective of these entities' competitiveness. A company's competitiveness is its multi-dimensional feature resulting both from its intrinsic properties and from its ability to deal with external factors originating from the environment [Flak, Glód 2009, p. 38]. According to the definition presented above, competitiveness is determined both by factors that are endogenous in relation to the company and by exogenous factors. Referring to the work of Gorynia [Gorynia 2002], we adopted a multidimensional approach to company competitiveness, one that takes into account competitive potential, competitive strategy and competitive position. This assumption is consistent with Buckley et al. [1988, p. 177]: "Competitiveness includes both the ends and the means towards those ends" [see also e.g. Andreosso-O'Callaghan, Jacobson 1996; Gorynia 2002; Hitchens et al. 2003]. In the case of the company's results, we can speak of output competitiveness [Andreosso-O'Callaghan, Jacobson 1996; Hitchens et al. 2003], which can also be referred to as competitive position. In the case of the resources used to achieve these results, we speak of input competitiveness [Andreosso-O'Callaghan, Jacobson 1996; Hitchens et al. 2003], which encompasses competitive potential and competitive strategy. From this perspective, we can also observe that input competitiveness has an influence on output competitiveness, and that company competitiveness can be presented by means of a multi-level, hierarchical structure.

The latest economic crisis draws the attention of researchers, politicians and business practitioners to the enormous significance of economies' openness to market trends being transferred from country to country. The spread of these processes leads to particular economies' intensified cyclical convergence. The process is a challenge, on the one hand for researchers seeking arguments to confirm the existence or the absence of a global business cycle, and on the other for politicians and business practitioners interested in the protection of their own business communities from the negative aspects of the business cycle. Economic integration – which is an integral element of modern economic reality, producing benefits and opportunities for national economies – is not free from serious threats, which we could perceive during Europe's debt crisis and the global economic crisis. The research results presented in section 6.3 demonstrate that in 2009 Estonia, Lithuania, and Ireland, which had a significant share of exports of goods and services in their GDPs, were hit by the crisis the hardest. Their integration with the global economy through flows of exports undoubtedly became one of the causes of a strong turbulence on the scale of their internal markets. On the other hand, Egypt and Australia, which were characterised by a relatively small share of exports of goods and services in their GDPs, reported the smallest decline in indicators describing the economic situation. In view of the above, rather obvious recommendations for economic policy could be put forward. A question arises about the

desired level of an economy's integration with the world economy. Uncritically enforced integration processes may intensify the potential negative aspects of the business cycle. A challenge for the business sector is to prudently develop a set of target sale and purchase markets. When defining the markets to which they export their own products, in which they make foreign direct investment, or from which they import goods, companies are usually interested in areas that are similar to one another or to the domestic market. This fact often translates into the functioning of such markets as part of integration groupings. An attractiveness assessment of these markets should take into account the possibility of cyclical fluctuations being transferred between them.

We should take into consideration the potential spread of crisis phenomena when assessing market attractiveness because of the strongly situational character of previous research into the effect of the economic crisis on companies and national economies. The fact that other companies' or economies' strategies of dealing with the crisis cannot simply be copied is a motivation for consciously developing crisis management strategies, and even before that, for creating scenarios that take into account possible macroeconomic turbulence in particular markets. Companies' reflection on possible scenarios for the development of the macroeconomic situation in various markets should be accompanied by an examination of the mechanisms, causes, manifestations, and effects of potential crises in industries where the companies operate. These crises are often caused by the behaviour of industry members themselves, particularly in the area of research and development. It is imperative that managers should be aware of value migration between industries, a process that may even question the further existence of some industries. Therefore, long-term thinking while building the company's product range turns out to be indispensable. To define the company's activity, we need to ask not only about the product that the company will offer, but also about the needs that the firm will address by offering it.

What is important from the viewpoint of economic policy is the economy's industry structure and its impact on the level of economic prosperity. The present authors by no means intend to recommend government interference, through industrial policy, in the industry structure of a given economic organism. It is imperative, however, that decision-makers should be aware of the extent to which this structure is dominated by industries vulnerable to crises and by industries that can easily infect other economic mesosystems owing to links in the process of value creation. The significance of particular industries' internationalisation and globalisation potential should not be underestimated, either.

Undoubtedly, the fact that the presented research results concern companies located in one country (Poland) restricts the possibility of generalising the conclusions drawn from them. This is significant because Poland, unlike other European

countries, survived the global economic crisis relatively well. A solution expected to allow comparison of entities facing different levels of difficulty in dealing with the global economic crisis was to analyse the weakest and the best industries. Nevertheless, a strong situationality and being firmly placed in a specific context of crisis phenomena are an encouragement to further develop research focused on these phenomena. The experiences of each country which was affected to a greater or lesser extent by the crisis are different. This is why it would be worthwhile to undertake research into the countries which were affected the most or the least negatively by the global economic crisis, as well as into the countries which found it the most or the least difficult to return at least to the pre-crisis level of economic development. It would also be advisable to develop a time frame of economic crises in particular countries. Defining the moment an economic crisis occurred would make it possible to more precisely link the phenomenon with the characteristics of the economic policy being implemented at the time. This would help to more accurately ascertain the effectiveness of specific economic-policy tools (or the lack thereof), to ensure a consistency of economic-policy instruments, to improve the complementarity of the tools used, and to exploit their potential substitutability. On the other hand, the passage of time will undoubtedly increase the difficulty of collecting reliable empirical data on companies operating in particular markets and on their behaviour during the global economic crisis. It was the respondents' perceptual limitations (memory) that were one of the main reasons why the period of prosperity was not represented by the year 2007, which was characterised not only by a high GDP growth rate but also by a relatively low unemployment rate and an increase in earnings. Nonetheless, it has been pointed out in several studies that respondents are not able to reliably assess phenomena that occurred more than five years before the time of the study, an approach that seems justified. At the same time, the strong situational character of crisis phenomena will hinder simple comparisons of data with information relating to companies' reaction to crises.

There are rather few studies on crises conducted from the industry perspective. It would be advisable, therefore, to carry out research into the specificity of crisis phenomena in selected industries. Although (for reasons of space) the results presented here do not include a comparative analysis of companies divided by sector, this aspect will be taken into account in further work on the empirical material collected. Additionally, what seems interesting and justified from a practical point of view is seeking factors that generate perturbations on an industry scale. Given the specificity of particular industries, a good solution would be to use case studies showing industries together with key companies which in a certain way reacted to the crisis. Studies focused on companies which experienced the consequences of the global economic crisis should be extended to include additional cases. These

could be taken from industries affected to various degrees by the crisis and representing industries that are unrelated in the chain of value creation. This would provide an opportunity to identify various industry-specific mechanisms of crisis spreading, as well as crisis recovery strategies pursued by companies from particular industries. Although a simple copying of other market participants' behaviour is not advisable, knowing the regularities of how organisations from a specific industry deal with a crisis could help to create a catalogue of possible recommended remedial or preventive measures tailored to a particular industry.



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