

**Value Capture from Advantages and Glocal Governance for Sustainable Value
Creation ***

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Abstract

The impact of firm value capture strategies on the sustainability of the value creation process, as a whole, has been little discussed in the literature. Despite contributions by classic authors on issues pertaining to value capture and value creation, moreover, we still lack a conceptual framework on all their nature and determinants. Our purpose in this paper is to propose a conceptual framework for value creation and value capture, explore their relationship, and discuss pre-requisites for sustainable aggregate value creation. We then derive propositions and explore implications of our analysis on business strategy and public policy.

1. Introduction

The attempt to capture value from their (perceived) advantages is arguably of essence for firms' existence and evolution. However, the relationship between (types of) firm value capture strategies and (the determinants of) value creation actions by firms, has been overlooked in the literature. Importantly, the relationship between firm competitive advantage, and sustainability of the wider society-wide value wealth-creation process, have been given slant attention. Despite major figures in Industrial Organizations (IO) economics and in (strategic) management having contributed to value capture and value creation-related issues, we are still lacking a conceptual framework on (the determinants of) value creation, on firm value capture strategies, their relationship, and the relationship between firm competitive advantage and the sustainability of the overall society-wide value-wealth creation process.

The aim of this paper is to shed light on these important issues. Section 2, provides a short selective and critical literature survey on some classic contributions on the issue of value capture from advantages; as they relate to value creation. Section 3 presents a framework on (the determinants of) value creation and value capture, explores their interrelationships and the impact of value capture on the sustainability of the overall value-wealth creation process. We also derive testable propositions. Section 4 discusses implications of our analysis on industry organisation, public policy and managerial practice and Section 5 has concluding remarks and issues for further research.

2. Capturing Value from Advantages – A Critical Appraisal

“Profiting from advantages” is a time-honoured theme in industrial organisations (IO) and (international) strategic management. The originator of the theme was Stephen Hymer (1960/1970), whose 1960 PhD thesis at the MIT, served to establish him as the father figure of the theory of the Multinational Enterprise (MNE), foreign direct investment (fdi) and international business (IB), see Dunning & Pitelis (2005). In his now classic thesis, Hymer claimed that the need of firms to best exploit (therefore profit from) their advantages, was a crucial deciding factor for them to undertake fdi, versus alternative modalities of foreign operations such as licensing, franchising and cooperation. The superior control afforded through fdi rendered it a perdurable modality for profitability, than other more market-based alternatives.

Hymer focussed mainly on “monopolistic advantages” by firms and the effort by firms to capture monopolistic rents from these advantages, not so much on the process of their derivation, that is the creation of advantages. This “profiting from advantages” theme was inspired by the earlier work of Jo Bain (1956) on Barriers to New Competition. In his classic book, Bain attributed the ability of firms to charge prices in excess of the (perfectly) competitive ones, therefore to capture oligopoly rents, to barriers to entry, such as absolute cost advantages, economies of scale, and product differentiation (or the preference barrier). Bain paid particular attention to the underlying advantages afforded to firms through such barriers to new competition. Hymer (1960) explicitly drew on Bain’s analysis of advantages and extended it to MNEs. Bain and Hymer paid limited attention to the role of innovation as an advantage. (Dunning and Pitelis, 2005). This would partly explain their

focus on “profiting from advantages”, (or capturing supernormal profits), than on the value creating properties of advantages.

David Teece (1986) helped address these gaps. Teece’s paper addressed the issue of how can an innovator enhance the chances of capturing as high a share as possible from the value created by an innovation. In particular, Teece observed that it is common for innovators to lose out to competitors who possess complementary assets and capabilities. In this context, business strategy may be crucial, mainly in the form of attempts by the innovator to establish a base of complementary assets and capabilities. Assuming absent of failing markets for ideas-technologies, the choice of the mode of acquisition of such assets and capabilities will in turn depend on factors such as the ‘appropriability regime’, –how easy is to protect an innovation (through for example, patents or secrecy) and the existence or otherwise of a ‘dominant design’ (which emergence tends to shift competition from design to price). In brief, when the ‘appropriability regime’ is ‘weak’ and there exists a ‘dominant design’, innovators are well advised to acquire complementary assets and capabilities such as distribution, for example, through contracts, integration or collaboration. The choice of modality will depend crucially on the nature of complementary assets and the competitive position of the innovator vis-à-vis rivals.

Despite dealing with the archetypal issue of transaction costs theory (the choice between contracts, integration, collaboration) and in contrast to Hymer (1968), who explicitly synthesised transaction costs and oligopolistic rivalry, Teece took a cut more akin to the resource-based view (RBV thereafter). Teece’s RBV lens allowed him to go beyond

Hymer's theme and include innovation as an advantage which creates value, but it is not by itself sufficient to capture this value. On the other hand, the work of major RBV scholars, such as Barney (1991) and Peteraf (1993) focuses on firm ability to capture value through rare hard to imitate intra-firm resources.

In contrast to this focus on value capture, the transaction costs perspective of Coase (1937) and Williamson (1973) focused on integration as a strategy for value creation (through the reduction of transaction costs) and paid little attention to the value capture properties of integration. On the other hand the work of RBV scholars such as Penrose (1959) and Richardson (1972), emphasizes the value creation properties of firm integration strategies, see Mahoney (2005).

In his now classic 1972 article, George Richardson built on an earlier insight from Edith Penrose (1959) to explore the choice between market, integration and cooperation. He used two main categories, similarity of activities and complementarity, of activities. Similar activities are those the efficient carrying-out of which requires the same underlying capabilities. Activities are complementary when for their efficient dispensation, the requisite underlying capabilities must be used jointly. In this context, Richardson observed that production-related efficiency dictates that firms consider integrating when their (planned) activities are both similar and complementary to those of other firms (with which they may intend to integrate). Cooperation is best when there exist complementary but dissimilar activities. Weakly complementary, dissimilar activities are best left to markets.

Richardson's analysis adds a production efficiency focus on the value creation properties of integration that complements Teece's and the transaction costs perspective. He does not, however, address the issue of value capture.

The problem of capturing value/profit from innovation and other firm advantages in a dynamic environment characterised by Schumpeterian competition is important in the work of Penrose (1959). She claimed that in order to achieve sustainable long-term performance, firms need to build 'technological' or 'impregnable bases'. For Penrose,

'In the long run the profitability, survival, and growth of a firm does not depend so much on the efficiency with which it is able to organize the production of even a widely diversified range of products as it does on the ability of the firm to establish one or more wide and relatively impregnable 'bases' from which it can adapt and extend its operations in an uncertain, changing, and competitive world.' (p.137)

"Impregnable bases" are seen by Penrose as technological and know-how-based bundles of tacit knowledge which are hard for rivals to initiate. The concept is akin to and supportive of Teece's arguments which focuses on the need to acquire assets and capabilities which allow innovators to capture value. An important part of the Penrosean story, however, is that innovation can itself be an element of an 'impregnable base' and that the last mentioned may involve more than the acquisition of complementary assets and capabilities. An implication is that the acquisition of complementary assets and capabilities may not suffice to allow firms to profit from an innovation. Building 'impregnable bases' can be expensive, time consuming and more likely to be effected by firms with a history. For

smaller firms things may not be so easy, inviting considerations of “public policy” to support small firms-see below.

If we take as an example EMI’s failure to capture value significantly from the invention of the CT scanner, the following insights from the above contributions can be gained. As noted by Teece, EMI possessed neither similar nor complementary capabilities for the production and exploitation of the CT scanner. In this context its best option might be to sell or licence the idea/ technology. However, the market for ideas/technologies is notoriously imperfect, precluding this possibility for EMI. Besides the well known problems discussed in the literature (such as ‘Arrow’s paradox’, due to the ‘public goods’ nature of knowledge, see e.g. Buckley and Casson, 1976), and/or the presence of opportunistic buyers (as in Hymer, 1968, Williamson, 1975), a genuine (non opportunism-related) problem in this case is the prediction of demand. In EMI’s case early predictions proved to be widely pessimistic (Bartlett, 2005). In such a context, even a honest buyer might be unwilling to buy, and in any case, unwilling to pay a price above that consistent with demand projections at the time. Such a potential buyer might have been Siemens, or other companies in the medical equipment sector. Given the problems with selling¹, an alternative possibility examined by Teece was for EMI to collaborate with a company that possessed the capabilities required for production and distribution of CT scanners, a possibility being Siemens. However, in this case the problem of valuing the technology is still present, leading to high pre-contract transaction costs, but also high post-contract transaction costs due to small number conditions, namely a ‘bilateral oligopoly’ (Hymer, 1968, Williamson, 1975). In addition EMI would carry a risk of its technology being

expropriated by Siemens, or other competitors such as GE and Technicare, who possessed requisite production and complementary capabilities for the exploitation of the innovation; were it to choose to partner with them.

The moral is that when there exist stronger and better positioned competitors, one faces a world of very imperfect choices. In the absence of a strong appropriability regime, e.g., through a very strong patent or secrecy (see Bartlett, 2005), EMI could only hope either to acquire, or to build gradually complementary assets and ‘impregnable bases’ so as to achieve comparable competitive strength to its rivals and then aim to fully profit from its innovation.

Given its stronghold in its existing sector, the option for EMI to acquire an existing player(s) in the US, its target expansion market was a realistic one. Teece did not explore this possibility which was not pursued by EMI either (Bartlett, 2005). This is almost paradoxical, as going alone involved very many risks, aired at the time within the company, like strong competitors, absence of manufacturing capabilities and lack of knowledge of the US market. (Bartlett, 2005). Had EMI chosen the route of diversification through acquisition, things might have been different - we will never know². The choice of “greenfield” foreign direct investment, may explain in part at least, its failure to profit significantly, from its innovations. Importantly, moreover, the possibility to acquire rivals is normally not available to small firms and/or individual innovators. Considering the very substantial resource and (transaction) costs required (to acquire) or build complementary assets and level the playing field, it is hardly surprising that the best some start-ups can

often hope for, is to be taken over. This raises the important question of how can a small firm and/or individual innovator capture value from their innovation/advantages, and what can be the role of business and public policy in this context.

To summarize, Richardson's analysis complements Teece's suggestion that EMI's decision to 'make' through greenfield investment, was theoretically ill-advised to start with. Transaction costs arguments on the other hand point to the limitations of both cooperation and market-based strategies. Once greenfield investment had been chosen, from the three imperfect alternatives, the building of complementary assets was according to Teece, the only choice. This, however, is also difficult, as it proved to be the case with EMI, and indeed may be out of the question for individual innovators and start-ups. Recent work by Gans and Stern (2003) and Gans, Hsu and Stern (2001) confirmed the view that the choice of competition by SMEs will depend on the degree of imperfection of the market for ideas. For example, in the biotechnology sector, where patterns are relatively effective and there exist 'market for ideas', cooperation with larger players is more common than in electronics, where the absence of such conditions obliges SMEs to attempt to compete head-on with existing competencies. This raises important business policy and public policy questions, which we address below.

In contrast to the Bain-Hymer tradition, which in effect ignores innovation as an advantage from which value can be captured, Teece assumed that innovation helps create value, but it is not by itself sufficient for a firm to be able to capture such value. More specifically, the explicit hypothesis in Teece's article is that if the innovator has come up with a product,

which is valuable to consumers, there is a market for it. In this sense innovation creates value. If instead nobody is interested in buying a new product, the innovation behind it is (deemed) worthless. While in line with economics and marketing literatures, see Adner and Zemski (2006), it is arguable that market-ability need not be the only test of value creation, and that a more objective measure of value could be used.

Classical economists, for example, like Adam Smith, used the 'labour theory of value' to explain 'value creation'. According to this, value is created when labour power is expended on a useful product. A difficulty here is the word 'useful' which in a market economy brings back market-ability through the back door. A purely subjective measure of value, on the other hand, as value being perceived by buyers and translated in willingness to pay, may also be throwing out the baby with the bathwater. For example, is willingness to pay purely subjective, or is it linked to production efficiency (cost of production) and how is the latter linked to value and willingness to pay? Interestingly, the IO approach, of Bain, Hymer and Teece, marries objective and subjective notions of value in the form of a demand (subjective value) and a cost (objective value) curve. We shall use this synthetic approach throughout. In particular, we adopt the widely held view in business strategy that value can be added through two major routes – cost reduction/ “leadership” or perceived utility/differentiation, both as realised in willingness to pay (e.g., Porter, 1985)³. In a recent paper Adner and Zemski, (2006), for example provide a detailed analysis and a discussion of the relationship between value creation through efficiency and perceived value-utility by the consumers in line with the above.

While Teece went beyond Bain and Hymer, by focussing on innovation, his approach is limited in that it views innovation as the sole source of value creation and business strategy (for example integration, licencing) as the sole means of value capture. He discusses no other means of value creation and capture, and the relationship between the two. The whole “profiting from advantages” tradition, fails to explore the impact of value capture on the sustainability of value creation-at the firm level and more widely. Perhaps more importantly, in the literature as a whole, issues of value creation, value capture, their determinants, relationships and the sustainability (or not) of the overall value creation process, are often implicit, or not even discussed. This is a major gap in the that we aim to contribute towards filling here.

3. On the Determinants of Value Creation and Value Capture, and their Relationship

There exists a very large literature in economics, IO and (international) strategic management on the issues of value creation and value capture, perhaps too large to do it full justice here. Our effort will be to provide a bird eye’s account, of the major contributions, with an eye to identifying and then filling existing gaps.

a. On the determinants of Value Creation by Firms

Starting from value creation, it is arguable that innovation, has received the lion’s share in the literature. As far back as in Adam Smith’s ‘pin factory’, intra-firm inventions argued to be engendered through learning by doing, was viewed as a critical determinant of

productivity. (Smith, 1776, Chapter 1). However, Schumpeter's (1942) focus on competition as 'creative destruction' from innovations, is arguably the main dynamic value creation theory of innovation, see for example Amit and Zott (2001). The Schumpeterian view of innovation was adopted by Penrose's (1959), one of the founders of the resource-based view (RBV), and the dynamic capabilities view, see Mahoney (2005), for a critical survey. The value creation (as opposed to the 'rents in equilibrium' one) version of the RBV, by for example Penrose (1959), Teece (1986), Teece, Pisano and Shuen (1997) and others, for example, focuses on value creation through efficiency-innovation.

The focus on (endogenous) growth through knowledge creation and innovations in Penrose and the value creation version of the RBV, fully complements Schumpeter's analysis. The implication of the last mentioned on intertemporal (dynamic) efficiency is now fully acknowledged by mainstream IO economists too, see for example Baumol, (1991).

In traditional neoclassical theory of growth (for example Solow, 1956) existing technology is considered to be embodied in the available capital stock (and when seen more broadly also in the available pool of labour), while technological change is seen as exogenous. New "endogenous growth" theories, recognize the endogenous, Schumpeterian nature of technology and innovation, the possibility of increasing returns to scale and the significance of human resources such as management, in engendering growth, see Lucas (1988), Romer (1986, 1990). In many ways, and without always realizing it, such models build on the ideas of Penrose (1959) and Teece (1982, 1986), in addition of course to earlier

contributions by Adam Smith (1776), Allyn Young (1928) and Nicky Kaldor (1970) on 'increasing returns' and the importance of 'human resources', notably management⁴.

Despite various limitations of old and new neoclassical growth theory, see Solow (1997, 2001), Romer (1990), its focus on 'returns to scale', resources (capital and labour), and (its various assumption about) technology, provides useful hints on the sources of value creation, through cost reduction, differentiation, or a combination of the two. Starting from resources in particular human ones, these have a prominent role in classical economics and in management. In Adam Smith, labourers engender productivity enhancement (cost reductions) through specialisation, division of labour, learning by doing and inventions. The "capitalist" in Karl Marx is the driving force of economic change, the "entrepreneur" in Schumpeter (1942). In Penrose (1959) instead, the "manager" is the hero, see Mahoney (2005, 2007) for extensive discussion. The work of management scholars such as Pfeffer (1998) points to the importance of human resources in organisations. In all, the quantity, quality and relationships (for example harmonious or conflictual) of human resources is of essence in determining the ability of a firm to create value through productivity and differentiation, even in influencing the objective of firms (see Cyert and March, 1963, Pitelis, 2007). Like firms, all human resources are highly unique and individual and their combination and relationships help create the unique 'personality' of the organization. Non human resources, are critical in the resource-based view (RBV) of the firm; see Mahoney (2005) for a critical survey, and have received sufficient attention to need no further elaboration here.

“Returns to scale”, are a major determinant of cost reductions, thus value creation. Economists, economic historians and management scholars have focused on numerous factors that lead to reductions in unit costs (unit costs economies thereafter). These include economies of scale and scope (Chandler, 1962), economies of growth (Penrose, 1959), transaction costs economies (Coase, 1937, Williamson, 1975), economies of learning (Arrow, 1962), economies of joint governance (Williamson, 2005) external economies (Krugman, 1991, 1996, Porter, 1990), economies of pluralism and diversity,. The more and the stronger a firm’s unit cost economies are, the lower will tend to be its unit costs, and the higher its ability to create value.

Absent from economics, but central to business strategy is the other major determinant of value creation-firms infra-structure and strategy. By firm infra-structure we refer to its systems, routines and decision making processes, while by structure we refer mainly to its internal organisational form (for example, U-form, M-form, heterarchy, etc.). We adopt the conventional definition of strategy, as the pursuit of a long-term objective supported by the requisite allocation of human and other resources for its implementation. The role of strategy is emphasised in Hymer and Teece, the role of infra-structure in the huge literature on strategic management, see, for example, Grant (2005). The focus by Hymer and Teece on the value capture/profitting from advantages aspect of strategy, fails to recognise that strategy is also of essence in increasing efficiency and productivity, by reducing transaction and production costs and by increasing perceived value by effecting product differentiation – it is, therefore, an important determinant of value creation. The role of a firm’s systems, routines and internal decision making processes has been explored by the RBV, Nelson and

Winter (1982) and Cyert and March (1963). The importance of internal organisational form is discussed by Chandler (1962), Williamson (1981) and Birkinshaw and Hood (1998). The choice of a firm's internal structure is of essence in carrying out a strategy, increasing efficiency and productivity, acquiring and upgrading knowledge and (thus) adding value.

In all firm infra-structure and strategy, help to both reduce costs, but also effect its unique personality and character, often encapsulated in the complex interactions of tacit knowledge, embodied in its business model, see Chesbrough and Rosenbloom (2002). These engender 'firm differentiation' and can add perceived value to the consumers.

The major determinants of value creation interact in numerous ways. For example, human resources are the source of firms of innovation, discussed above. (Smith, 1776, Schumpeter, 1942, Penrose, 1959) and strategy (Chandler, 1962, Penrose, 1959). Technology and Innovation impact on unit cost economies (Chandler, 1962, Penrose, 1959). Innovation and technological accumulation can be an explicit element of strategy (Cantwell, 1989). Firm infra-structure is a crucial prerequisite for the implementation of strategy, the leverage of human resources and technology, (Cyert and March, 1963, Nelson and Winter, 1982). Unit cost economies, are crucial in enabling innovation the leveraging of human resources the undertaking of RnD and innovation. (Chandler, 1962)

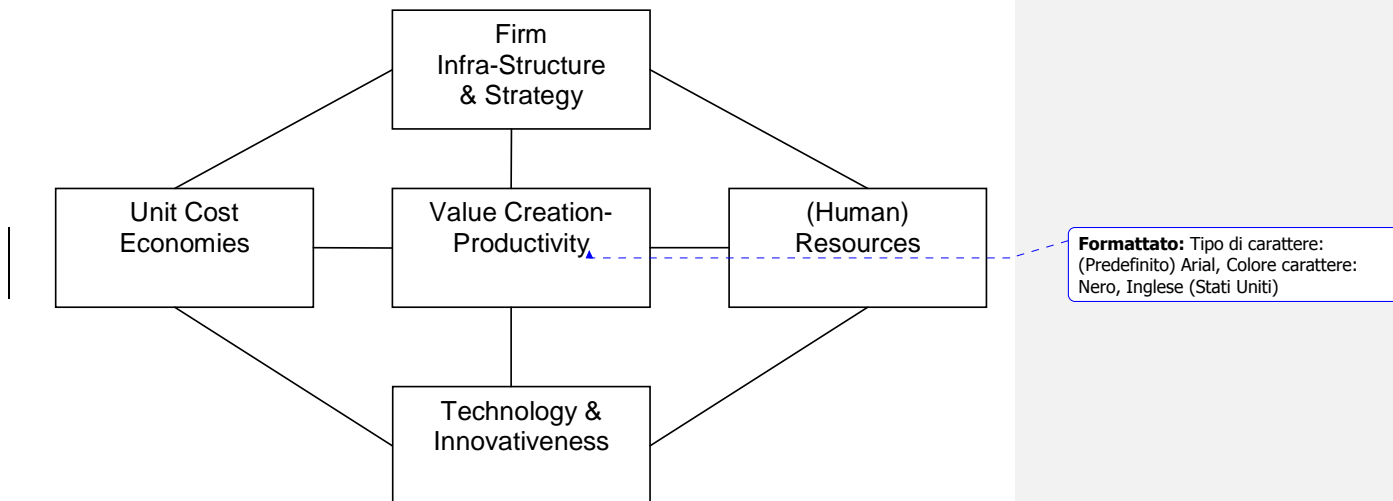
While the determinants of value creation discussed here, play a prominent role in extant economies and management, they are rarely put in the context of value creation per-se. The emphasis of business history, IO and (strategic) management on infra-structure and

strategy, and unit cost economies, also zeroes down to issues of firm growth, not value creation per-se. The literature that looks explicitly on value creation is summarized by Amit and Zott (2001). They focus on ‘virtual markets’, ‘value chains’, “(Schumpeterian) innovation”, intra-firm resources, strategic networks and transactions costs economics. While all these factors do effect value creation it is arguable that this list includes determinants (like innovation) and means (like strategic networks). Here we focus explicitly on what we view at the four fundamental determinants of value creation, the factors without which firms can not add value directly. Indicatively, this is not the case for means (like value chain analysis) or types or strategies (like integration and strategic networks) While no firm can add value without human resources, infra-structure and strategy and some sort of advantage through unit cost reductions and/or innovations, (firms) can exist without, for example, strategic networks.

Other value-creating factors usually considered in the literature include ‘physical capital’ (crucial in the neoclassical growth theory of, for example, Solow, 1956). While physical capital contributes to value creation in today’s “intangible” economy, it is not of essence for a firm to add value. A human resource, for example a sole entrepreneur can do to, by exploring his/her ideas, skills and capabilities without using (much) physical capital - an example being consultants running their own companies. In addition, the impact of physical capital on value creation, is arguably included in the contribution of other variables, notably technology, unit cost economies and human resources. Other resources moreover, like for example raw materials are the basis on which value is added, not determinants of value creation per-se.

The above discussion can be synthesized in Figure 1.

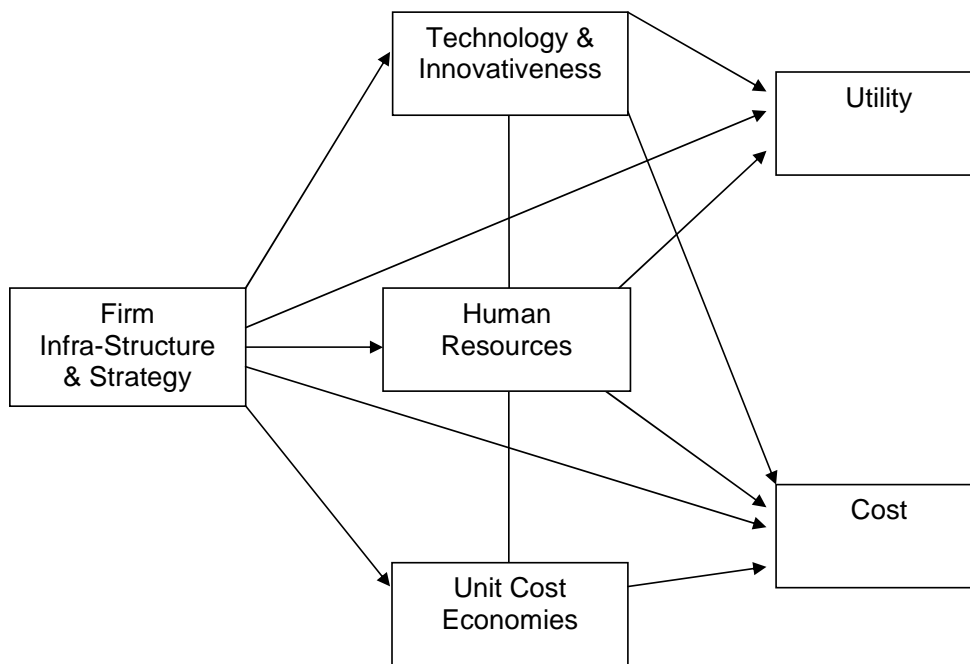
Figure 1 Four fundamental determinants of value creation



- Figure 1, summarizes four fundamental and interacting determinants of value creation at the level of the firm
- The four determinants are derived from an eclectic integration and extension of IO and (strategic) management literatures
- Other factors can affect value creation indirectly, through their effect on the four fundamental determinants

Figure 2 explores the (casual) link between the four determinants to value creation and the two main sources of value creation - “subjective utility”/perceived value and cost reduction.

Figure 2 – Determinants of Value Creation and their relationship to the two major sources of value (cost and utility)



- From the four fundamental determinants of value creation, firm strategy and infra-structure stands out in that it impacts on all other determinants and (as well as) on Utility and Cost.

In Figure 2, the arrows show the directions of causality and the impact of the four determinants on ‘subjective utility’ and/or cost reduction. One variable, unit cost economies and human resources, affect mainly cost reductions, while the other determinants affect

both. For example a process innovation can reduce unit costs and engender product differentiation. Infra-structure and strategy can reduce costs (e.g. through integration) and differentiate the firm itself (e.g. through branding). Human resource can also affect subjective utility, but mainly through strategy, product differentiation and/or innovation. The same is true for unit cost economies. “Subjective utility” and cost reductions in their turn, can feed-back to the four determinants. For example, a firm’s ‘brand’ can help it receive better terms for advertising and from suppliers, thus engender unit cost economies.

The analysis above points to the following:

Proposition 1

The ability of firms to create value depends largely on four fundamental factors – unit costs economies, human resources, technology and innovativeness, and firm infra-structure and strategy. These factors affect value creation independently and in their interactions. Other factors, such as physical capital can help firms create value, but indirectly and through their effects on the four fundamental factors.

The major implications following from our analysis of value creation, concerning the “capturing value from advantages” perspective, and extant literature, are simple yet we feel powerful. Innovation is not the only way through which a firm can create value from which it needs or wishes to profit. The mere existence of skills capabilities, and competences of its human resources namely the mere existence of (perceived) advantages, the conception of a strategy that can create value (even from someone else’s innovations) can be sufficient conditions for a firm to seek to secure profits from such advantages (to include just

strategy). It follows that innovation is a sufficient, but not a necessary condition for firm's pursuit of value capture. Profiting from innovation is a very important subject of a more general theme, that of capturing value from advantages. This is important, not least because our analysis remain relevant even it/when there develop markets for technology (see Arora et al, 2001, Chesbrough, 2003a, b) which do not render necessary the use of integration strategy in order to profit from innovation. We return to this issue later. Before, however, we turn our attention to value capture, the main focus of the "profiting from advantages" perspective.

b. Capturing (Created) Value-Strategies and Determinants

Capturing value from one's 'advantages', is the concern of any innovator, and more widely a major objective of firms (see Brandenburger and Nalebuff, 1995), but also individuals and nations. Assuming that a firm has produced a useful, innovative product, the fundamental question becomes how to obtain the maximum possible net present value (NPV) of the anticipated future income streams of this innovation. In addition, the firm, innovator or not, has the wider consideration of how to capture the maximum possible value created by itself, but also by other firms too. This is the essence of competition. Through efficiency, power, strategy, ingenuity, imagination and luck, firms need to out-compete rivals in order to capture value. In general, firms can capture less, equal or more value than the one they have created through their activities (see Brandenburger and Nalebuff, 1995). The size of the pie captured by a firm will mainly depend on two factors: first, their market power, for example, enabled through structural and strategic barriers to entry, as in Bain (1956) and Porter (1980). In addition, it will depend on the ability of a

firm to create ‘impregnable bases’ as described by Penrose (1959) and the RBV, for example, Peteraf (1993), and more generally engender differentiation of the firm, vis-à-vis its competitors. In addition to these determinants of value capture, ‘generic strategies’ (as in Porter, 1985) and integration, diversification and cooperation strategies, as in Hymer, Teece, Richardson and Williamson, can help capture value.

The literature in barriers to entry goes back to Bain’s (1956) classic work on Barriers to New Competition. Bain identified three main barriers to entry of new firms, which allow incumbents to capture super normal profits, by keeping prices above the competitive levels (where price equals average costs). Bain identified three main barriers- absolute root advantages, economies of scale and product differentiation. His empirical work has shown that the last mentioned (or preference barrier) was the most important. Subsequent literature has focused on pricing (eg. the limit pricing model, (Modigliani, 1958), investments in excess capacity (Spence, 1977) product proliferation, and advertising, (see Porter, 1980. Scherer and Ross, 1990). The main characteristic of such barriers is that they focus on the industry, not the firm. In contrast, the resource-based view (RBV) focuses on rare, and hard to imitate capabilities, that are difficult for competitors to copy, thus creating intra-firm barriers to entry, see Peteraf (1993) and Mahoney (2005). Edith Penrose (1959), one of the founders of the RBV, has discussed both Bain-type barriers to entry, but also ‘impregnable bases’. Such are intra-firm technological resource bases that create a stronghold (on which firms can build, and which allows firms to capture value from competition. Technological ‘impregnable bases’ can be seen as a dynamic equivalent of non-imitable resources in that they change over time Hard to imitate intra-firm resources and capabilities, as well as

‘impregnable bases’ and the ‘business model’ (Chesbrough and Rosebloom, 2002), help create a firm’s own “identity”, therefore they constitute a new genre of barriers to entry, that of “firm differentiation”.

“Generic strategies” are well rehearsed in the literature. Besides cost leadership, differentiation and focus (Porter, 1985), they include a ‘value for money’ strategy that synthesizes the two, for example in the context of hyper-competition, Pitelis and Taylor (1999). ‘Generic’ strategies allow firms to position themselves in a sector, so as to capture value by reducing the forces of competition (Bain, 1956, Hymer, 1960 Porter, 1980). Integration, diversification and cooperation strategies are also extensively discussed, and are the focus of Hymer, Williamson, Teece, Richardson and Penrose. They aim to capture value, either through efficiency, for example in the transaction costs and RBV literature, or through market power, for example in Bain, Hymer and Porter.

The four types of value capture strategies interact. For example, it is interesting to note that Bain’s three barriers include Porter’s two generic strategies. Integration, cooperation and diversification are often viewed as barriers to entry (Porter, 1980), and they impact on “firm differentiation” as they help determine a firm’s “business model”-identity.

In addition to their interactions, the four major strategies for value capture, are also linked to value creation, albeit in different degrees. For example, both Bain’s three barriers and Porter’s two generic strategies help reduce unit costs and/or increase perceived value, so they help create value. Intra-firm barriers, ‘impregnable bases’ and the ‘business model’

help firms create perceived value through branding and by providing an incentive to innovate, Schumpeter (1942), Penrose (1959), Baumol, (1991). Even Bain-type barriers can help create value by providing an incentive for entrants and through Schumpeterian ‘creative destruction’.

There follows:

Proposition 2

Four fundamental and partially overlapping types of strategy – (strategic) entry difference, ‘firm differentiation’, Porter-type ‘generic strategies’ and integration, diversification and cooperation strategies, determine, independently and in their interaction, the ability of firms to profit/capture value from their advantages. To varying degrees these strategies involve both power and efficiency, both of which are in turn potential contributors to value creation.

The main implication from our analysis is that innovation is not a necessary condition for motivating value capture. For example, firms like IBM, Microsoft, Cisco, Intel, Sun and Oracle can capture value (through strategy) without any innovation advantages (Chesbrough, 2003). Importantly, moreover, technology and innovation itself can be part and parcel of a value capture strategy, through the building of ‘impregnable bases’.

The possibility of capturing value from the innovation of others brings centre stage the issue of competition. In general, total value created is the sum total of all firms’ value adding efforts. This is illustrated in Figure 3, as the total area within the circle (A). The inner circles constitute the value created by firm. The value captured by firm *i*, however,

can be larger, or smaller than the value it has created (see Brandenburger and Nalebuff, 1995). This will depend on its ability to devise and implement a mixture of value capture strategies superior to that of its competitors. The sustainability of a firm's competitive advantage over time will depend on its ability to keep abreast of rivals in terms of capturing value created by itself or other firms. Innovation is useful, but not necessary in this context. In addition, while strategy may suffice to capture value, it also helps add value⁵.

Through requisite value capture and value creation strategies, firms can achieve sustainable competitive advantage. Allowing for strategies to capture and create value, renders strategy itself into an 'advantage' from which firms need to capture value. The complex interaction between value creation and value capture helps firms to create competitive advantage, that allow them to outcompete rivals (see Brandenburger and Nalebuff, 1995).

c. Value Capture and Sustainability of Value Creation

Our focus so far, as well as that of the 'advantages' tradition and of the strategic management literature as a whole, is the (sustainable) competitive advantage of firms (see Teece, 2006). However Hymer (1960) and Teece (1982) are also concerned with the economic performance of nations, of national competitive advantage, predating Porter's (1990) subsequent work on this issue. It is interesting to analyze the link between firm competitive advantage and national competitive advantage. In addition, it would be interesting to explore the relationship between sustainable competitive advantage by firms and nations, on the sustainability of the value creation process as a whole. This helps revisit

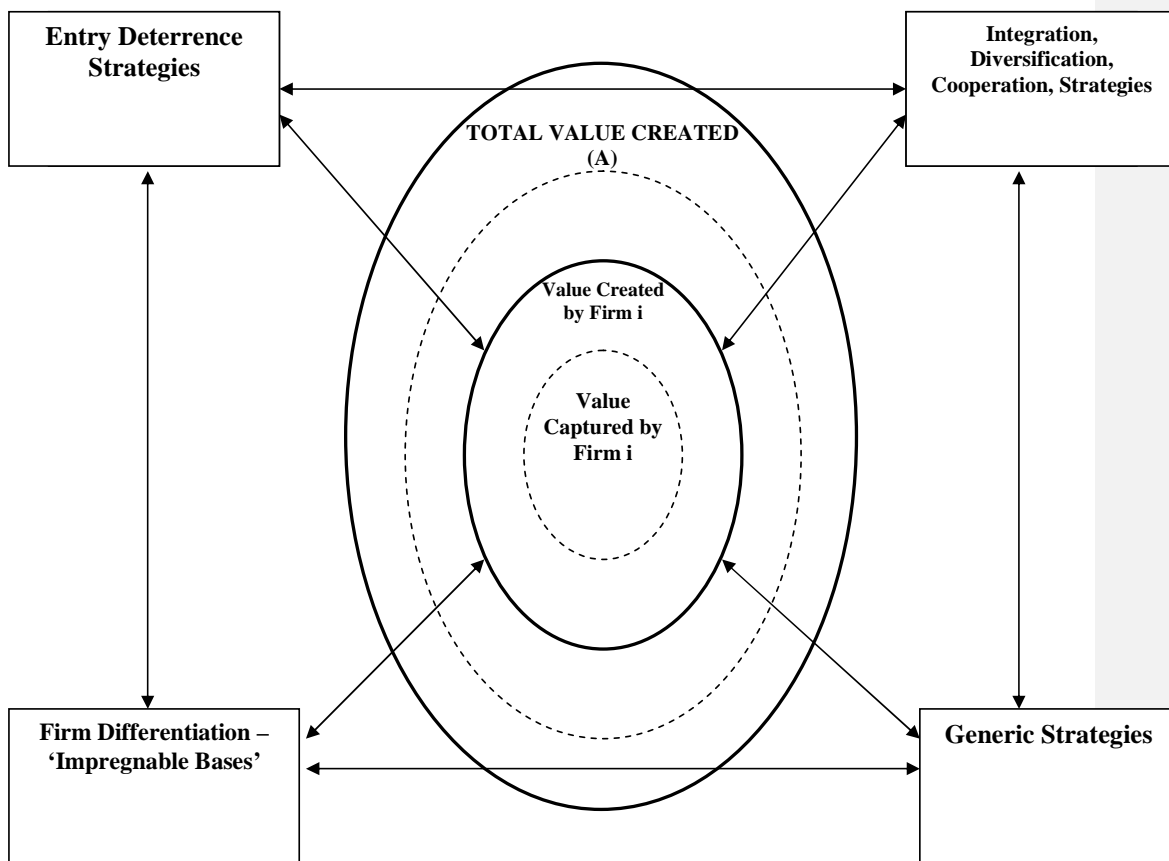
but also extend Teece and Porter's (1990) analysis and focus, which are on a particular firms and particular nations, not on the sustainability of global value creation process, as a whole.

In terms of Figure 3, our question is what types of firm strategies and industry structures are more amenable in increasing the overall outer circle (the "pie"), for a nation, but also more widely, the sum total of all nations, in a sustainable way. This is a complex and intricate issue, which cannot be addressed comprehensively here. However, a particular aspect of it is of relevance; namely the potential impact of value capture by firms and/or nations, on the sustainability of value creation as a whole. As a general rule of thumb, firms and/or nations competitive advantages should not lead to entrenched power structures that stifle the process of innovation and value creation. At the firm level, such are collusive and monopolistic practices (Penrose, 1959, Scherer and Ross, 1990). At the national level such are protectionist and/or strategic trade policies (see Krugman, 1986). In this context it is interesting to note that Teece's focus on the need by nations to retain complementary assets, resources- capabilities leads him to approve the policy prescription of the 'new trade theory' namely neo-protectionism. Despite their potential value for the nation that uses them, such policies may, however, can undermine value creation by restricting trade, technology transfer, learning and innovation, see below.

The conclusion from the above is that (sustainable) competitive advantage by firms, need not imply sustainable value creation at the national level. Similarly, competitive advantage of a nation need not imply sustainable global value creation. It all depends on how firms

and nations profit from their competitive advantages. When they do so through ‘monopolistic practices’ and/or strategic trade policies, respectively the process of global sustainable value creation is undermined. This has implications for inter-national policy and managerial practice, discussed below.

Figure 3 – Four major strategies for value capture



- Four major types of strategies affect value capture, (strategic) entry deterrence, firm differentiation, “Generic” Strategies and Integration, Diversification and Cooperation Strategies.
- These are derived from extant IO and strategic management literature
- The four types interact and they may also help create value

Proposition 3

Firms (nations and other economic agents) legitimate (and of course illegitimate), attempts to capture value can be insidious to the overall value creation process and undermine sustainability. This engenders a “systems failure” and calls for requisite public and business policy actions

4. Implications on industry organisation, public policy and managerial practice

The traditional approach to industry organisation suggests that from the point of view of economic (Pareto) efficiency, perfect competition or perfect contestability are the best forms of industry-structure- as they lead to maximum consumer surplus (see von Witteloostuijn and Boone, 2006, for a critical appraisal and synthesis with the organisational ecology approach). Intertemporally, however, it recognised that the crucial determinant of dynamic efficiency is innovation (Baumol, 1991). This is in line with the RBV focus on innovation and our broader focus on value creation. In this context the ideal industry structure is the one that promotes innovation and value creation. Theory and

evidence point to this being neither contestability, nor monopoly, but rather big business competition, see Penrose (1959), Baumol (1982) Aghion et al (2005). Considering that the aforementioned authors come from an RBV, neoclassical and macroeconomic endogenous growth perspective, respectively, this seems like a startling consensus.

Innovation-promoting industry organisation cannot ensure sustainability by itself. The simple reason is that firms value capture strategies may lead to value destruction through monopolistic practices (Penrose, 1959). Public policy is required to ensure that value capture does not undermine value creation, It can include competition, industrial and regulation policies that aim to effect sustainable value creation by enhancing competition and contestability, facilitating innovation, SME and cluster creation and upgrading, big business competition for innovation, a level playing field, the elimination of corruption. Clearly, despite democratic credentials, public policy too may also be captured by organised groups (Olson, 1971) and clearly corruption is not unknown to policy makers. This brings in the issue of diversity and pluralism, which helps effect some checks and balances, through 'enlightened' management, competition, pluralism and diversity of institutional and organisational forms, which can help engender mutual monitoring and stewardship. Such an institutional structure can include public and private organisations, NGOs, consumer associations and cooperative structures, such as firm clusters, clubs, associations and more widely, 'social capital', (see Putnman, 1993, Moran and Ghoshal, 1999). Even these are unlikely, however, to be sufficient by themselves, given the incentive by firms and nations to maximize the surplus accrued to them, and the panoply of means

and policies that large firms and developed nations have in their disposal, (see Ramamurti, 2004, for example)

For big business competition not to lead to collusion and thus entrenched positions of power, it should coexist with small firm creation and growth, Penrose (1959). The conventional approach to public policy is to take first the stance of the national interest e.g.. Teece (1986), Porter (1990). In this context, Teece, for example, correctly points to the importance of manufacturing and the potential deleterious implication of a 'design economy' that lacks the requisite complementary capabilities. In addition, he correctly points to the need for public policy to focus not only on the promotion of innovation, but also on requisite complementary assets. In effect Teece advocates a form of 'national differentiation' strategy, where the nation as a whole creates an 'impregnable basis' which allows it to create and capture value more successfully than other nations. In this context, Teece also points to the similarity between the prescriptions that follow from his analysis and those of 'new trade theory' (e.g., Krugman, 1986). However, it is important that such policies are not value destroying. This could be the case if, for example, a nation's attempt to capture global value through strategic trade and protectionist policies, could lead to value destruction, either by thwarting competition and/or by leading to retaliation and/or government failures⁶.

The focus on a particular nations lead extant literature (e.g. Teece, 1986, Porter, 1990, 1998) to overlook the relationship between national policies and inter-national value creation itself a condition for the sustainability of national (and firm) competitive

advantages. A focus on sustainable global value creation helps address this, by providing a more nuanced view on ‘new trade theory’-related neo-protectionist policy⁷.

A crucial consideration here, however, is the alignment of incentives between different nations for the wider purpose of global sustainable value creation. This may require global governance, in the lines of the WTO. As far as regulatory capture goes, similar considerations apply for international organisations as for national ones (see Ramamurti, 2004).

Concerning managerial practice, our observations are in line with Penrose and Teece’s original prescriptions to innovate and build complementary assets and ‘impregnable bases’ to capture created value. Our analysis, also suggests that firms should eschew from value capture through monopolistic restrictions, and aim to internalise the forces of creative destruction (Penrose, 1959). Arguably, this is not so easy for SMEs, for the reasons we discussed. This can lead to market failures. Sustainability of value creation requires enlightened managerial practice by large firms, but also public policies to support SMEs, diagnose and upgrade SME clusters, diagnose and upgrade ‘systems of innovation’. Such policies can also help effect a strong national value creation and value capture regime; thus enhancing national competitiveness, and global sustainable value creation (see Wignaraja, 2003 for discussions).

5. Concluding remarks, 'operationalisation' and further research

We accessed critically the value creation and value capture literature in IO and strategy, provided a framework for value creation and value capture and explored their relationship and impact on sustainability of value creation.

Our analysis on value creation implied that innovation is not a necessary condition for value creation-other factors can create value, not least strategy itself. The ability of firms to capture value through strategy alone, by exploiting other firms' innovations is now a rather common phenomenon.

We have also suggested that value capture can be affected not simply through integration and cooperation, but through a number of complex, interrelated ways, which can often include elements of value creation, albeit to varying degrees. The panoply of strategies available, mainly to large firms, points to the difficulties faced by smaller firms and it calls for public and business policy, for example in support of markets for technology (see Arora et al, 2001). The emergence of such markets in recent years seems to call into questions prescriptions for integration. However, seen from a different light, it supports the market (licensing) versus integration approach, by responding to calls to address issues of market failures for technology and innovation.

We also focused on the relationship between firm (and national) competitive advantage, and the overall process of sustainable value creation. This focus is more in line with recent

development in innovation policy, informed from a ‘system’, evolutionary and resource-based perspective (see e.g.. Wignaraja, 2003, Teubal, 2000, 2002).

Our three major propositions are operationalisable and testable. For example, productivity measures can be used as proxies for ‘value creation’, while ‘price-cost margins’ and/or other performance indicators, can serve as proxies for profitability/value capture. There exist many studies that proxy our other determinant of value capture/creation. In the IO, innovation, human resources and strategy literatures – Georgiadis and Pitelis (2006) provide a recent survey.

The relationship between value capture and sustainable value creation has not been tested to date. It involves two aspects. First, the impact of value capture strategies by firms on their own sustainable competitive advantage. Second, the impact of firm value capture as aggregate (nationwide) value creation. At a more macro level, one could test the impact of nation-wide value capture strategies on global value creation. Productivity and profitability measures at the requisite level could be used for this purpose. In general our analysis would point to inverse U-shape relationships throughout; namely a positive link between value capture and value creation up to a point (indicating the value creation property of advantages), and negative thereafter (indicating that extensive profitability/value capture may require actions/policies/strategies that undermine sustainability of firm, and national and global advantages/value creation. This is an exciting research agenda on which we are currently embarked and which, we hope will stimulate others.

To summarize and conclude, we claimed that:

- capturing value/profitting from advantages (for example innovation) is a powerful perspective of firm objectives and strategy.
 - innovation is not the only source of value creation. Firms may wish to capture value from other value creating capabilities, advantages or just ideas
 - strategy may be a sufficient condition for value capture, even in the absence of innovation. Strategy itself is a firm advantage-value creator, from which value can be captured. Firms use a panoply of specific strategies to capture value, all of which also contribute to varying degrees to value creation.
 - many value capture strategies, may be unavailable to some firms, especially SMEs.
- the successful capture of value by (especially large) firms, need not be beneficial for the economy as a whole, as it may thwart innovation.
- public policies to capture value for a nation, may thwart the process of sustainable global value creation, when they hinder technology transfer, learning and innovation. Neo-protectionist policies are likely to have such effects.
- our focus on the sustainability of aggregate value creation, alongside our framework, on value creation and capture, fills an important gap in the literature, and provides innovative (and consistent to each other) business and public policy implications.
- Our propositions are operationalisable and testable, but care must be taken to account for possible bi-causal relationships.

In conclusion, we have re-visited extended and generalised extant literature on value creation and capture, and explored the important relationship between profiting from advantages and value creation at the firm level, and more widely, the overall value creation process. Our analysis points to hitherto unexplored relationships-testable propositions and opens new avenues for empirical, conceptual and policy oriented research that will keep us (and hopefully others) fruitfully occupied in years to come.

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¹ For then CEO Powell, this would be “selling our birthright” (Bartlett, 2005, p.194).

² Teece calls the decision if EMI not to partner with Seimens ‘a strategic error’ (p.298). We feel that the decision of EMI not to acquire US rivals, as well as build (a portfolio of) acquisitions and partnerships, was a big error, too. The pursuit of such an acquisition cum partnership strategy by

Kodak, for example, in order for it to acquire capabilities for digital technology, seems to have been more successful, see Grant (2005).

³ A hybrid strategy, of relevance for our purposes here is to achieve simultaneously cost reductions and differentiation through innovation, see Taylor and Pitelis (1999) and below.

⁴ Building on the early models, endogenous growth theory has grown by leaps and bounds incorporating numerous other factors in their growth equation, to include the role of market structure, government spending, foreign direct investment etc., see Aghion and Durlaf (2005) for an extensive survey.

⁵ Despite their interactions, the emphasis on value creation and value capture was involve ‘trade-offs’ in leveraging of resources and capabilities, which may reflect on the firms financial performance (Mizik and Jacobson, 2003).

⁶ Unless ‘strategic trade’ is used as an instrument to level the playing field, i.e. mainly by developing countries and only for a transitory period, and subject to not thwarting their firms incentive to innovate.

⁷ One should not stress too much Teece’s similarities to ‘new trade theory’. His focus on innovation helps him escape the trap of neo-protectionist, as innovation impacts on value creation. Teece’s focus on innovation, complementary resources and capabilities, indeed, predates the recent torch in this directions of public policies For example, the ‘systems approach’, the ‘national systems of

innovation' perspective and the relatively recent focus on clusters is both in line with, and builds on Penrose, Richardson and Teece's analyses, see Pitelis (2003).