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Value Capture from Organizational Advantages and 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 leading scholars on issues pertaining to value capture and value creation, moreover, we still lack a systematic framework of their 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 system-wide value creation. We then derive propositions and explore implications of our analysis on business strategy and public policy.

I. Introduction

The aim of this paper is to discuss the issue of value capture by firms from their perceived value adding organisational advantages. We suggest this to be at the heart of firm strategy, yet not adequately explored in the literature. In particular, despite strong interest in the topic, old and recent, there exists little systematic discussion on the factors that add value at the firm level, strategies for value capture, and their interrelationship. In addition, there is little explicit discussion on the potential impact of value capture strategies on the sustainability of the value creation process at the aggregate society and even world-wide levels.

We attempt to fill these gaps in three stages. First, we provide definitions and a short historical account of the debate in economics and strategic management in Section II. Then, we have a sense-making Section (III), where we provide a more systematic than hitherto available account of factors that add value, and strategies for value capture, their interrelationship and the impact of value capture on the sustainability of the system-wide value creation. Section IV discusses the co-evolution and co-determination of value capture and value creation. Section V, discusses implications for managerial practice and public policy, limitations and directions for future research. It also concludes.

II. Value: Nature, Creation, Capture and 'Advantages'

a. Some Definitional Issues

'Value' is a highly loaded term in social science and (strategic) management. Perhaps, surprisingly, the term 'value added' is much less so. For example Kay defines 'value

added' as 'the difference between the (comprehensively accounted) value of a firm's output and the (comprehensively accounted) cost of the firm's inputs' (Kay 1995: 19). Kay regards 'value added' as 'the **key** measure of corporate success' (Kay 1995: 19, emphasis added).

It is tempting to proceed on the above basis, yet it is potentially disconcerting that the term 'value added' is defined through reference to value, which itself is not defined. This is more the norm rather than the exception in the literature. More recently for example Bowman and Ambrosini discuss 'value creation versus value capture', and address questions such as 'what is 'value'? how is it created? And who captures it?' (Bowman and Ambrosini 2000: 1). They provide discussions on what is valuable, and/or the types of value (such as 'use value' and 'exchange value') as well as theories of value (for example the marginal utility and cost of production theories), but offer no definition of 'value' as such. The same applies for the more recent Special Topic Forum of the Academy of Management Review (2007) on 'value creation and value capture'. In their introduction to the Special Topic Forum, Lepak et al. point out that 'value creation is a central concept in the management and organisation literature' and that value creation is 'not well understood' (Lepak et al. 2007: 180). Lepak et al. suggest that 'value creation depends on the relative amount of value that is subjectively realised by a target user (or buyer) who is the focus of value creation' (Lepak et al. 2007: 182). Having defined value creation' (Lepak et al. 2007: 182), the authors then proceed to discuss the process of value creation and the mechanisms that allow the creator of value to capture value. Again, value creation is defined in terms of value, but value itself is not defined.

Such recent difficulties are not hard to appreciate. The concept of 'value' goes at least as far back as in the works of ancient Greek philosophers like Aristotle and Xenophon and has assumed renewed interest in the works of classical economists such as Adam Smith, David Ricardo and Karl Marx, and the 'marginalist' revolution of Jevons, Menger and Walras. Maurice Dobb (1973) has, in our view, the most authoritative account to-date of the historical evolution of these debates. Their gist lies in that 'classical economists' considered labour (in Marx's most developed variant, socially necessary labour of average skill and competence) expended in a product as the sole source of 'value', (see Brown, 2008, for a recent account and defence of this view) while the 'marginalists' considered marginal utility as the sole source of 'value' (Dobb 1973: 168). Subsequent developments in this "neoclassical" tradition refer to the 'theory of value', as in effect the theory of price, see Robbins (1935), Debreu (1959), Hicks (1939).

No less than Joan Robinson (1964) considered the notion of 'value' as 'one of the great metaphysical ideas in economies', namely ideological propositions of some content and use, even indispensability, but outside the realm of science proper (see Dobb 1973: 2).

Despite the current dominance of the marginalist school in economics, following the now classic essay on the Nature and Scope of Economics by Lionell Robbins (1935), , mainstream microeconomics and Industrial Organisation (IO) texts are still relying on a combination of the cost of production theory and the marginal utility theory, as reflected respectively in the use of a cost and a demand schedule. (Note, however that a subjective interpretation of the cost schedule is possible, in terms of it being, in effect, 'opportunity

costs', namely values in terms of their best alternative use. This would establish the internal consistency of the subjectivist approach. I am grateful to an anonymous reviewer for pointing this out). We will follow the convention of assigning 'value' to both theories (like does Dobb 1973, for example); but cannot fail to note that we have yet to define the term 'value'!

For the remainder of this paper we will define 'value' as 'perceived worthiness' to a final or target user of a product or service. Perceived worthiness can be due to rarity, aesthetic appeal, a perceived satisfactory price for what is on offer ('value for money'), or a combination of these.

'Value' can be potential or realised –potential before a monetary price has been paid, realised afterwards. The realisation of value as price raises the issue of consumer awareness and the existence of substitute products by competitors – therefore issues of promotion and marketing as well as competitive strategy. 'Perceived worthiness' can be effected through efficiency, effectiveness and innovativeness in the production of a good or service that can lead either to decreased cost and price for given characteristics, ('quality') or to increased differentiation (perceived quality). In this sense 'value added' equals 'value creation' and is the additional perceived worthiness effected through reduced prices or increased differentiation.

On the other hand, value capture, is the appropriation of value created by a unit of analysis (consumer, firm, region, nation), or other such units, by such a unit. Like value creation,

value capture requires dealing with the issue of promotion-marketing and competition with other units offering competing substitute products/services.

It is arguable that an analysis of the relationship between value creation and value capture, presupposes an appreciation of their determinants. Despite extensive accounts on sources of superior efficiency, innovativeness and market power in IO and strategic management and the recent resurgence of interest is the topic (see also Research Policy 2006), there exists no systematic account of the determinants of value creation, value capture and their interrelationship. We try to provide such an account in section III. Before, in the next sub-section, we discuss briefly some classic contributions on the issue of 'value capture from advantages', which will be of input to our subsequent analysis.

b. Value Capture: An Historical Excursion

In the strategy literature it is sometimes argued that 'business is about creating value' (Grant 2005: 39).

In contrast to the above, one may be forgiven to think that firms are not interested in value creation per-se, but rather in value capture. Leaving aside issues of personal ethics or pride, for a business firm in a capitalist economy, what counts is the bottom-line, which is profitability, or rate of return on capital. It is arguable that if a business can achieve this purely by means of value appropriation (for example by capturing value created by others), as a business firm per-se this should be quite satisfactory. In this context, value creation or value added, become critical only to the extent it is necessary for a firm to capture value created, or simply extant (such as that of 'free' goods, such as air and water). Whether the

capture of value presupposes the creation of value is therefore a critical issue to be addressed.

In mainstream microeconomics and IO, the possibility of capturing value as 'rents' appears whenever the existence of monopolistic conditions restricts supply, and therefore given the demand schedule, it raises prices above the ones just sufficient to cover average costs (which include a 'fair' compensation for all resources of production, to include managers and entrepreneurs). Moreover, the concepts of 'rent capture' or 'rent seeking' have wide currency in economics, of the private as well as the public sector, see Krueger (1974) and Mueller (1989) for comprehensive accounts. Given the assumption of given technology and resources-skills, the IO approach is ideal in showing how value can be captured in the form of monopoly rents, without any preoccupation with value creation. Subsequent development in IO, such as the models of limit pricing and contestable markets, discuss the condition under which such 'rents in equilibrium' can be effected, see Baumol (1982), Tirole (1988), and Pitelis (2007a) for a recent critical account. These conditions refer to the existence or otherwise of barriers to entry and exit (or mobility barriers). The absence of barriers to mobility help establish the 'zero waste' condition (Baumol 1991) or the 'zero profit' one (Augier and Teece 2008). For the last mentioned, escaping this 'zero profit' condition is of essence to business strategy.

The stylised assumptions of mainstream IO are not met in practice. In real life costs and demand conditions faced by individual firms may differ, firms may be endowed with, or build themselves, different (heterogeneous) skills and capabilities, they can be more or less

efficient, effective and innovative than their rivals. Such differences, moreover, can be attributed and/or reflected in, not just production costs, but also transaction costs. For example, firms which are more efficient, can capture higher profits than their competitors in a sector, even when they charge the average market price, simply because they have lower costs; this is Harold Demsetz's (1973) well known 'differential efficiency' hypothesis. Similar considerations apply to Joseph Schumpeter's (1942) idea that more innovative firms will tend to grow bigger and more profitable, with profitability being due to superior innovative capability and the temporary monopoly positions that innovations can afford to firms. Pitelis (1991) termed this as the 'differential innovation' hypothesis. Demsetz is a variant of the Schumpeterian view.

Another possibility for different cost conditions between competitive and monopolistic firms is discussed in Williamson's (1968) well known 'trade-off', the idea that larger firms resulting from a merger, may face lower cost conditions, for example because of synergies experienced, leading to an 'efficiency' benefit, that should be traded-off against the static allocative welfare loss of monopoly power, see Scherer and Ross (1990) for discussion. The resurfacing of Coase's (1937) transaction costs analysis, and the subsequent elaborations and extensions by Williamson (1975, 1985) and others, offer another reason why large size and the concomitant more concentrated industry structures, can be seen as the outcome of firms capability in reducing market transaction costs through superseding the market – therefore through integration (or internalisation).

More recently the resource-based-view (RBV) provided extensive discussions as to the reasons for firm heterogeneity (see Teece, 1982; Wernerfelt, 1984; Barney, 1991; Peteraf, 1993), Foss (1993), and Mahoney (2005) for a critical account. There are arguably two but related variants of RBV - the 'rents in equilibrium' and the 'value creation' one, see Foss (1999). The former can be seen as a variant of the IO literature on barriers to entry, only now the reason for monopoly rents is the possession by firms of resources which are valuable, rare, and non-imitable. The 'value-creation' variant focuses more on the resource-creation potential of firms, through (endogenous) knowledge creation, innovation and growth (Penrose, 1959).

Building on Penrose (1959), George Richardson (1972) provided an additional production-based reason for the division of labour between markets, firms, (integration) and inter-firm cooperation, based on the ideas of similarity and complementarity of activities. Similar activities are those which require the same or closely related capabilities. Similarity with complementarity suggests integration, dissimilarity suggests market, and dissimilarity combined with complementarity suggests inter-firm cooperation – see Kay (1998) and Foss and Loasby (1998) for critical assessments.

The aforementioned analysis focused on the cost (or supply)-side, but there is also a demand one. Like facing (or effecting) different cost curves, firms can also face (or effect) different demand conditions. There is an extensive literature in IO about the role of advertising and other promotion activities by firms that aim to change the demand conditions, by creating new demand and/or by making the demand schedule they face less

elastic, see Scherer and Ross (1990) for discussions. Scholars, such as Kenneth Galbraith (1967) went as far as suggesting that the ability and effectiveness of firms to create demand is such that one should be talking about 'producer sovereignty' not consumer one. Cowling (1982, 2006) provides an extensive account of the role of advertising in today's micro- and macroeconomy. The very focus of the 'marketing' literature is arguably to explore conditions under which consumers will be more inclined to buy, see Adner and Zemsky (2006). Priem emphasizes firm ability to create value, by engendering 'consumer benefits experienced' (Priem 2007: 219).

Despite such interest on value, value added-creation and value capture, by leading scholars, the specific link between value capture and firm advantages, was first introduced by Stephen Hymer (1960/1976). Hymer's now famous PhD thesis at MIT explained the choice of modality of foreign operations by firms, (for example foreign direct investment -fdi- versus licensing), in terms of the superiority of some modalities like fdi is allowing firms to capture value from their 'advantages'. Hymer's 'advantages' thesis was a unique insight he developed by drawing on Jo Bain's (1956) earlier observation that the barriers to new competition, that Bain discussed in his book, were due to underlying firm advantages see Dunning and Pitelis (2008) for a recent account. Hymer's 'advantages' thesis was applied to the case of multinational enterprises (MNEs) and fdi, and helped establish him as the father-figure of the field of International Business. In this context, it is not surprising that further contributions in the advantages tradition were made by IB scholars, such as John Dunning (1988, 2000).

Hymer himself focused on 'monopolistic advantages', not efficiency advantages, thereby avoiding carefully to assign any value-creating attributes to such advantages. Subsequent work in IB, not least Buckley and Casson (1976) and Dunning's envelope (the Ownership, Location, Internalisation-OLI, paradigm), focused on efficiency (value adding) advantages deriving from reductions in transaction costs (Buckley and Casson, 1976), or efficiency and monopolistic advantages (Dunning, 1988, 2000).

Outside IB, David Teece (1986) (who had himself made very significant earlier contributions in IB scholarship, to include his work on Hymer, see Teece, 1985), made a landmark contribution, by exploring conditions under which an innovator (such as EMI), would fail to profit from its innovations. He attributed such failures to the lack of complementary skills and capabilities vis-à-vis competitors. While Teece did not use the term value capture from value creating advantages, his 'profiting from innovation' theme, is very much in line with the 'capturing value from value creating advantages' idea; as he deals explicitly both with value capture and 'innovation', one of firm advantages most widely regarded as value adding or creating (see Dunning and Pitelis, 2008). More recent works by Teece himself (Teece, 2006), and in Research Policy (2006) both revisiting Teece (1986), are in fact more explicitly couched in 'value capture from value creating advantages' terms – our theme here.

Despite significant progress, we claim below that there exists no unifying, systematic and discriminating account of the determinants of value creation, value capture and their interrelationship, that helps 'make sense' of the various contributions. In addition, the

impact of system-wide value capture on the sustainability of value creation has not been given attention. We start with 'sense making' in the next Section.

III. 'Sense-Making': Determinants of Value Creation and Firm Value Capture Strategies

There exists a very extensive literature that discusses efficiency (allocative or dynamic through innovation) and market power in economics, and strategic management –or what Williamson (1991) calls 'Economising versus Strategising', see Mahoney (2005) for a discussion. All such literature is of import to our discussion of value creation and value capture; so we will therefore need to be eclectic. We start with the determinants of value creation.

a. The Determinants of Value Creation by Firms.

Besides 'innovation' (the focus of Teece, 1986), and many before and since (see Research Policy , 2006), Fagerberg et al (2005), we claim in this sub-section that three additional factors are critical determinants of value added at the firm level - human (and other) resources, unit costs economies-increasing returns, and firm infra-structure and strategy. All these derive from extant literature, but have not hitherto been presented in a unifying context. In addition, we claim that these four factors are generic or fundamental-first-order-determinants. Other factors discussed in the literature, (for example networks), operate through the four first-order factors, see below.

As far back as in Adam Smith's (1776) 'pin factory' the benefits from intrafirm division of labour, teamwork and 'inventions' by labourers, itself engendered through learning by doing, were viewed by Smith as critical determinants of productivity and wealth creation (Smith, 1776, Chapter 1), see Loasby (1996). Marshall (1920) extended Smith's analysis by identifying knowledge as 'our most powerful engine of production' (Marshall 1920: 138, quoted by Loasby 1998: 164). Schumpeter's (1942) focus on competition as 'creative destruction' through innovations, is arguably the main dynamic value creation theory of innovation, see Amitt and Zott (2001). The Schumpeterian view of innovation was adopted by Penrose (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 version of the RBV, by for example Penrose (1959), Teece (1986), Teece et al. (1997), Teece (2007), Helfat et al (2007), 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, complement Schumpeter's analysis. The implication of the last mentioned on intertemporal (dynamic) efficiency is now acknowledged by mainstream IO economists too, see for example Baumol, (1991, 2002).

In the traditional neoclassical theory of growth (for example Solow, 1956), existing technology is considered to be embodied in the production function (which includes capital and labour), while technological change is seen as exogenous. New 'endogenous growth' theories, recognize the potential endogenous 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) and Aghion and Durlaf (2005), who also discuss more recent developments. In a way, and without always noticing 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), Kenneth Arrow (1962) and Nicholas Kaldor (1970, 1972) on 'learning by doing', 'increasing returns' and the importance of 'human resources', notably management, see de la Mothe and Paquet (1996), Loasby (1998), Fagerberg et al (2005) and Research Policy (2006) for discussions.

Despite various limitations of old and new neoclassical growth theory, see Solow (1997), Romer (1990), Loasby (1998), its focus on 'returns to scale', resources (capital and labour), and (its various assumptions about) technology, provide 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, it is labourers who engender productivity enhancement through specialisation, division or labour, teamwork learning by doing and inventions. The 'capitalist' in Karl Marx (1959) is the driving force of economic change, the 'entrepreneur', and entrepreneurship, in Schumpeter (1942) and in 'Austrian Economics'; see Ricketts (2002) for a critical assessment, as well as in the recent literature on entrepreneurship, see for example Verbeke and Yuan (2007) for an account. In Penrose (1959) instead, the 'manager' is the main hero, see Pitelis (2002)) for discussions. The work of 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, human resources are highly unique and individual and their combination and relationships help create the unique 'personality' of the organization, see Richardson (1998). Non-human resources, are critical in the resource-based view (RBV) of the firm; see Mahoney (2005) for a critical survey. They have already received substantial attention, in the literature, so they need no further elaboration here; see however Teece (2007) for a recent account.

'Returns to scale'/'increasing returns', are a major determinant of productivity and value creation, see Loasby (1998). Economists, economic historians and management scholars 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 and agglomeration economies (Kaldor 1970; Krugman 1991, 1996; Porter 1980; Henderson 2005), economies of pluralism and diversity, Pitelis (2004). 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.

Missing from economics, but central to business strategy is the other major determinant of value creation-firm's 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, see Chandler (1962). The role of firm infra-structure is emphasized in the strategic management literature see, for example, Grant (2005). The common focus on the value capture/profiting from advantages aspect of strategy, underplays the idea that strategy is of essence in increasing efficiency and productivity too, 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 in value creation and capture, has been explored by Simon (1995), the RBV, Nelson and Winter (1982, 2002) and Cyert and March (1963); see also Loasby (1998), Kay (2000) and Pitelis (2007). The importance of internal organisational forms is discussed by Chandler (1962), Hedlund (1986), 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.

Other potentially value-creating factors considered in the literature include physical and financial capital. (Physical capital, for example, is important in the neoclassical growth theory of, for example, Solow, (1956). While both physical and financial capital can

contribute to value creation, their contribution is arguably through other variables, notably technology, unit cost economies and especially human resources, see Harcourt and Cohen (2003), namely it is not independent of the other determinants. Similarly, other resources for example raw materials, serve as a basis on which value is added but they are not independent determinants of value creation, see also Bowman and Ambrosini (2000); Brown (2008).

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

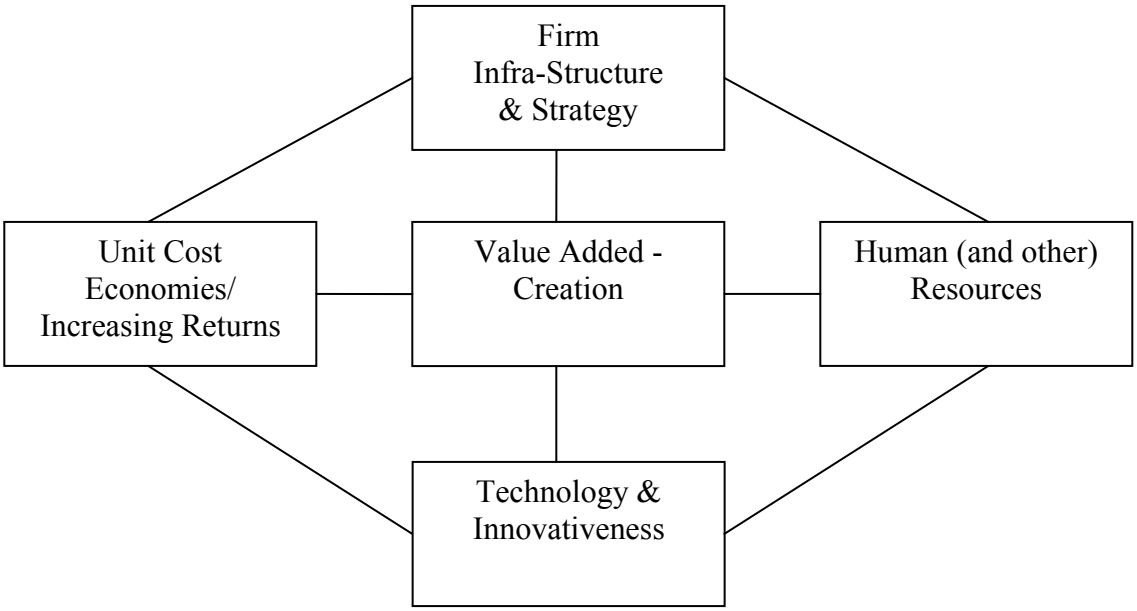
The determinants of value creation interact in numerous ways. For example, human resources are the source of firms' innovation, as discussed above. (Smith 1776; Schumpeter 1942; Penrose 1959) and strategy (Chandler 1962; Penrose 1959). Technology and Innovation impact on unit cost economies (Chandler 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 leveraging of human resources and technology, (Cyert and March 1963; Nelson and Winter 1982; Loasby 1998). Unit cost economies, are crucial in enabling innovation the leveraging of human resources the undertaking of R&D and innovation. (Chandler 1962)

From the first-order determinants, unit cost economies affect mainly the cost side. All others, can impact on both cost and utility. For example a process innovation can reduce unit costs and engender product differentiation. Infra-structure and strategy can reduce costs (for example through integration) and differentiate the firm itself (e.g. through branding). Human resources 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 firms 'brand' can help it receive better terms for advertising and from suppliers, thus engender unit cost economies.

As we have pointed out, the aforementioned contributions have direct implications on value creation, albeit they are not normally couched in such terms. More recently, however, attempts have been made to discuss explicitly determinants of value creation, see for example, Amit and Zott (2001), AMR (2007). Some early literature that looks at value creation is summarized by Amit and Zott (2001). The authors focus on 'virtual markets', 'value chains', '(Schumpeterian) innovation', intra-firm resources, strategic networks and transactions costs economics. More recently, Lepak et al (2007) summarize the main points of a Special Topic Forum of AMR (2007) on 'Value Creation and Value Capture'. At the organizational level, they emphasize invention and innovation, management and entrepreneurship, 'the creation of new advantages' (AMR 2007: 184), and factors underlying such creation, to include managerial capabilities and cognition, knowledge creation, learning and entrepreneurship, social networks and strategic human resources. While all these factors are in line with our discussion, it is arguable that they could benefit

from more systematization. For example, their list includes generic factors, such as innovation, and factors such as transaction costs, which is just one of many potentially cost reducing factors. It also includes strategic networks, which could be seen as a strategic tool or vehicle, but not a generic factor, such as strategy. Given the above, we consider it important to focus on the generic and more general categories-determinants of value creation, which we submit to be the ones we discussed. Our discussion is summarized in Figure 1.

Figure 1. Four generic, first-order determinants of value creation



- Figure 1, summarizes four generic, first-order, direct and interacting determinants of value creation at the level of the firm
- The four determinants are derived from an integration and extension of economics, IO and (strategic) management literature
- Other factors or subfactors can affect value creation , through their effect on the four generic, first order determinants

Our analysis points to the following:

Proposition 1

The ability of firms to create value depends on four generic, first-order factors – unit costs economies/increasing returns, human and other resources, technology and innovativeness, and firm infra-structure and strategy. The four factors affect value creation independently and in their interaction.

The major implications following from our analysis, concerning the 'capturing value from advantages' perspective and other extant literature, are simple yet we feel powerful. Innovation is crucial, yet it is not the only way through which a firm can create value from which to profit. The existence of skills capabilities and competences of its human resources and the mere existence of perceived advantages, including 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. Innovation is neither a sufficient, not a necessary condition for firm's pursuit of value capture. For firms, profiting from innovation is a very important subject of a more general theme, that of capturing value from value creating form specific advantages. This is important, not least because our analysis remain relevant even when there exist markets for technology (see Arora et al. 2001; Chesbrough 2003) which do not necessitate the use of internalisation in order for firms to profit from innovation.

b. Firm Strategies for Value Capture

Capturing value from 'advantages', is the concern of any innovator, and more widely a major objective of firms (see Brandenburger and Nalebuff 1995; Teece et al. 1997), but also individuals and nations, see Teece (1986), Porter (1990), Krugman (1996), Wignaraja (2003) . 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. This is of essence to 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 created through their activities (see Brandenburger and Nalebuff 1995). The size of the pie captured by a firm depends on factors such as their market power, for example, enabled through structural and strategic barriers to entry, as in Bain (1956) and Porter (1980). It also depends on the ability of a firm to engender differentiation of the firm, vis-à-vis its competitors, see below. In addition to these determinants of value capture, 'generic strategies' (as in Porter 1985) and integration, diversification and inter-firm cooperation strategies can be leveraged to capture value.

The literature in barriers to entry goes back Bain (1956). 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); absolute cost advantages, economies of scale and product differentiation. His empirical work showed that the last mentioned (or "preference barrier") was most important. Subsequent literature

focused on pricing (e.g. 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 intra-firm rare and hard to imitate resources, that are difficult for competitors to copy, thus engendering intra-firm barriers to entry, see Peteraf (1993) and Mahoney (2005). Edith Penrose (1959), one of the founders of the RBV, discussed both Bain-type barriers to entry, as well as 'relatively impregnable bases', (Penrose, 1959, p.137 and below). Hard to imitate intra-firm resources and capabilities, as well as 'relatively impregnable bases' and the overall 'business model' (Chesbourgh and Rosenbloom 2002), help create a firm's "distinct identity" (Richardson 1998), therefore they can be taken to constitute a new genre of barriers to entry, that we call '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 1960/1976; Porter 1980). Integration, diversification and cooperation strategies are also extensively discussed, and are the focus of Coase, Hymer, Chandler, Williamson, Teece and Penrose. They aim to capture value, either through efficiency, (for example in the transaction costs 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'-distinct identity.

In their interactions, the four types of strategies for value capture, are also linked to value creation. 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, 2002). Even Bain-type barriers can help create value by providing an incentive for entrants and Schumpeterian 'creative destruction'. There follows:

Proposition 2

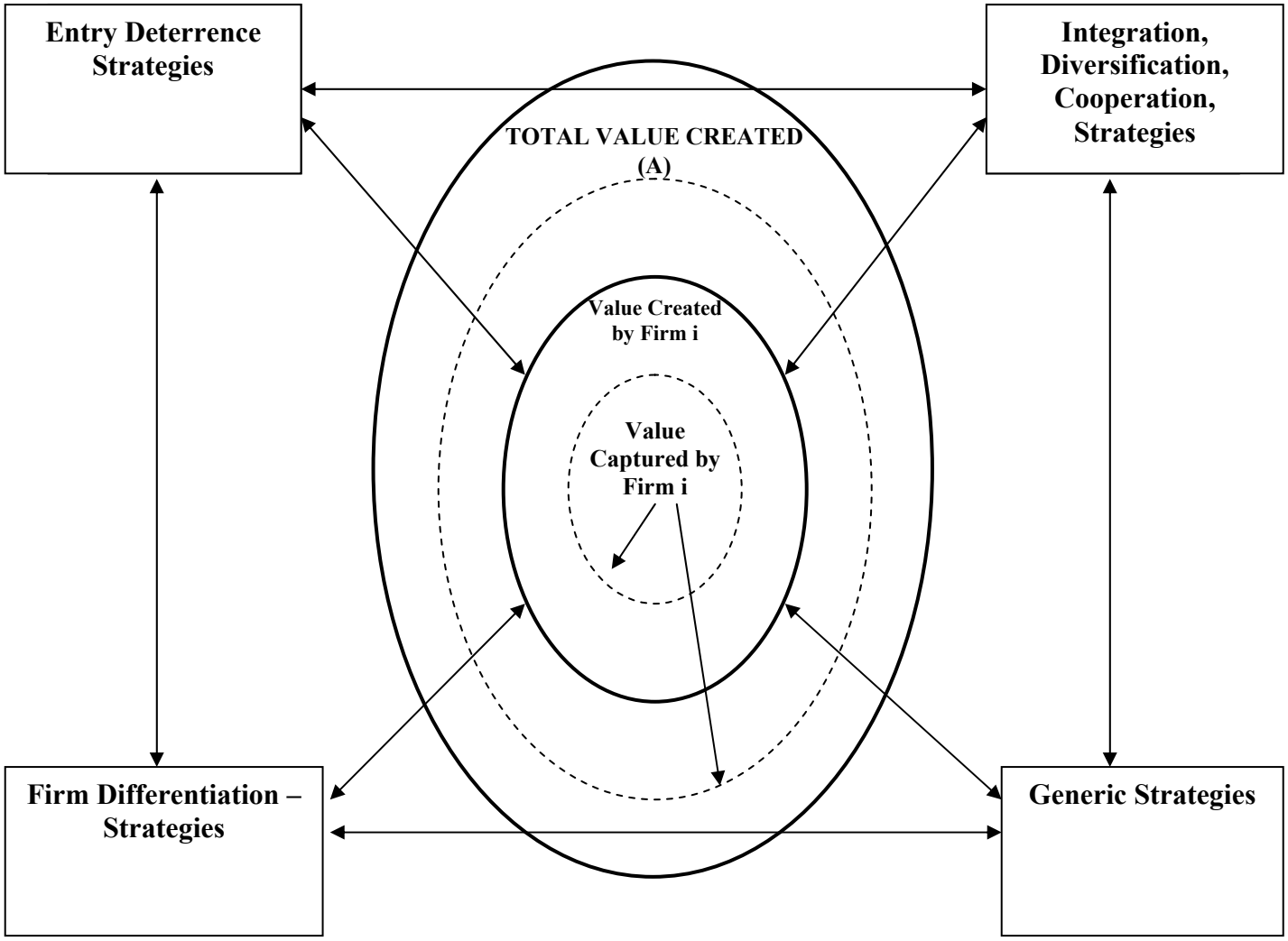
Four fundamental and partially overlapping types of strategies – (strategic) entry difference, 'firm differentiation', 'generic strategies' and integration, diversification and cooperation strategies, determine, independently and in their interaction, the ability of firms to profit/capture value from their value creating advantages.

An implication from our analysis is that even innovation in the conventional sense is not necessary for value capture. For example, firms like IBM, Microsoft, Cisco, Intel, Sun and Oracle can capture value through strategy without any new innovation advantages (Chesbourgh 2003). Looked differently, they are innovative in devising strategies for value

capture. Importantly, moreover, technology and innovation themselves can be seen as part and parcel of a value capture strategy. 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' (as well as others) value adding activities. This is illustrated in Figure 2, as the total area within the circle (A). The inner circle constitutes the value created by firm i. The value captured by firm i, however,(represented by the dotted lined circles), can be larger, or smaller than the value it created (see Brandenburger and Nalebuff 1995). This will depend on its ability to device and implement a portfolio 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 and/or other firms. Innovation is useful, but not necessary in this context (except if it is conceived more broadly, to include all types of innovations, such as organizational and strategy-related). In addition, while strategy may suffice to capture value, it can also help create value.

[Figure 2 around here]

Figure 2 – Four major genres of strategies for value capture



- Four major genres of strategies affect value capture; (strategic) entry deterrence, 'generic' strategies, integration, diversification and cooperation strategies and "firm differentiation" strategies.
- The four genres interact and they may also help engender value.

Through requisite value capture and value creation strategies, firms aim to achieve sustainable competitive advantage (SCA), see Teece (2007). Allowing for strategies to capture and create value, renders strategy itself an 'advantage' from which firms can capture value. The complex interaction between value creation and value capture can help firms to try to create SCAs.

c. Value Capture and the Sustainability of System-wide Value Creation

Our focus so far, and the almost exclusive focus of strategy management, is on the Sustainable Competitive Advantage (SCA) of firms, see Teece (2007) for a recent restatement. However, the way through which firms acquire and sustain SCAs can be of importance to the performance of the industry, the nation and the world at large. Accordingly, it could be of importance to the longer-term sustainability of the CA of firms too. Put differently, a genuine firm-level SCA should be defined as one that is taking into account all the potential intertemporal negative externalities of the firm's activities. SCA in this definition would be equivalent to a firm's net value added, or, differently put, the Net Present Value of its value added throughout its existence, calculated to have internalized all potentially negative externalities. Clearly this is not easy to calculate; for one, the problem of externalities is far too vexed to allow this, (see Dahlman 1979), and we do not possess the requisite knowledge. However, this should not stop us from addressing the problem.

There is extensive literature on issues pertaining to our concern with sustainability, to include 'conflict,' 'agency', 'rent seeking' and issues of time-inconsistency. The possibility of divergent interests between economic agents, or groups of them, has been

explored by the likes of Adam Smith, Karl Marx and more recently literature on 'agency', the 'managerial revolution', (the alleged separation of ownership and control), and the behavioral theory of the firm; see Pitelis (2004, 2007) for relevant accounts. The issue here is how is presence of conflicting interests, 'principals' can ensure that 'agents' will operate in ways that further the interests of the principal - how 'interest alignment' can be achieved. The 'agencies' usually considered involve owners and workers (Alchian and Demsetz 1972) or owners (shareholders) and managers (Jensen and Meckling 1976). For example, a solution to the problem of 'agency' between shareholders and managers and the alignment of their interests can help the firm focus on 'shareholder value', and achieve SCA.

There exist various controversies on this, (see Pitelis 2004 for an account), but even granting a focus on shareholder value and firm SCAs, there are additional 'agencies' to be considered. These include the firm and the industry, the industry and the nation, the nation and the world. In general, what is good for a firm may not be good for the industry, what is good for an industry may not be good for the nation, and what is good for one nation may not be good for the world as a whole. To appreciate a focus on 'the world', for example, all one needs to do is 'imagine' that the world is 'flat', merely fully integrated as a single nation, see Friedman (2005) and Ghemawat (2007) for opposed views. In a non-flat world, the more commonly expressed view that what is good for a firm or industry may not be good for the nation as a whole (see Olson, 1971), becomes directly relevant and applicable to the case of what is good for a nation, may not be good for the world, as a whole.

The IO literature focuses on monopoly and restrictive practices by firms as actions that may undermine the performance of the industry as a whole. The impact of monopolies on social welfare has been explored extensively in the IO literature, notably as the Issue of 'welfare losses of monopoly' (see Scherer and Ross 1990). The potential detrimental effects of 'strategic trade' policies especially by developed nations on the ability of developing nations to develop and therefore on long-term value creation at the world level, have been discussed, notably in the context of the new (or strategic) trade theory, see Krugman (1986, 1987, 1992). The wider effects of 'rent-seeking' and a rent-seeking society have been explored by political economists, see for example Krueger (1974). The general idea is that it matters how one achieves ones' advantages. If these are achieved through rent-seeking (for example entrepreneurship that focuses on value capture and value redistribution, not value creation), this will tend to undermine intertemporal value creation.

An example on how national interest may undermine global value creation (and therefore in the long-term national interest as well) can be the attitude of Western Governments and international organizations such as the IMF and the World Bank towards the 1997 East Asia Crisis as compared to the recent 'Credit Crunch'. The advice to the Asian governments was to liberalize financial markets and increase interest rates. This led to a worsening of the crisis for the countries that followed this advice, in contrast to those who did not follow it, (such as India and China), which were least affected. In contrast, during the recent 'credit crunch' Western Governments such as the US reduced the interest rates and bailed-out, even nationalized, companies, such as Northern Rock in the UK, despite the 'moral hazard' problem that this entails. For Stiglitz (2007) this is no less that 'financial

hypocrisy', explicitly aimed to serve the interests of a group of people – rich financiers mainly from a handful of countries. Such 'hypocrisy' and the pursuit of sectional interests is a classic case of 'rent-seeking' that could undermine intertemporal world-wide value creation.

To conclude, firm SCA need not lead to industry SCA, which need not lead to national SCA, which need not lead to world-wide sustainable value creation. Much depends on how each agent tries and manages to capture value. When they do so through restrictive practices, and/or 'rent-seeking', this may undermine overall world-wide value creation, leading to a 'systemic failure' that needs to be addressed. This may also come about because of factors such as 'myopia', mistakes and time inconsistencies. Moreover, 'system failures' can arise even when there exists interest alignment, see for example Metcalfe (2003). For our purposes here, the above discussion leads to

Proposition 3.

The pursuit of value capture, through legitimate and illegitimate means, by economic agents may be insidious to sustainable world-wide value creation.

III. Co-evolution, Co-determination and Learning

It is said that the essence of a diagram is in its 'arrows'. If so, our diagrams are of dubious usefulness- there exist too many arrows, mostly bi-directional! A reason for this apparent indeterminacy, however, is simply that the indeterminacy is not apparent – it is quite real! While our analysis in the previous section was aimed to be an exercise in "sense making",

in the real world, economic agents operate in a context of uncertainty, often radical, (the one where no probabilities can be assigned on expected future outcomes) – see Knight (1921). In such a context, agents cannot hope optimize in the way described in the previous section; instead they try to do as best as they can, under the circumstances; for example in the case of firms, they aim for the maximum possible profit over time. In so doing, firms may actually not go for profit in the short-run but pursue other objectives, such as market share and growth. This is because they may believe that by pursuing growth and market share they will be in a stronger position to achieve long-term profits (see Best, 1990 for the case of Japanese firms), or rather because the very process of growth is endogenous to the firm, as argued by Penrose (1959). For Richardson (1998) the presence of uncertainty and indeed divergent beliefs about the chance of success among participants is of the essence of the competitive process- as it fuels creativity.

Penrose's approach is helpful in exploring the relationship between value capture and value creation in a co-evolutionary setting. In the absence of perfect knowledge, firms can simply never be certain whether and how to capture value in a sustainable way. If there was a guarantee of monopoly rents, firms might well go for it – but there is none. In such context, the best a firm can do is to aim to simultaneously develop advantages and try to capture value from them by using the panoply of value creation determinants and value capture strategies we discussed in the last section. In the absence of monopoly, such advantages are likely to be value creating ones, namely advantages that offer a 'value proposition' to end users, for example customers, which is more attractive than that of the competition. Such advantages are bound to involve innovation of one type or another, in the sense that any

new ‘value proposition’ by definition involves something new (innovation), be this real or even ‘imaginatory’. This link between firms and value creation is even more pronounced if it is suggested that efficiency (from the division of labour, transaction costs, reductions of capability-related productivity advantages) is the key reason for their existence (see Loasby, 1998 for a discussion).

Firms hope that such innovations will confer to them at least transient monopoly rents, but this cannot be guaranteed because of Schumpeterian competition. This renders crucial for firms to develop and leverage capabilities to learn, adapt, appreciate and enhance their ‘productive-opportunity’ (the dynamic interaction between their internal resources and capabilities, and their external environment - Penrose 1959), see Foss and Loasby (1998).

There are no easy ways to achieve the above, but one possible approach to deal with the issue of value capture in an uncertain evolving environment proposed by Penrose (1959), is for firms to try to build relatively impregnable bases, namely a package of characteristics, skills, competences, innovation and capabilities that distinguish them from every other firm (see also Richardson, 1998, on firms’ distinct identity) and allows them to simultaneously build on strength and adapt.

In Penrose’s words:

> ‘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 it operations in an uncertain, changing and competitive world' (p. 137 – emphasis added).

Penrose's concept of 'relatively impregnable bases' is akin to more recent developments by Teece (1986), and the RBV pertaining to firm heterogeneity, the need for complementary assets and capabilities and the role of dynamic capabilities in allowing firms to sustain their CAs (Teece 2007).'Relatively impregnable bases', and 'routines' (Nelson and Winter 1982) can be seen as mechanisms through which firms try to marry over time stability and change, diversity and direction, equilibrium and growth, see Loasby (1996), Richardson (2002) and Pitelis (2002).

In the above context, value capture and value creation co-evolve and are co-determined. 'Relatively impregnable bases' allow firms to capture value, but also to create value by building on such bases. Strategies that allow firms to capture value, also help them to survive and thus create value. That explains why firm strategy is both value creating and a means of value capture.

Clearly, some firms can be 'too successful' in building 'impregnable bases'. Companies like Google and Microsoft are certainly accused for failing to innovate, because their 'impregnability' is strong enough for them to stem the forces of creative destruction. This is when SCA can undermine national value creation - this requires extra-firm governance to which we return in the next section.

While value creation and capture co-evolve and are codetermined over time, at any given point in time, resources spent in pursuing value capture, may be taken away from resources required for value creation (for example innovation), see Mizik and Jacobson (2003). It is also arguable that the pursuit of value creation versus value capture may require different types of knowledge and capabilities (Loasby 1998). This helps explain why some firms (but also individuals or nations) are more successful in creating value, some others in capturing value. Arguably, the successful management of this trade-off is of the essence of firm strategy and performance. Too much focus on value capture today may undermine long-term success, too much focus on value creation may deprive a company from the means to survive, thus the means of creating value.[1] This is an issue of concern to the society as a whole.

We can highlight some of the issues covered in this Section by looking at the case of EMI and the CT scanner, discussed in more detail by Bartlett (2005) and Teece (1986). When EMI (a music company with cash available due to its success in the music sector devoted to develop innovations of potential use to its current and potentially other activities) invented the technology for the CT scanner, it could see its value creating and capturing potential through its applicability to a different (medical equipment) sector. EMI could try to capture value by licensing the technology, through a joint-venture or by entering the new sector. In the last mentioned case, it could do so within its home-base (the UK) or internationally, by undertaking foreign operations. In the last case it could enter a foreign market through

greenfield investments or through acquisitions. The decision of EMI was to enter the medical equipment sector in the US, where demand projections were best, through greenfield foreign direct investment (fdi). Many scholars suggested that EMI had better pursue other strategies, given that it did not have complementary assets and capabilities in the new sector (Teece 1986). Seen differently there were competitors in the US market with relatively 'impregnable bases' such as distribution and brands, which they leveraged to eventually outcompete EMI. EMI's failure to capture more value from its value creating advantage could have been foreseen and EMI could have adopted a different route, which might include building complementary assets and capabilities before entering the US market. This might allow EMI to create a 'relatively impregnable base' which could help it compete in a more level-playing field with established players. Other possibilities for EMI could involve licensing, joint venture or entry through acquisition.

EMI rejected licensing or joint venture because of fears that its technology would be expropriated and/or because of uncertainty over demands, which would imply potentially unsatisfactory royalties or terms with a partner, see Bartlett (2005). In this context going it alone would appear to be a good choice. Given this decision, the building of a relatively 'impregnable bases' could be a very lengthy process. One way to speed-up the process would be for EMI to acquire a player in the US market. This, for example, is how Kodak managed to acquire digital photography capabilities successfully, see Grant (2005). However, this presupposed the existence or acquisition targets and problems associated with a merger that lead to the usual claims about the 'unprofitability of mergers' (see Scherer and Ross 1990). The point here is that, given uncertainty about future demands,

potential market failures associated with licensing and joint ventures, and the difficulties of establishing complementary capabilities, either its own, or through acquisitions (especially lacking experience in so doing), what EMI did might look like the best strategy for it on the basis of the information it possessed at the time. Such difficulties to adopt a theoretically optimal strategy are likely to be more severe for smaller firms, especially in the absence of a strong 'appropriability regime' supported by patents, see Teece (1986, 2006). The best possible strategy may also depend on the sector under consideration, see Gans et al. (2001), Gans and Stern (2003) and the existence or otherwise, of market for ideas, see Arora et al (2001).

Had EMI possessed some transferable advantages to a target and/or experience with acquisitions, acquiring a US player, if available might have proven a better choice. For example, CEMEX's acquisitions transfer skills and competencies in distribution and IT to the acquired target in the same sector. In so doing, CEMEX adds value, but also leverages 'reverse knowledge capability-transfer', when acquisition firms have such knowledge like in the case of the UK RMC Group, that CEMEX acquired, which had complementary knowledge to CEMEX in ready-made cement. This strategy helps CEMEX influence the industry structure, acquire market power, and create a relatively impregnable bases, all at the same time, see Nelson (1995). In the process CEMEX also acquires knowledge for doing this better next time around. In addition, CEMEX decides not just on the basis of extant knowledge, but on the basis of anticipated change in its local (Mexico) and international markets. Once decisions have been made, moreover, it also acts to influence the external environment, in a way that it is consistent with its decided upon strategy (see

Hill 2006; Pitelis 2007a). In all, what we have here is decision making under conditions of uncertainty on the basis of anticipatory change, through adaptive and proactive behaviour that aim to influence the firms' 'productive opportunity'. Value creation and capture in this context, as well as their determinants, are co-evolving, co-determined and influence perennial learning, adaptation and proactive behaviour. The very factors that help create value (transfer of skills) helps CEMEX capture value, through increased efficiency, market power and a relatively more 'impregnable bases'.

To summarize, in the real world of uncertainty, change, limited rationality and learning, adaptative and proactive behaviour based on anticipatory change, and attempts to mould their 'productive opportunity', is the way through firms try to survive, evolve and succeed. A way to effect this is by aiming to build relatively impregnable albeit evolving bases, on which to build on strength, and adapt in a partly endogenous, changing environment. In this context, value creation and value capture are co-determined and co-evolving.

Despite such fluidity, the possibility that some firms or nations will be 'too successful' and compete in ways insidious to the world-wide value creation process is ever present. This calls for suitable policies by firms, governments and extra-private-extra-public actors, such as NGOs, to help align different interests by actors and address time-inconsistency and other problems, in a way that safeguards the process of sustainable world-wide value creation.

IV. Conclusions and Policy Implications

To summarize and conclude, we claimed that:

- capturing value from value creating advantages such as innovation is an important objective of business 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 when they lack 'track-record', and relatively 'impregnable bases'.
- the successful capture of value by (especially large) firms, need not be beneficial for the economy as a whole, for example if it thwarts innovation.
- public policies to capture value for a nation may thwart the process of sustainable world-wide value creation, when they hinder knowledge transfer, learning and innovation. Neo-protectionist policies by developed nations are likely to have such effects. The imposition of sectional interests on other societal interests can have similar effects, as in the case of IMF-World Bank advise in the case of the Asian Financial Crisis.

- our focus on the sustainability of world-wide value creation, alongside our framework on value creation and capture helps fill important gaps in the literature, and

points to the need for innovative and mutually consistent and reinforcing business and public policies.

- in reality, under uncertainty, change and limited rationality, value capture and value creation are co-determined and co-evolving. Decisions are taken by firms on the basis of extant limited knowledge, but also anticipatory change: firms behave in an adaptive, but also proactive way that aims to enhance their 'productive opportunity', learning is crucial for success.

- learning and co-evolution do not preclude the possibility that success will lead to embedded power structures, which could be used in ways insidious to the wider aim of overall value creation. This calls for appropriate 'governance'.

What constitutes appropriate governance, or more appropriately 'sustainability-compatible governance' is a thorny issue, beyond the scope of this paper. Pitelis (2007b) and Mahoney et al. (2008), among others, have more extensive discussions. However, the following implications follow from our analysis, so far, concerning managerial practice, public policy and overall national and global governance.

First, firms should aim to compete in an enlightened way, that takes into account the potential negative externalities of their actions, which may prejudice the sustainability of system-wide value creation, and also eventually their own success. At the most basic level,

this implies competing through innovation, the avoidance of restrictive and monopolistic practices.

Public policy should aim to enhance competition through innovation (see Teubal 2002, Metcalfe, 2003, Pitelis, 2003), by regulating anti-competitive and promoting new firm creation and growth and markets for technology and ideas, see Arora et al (2001). Nation states (especially developed ones) should avoid 'strategic trade policies' and/or the pursuit of sectoral interests of powerful groups, at the expense of the wider interest of economic sustainability. Pluralism and diversity, through the creation and growth of NGOs, consumer associations, public-private partnerships, clusters and overall 'social capital' creation (see Moran and Ghoshal 1999; Putnam, 1993, Pitelis 2004) should be encouraged, in order to ensure a degree of mutual stewardship and monitoring that aims to address the problem of 'who monitors the monitor' (Alchian and Demsetz 1972), which in practical terms means the avoidance of 'regulatory capture' by powerful constituents in pursuit of rent-seeking (Stigler 1971; Olson 1971; Krueger 1974).

Setting-up an accountable international organization that places 'sustainability' at the centre-stage of its Agenda, could be another way of addressing the problem of 'regulatory capture'. Such organizations can also be captured by organised interests, see Stiglitz (2007) for the case of the World Bank and the IMF. Other organizations, such as the WTO, may confer benefits to developing nations, but can also be captured by more powerful nations, see Ramamurti (2004). The potential accountability deficit is a crucial issue that needs to be addressed.

Enlightened managerial practice, national and inter-national regulation, and innovation and value-creation-promoting policies, as well as diversity and pluralism and accountable global governance, may go some way towards advancing the 'global social good' of sustainable world-wide value creation. They are unlikely to suffice. Embedded power structures are likely to try to make this hard to realise. However, sustainability may well be a target that helps us focus on the laudable objective of unleashing global resources and capabilities for the promotion of the wider good, which is sustainable global value creation, distributed fairly between nations and peoples. Maybe is just a dream. Then again, maybe it is not.

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