

The Governance of the Global Factory

Abstract

There have been significant shifts in the global location of economic activity over the past 30 years, whatever indicators are considered. This has led various authors to refer to the idea of the *global factory*. But much less well understood but of at least equal importance is who maintains control over these dispersed activities – or to put it differently what can we say about the *governance of the global factory*? In this paper, we address the conceptual issue of how to define the *global factory*, and identify three common ‘models’ of the global factory put forward in the extant literature. Next we consider the empirical evidence for each of the three models, and find that the greater global dispersion of economic activity has been accompanied by a rise of indigenous production capability in emerging economies, the increasing influence of MNEs worldwide, and a substantial amount of activity being externalised and taking place under outsourcing contracts. We then turn to the *governance* issue, and consider the implication of the each of the three models of the global factory for who has effective control of the globally-dispersed economic activity and for the global distribution of income.

The Governance of the Global Factory

Introduction

Over the past 30 years, we have witnessed major changes in the global distribution of economic activity. The major drivers of these changes are well documented and include *inter alia* the following: economic restructuring and market liberalisation in many countries in Eastern Europe, Asia, and elsewhere; financial deregulation and the integration of world financial markets; trade and investment liberalisation – including the proliferation of preferential trading arrangements (multilateral and bilateral); and technological advances, particularly in ICT and transportation.

The shifts in the global location of economic activity have been dramatic, whatever indicators are considered, and have excited much interest not just in the academic literature but in the popular press and elsewhere. This has led various authors to refer to the idea of the *global factory*. But much less well understood but of at least equal importance is who maintains control over these dispersed activities – or to put it differently what can we say about the *governance of the global factory*?

This paper is organised as follows. We first present some data illustrating the changes in the global distribution of economic activity between 1985 and 2012, and highlight how the emerging economies are steadily becoming more important relative to the advanced economies. We then address the conceptual issue of how to define the *global factory*, and identify three common ‘models’ of the global factory put forward in the extant literature. Next we consider the empirical evidence for each of the three models, and find that the greater global dispersion of economic activity has been accompanied by a rise of indigenous production capability in emerging economies, the increasing influence of MNEs worldwide, and a substantial amount of activity being externalised and taking place under outsourcing

contracts. We then turn to the *governance* issue, and consider the implication of the each of the three models of the global factory for who has effective control of the globally-dispersed economic activity and for the global distribution of income. The final section summarises our conclusions, and points out some avenues for future research.

The Global Distribution of Economic Activity

It is a common perception that the emerging economies account for a large and growing share of global economic activity. There are several difficulties in trying to validate this perception, not least in deciding which countries should be defined as *emerging*, which as *advanced*, and which are *developing*. There is no universally agreed set of criteria for membership of each of these groupings, and many different categorisation schemes are in existence. This basic definitional difficulty is compounded by the fact that some countries might well be best categorised to one grouping at one point in time, but then merit a different categorisation at a later date.

These problems notwithstanding, we have categorised the countries of the world into three broad groups (i.e. advanced, emerging, and developing), broadly following the 2012 categorisation of the IMF but including both South Korea and Taiwan, Province of China as emerging economies. These two countries are both clear examples of the historical problem identified above in that few would argue that both fitted into the *emerging* category some years ago, whilst both might well be more appropriately placed in the *advanced* category by 2012. We have thus categorised 26 emerging economies and 33 advanced economies for the purposes of our statistical analysis, with all other economies classified as developing:

- Emerging economies: Argentina; Brazil; Bulgaria; Chile; China; Colombia; Hungary; India; Indonesia; Latvia; Lithuania; Malaysia; Mexico; Pakistan; Peru; Philippines;

Poland; Romania; Russian Federation; South Africa; South Korea; Taiwan, Province of China; Thailand; Turkey; Ukraine; Venezuela.

- Advanced economies: Australia; Austria; Belgium; Canada; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hong Kong SAR; Iceland; Ireland; Israel; Italy; Japan; Luxembourg; Malta; Netherlands; New Zealand; Norway; Portugal; Singapore; Slovakia; Slovenia; Spain; Sweden; Switzerland; United Kingdom; United States of America.

We present illustrative data for three years in Table 1: for 2012 (the latest year for which data are available), for 2000 (the start of the new millennium), and for 1985. Data are presented on a small range of indicators, viz: population; GDP; merchandise exports, inward foreign direct investment (FDI) flows, and outward FDI flows. There is a problem with presenting annual data for selected years in that some economic variables (e.g. annual FDI flows) vary considerably from one year to the next, nevertheless Table 1 is useful in highlighting some broad historical trends.

***** Table 1 about here *****

- The population of the world increased from 4.86bn in 1985, to 6.12bn in 2000, and to 7.05bn in 2012. Meanwhile, the proportion residing in the emerging economies stayed relatively constant at about 60%, whilst the share in the developed economies fell (from 17.1% to 13.7%) and that of the developing economies rose (from 22.1% to 27.1%) over the period from 1985 to 2012.
- In terms of GDP distribution, the global share of the advanced economies grew from 71.9% in 1985 to 76.9% in 2000, at the expense of the developing economies whose share fell from 11.3% to 4.7%. But the most dramatic changes have occurred since the start of the 21st Century. The global GDP share of the advanced economies fell dramatically by seventeen percentage points, from 76.9% in 2000 to 59.8% in 2012.

Meanwhile, the global share of the emerging economies rose markedly from 18.4% in 2000 to 31.7%, whilst the share of the developing economies also recovered to 8.5%.

- As regards merchandise exports (i.e. exports of goods, but not services), the picture is even more stark. Exports from the advanced economies fell over sixteen percentage points from 70.1% of the global total in 1985 to 53.6% in 2012, whilst exports from the emerging economies almost doubled from 18% to 33.5% over the same period.
- Inward FDI flows were very much (76%) targeted at the advanced economies in 1985, and this proportion actually rose to almost 86% by 2000 at the expense of both the emerging and the developing economies. Since then, however, the share directed to the advanced economies has fallen to under 50% by 2012, whilst the share going to the emerging economies has risen dramatically to over a third (33.5%) of the global total and that going to the developing economies has also increased to 17%.
- The picture with regard to outward FDI flows is also very revealing. The advanced economies accounted for an overwhelming proportion (95%) of global flows in both 1985 and 2000. But the situation was quite different in 2012, with the emerging economies now the provenance of over 20% of global FDI flows whilst the share provided by the developed economies had fallen to less than 80%.

The picture presented by these three snapshots is of significant changes in the global distribution of economic activity, notwithstanding the important caveats mentioned above. In particular, there has been a clear shift since 1985 in the locus of activity away from the advanced economies towards the emerging economies, and this shift has been very pronounced since the turn of the century.

The Global Factory

How to define the *global factory*? Some authors use the term essentially as a synonym for the multinational enterprise (MNE). Others use the term in a more conceptual way, and here we outline three important alternatives. Hence Gereffi (1989), for example, uses the term global factory to represent “the emergence of a global manufacturing system” (p.97) in which different nations are able to specialise in distinct industrial sectors, and even in different stages of production (p.97). He points out that the production of many commodities often spans several countries, with different tasks being undertaken in different countries according to comparative advantage considerations, with consequent effects upon export specialisation and the pattern of international trade. The greater dispersion of activity has been associated with a widening of corporate ownership on a global scale, with many more firms controlled by a more diverse set of owners in many different countries. Further Gereffi highlights the different ownership structures of industry in selected Latin American and East Asian newly industrialising economies. MNEs and SOEs are major players in many Latin America countries, whilst local private capital is quite diversified (p.103). In contrast, local private firms are the main industrial actors in Taiwan and Hong Kong. MNEs are dominant in Singapore, whilst the industrial structure in South Korea is dominated by large privately-owned business groups (*chaebol*). The nation is seen as the appropriate focus of analysis, whilst corporate ownership and control are viewed as essentially exogenous elements, peculiar to the different countries to which production is relocated on cost considerations. Gereffi (p.103) does suggest, however, that the ownership structures of industry do have profound implications for industrial policy and the future internationalisation of the economies.

A second possibility is that firms from the advanced economies have offshored many of their value chain activities to the emerging economies, but with most of these activities still

integrated (internalised) under common ownership within multinational enterprises (MNEs) headquartered in advanced economies notwithstanding their geographic dispersion. Thus the Grunwald & Flamm (1985) conception of the global factory focused on the growth of foreign assembly facilities, drawing upon earlier theoretical ideas by Raymond Vernon (1966, 1979) on the product life cycle. The authors emphasised that MNEs typically establish offshore assembly operations to meet the competition of low-cost imports. Such assembly activities tend to equalize the wages of unskilled workers around the world; thus, unskilled workers in the advanced economies will experience unemployment and associated adjustment costs and those remaining employed will suffer a decline in real wages, with the gains from trade accruing to skilled workers and consumers in general).

A third possibility is that this offshoring of activities has been accompanied by an outsourcing (externalisation) of some of the value chain activities to independent suppliers (Buckley, 2004, 2007, 2009a, 2009b, 2011; Buckley & Ghauri, 2004)¹. Such externalisation involves not only a physical ‘slicing-up’ of the value chain and a change in its ownership, but often control of the value chain still resides with the ‘lead’ or ‘focal’ firm. Here the *global factory* is seen as “a structure though which multinational enterprises integrate their global strategies though a combination of innovation, distribution and production of both goods and services” and “the control or orchestration of these activities remains very firmly within the metropolitan (advanced) countries” (Buckley, 2009b: 131). Ownership of core functions within the value chain is crucial to the operation of the global factory, and the *global factory* concept is very much a reality notwithstanding the absence of central ownership. The global factory is seen as a complex strategy to reduce location and transaction costs, and as an

¹ *Outsourcing* is a process which involves the firm externalising elements of its value chain: i.e. there is an *organisational fragmentation of production*. *Offshoring* refers to the relocation of the production of goods and/or services overseas: i.e. there is an *international fragmentation of production*. *Outsourcing* and *offshoring* are conceptually different, and have different determinants. Outsourced activities may take place within the same country, or involve the relocation of production overseas. Offshored activities may take place under the control of the lead firm (FDI), or independently (Strange, 2011).

efficient response to changing global economic conditions. MNEs coordinate the resultant distributed networks of activities, which are held together by flows of intermediate products.

How Important is the Global Factory?

What is the empirical evidence for each of these three models of the global factory? All three highlight that the technology of production in many industries is such that value chains in many industries may be broken down ('fine-sliced') into distinct stages. All three assume that some, if not all, of the stages in the value chain are labour-intensive and involve modest skill requirements, and hence are more suited for location in emerging and/or developing economies where labour costs are generally lower. And all three reflect the increased importance of intermediate goods trade in the global economy, as a result of lower trade barriers and transportation costs (Baldwin & Venables, 2013; Baldwin & Lopez-Gonzalez, 2013). Trade in intermediate goods now dominate global trade flows, accounting for over 60 percent of world exports, although this overall figure masks marked differences between countries and between products.

The main evidence in favour of the Gereffi (1989) concept of the global factory is provided by the greater global dispersion of economic activity highlighted in Table 1, and by the rising growth and economic influence of indigenous MNEs from emerging economies (Sauvant et al, 2011; Guillén & García-Canal, 2013). As Guillén & García-Canal (2013: 1-2) note:

“... at the end of the twentieth century, few emerging market multinationals had successfully challenged their European, North American, and Japanese counterparts. Long-established brands such as Sony, Gulfstream, and Hewlett-Packard were still golden. The world corporate pecking order was mostly a game of musical chairs among the same two dozen firms. When *Forbes* published its

first Global 2000 list in March 2003, no one could have been surprised by the top 10 entries – Citigroup, GE, AIG, and ExxonMobil among them. Almost 40 percent of the top 2,000 corporations were US based. More than 60 percent of the corporations were headquartered in three countries alone: the United States, Japan, and the United Kingdom. *Forbes'* more recent Global 2000 list – in April 2012 – tells a radically different story. A third of its top 25 businesses are from nations barely represented in the listing only eight years earlier. China, of course, leads the way with oil companies and banks; but Brazil's Petrobras and Russia's Gazprom are right in the mix as well. Break down the world economic order by sector, and the list of global leaders from emerging economies ... becomes still more impressive."

The Grunwald & Flamm (1985) concept is supported by data provided by UNCTAD (2011: 25) which show that MNEs provided 25% of world GDP in 2010, and that value-added by foreign affiliates comprised 40% of total MNE value-added. Clearly overseas production by MNEs, both from developed and emerging economies, accounts for a substantial proportion of total economic activity. Meanwhile empirical evidence for the Buckley & Ghauri (2004) model comes from data which show that manufacturing and services outsourcing was worth \$1100-1300 billion in 2010 (UNCTAD, 2011: 133). Furthermore firms from emerging economies such as the People's Republic of China, India, Taiwan Province of China, and Chile figure prominently in the lists of most important providers of outsourced goods. Data by industry (UNCTAD 2011: 135) show that the most active sectors are garments (with \$200bn of cross-border outsourced sales, and 7m employees), footwear (\$50bn sales, 2m employees), toys (\$15bn sales, 0.5m employees); electronics (\$240bn sales, 1.7m employees), auto components (\$220bn sales, 1.4m employees), and pharmaceuticals (\$30bn sales, 0.2m employees).

In short, and notwithstanding the fragmented nature of the evidence, it appears as though there is some empirical justification for all three models of the global factory. In other words, what we can observe is a greater global dispersion of economic activity, the rise of indigenous production capability in emerging economies, the increasing influence of MNEs worldwide, and a substantial amount of activity across a variety of sectors being externalised and taking place under outsourcing contracts.

The Governance of the Global Factory

Each of the three models has quite different implications for who has effective control of the globally-dispersed economic activity – i.e. the governance of the global factory - and for the global distribution of income.

In the Gereffi model, an increasing proportion of world output will be produced by firms headquartered in emerging economies. This then focuses attention on the special features of the corporate governance systems in emerging economies: weak institutions and limited legal protection for minority shareholders; concentration of share ownership; prominence of family ownership and/or State ownership; weak markets for corporate control; complex ownership structures, often involving stock pyramids, cross-shareholdings, and dual class shares; business groups etc (La Porta et al, 1999; Claessens et al, 2000; Claessens & Fan, 2002). These governance arrangements in turn have repercussions for firm strategies (Filatotchev et al, 2007; Strange et al, 2009; Gammeltoft et al, 2010; Majocchi & Strange, 2012). As Allen (2005) notes, the literature on corporate governance in more advanced economies typically assumes that firms should be run in the interests of their shareholders, and that such an assumption is reasonable when markets are perfect and complete. But markets are imperfect and incomplete in many emerging markets, hence principal-principal agency problems (Young et al, 2008) may be relevant and firm objective functions other than

shareholder wealth maximisation may be more pertinent with consequent implications for strategy. Furthermore, the limitations of the corporate governance systems may also have implications for industrial policy and economic development. Key issues are the ‘close’ relationships between the State and big business (Hoskisson et al, 2000), the (in)efficiency of large business groups (George & Kabir, 2008), and discrimination in the availability of capital (Poncet et al, 2010). Notwithstanding the above, there will be marked shifts in both the ownership and control of global productive capacity to the emerging economies.

In contrast, significant ownership and control of global productive capacity are retained by MNEs from the advanced economies in the Grunwald & Flamm model. This is the traditional domain of much IB theory and empirical analysis, with its emphasis on foreign direct investment (FDI) undertaken by MNEs from advanced economies in emerging and developing countries. Various stages of the lead firms’ value chains may be ‘fine-sliced’ and offshored to more cost-effective locations, but these activities are still retained (internalised) under the explicit ownership and control of the lead firms. Many host countries view such inward FDI as a key element of their economic development strategies and welcome its potential employment, value-added and technology transfer benefits, whilst downplaying any concerns about foreign domination of local productive capacity (Reich, 1990, 1991; UNCTAD, 2003). Other host countries are more circumspect about inward FDI, and highlight the associated loss of national sovereignty and alleged problems such as transfer price manipulation and the ‘footloose’ nature of many foreign investments. Whatever the net benefits to the host economies, however, it is reasonable to assume that the MNEs, and their shareholders (predominantly in advanced economies), will generally profit from these overseas ventures in the long-term notwithstanding the risks they incur in making the capital investments in the host countries.

In the Buckley & Ghauri model, there is a reduction in the ownership of global productive capacity by MNEs from advanced economies as they outsource (externalise) elements of their value chains, but they still retain effective control over the chains. Most theoretical explanations argue that firms are embracing outsourcing as an *efficient* response to changing economic conditions (in particular, ICT advances), and emphasise that firms are either concentrating on their core competencies (Prahalad & Hamel, 1990), taking advantage of complementary resources and capabilities owned by external suppliers (Gottfredsson et al, 2005), or taking advantage of more efficient external suppliers (Abraham & Taylor, 1996). However, such explanations neglect the *power* asymmetries between the lead firms and their independent suppliers in outsourcing relationships (Hymer, 1972; Strange & Newton, 2006).

As Strange (2011) has argued, ICT advances have reduced the costs of searching for potential suppliers by lead firms, and increased competition between suppliers at various stages of the value chain. This has shifted power within value chains away from suppliers towards the lead firms, who are able to control the interface with the final customers through a variety of ‘isolating mechanisms’ (Rumelt, 1984, 1987) such as branding, product customisation, and/or preferential access. The firms that control these interfaces with the final customer are able to externalise the production of various intermediate goods and/or services within their value chains whilst crucially still retaining control over the chains. This organisational fragmentation of the value chain may also be accompanied by greater spatial disaggregation² if (a) the technology is such that production may be split into different stages that can be carried out in different locations, and if these different stages are characterised by different factor intensities, and (b) the costs of coordination across locations, and of transporting the intermediate goods, are low enough to make the process economically viable (Deardorff, 2001). This spatial disaggregation may take place within a single country but, to

² In principle, this spatial disaggregation might also take place within the firm if the market transaction costs are high enough.

the extent that factor price differentials are generally more pronounced between countries, a greater international fragmentation of production (IFP) is the likely outcome with most suppliers being located in emerging and developing countries. This IFP will typically give rise to greater international trade in intermediate products. Furthermore, the lead firms will be able to leverage their power over their suppliers to appropriate all the rents along the chain from a smaller asset base, meanwhile enjoying increased flexibility of supply.

What are the implications of such outsourcing arrangements for the global distribution of income, given that lead firms based in advanced economies are retaining effective control of the value chains? Critics often claim that the suppliers in the emerging/developing countries are being exploited, with no contractual security and constant pressures to reduce costs. Indeed there is a substantial literature (see, for example, Bartlett et al, 2008; UNCTAD, 2011; Denicolai et al, 2012) highlighting the low wage levels, poor working conditions, and environmental abuses in the suppliers of various infamous lead firms (e.g. Nike, Apple).

On the positive side, the IFP increases the opportunities for countries which are not efficient producers of the final good to benefit from trade through specialisation in the labour-intensive stages of a production process which, as a whole, may be capital or technology-intensive (Yeats, 1997). Participation in global value chains provides the local firms with access to overseas markets at lower cost than would otherwise be possible, and may give rise to technology transfer and/or benefits from organisational learning (Gereffi, 1999; Humphrey & Schmitz, 2000; Gibbon, 2001; Bair & Gereffi, 2003). The challenge for local firms is not so much to participate in global value chains, as to upgrade their positions within such chains from that of simple assembly to OEM, and ultimately to original brand name manufacturing (OBM). There is evidence across a range of industries, including *inter alia* garments, automobiles and electronics, of an evolving tiered structure of suppliers, wherein the first tier may undertake relatively sophisticated activities but where lower tier positions typically

involve lower-skilled activities that are relatively easy to imitate, but provide little scope for learning and growth. In practice, upgrading is beset with obstacles such as transactional dependence vis-à-vis the lead firms, and various isolating mechanisms around the profitable activities within the chains (Palpacuer & Parisotto, 2003). Nevertheless there are success stories. The Taiwanese component supplier Foxconn (Hon Hai) has evolved from humble beginnings to being a major MNE in its own right, employing over 600,000 people³ in 2010 at manufacturing locations in over 20 countries, and supplying electronic components to an array of major clients including Apple, Dell, Sony, Nintendo, Hewlett-Packard, and Samsung (UNCTAD, 2011: 219). Furthermore, as the example of Foxconn clearly demonstrates, the very process of outsourcing undermines the power asymmetries that were inherent in the original externalised relationship, as Foxconn is now a powerful intermediary within the value chains of all of its clients.

Economic theory suggests that trade in intermediate products brings efficiency gains that amount to an outward shift in the production function for final goods, over and above the traditional gains from increased specialisation and exchange between countries (Feenstra, (1998: 47). But Feenstra also questions whether these gains will be accompanied by costs in terms of the distribution of income? When firms offshore activities that are intensive in unskilled labour to another country, this is effectively the same as the firms importing supplies of that labour from that country and combining them with their home production. From the perspective of the unskilled workers in the home country, their wages will be reduced as a result of the outsourcing, over and above the impact of the trade in final goods. But what about the unskilled workers in the host country? In a Heckscher-Ohlin world of constant returns to scale and perfectly competitive markets, their wages should increase as factor prices equalise. In our view, the positive effects on wages in host countries can not be

³ This figure had risen to 1.6m by the end of 2012.

assumed in a world of imperfect markets, characterised by powerful buyers who are intent on appropriating the maximum rents possible. Indeed, Palpacuer & Parisotto (2003: 110-111) suggest that any gains from industrial upgrading are typically restricted to the lead firms and first-tier suppliers, and are not shared with local workers in the form of better employment conditions or higher wages, and that moreover upgrading often involves some forms of workers' displacement and/or restrictive labour practices.

Conclusions

The main messages of this paper are threefold. First, we have shown that there have been major changes in the global distribution of economic activity over the past thirty years, with the emerging economies assuming greater shares relative to the advanced economies over a range of indicators. Second, and notwithstanding these changes in the location of economic activity, we have highlighted some important conceptual and empirical issues about who maintains control over these increasingly disperse activities. The empirical evidence suggests that there has been an increase in indigenous production capability in emerging economies and a greater influence of MNEs worldwide, but that many firms are outsourcing various activities that had previously been internalised within vertically-integrated operations. The evidence is piecemeal, but it is nevertheless clear that the *global factory* concept has empirical support. Third, it is evident that future research is required on the governance of the global factory, and the implications of the three different models for economic development and the global distribution of income. This might well combine the insights of internalisation theory (Buckley & Strange, 2011), global value chain analysis (Gereffi et al, 2005), and corporate governance research (Wright et al, 2005).

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Table 1: The Rise of the Emerging Economies

	Year	Advanced Economies	Emerging Economies	Developing Economies
Population	1985	17.1%	60.8%	22.1%
	2000	14.6%	60.4%	25.0%
	2012	13.7%	59.3%	27.1%
GDP	1985	71.9%	16.8%	11.3%
	2000	76.9%	18.4%	4.7%
	2012	59.8%	31.7%	8.5%
Merchandise Exports	1985	70.1%	18.0%	11.9%
	2000	69.8%	22.8%	7.4%
	2012	53.6%	33.5%	12.9%
Inward FDI	1985	76.0%	15.9%	8.1%
	2000	85.8%	11.2%	3.0%
	2012	49.5%	33.5%	17.0%
Outward FDI	1985	95.5%	3.3%	1.2%
	2000	94.0%	2.3%	3.7%
	2012	79.7%	21.3%	-1.0%

Notes: (1) All figures are expressed as percentages of the world totals.
(2) The annual GDP, exports and FDI data were all expressed in current prices at current exchange rates. The population data refer to July 1st in the year indicated.
(3) The following 33 countries are classified as ‘advanced economies’: Australia, Austria
(4) The following 26 countries are classified as ‘emerging economies’: Argentina, Brazil
(5) All other countries are classified as ‘developing economies’.

Source: Authors’ calculations based on country data extracted from UNCTADSTAT.