The impact of the global factory on economic development

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ABSTRACT

The global factory is a structure through which multinational enterprises integrate their global strategies through a combination of innovation, distribution and production of both goods and services. The global factory is analysed within a Coasean framework with particular attention to ownership and location policies using methods that illustrate its power in the global system. Developing countries are constrained by the existence and power of global factories. Firms in developing countries are frequently constrained to be suppliers of labour intensive manufacturing or services into the global factory system. Breaking into this system is difficult for emerging countries. It requires either a strategy of upgrading or the establishment of new global factories under the control of focal firms from emerging countries. The implementation of these strategies is formidably difficult.

This paper advances four propositions.

1. A complex of causal factors under the umbrella term of globalisation have caused an international configuration of economic activities labelled ‘the global factory’ that dominates large areas of the world economy.

2. The existence of global factory system constrains the development options of a large number of developing countries.

3. Difficulties of mobilising entrepreneurial abilities in many countries react with these constraints to produce a difficult environment for economic development.

4. The paths to economic development under this system are:
   (a) Incrementally upgrading activities within existing global factories.
   or
   (b) Develop global factories under local control.

All of these development options are immensely difficult to implement. This paper suggests that although there has been a radical shift in the location of activities within the global economy, the control or orchestration of these activities remains very firmly within the metropolitan (advanced) countries.

Proposition 1. Globalisation pressures have reconfigured the world economy and created “global factories.”

“Globalisation is essentially a process driven by economic forces. Its immediate causes are: the spatial reorganisation of production, international trade and the integration of financial markets.” It is not therefore uniform across economic space – “the segmentation of the manufacturing process into multiple partial operations which combined with the development of cheap transportation and communication networks, has brought the increasing division of production into separate stages carried out in different locations.” (Sideri, 1997, p. 38). The strategies of multinational firms are therefore crucial to the causes and consequences of globalisation.

We can examine globalisation as a conflict between markets and management (government policies). Fig. 1 identifies three levels of markets – financial markets, markets in goods and services and labour markets. Each of these is moving at a different speed towards global integration. Financial markets are already very closely integrated internationally. No individual ‘national capital markets’ can have a sustainable independent existence.
However, attempts at national regulation do persist (Laulajainen, 2000) and the role of localities in the financial markets still provides differentiation (Berg & Guisinger, 2001; Tickell, 2000). Despite this, it is legitimate for analytical purposes to hypothesise a single integrated global capital market. Regional economic integration is becoming increasingly effective in integrating goods and services markets at the regional level. The relationship between company strategy and policy making within regional blocs, such as the European Union (EU), is a fascinating area for the development of new research streams (Chapman, 1999; Raines & Wishlade, 1999, see also Wood, 2003 on the Industrial Midwest of America). Labour markets, however, are functionally separate at the national level and here integration is largely resisted by national governments (Buckley et al., 2001).

The largest multinational enterprises are already perfectly placed to exploit these differences in the international integration of markets (Buckley, 1996). However, regional economic integration offers both large and small firms the opportunity to enjoy the advantages of a large ‘home’ market, whether it is their native home or their adoptive home. The operation of international capital markets (which allow firms to drive their capital costs down to a minimum) has largely transcended policy on regional integration, although each region would hope to retain its own regional financial centre. Labour markets, however, are functionally separate at the national level and here integration is largely resisted by national governments (Buckley et al., 2001).

On an industry level, globalisation can be shown to have an increasing impact. Gersbach (2002) defines globalisation at the micro level as “the exposure of a productivity follower industry in one country to the productivity leader in another country” (p. 209). The transmission mechanisms of change across country borders are trade and FDI. Gersbach found a strong relationship between globalisation and productivity differences with the most efficient producers. He concludes that globalisation matters and that its influence spreads beyond a single region (e.g., Europe, North America).

More attention has been paid to vertical relationships (the supply chain or value chain). The differentiation of labour markets is most acute between advanced and less developed countries which are typically not part of the same regional bloc. The managers of multinational enterprises (MNEs) are increasingly able to segment their activities and to seek the optimal location for increasingly intensive stages of production in the cheaper labour economies within the integrated area. Firms that serve just one regional market, as well as those that serve several of the regional goods and services markets of the world through horizontally integrated foreign direct investment (FDI), are able to complement this with vertically integrated FDI in quality-differentiated labour markets. Vertical integration also reflects the spatial distribution of supplies of key inputs and raw materials. The multinational enterprise achieves advantages through both vertical and horizontal integration. Each strategy is promoted by the ‘size-of-country benefits’ of regional economic integration in goods and services markets, which reduce or eliminate artificial barriers to trade between the members. This maximises the ability of firms to exploit intra-regional differences in factor abundance, including differentiated human capital.
specialized slivers of activity. This ability to separate and relocate stages of production has led to a boom in manufacturing in China and service activities in India. MNEs are also increasingly able to co-ordinate these activities by means of a wide variety of mechanisms from wholly owned FDI through licensing and subcontracting to market relationships. The more precise use of location and ownership strategies by MNEs is the very essence of increasing globalisation. This is the emergence of the ‘global factory’ (Buckley, 2004).

In parallel with the growth of the globalisation of production, globalisation of consumption has accelerated and it is perhaps this which has excited most opposition. The alleged globalisation of tastes provokes nationalistic protectionist sentiments and is here analysed in terms of the balance of strategies within MNEs between “local” and “global” pressures on the firm.

1. Location factors

The process of globalisation is thus not only beginning to reorganise power at world level but also at national and sub-national levels (Alden, 1999; Dunning & Wallace, 1999; Graham, 2003; Mirza, 1998; Peck & Durnin, 1999; Pike, 1999; Yeung, 2003). As domestic firms move part of their production to other countries, technology, knowledge and capital become more important than land, the traditional source of state power. This redefines the function of the state (Rosecrance, 1996; Sideri, 1997). The loss of sovereignty to supra-national regional institutions is more acceptable than to international institutions which are more remote. The EU is an example of such regional integration and governance (Bressand, 1990).

Social programmes within the EU are enforcing major re-distributions of revenue between the individual nations – a process currently (2006) being challenged. The nation state as the possessor of the sense of identity is being replaced by sub-nations and internal regions as government is devolved.

A recent study by Subramanian and Lawrence (1999) found that national locations remained distinctive. Policy barriers at the borders, differences in local cultures in their widest sense and nature and geography, contribute to distinctiveness. This, together with the ability of incumbents to keep outsiders at a disadvantage (Buckley et al., 2001) and the first entrant benefits of local firms, reinforce the differentiation of national economies. International competition remains imperfect and international price differences persist because arbitrage is costly. Domestic market conditions largely determine prices and wages. Multinational firm affiliates remain firmly embedded in their local economy and such local firms identify closely with the national government. Subramanian and Lawrence (1999) conclude that national borders still matter. Borders continue to engender and to coincide with important discontinuities stemming from government policies, geography and societal differences. The authors stress information discontinuities which coincide with national boundaries and so create search and deliberation problems for trading and manufacturing firms. These issues also account for the alleged ‘home bias’ of multinational firms.

Foreign direct investment is the key tool by which multinationals bridge cross-border discontinuities.

The two contrasting paradigms of a world made up of self-contained national economies and a ‘borderless world’ are incomplete and capture only part of a complex and subtle story. Lenway and Murtha (1994) examine the role of the state as strategist along four dimensions: authority versus markets, communitarianism versus individualism, political versus economic objectives and equity versus efficiency. They state that international business scholarship “places a benchmark value on efficient international markets and tends to regard states as causes of deviation from this ideal” (p. 530).

2. Driving factors in globalisation and the global factory

On the demand side, producers can make substitute or competing products increasingly easily. In addition, consumers are willing to switch between products, particularly when prices fall for some classes of product. This produces increasing volatility and creates pressures on producers to lock consumers in by branding (and by extending brands across a wider product range).

On the supply side, rapid innovation occurs and this leads to mass production of standardized offerings which creates opportunities for economies of scale. (The “product cycle” process has become foreshortened (Vernon, 1966, 1979).) Crucially, access to cheap labour has become much easier. The combined effect of the need for flexibility to meet consumer demand and downward pressure on prices through competition induces increased demands for outsourcing and offshoring. The costs of adopting flexible manufacturing are now much lower than before. Companies are thus faced with protecting their ownership advantages even when externalising differentiated activities.

Technological changes, including the rise of e-commerce, have made global operations cheaper and more manageable. Managers in companies with global operations have learned to “fine slice” their activities and to locate each “stage” of activity in its optimal location and to control the whole supply chain, even when not owning all of it. These technological and managerial drivers have been augmented by political changes towards far more openness in previously closed economies. Even local factors can be seen to support global development. For instance, biases in the local capital market in China discriminate against whole swathes of local activity in the domestic private sector and make foreign ownership more likely than the growth of smaller indigenous firms (Huang, 2003). The nature of the global factory varies over time and space. Differences in industrial systems across countries have been frequently noted (Whitley, 1999). Particular differences can be noted in the degree of vertical integration (or internalisation of the value chain) as between Japanese and U.S. industry, Taiwan and South Korea, the rest of Italy versus the Emilia–Romagna region, and the British and U.S. textile industries in the first half of the nineteenth century. In all these examples, the first half of the pairing is much less vertically integrated (McLaren, 2000). From a country’s point of view, it is good to attempt to host the location
of the whole of the value chain? A more reasonable question is: how far is it possible to secure the governance (or primary governance) or a global factory?

The true enemy of single nation global factories (even single region ones) is comparative advantage. Global factories are global because of differences in location give rise to national comparative advantages. The creation of ersatz global factories in single countries is often doomed to failure because no single country can replicate the cost and dynamic advantages of global competitors. The location of different stages of the global factory is determined by the advantages of different host countries. These can be augmented “artificially” by education, agglomeration advantages (giving rise to clustering) and investment in research, development and entrepreneurship. Host country policies designed to produce improvements in their dynamic comparative advantage can act as a magnet for economic activity. The attempt to design policies to attract all the stages of the global factory is futile. The issue of control of the governance of global factories is a more subtle issue. There are barriers to entry to markets, to locations, to new functions (R&D, marketing) and to new products (innovation, product improvement). These barriers often are of different natures, for instance the barriers to diversification (of products) differ from the barriers to internationalisation.

3. Elements of the global factory

The notion of the global factory was introduced in Buckley (2004) and developed in Buckley and Ghauri (2004). The key idea is that MNEs are becoming much more like differentiated networks. They choose location and ownership policies so as to maximise profits but this does not necessarily involve internalising their activities. Indeed, they have set a trend by outsourcing or offshoring their activities. Outsourcing involves utilising “buy” rather than “make” in the Coasean “externalise or internalise” decision (Coase, 1937). Offshoring involves both the externalisation option together with the ‘make abroad’ location decision (Buckley & Casson, 1976). MNEs have developed the ability to ‘fine slice’ their activities on an even more precise calculus and are increasingly able to alter location and internalisation decisions for activities which were previously locationally bound by being tied to other activities and which could only be controlled by internal management fiat.

The opening up of the global factory has provided new opportunities for new locations to enter international business. Emerging countries such as India and China are subcontracting production and service activities from the brand-owning MNEs. The use of the market by MNEs enables new firms to compete for business against the internalised activities of the MNE. This not only subjects every internalised activity to “the market test”, it also results in a differentiated network (as presented in Fig. 2) which we term “the global factory.”

The global supply chain is divided into three parts. The original equipment manufacturers (OEMs) control the brand and undertake design, engineering and R&D for the product (although there may be outsourced (see Fig. 2)). They are customers for contract manufacturers (CMs) who
perform manufacturing (and perhaps logistics) services for OEMs. In this so called modular production network, CMs need to possess capabilities such as mix, product and new product flexibilities while at the same time carrying out manufacturing activities at low costs with mass production processes. Flexibility is necessary to fulfil consumers’ product differentiation needs (local requirements) and low cost for global efficiency imperatives (see Wilson & Guzman, 2005). The third part of the chain is warehousing, distribution and adaptation carried out on a ‘hub and spoke’ principle in order to achieve local market adaptation through a mix of ownership and location policies. As Fig. 3 shows, ownership strategies are used to involve local firms with marketing skills and local market intelligence in international joint ventures (IJVs) whilst location strategies are used to differentiate the wholly owned ‘hub’ (centrally located) from the jointly owned ‘spokes.’

4. The information structure of the global factory

Casson (1997a) highlights the importance of information costs in the structure of business organisation. He sees the brand owner as essentially a specialist in the search and specification functions (for customers and products respectively). “The brand owner, by intermediating between the producer and the retailer, co-ordinates the entire distribution channel linking the worker to the final customer” (Casson, 1997b, p. 159). This intermediation by the brand owner/market maker is intermediation of information, not production. The information structure of the global factory is shown schematically in Fig. 4. This shows that the brand owner is the information hub of the global factory. The brand owner organises the market process itself. The organisation of production is conventionally within firms but the organisation of the whole production and trade sequence is intermediated by the market-making global factory. In many industries, particularly service industries, such as banking and insurance, the essence of competitiveness is the processing of information.

Fragmentation of the production chain can be accompanied by spatial disaggregation if:

- (a) there are technological discontinuities between different stages,
- (b) the stages are characterised by different factor intensities, and
- (c) the costs of coordination and transport are sufficiently low to make the process economic (Deardorff, 2001).

Each of these elements has a technical, a managerial and a political dimension. Strategies of “fine-slicing” the production chain have combined with technological change, notably the development of the internet and other communications technologies to allow control at a distance (and without ownership) to become more feasible even for elements of the chain requiring fine control. The opening up of China (and now India) creates access to cheap, well disciplined labour and the development of logistics practice reduces costs.

Products with standard manufacturing interfaces and services with standard processes are ideal for outsourcing. A lack of interaction of the offshored facility with other functions enables a clean interface to be created and a “fine-slicing” cut to be made. Products which should not be outsourced include those where protection of intellectual property is crucial, those with extreme logistics requirements, with high technology content or performance requirements and those where consumers are highly sensitive to the location of production (Boston Consulting Group, 2004).

The literature on global commodity chains, latterly global value chains, has much in common with the analysis of the global factory and has much to offer in furthering the research agenda. This is true both in understanding the relationships between global value chains and the results

![Fig. 3. 'Hub and spoke' strategies: an example.](image)
of globalisation (Gereffi, 2001; Kaplinsky, 2001, 2004) and in the impact that value chains have on (the difficulties) of emerging economies, principally by investigating the prospects of upgrading the parts of the value chain that benefit poorer economies (Barnes, Kaplinsky, & Morris, 2004; Gereffi, 1999; Gereffi & Memedovic, 2003; Kaplinsky, Memedovic, Morris, & Readman, 2003). Issues of governance within global value chains have also been investigated (Gereffi, Humphrey, & Sturgeon, 2005) in ways that parallel the discussion of the global factory. Sadly, transaction and economics is treated solely as if it explained only internalisation (not externalisation too). "Conversely, the transaction costs approach offers various reasons why firms will bring certain activities in house" (Gereffi et al., 2005, p. 80). Research on governance of value chains – "a theory of value chain governance" (Gereffi et al., p. 85) relies on "complexity of information and knowledge transfer ... the extent to which this ... can be codified and ... capabilities" as key drivers in the theory. This collapses into classification of five governance types and thus research agenda needs to be carried beyond typology. 

Much of the work on first “commodity chains” then “value chains” is strongly empirically based and provides a well thought out research programme, as exemplified by "A Handbook for Value Chain Research" (Kaplinsky & Morris, 2001). This research programme has gone beyond the original distinction between “producer driven” and “buyer driven” chains (Gereffi, 2001) and Bair (2005) notes that there remains much to do in relating descriptions of varieties of “chains” to development outcomes. A key contribution of the commodity-chain literature is to move away from arid analyses of industries, sectors or even strategic groups to focus on links between firms and other entities that compete in networks against each other. This feature of global capitalism is central to understanding the difficulties of upgrading facing emerging countries in having to deal with global factories. 

5. The assets of the global factory

Strategies used in the global factory require a rethink of our notion of the stock of investment. Focal firms have decreased their ownership of productive capacity and increased their stocks of intangible assets. Thus production is outsourced to firms who specialize in maintaining and expanding production capacity. Focal firms invest in intangible assets such as: (1) brand equity; (2) management skills; (3) innovative capacity (R&D labs, design facilities); (4) distribution networks. 

These assets are embedded within the firm. They are difficult to disentangle and disengage from the firm as a whole and they have an element of non-substitutability. It is difficult for other firms to copy or to replicate these intangible assets. Particular types of intangible assets that have achieved salience and value in the global factory are brand image, embedded supply chain management, design and new product development facilities, distribution networks with local adaptation capabilities and the ability of the management team to achieve customer lock-in. 

Casson (2006) notes that networks typically involve stocks and flows. The stock components comprise network infrastructure, whilst the flow constitutes traffic. The stock components of the global factory are assets, such as production units, R&D laboratories, design centres and offices. The flows generated are of goods, semi-finished products and knowledge. Physical networks are important
in sustaining trade whilst social networks are important in sustaining technology transfer, marketing and managerial communications (Casson, 2006, pp. 6–7). The global factory is an amalgam of a physical and social network, uniquely fitted to combine support for trade, technology and knowledge flows.

**Proposition 2.** The global factory constrains development options.

6. Globalisation and corporate governance

Two key issues interact to provide governance issues arising from the globalisation of business. The first is the existence of unpriced externalities. These impose costs (e.g., pollution) on the local economy and environment. The second is the remoteness of production and service activities from their ultimate owners or controllers (e.g., the shareholders). These two factors interact because the mechanism for correcting negative externalities becomes difficult to implement due to remoteness and lack of immediate responsibility.

Perceived difficulties of global governance in multinational firms are exacerbated by the current crises in governance of firms in the West. The shareholder return driven environment which prevails today is very much the creature of the merger wave of the 1980s (Buckley & Ghauri, 2002). The feeling that corporations are outside social controls and that current forms of governance benefit only executives (and owners) rather than other stakeholders contribute to the concerns of critics. MNE–host country relations in middle-income countries have fully emerged onto the world stage, leaving behind a group of largely inert less developed countries which have so far been bypassed by globalisation. Large, emerging countries, which contain significant middle class markets, cheaper and well educated labour and stabilising political regimes (India, China, Brazil) are no longer seen just as new markets for old products (Prahalad & Lieberthal, 1998) but as significant locations where local firms emerge to raise the wage rate above the going rate – set by agricultural wages. The factor that prevents this alternative position from emerging is the lack of entrepreneurial ability available to host country firms. At least part of this deficiency is because local entrepreneurs are bid away from local firms (by the higher wages alluded to above) to become managers and entrepreneurs in the global factory.

Is it therefore better for less developed countries to host portions of the global factory? The short run answer is probably yes because wages, taxes, spillover benefits and training benefits accrue to the local economy. This will generally be a benefit greater than the cost of relying on purely traditional employment (in agriculture largely – rural poverty). However, the answer in the long run depends on the potential of the host economy to develop in the absence of global factories and inward investment. The more practical policy question is how far global factories should be encouraged in particular host countries.

**Proposition 3.** Difficulties of mobilising and concentrating entrepreneurship in poorer countries further inhibit development.

Economic theory tends to underestimate the obstacles that lie in the path of realising the potential for exploitation
of resources in any locality. Concentration on traditional concepts of resource endowment (land, labour, capital) has had only a limited success in exploring national differences in material economic performance (as conventionally measured by per capita GNP). Even adding differences in education and training does not go far enough as these are embedded in general culture. Thus two main obstacles to the efficient use of natural resources can be identified. The first is geographical: the inability to effect a division of labour due to obstacles of transportation, including transaction costs. The second is the absence of an entrepreneurial culture which provides the economy with flexibility – in particular, the structural flexibility to cope with changes in the division of labour. These issues can also be developed in the context of the firm.

9. Dynamics: transaction costs and entrepreneurship

Why do entrepreneurs hire assets rather than asset owners hire entrepreneurs? The answer lies in non-contractibility. The key function of the entrepreneur is to exercise judgement in the face of uncertainty (Casson, 1982; Knight, 1921). Incomplete contracts have a positive effect on the exercise of entrepreneurship – they allow sequential adaptation to changing circumstances in an uncertain world. The firm is thus the agency by which the entrepreneur (whose services is the most difficult to measure or evaluate) combines his assets (judgement) with physical assets. The firm enables previously segmented areas of judgement and skills to be blended together and thus individual entrepreneurship becomes collective organisation. Individuals with entrepreneurial judgement can thus coalesce within the organisation and combine their skills. Because of the non-contractibility (or rather the extremely high costs of contracting) of these skills, this coalition becomes embedded in the firm, thus giving a transactions cost rationale for ‘competencies’ residing for a finite period of time in certain companies. "Sticky capabilities" thus emerge.

Baumol (2007) distinguishes “replicative” entrepreneurship from innovative entrepreneurship. The former is simply the organiser (or undertaker) of a firm. This may be a way out of individual poverty – operating as a peddler and hiring no one for example and such tiny enterprises may well grow in huge numbers in poor economies. Indeed they may well appear because the economy is relatively stagnant. Innovative entrepreneurs are characterised by the supply of new products, new production methods, market-making and the creation of new forms of organisation. They are the organisers of innovation – taking an entire process from the generation of a novel idea (invention) through to marketability and entry of the product or service to the (global) market place. Such activities (as defined by Šay, 1819 and Schumpeter, 1911) include the risk bearing function and thus involve the mobilisation of capital, but also the exercise of judgement (Casson, 1982). It is the combination of these attributes that is crucial and the existence of an environment that nurtures and rewards them that leads to success. Retention of entrepreneurs, against the centrifugal tendencies of metropoles in the global economy, is also a factor in long term success and in the creation of global factories.

Proposition 4. Constrained paths to development result in changes in the location but not the control of economic activity.

10. The least developed countries – starting development

A necessary condition for development in any locality is that there are resources with a potential for exploitation. Economic theory tends to underestimate the obstacles that lie in the path of realising this potential, however. Working with traditional concepts of resource endowment – land, labour and capital – cross-section regressions using the total factor productivity approach have only limited success in explaining international differences in material economic performance (as measured by per capita GNP) (Pack & Westphal, 1987). Some countries clearly underperform by failing to realise their potential, and the question is why this should be so (Leibenstein, 1968).

Differences in education and training are commonly cited as a possible explanation, and the analysis presented here is generally consistent with this view. It goes beyond it, however, in recognising that education takes place largely outside formal institutions. Early education, in particular, is effected through family influence, peer group pressure within the local community, and so on. To benefit fully from formal education it may be necessary for people to ‘unlearn’ beliefs from their informal education. But if the conflict between the two sets of beliefs is acute then psychological obstacles to unlearning may arise. Measures of educational input based on gross expenditure fail to capture these important factors. The analysis in this paper helps to identify those aspects of the formal curriculum which are crucial in supporting economic development. It also identifies those elements of general culture which prepare people to benefit from such education.

Two main obstacles to the efficient use of national resources have been identified. The first is geographical: the inability to effect a division of labour due to obstacles to transportation. In this context, the presence of a potential entrepôt centre is crucial in facilitating the development of a region. The second is the absence of an entrepreneurial culture. An entrepreneurial culture provides an economy with flexibility – in particular, the structural flexibility to cope with changes in the division of labour. These changes may be progressive changes stemming from essentially autonomous technological innovations, or defensive changes made in response to resource depletion or various environmental disturbances. These are not new ideas. Kreutz (1991) notes “There is a marked emphasis on trade and its virtues in the writings of tenth-century Muslim geographers such as Ibn Hawqal. Speaking disparagingly of contemporary Sicily, which he found dirty and impoverished, Ibn Hawqal blamed its sorry condition on heavy taxation and execrable treatment of merchants. Elsewhere, he admired, above all, busy harbors and the steady flow of goods” (p. 84).
11. Emerging countries

Three possible strategies suggest themselves to create a global factory under a single country (or region) government. First is to expand from the subordinate contractual manufacturing provider by adding activities. The second is to internationalise from an ‘almost complete’ local factory lacking perhaps, branding or R&D. The third is to build a full range of activities in the host country or regions and then internationalise the whole range from a domestic base. We will analyse the first strategy in detail. The second strategy, feasible only where global networks are patchy or intrinsically difficult to create, is on first sight more hopeful. However, ‘gaps’ in global factories are difficult to fill because they represent deficiencies in local conditions. They are most usually in branding, distribution or R&D and are, as we shall see, the most difficult and complex part of the network of the global factory to enter. Alliances are a potential means of filling gaps but are open to potential power inequalities and to the threat of takeover. Finally, building a local network and then internationalising the whole of it is a formidable task. Such a strategy only arises when the local economy is large (China, India, Brazil, Russia) or is protected by artificial barriers (such as tariffs) or cultural barriers. Korean Chaebols might be an example and their extremely patchy success rate is an example of the difficulties of internationalising even from a strong, artificially protected and culturally distorted base. It could also be argued that Korean firms lacked the basic R&D strength to anchor a true global factory, being dependent on second generation Japanese technology.

In emerging countries (par excellence China) the first step is produce components or complete products to the specifications of foreign firms who market the final product. Such “original equipment manufacturers” (Fig. 5) are a subservient part of the global factory’s network and are often in a weak bargaining position vis-à-vis the principal. There are many OEMs to play off against one another and OEMs are often forced to be price takers.

A crucial and neglected (Casson, 1999) aspect of breaking in to the global factory is the ability of indigenous firms to assume the role of market-making intermediaries. A market-making intermediary establishes trading links that would not otherwise exist. In so doing, such a firm creates a network of buyers and sellers that could not easily trade with each other. This requires negotiating skills, a reputation for honesty and, crucially, the firm must recognise systematic changes in demand and supply conditions that create opportunities to profit from the creation of new markets. Therefore, information costs are vital. The entrepreneur’s task is to collect the relevant information and to identify opportunities to satisfy latent demand. The creation of a new market involves set up costs. These are non-recoverable sunk costs analogous to those involved in innovation. In order to recover these costs, a degree of monopoly is essential. The first mover advantages which confer such a monopoly can be protected by secrecy or some form of legal entry prevention – a patent or licence. An effective form of protection is to reach customers quickly and defend a reputation for quality by branding.

The status of OEM allows benefits to the emerging country firm (Shenkar, 2005). The firm can achieve incremental upgrading of quality and manufacture to customer requirements. It is plugged into the network of the global factory (albeit in a subservient position) and gains access, indirectly, to the global market. The OEM also receives technological support derived from the detailed specification of the customer. More enlightened principals also supply financial and managerial help and may impose health and safety and environmental standards as well as upgrading the labour force.

Step 2 involves performing design and some development work and becoming an original design manufacturer (ODM) (Fig. 6). This strategic decision requires a significant upgrading of technological capability and the recruitment of engineers and designers capable of meeting world standards. It is significant that these categories of skills are priorities of the Chinese leadership (Shenkar, 2005, p. 89). A successful ODM can bypass middlemen and go direct to the buyer (usually the brand owner will control this process). The move from OEM to ODM is a profound one requiring high levels of managerial and technological skill and political nous. An UNCTAD (2005) study identifies need for host countries for textile MNEs to develop the ability to upgrade from simple assembly to “full package production” (in textiles). It provides the following list of key policy areas to enable this to happen: identify specialist niches; skills and technological upgrading; investment in information technology; improvement of infrastructure and utilising tariff preferences. This is a formidable list for low and even middle-income countries and firms to achieve, especially in view of their competitors also attempting to achieve the same goal.

The final step is to design, manufacture and sell the product under the firm’s own name. This move to original brand manufacturer (OBM) involves control not only of production engineering and design, but also of branding and marketing as shown in Fig. 7. It requires marketing and research skills. Given the global market it will also require exporting and FDI and the establishment of the brand in foreign markets. Some Chinese firms (Haier, Huawi Technologies) have achieved modest success in creating
their own global factories. Some outward FDI from China is designed to support such activities. Other outward FDI from emerging countries is intended to secure brands to be exploited worldwide. The main reasons why Shanghai Automotive Industry Corporation (SAIC), China’s biggest car maker was interested in buying Rover in 2005 were (1) to obtain the Rover brand (2) to obtain the ability to design and manufacture cars (Financial Times, 2005a, “What Shanghai sought from Longbridge”, p. 15).

12. Entry by buying brands

Brands, just like any other asset, can be acquired. It might seem to be a relatively easy way for outsiders to enter the global factory by purchasing brands. This will usually mean the acquisition of the whole company because brands are embedded and are often unavailable except as part of the takeover of the brand owner. However, it is often ailing companies that are most likely to be takeover targets and such companies may be owners of tired, dated or obsolescent brands. Moreover, because of the potential value as assets, brands are expensive to acquire and this may put good healthy brands with potential longevity beyond the purchasing power of emerging country firms.

In his analysis of the takeovers of IBM’s personal computing business by Lenovo the Chinese computer maker and Siemens of Germany paying BenQ, the Taiwanese company to take over its ailing mobile telephone business, Kroeber (2005, p. 19) shows that the Chinese company did so on for less favourable conditions than the Taiwanese company. Moreover, when the Chinese television maker TCL took control of the television business of Thomson SA of France, they acquired these assets for virtually no cash payment but Thomson retained a one-third stake in the TV business with an option to convert it into TCL shares. Lenovo paid IBM $1.75 billion in combined cash and debt assumption and this also gave IBM a 19% stake in Lenovo (Biediger et al., 2005). These Western companies disengaged from unprofitable businesses at no cost and gained a low cost option on the future profits if the Chinese companies turned the business around. The desperation of the Chinese companies compares unfavourably with the good deal that BenQ obtained. BenQ gained rights to all the patents held by the Siemen’s mobile handset unit whereas when TCL acquired Thomson’s TV business the highest value activity (tube production) was left out.

Kroeber (2005, p. 19) suggests an explanation of this phenomenon that accords perfectly with the underlying rationale of the global factory. Taiwanese companies have great strengths in supply chain management whereas the big Chinese manufacturing companies are trading groups that have exploited temporary arbitrage opportunities. Taiwanese equipment manufacturers rely on dense networks of highly specialized component suppliers. These suppliers and the ultimate assemblers (such as BenQ) operate with high flexibility and fast turnaround times. Thus, Taiwanese companies can bring new designs to market rapidly and can move into new product lines as new electronic gadgets are invented. Since, the mid-1990s, Taiwanese companies have gained cost advantages by moving most low-end production to China. In contrast, Chinese companies, such as Lenovo and TCL, have taken advantage of low purchasing power and inefficiencies in the Chinese market. They offer cheap versions of electronic products in a market where Chinese consumers cannot afford the higher quality but more expensive foreign products. These advantages diminish as Chinese income and purchasing power grows. Low profit margins mean that Chinese companies (such as TCL and Lenovo) cannot afford the R&D expenditure necessary to create new products and brands. In addition they have under-developed manufacturing and supply chain management skills. Entrepreneurial and market-making skills are weak in China and so acquiring weaker brands at high prices seems the best way forward to establish independent global factories.

Bids from China National Offshore Oil Corporation (CNOOC) for the U.S. oil group Unocal and by a group led by Haier (the leading Chinese domestic appliance company) for Maytag, the owner of Hoover vacuum cleaners have led to Chinese companies being termed ‘aberrant buyers’ (Financial Times, 24.06.05, p. 17). The desire of Chinese companies to buy not only global brands but also natural resources combined with the notoriously imperfect domestic capital market (Huang, 2004) means that these companies often outbid more traditional purchasers. As all outward investment by Chinese companies requires approval from the state Council, flexibility in negotiations is not an asset they possess.

The purchase of Ingersall Production systems by Dalian Machine Tool (China’s largest machine tool manufacturer) in 2002 was driven by the desire to acquire American management techniques and the takeover depended on retaining the local Chief Executive. A long term learning perspective is essential in building the global factory and brand. The value of a brand depends upon what the (prospective) owner can do to enhance it. This value enhancement depends crucially upon sales, marketing and distribution abilities. Smaller and inexperienced firms typically do not have this range of skills. Purchasing of brands alone will not secure long run global competitiveness. Brands, like all other assets, require constant reinvestment (and reinvigoration). They also require a wide range of supporting skills. Without these, brand value will atrophy.
13. The dynamics of upgrading

The move from contract OEM to ODM, to OBM and finally to full global factory, involving contracting out of activities is a set of enormous leaps. The degree of skill and managerial resources can only be accumulated, financed and protected by an immense effort of will and concentration of resources. There is a requirement for entrepreneurial ability of a high order and, moreover, the type of entrepreneurial skill required varies over time. Initially, the entrepreneur has to secure and to fulfil demanding and competitive contracts in order to secure a position as OEM in the global factory. Reliability and quality of output must be achieved. Upgrading to ODM requires real vision, a global outlook, long term planning and the ability to build a high level multi-disciplinary team. Designers and engineers have to be integrated into the firm and they require a different style of management from production workers. A shift from accepting design and engineering specifications to the creation of them is a profound step change. The final stage – the move to OBM – is even more difficult to achieve. The creation of an original brand is a huge undertaking. Quality, reliability, a good design and the maintenance of world class standards are not easily achieved. This has to go together with the creation of global distribution and marketing. Thus a primarily national, dependant organisation needs to become international and independent, central to a new global factory.

14. Consolidation

It is clear that OEMs have little bargaining power and this constrains their ability to amass the resources necessary to break out of their subservient role in the global factory. There is evidence that this is happening and situations approaching bilateral monopoly (or at least oligopoly) are occurring in several sections where one or more powerful principals confront multi skilled “factories for hire” which are approaching a scale, competence and self confidence to break out of the role of mere contractors.

A clear example of this process occurs in the textile and clothing sector (UNCTAD, 2005). A small number of large retailing companies transmit demands from Western consumers and largely shape trade and production patterns. However, with the removal of tariff protection from manufacturing in selected lower cost production locations, there is increasing pressure on producers to consolidate production into larger factories to gain economies of scale and reduce costs. This consolidation produces MNEs – mainly from East Asia (Hong Kong, Taiwan, Korea) with multiple production locations to supply the retailers.

15. The role of the state

The relationship between the global factory and state intervention to bolster developments is a complex one. The global factory results from managerial decisions on insourcing versus outsourcing (the make-or-buy decision) and location decisions which are unconstrained geographically. The developmental state as it has so far been conceived and implemented restricts both decision sets. Historically, developmental states (Japan and South Korea) fostered national champions. These have been conglomerate firms centred on a bank or a family – Keiretsu and Chaebols. Internal capital markets within these conglomerates have reinvested ‘soft’ money (raised cheaply from the bank or the state) and this has resulted in over-diversification. Parallel global factories would have utilised market relationships and avoided excessive internalisation. Similarly, the conglomerates, because of state direction or bias in investment decision, invested heavily at home rather than undertaking foreign investment. It is arguable that old-style conglomerate state championed firms like the Keiretsu and Chaebol were overwhelmed by the inability to compete with rival global factories even with state backing and ‘economic patriotism’. This does not necessarily mean that no form of developmental state could be successful. Such a state would have to be far more intelligent in design and flexible in operation. Future developmental states would have to combine judicious investment in locationally fixed endowments to attract and retain economic activity, to foster domestic entrepreneurship and to abandon opposition to market imperatives, including the necessity for home based firms to invest abroad in order to attain or retain international competitiveness. Focus rather than diversification would be the hallmark of future national champions. More open strategies would be required – for instance, family centred firms would have to recruit talent from outside the family to key managerial positions and less ethnocentric attitudes would be necessary for success. Investment in particular types of locationally fixed infrastructure to support key activities might be a feature of future strategies together with active policies to acquire and retain key individuals (scientists, designers) and groups (top managers, financiers). The strategies might resemble a more refined version of Singaporean strategies over the last 30 years.

There is a key requirement to balance state direction with innovative and entrepreneurial attitudes and behaviour which require freedom and individual risk taking. Subsidies and handouts require funding and funding requires a solid tax base. In addition, developmental states have been riddled with corruption. Moves away from market-based rewards provide opportunities for opportunism. Developmental states need to be open, transparent and to implement predictable policies and administration.

Future successful developmental states will have to perform a balancing act between direction and non-interference that requires sensitive, flexible and honest policies on a long term consistent basis. It is not clear that many (if any) states will be able to achieve these requirements and their decision makers must avoid the temptations of appropriating the rents that could accrue to the state.

16. Sovereign wealth funds

Government intervention in the global economy has recently been via sovereign wealth funds through which Governments buy foreign assets. Originally such funds
were invested conservatively, buying largely US Treasury Bonds and other foreign paper assets. These assets can be used to support the country’s exchange rate as they are highly liquid. Now China and other countries have more reserves than they need for this purpose and can move into vehicles for long term saving and to more risky assets – such as acquiring equities. Singapore has two such funds (GIC and Temasek) and oil and commodity – rich countries model their funds on Norway’s Government Pension Fund (Economist, 2007, p. 77). These funds acquire large equity stakes in foreign companies, including banks. Many sovereign wealth funds lack expertise in appraising foreign companies for equity acquisition purposes. China has therefore purchased equity (9.9%) in Blackstone’s, a private equity company with outstanding expertise in valuing and acquiring large companies. This acquisition by China’s sovereign wealth fund is a first step to taking control of global factories, using global financial companies as captive advisors.

In a global economy dominated by global factories, sovereign wealth funds represent a rational response by emerging countries. Not only do these funds represent a long term source of funds (albeit more risky than short term paper assets) they also provide management expertise on how to acquire global factories (via private equity stakes) and a direct purchase of management control (or at least a share in the management) of global factories. It is the ultimate management of the factories themselves that poses the largest question mark against the success of these ventures. Political interference is a threat to success as is the ability of the emerging country to retain the loyalty and expertise of key managers down the chain of control.

17. Conclusion: the global factory and its impact on development

The analysis of the global factory within a Coasean framework puts the issues of development in a new light. Developing countries are constrained by the existence and power of global factories. They are frequently constrained to be suppliers of labour intensive manufacturing goods into the global factory system. Breaking into the global factory by emerging country firms is formidable difficult. It requires a combination of strong finance, effective promotion, the training and recruitment of skilled personnel (which requires an excellent educational system) and a dedicated long term strategy. Developing countries can attempt to upgrade from this position gradually by the set of steps outlined above or they can attempt to set up new global factories in competition with existing ones. This latter strategy requires a concentration of resources available through large Sovereign Wealth Funds but beyond the scope of most emerging countries. Acquisition elements of this strategy in particular, such as buying established brands, require particular managerial skills. Development issues can be analysed within the framework above which pay particular attention to dynamics and to the context of the individual developing country which is crucial in determining outcomes.

18. Research agenda

This paper suggests an extensive research agenda. The shifts in the location of economic activity, to India and China for example, are well documented. What is less clear is the mechanisms of control over these activities. The power of “orchestration” of the global factory requires a refined conceptual framework and a good deal of micro-economic analysis – much of it is in a qualitative framework. The crucial elements of control in the system may not be easily replicable. The power of brand names, innovation and financing combined with an efficient distribution network provide formidable entry barriers to new entrants.

References


Sovereign Wealth Funds: Keep your T-bonds, we’ll take the bank. (2007, July 28). Economist, p. 77.