

Chapter 4

Global value chains and international investment

International investment is one of the building blocks of global value chains (GVCs). Multinational enterprises continuously shift resources across borders and restructure their activities geographically through international investments and divestments. During the past decades there has been a trend towards a closer focus on core activities in business investment. In addition, governments have become increasingly important actors in international investment in GVCs. These structural changes in international investment have raised a number of (new) policy issues, including the design of appropriate investment policies.

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The link between multinationals and global value chains

International investment is a basic building block, along with trade, of global value chains (GVCs). One of the reasons for the interest in this relationship is its implications for economic development, competitiveness (of firms and nations), technology and innovation, and jobs, among others. Foreign direct investment (FDI) provides channels for trade in goods and services (both intra-firm and arm's length), as well as in intangible assets, which are used by multinational enterprises (MNEs) to create value.

The stock of MNEs' FDI reached USD 22 trillion in 2011 and global trade exceeded USD 18 trillion. FDI has grown faster than global GDP over the past 20 years. In 1990, the value of global FDI stocks was less than 10% of global GDP and the value of global trade was around 15% of GDP. By 2011 these ratios had increased to 31% and 26%, respectively (Figure 4.1).

Figure 4.1. FDI and trade: Twin drivers of economic globalisation



Source: OECD FDI Statistics Database (www.oecd.org/investment/statistics.htm), IMF, World Economic Outlook Database, and World Trade Organization Statistics Database.

StatLink  <http://dx.doi.org/10.1787/888932834701>

Interest in GVCs is not only due to the fact that they have grown larger and more pervasive. In recent years, their rapid growth has been accompanied by qualitative changes in their nature. Many of these changes originate in changes in the international investment landscape. Emerging countries such as the People's Republic of China and India have become major new outward investors and governments have become important players in certain GVCs through their sovereign wealth funds and state-owned enterprises (SOEs). In addition, MNEs have rationalised their international architecture through outsourcing and offshoring. Gereffi et al. (2005) see this last development as one of the most important changes in the relationship between international investment and GVCs, having led to “the vertical disintegration of transnational corporations, which are redefining their core competencies to focus on innovation and product strategy, marketing, and the highest value-added segments of manufacturing and services, while reducing their direct ownership over ‘non-core’ functions”.

The theoretical literature on international investment (in GVCs) has two main strands: transaction cost and internalisation theories; and a somewhat eclectic group of strategic, behavioural explanations. The common thread between these different schools of thought is the idea that FDI takes place when conducting an international transaction within the firm generates more value for the firm than conducting the transaction in the market (e.g. through trade or licensing).

Transaction cost and internalisation theories

At the heart of transaction cost theory is a distinction between markets and hierarchies (Coase, 1937; Williamson, 1975, 1979). Firms exist because certain economic transactions can be conducted more efficiently through hierarchies than at arm's length through the market. The choice of hierarchy over market is motivated by market imperfections, including those associated with information costs (Arrow, 1974).

Transaction cost theory underscores the role of international investment in overcoming the many market imperfections that are absent or less pronounced in a purely domestic setting. These include, among others, the high costs of collecting information across geographic and cultural distances, the difficulty of protecting intellectual property rights (IPR) across different jurisdictions, impediments to arm's-length international trade such as tariff and non-tariff barriers, and the structural characteristics of markets that can give rise to first-mover advantages.

A specific version of transaction cost theory to explain FDI, known as internalisation theory, was first elaborated by Buckley and Casson (1976) and Rugman (1981). Once a domestic firm has developed a monopolistic or oligopolistic position based upon some combination of technology, cost, financial or other advantages, it will be motivated to maintain such advantages in international markets by conducting transactions through hierarchies rather than through markets. By doing so, it can maintain control over the barriers to entry that allow it to earn monopoly rents in its home market.

Internalisation theory predicts that firms will engage in FDI when they enjoy some form of advantage that can be more efficiently exploited through hierarchies (i.e. within the organisational structure of the firm) than at arm's length through markets. This situation arises when market imperfections mitigate against conducting international transactions through trade, licensing or any other form of economic transaction that does not involve the ownership of foreign resources. Internalisation theory motivated a considerable body of research that focused on two key factors: ownership advantages and market imperfections. With respect to the former, the focus has been on factors such as superior technology (Johnson, 1970; Magee, 1977), better capabilities for product differentiation (Caves, 1971) and managerial capabilities (McManus, 1972; Wolf, 1977).¹

With respect to market imperfections, one of the most important contributions is the research on the risk diversification advantages of MNEs (Aliber, 1970; Agmon and Lessard, 1977; Adler, 1981). The central argument in the risk diversification hypothesis is that MNEs offer equity investors opportunities for diversifying their investment portfolios in ways not otherwise possible owing to various imperfections in international capital markets.

Strategic and behavioural explanations of international investment

In one of the first contributions that dealt explicitly with the strategic nature of the FDI process, Vernon (1966) sought to explain the US post-war FDI in Europe in terms of the product cycle. The product cycle is the process whereby a product “matures”, production becomes more standardised, and “the need for swift and effective communication on the part of the producer with customers, suppliers, and even competitors” is reduced. Concurrently, the early technological advantages of innovating firms dissipate as the associated production-related knowledge becomes increasingly public in nature. As this dissipation takes place, profitable production comes to depend increasingly on lowering production costs and firms are motivated to anticipate potential competitive threats from lower-cost overseas producers through FDI.

According to Vernon, the main impetus for FDI in the context of the product life cycle is the natural maturing process that particular production-related knowledge undergoes. Managers undertake FDI initially as a defensive response to potential new sources of low-cost competition as their “new products” become “standard products”.

Following in the footsteps of Vernon, Knickerbocker (1973) examined the apparent tendency of US MNEs to make their investments more or less in lock step and Vernon’s observation that, under conditions of limited information about production costs in different foreign locations, MNEs might logically match their competitors’ FDI in a relative gains type of game (i.e. you are winning even if you lose money, as long as your competitor is losing more). Graham (1978) extended this line of analysis with the concept of “exchange of threats” FDI and elaborated a game theory model in which he demonstrated that even if a firm is not the lowest-cost producer in a particular market, FDI can be the optimising choice in an industry with oligopolistic characteristics (Graham, 1998).

Another strand of the strategic/behavioural literature on international investment and GVCs emphasises the role of FDI in providing MNEs with information about market conditions. For example, Boddewyn (1983) finds that the logic behind the decision to divest foreign assets might be different from the logic underlying the original FDI decision. Whereas FDI decisions are by definition motivated by the perception of some sort of positive gain, the reverse is not necessarily true (foreign divestment is not necessarily associated with losses or negative conditions).

In reference to Vernon (1966), he suggests that “divestment decisions are not limited to the decline phase. Instead, they coincide with the transition from any one phase to another because the firm usually needs new resources (capital, entrepreneurial and managerial skill, etc.) at each turning point. In fact, many ‘strategic’ FD decisions reflect such a situation...This is different from a ‘crisis divestment’ situation where a multinational firm loses its competitive advantages or faces a politically antagonistic environment, and therefore decides to divest.” (Boddewyn, 1983).

Kogut (1985) summarised as follows: “The design of international strategies is based upon the interplay between the comparative advantages of countries and the competitive advantages of firms. These two advantages determine the answer to the two principal questions in international strategy: 1) Where should the value-added chain be broken across borders? and 2) In what functional activities should a firm concentrate its resources?”

Horizontal and vertical investment in GVCs

Horizontal international investment involves the establishment by an MNE of affiliates in different markets with similar business functions (see also Chapter 1). From the internalisation theory perspective, it involves the internalisation of the same activity within the boundary of the firm in different markets. International investments by service providers are usually horizontal in nature. Multinational service providers tend to make investments that serve the domestic market and tend to be relatively autonomous *vis-à-vis* other affiliates. For example, a multinational retailer's stores in Germany will have few if any operational linkages to its stores in China. Most multinational telecom companies organise their operations as largely distinct, autonomous national providers.

The manufacturing sector is more mixed. It tends to have more vertical international investment but there are examples of horizontal investment as well. Even in an industry such as automotive production, with significant vertical integration, MNEs engage in horizontal investment, for example, when they establish assembly plants to produce the same model in different countries. A significant amount of international investment in the extractive industries is also horizontal in nature.

In the case of service providers and extractive industries, horizontal investments often contribute simultaneously to several GVCs. The retail sector is a good example, with diversified MNE retailers such as Walmart and Carrefour serving as the final distribution stage for thousands of GVCs. At the other end of the value chain, most extractive industries also participate in multiple GVCs. The output from an international investment in an iron ore mine could find its way simultaneously into reinforcing steel bar (rebar) for construction, steel plate for shipbuilding, and casings for Swiss watches.

Horizontal FDI often takes place when an economic activity is location-bound, i.e. access to a particular market requires physical presence. A retailer needs to be close to customers and a miner needs to be close to minerals. However, horizontal FDI also serves other functions for the firm, including risk diversification (e.g. the establishment of alternate sources of supply for key intermediate inputs) or a way of leveraging and protecting intangible assets, such as brands and proprietary know-how.

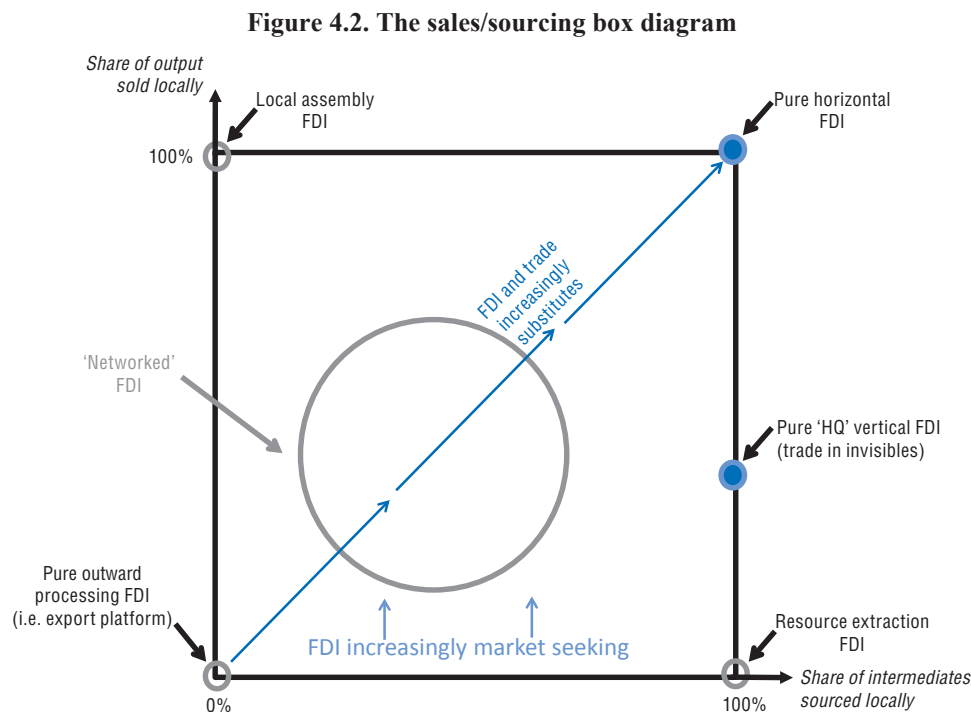
Vertical FDI involves the “internalisation” of value-adding steps of a GVC within the boundaries of the firm (see also Chapter 1). As in the case of horizontal FDI, the extent to which firms engage in vertical FDI is highly industry-specific but is also sensitive to strategic and policy factors. The reason is that vertical FDI entails additional risks and complications associated with managing and co-ordinating different lines of business within the GVC across different countries.

Vertical FDI is the main source of intra-firm trade – trade between foreign affiliates. To give an example, Royal Dutch Shell, one of the world's largest oil and gas companies, has extensive upstream activities (exploration, recovery, transport) and downstream activities (refining, chemicals, marketing, retail). Over half of the revenue generated by the firm's upstream businesses comes from intra-firm sales to its own downstream businesses.

In contrast with horizontal FDI, which tends to focus on relatively narrow functions of GVCs (and often spans many GVCs), vertical FDI tends to cover segments of GVCs and, in some cases, entire GVCs (e.g. Shell's consumer fuels business). One of the interesting characteristics of GVCs created by vertical FDI is that they are directly governed by the firm (in contrast with GVCs based primarily upon arm's-length trade between unrelated parties).² The policy implications of this “governance” dimension of vertically integrated GVCs are discussed below.

In sum, horizontal and vertical international investment contributes in different ways to the development of GVCs. Indeed, it is difficult to conceptualise an example of an international investment by an MNE that does not somehow contribute to the development of GVCs. Horizontal FDI has links to GVCs through arm's-length upstream and downstream commercial relationships and also serves to internalise intangible assets that can be shared across the firm's operations and bring value to the GVCs in which the firm participates. Vertical FDI directly creates GVCs (or sub-segments of GVCs), which are linked through intra-firm trade. An interesting feature of vertically integrated GVCs is that they are governed by the firms that create them.

In reality, most MNEs engage in both horizontal and vertical FDI. In addition, given the different types of trading relationships that can be associated with horizontal and vertical international investment, they can combine to create a wide variety of different linkages in the host economy. Figure 4.2 provides a useful illustration of the different possible sourcing linkages for an MNE affiliate and how these relate to horizontal and vertical FDI.



Source: Baldwin and Okubo (2012).

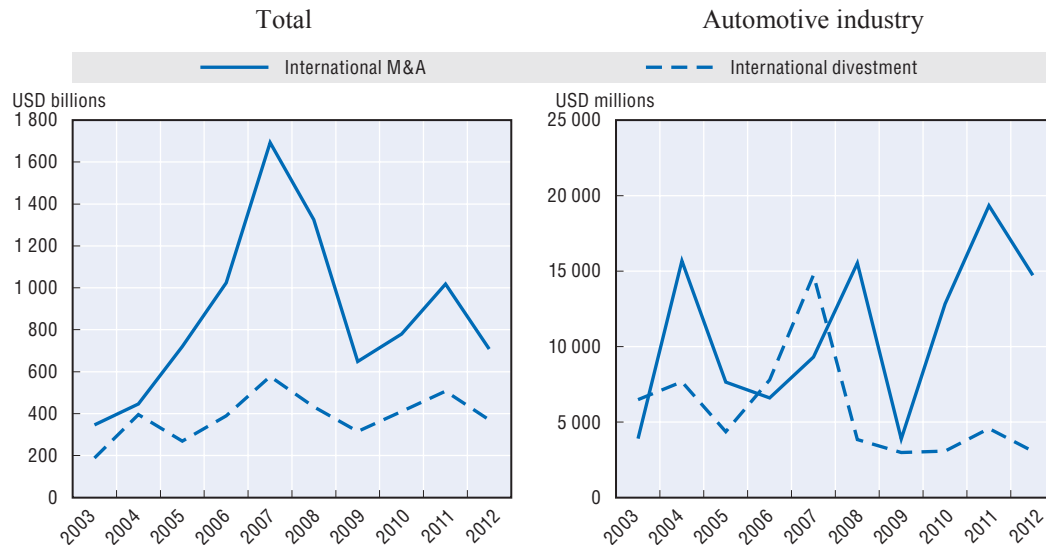
Trends in international investment in GVCs

Investment in GVCs: A churning sea

As MNEs continuously expand and restructure their international operations, they engage in simultaneous investments and divestments (Figure 4.3). In 2012, international divestment was about half the value of international investment; an interesting feature of this relationship has been the relatively constant level of international divestment activity. Turbulence in international investment can be more pronounced at the industry level (Figure 4.3). International investments through international mergers and acquisitions

(M&A) in the automotive industry during 2003-12 were on average higher than international divestment (USD 11 billion versus USD 6 billion, respectively). However, international divestment exceeded international investment in 2003, 2006 and 2007 (the large difference between international M&A and international divestment in 2007 was largely due to the USD 7.5 billion divestment of Chrysler by DaimlerChrysler AG). This sort of variability is also observed at individual country level.

Figure 4.3. International investments through mergers & acquisitions and investments, world, 2003-12



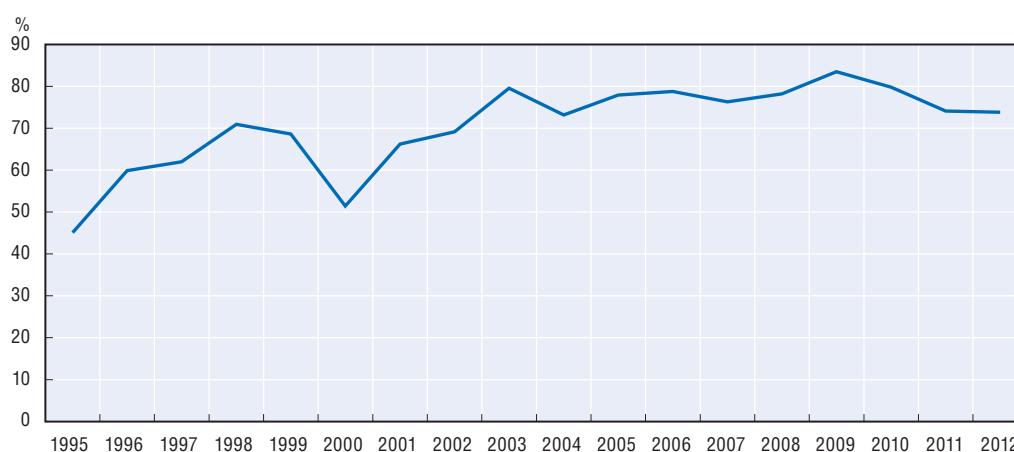
Source: Dealogic M&A Analytics, OECD calculations.

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The “vertical disintegration” of MNEs

International M&A data suggest that international investment by MNEs has focused more on their core lines of business over time (Figure 4.4).³ During the first half of the period covered, the share of international M&A by MNEs in their core lines of business (i.e. automotive in automotive, chemicals in chemicals) steadily increased from a low of just under 50% in 1995 to 80% in 2003. Since then it has remained relatively steady, averaging just under 80%.

The changed focus of international M&A during the second half of the 1990s and the early 2000s is consistent with many of the explanations for the growth in GVCs, including trade and investment liberalisation, major advances in ICTs and the emergence of China and other emerging markets as efficient production locations. These changes seem to have reduced the need for MNEs to establish ownership of broad parts of their GVCs through international investment in order to control, among other things, costs, the quality of inputs, timely delivery, protection of IPR, and so on. However, this is not to suggest that international investment is becoming less important for GVCs. Indeed, as Figure 4.1 showed, the value of cross-border linkages through international investment continues to grow. Rather, international investment flows would seem to have both grown and become more specialised (at the level of the firm).

Figure 4.4. Share of international mergers & acquisitions in core business, world, 1995-2012

Source: Dealogic M&A Analytics, OECD calculations.

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Governments as new actors investing in GVCs

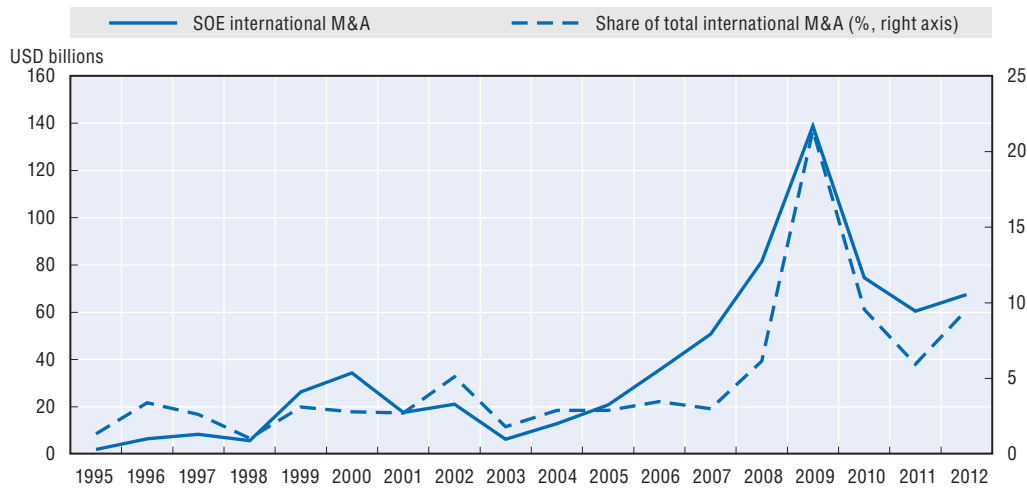
Over the past decade, governments have become significantly more important participants in the global economy as international investors, principally through sovereign wealth funds and state-owned enterprises. Among the largest 500 companies in the world as ranked by revenues, state-owned enterprises (SOEs) now account for around 20% of economic activity across a range of measures, up from around 7% in 2000 (Table 4.1).⁴

Table 4.1. Representation of state-owned enterprises in 2000 and 2011, Fortune Global 500 (shares)

	2000	2011
Number of SOEs	7%	19%
Average assets	8%	19%
Average revenues	6%	20%
Average profits	7%	22%
Average stockholder equity	9%	21%
Average number of employees	19%	30%

Source: *Fortune Global 500 2012*, OECD calculations.

Figure 4.5 presents the growth in international M&A by SOEs from 1995 through 2012 in terms of absolute values and as a share of total international M&A activity. International investment by SOEs has been growing steadily since the early 2000s but accelerated sharply at the start of the global financial and economic crisis in 2008. China has been the largest source of such investment, accounting for around a third of all international investment by SOEs.

Figure 4.5. International mergers & acquisitions by state-owned enterprises, world, 1995-2012

Source: Dealogic M&A Analytics, OECD calculations.

StatLink  <http://dx.doi.org/10.1787/888932834758>

Two aspects of the growth in international investment by government-controlled entities are relevant from a GVC perspective. The first is that this investment is highly concentrated in a limited number of sectors. Excluding finance, insurance and various special purpose financial entities, Table 4.2 shows that 97% of international investment by SOEs is in extractive industries, oil and gas, utilities and energy, mining, and metal and steel.

Table 4.2. The industrial composition of international investment by state-owned enterprises (SOEs), world, 2012 (USD billion)

Acquiring industry group	Total international M&A	SOE international M&A	Share of SOE total (%)
Oil & gas	61 814	20 869	61
Utility & energy	40 339	7 577	22
Mining	42 963	3 000	9
Metal & steel	34 318	1 701	5
Professional services	9 315	411	1
Machinery	18 085	486	1
Agribusiness	3 972	65	0
Total	542 517	34 202	100

Source: Dealogic M&A Analytics, OECD calculations.

StatLink  <http://dx.doi.org/10.1787/888932835195>

The second characteristic concerns the destinations of this investment. Table 4.3 lists the top ten recipients of SOE international M&A investment in 2012. These ten countries received 87% of all international M&A by SOEs. International investment can be quite “lumpy” in the sense that individual deals can be so large that they influence a country’s overall flows. As a result, the SOE share of overall inflows can be quite high for some countries, especially small developing economies.

For example, in 2012, 100% of Sierra Leone’s inward investment came from SOEs (a USD 1.7 billion investment in an integrated iron-ore project, including the building of a new port and railroad). This example highlights the extent to which SOEs can represent important sources of capital, including for countries that have not traditionally been attractive locations for foreign investors. However, it can also generate financial imbalances and inflationary pressures, and can create a situation in which a country’s main link to GVCs (as an upstream producer of raw materials in this case) is controlled by a single firm or small group of firms. In the five years preceding this investment, Sierra Leone received on average USD 73 million in inward FDI annually. The SOE investment in Sierra Leone in 2012 represented a 23-fold increase in the country’s inward FDI over 2011.

Table 4.3. Top 10 targets for international mergers and acquisitions by state-owned enterprises, 2012 (USD millions)

Target nationality	SOE international M&A	Total international M&A	Share of country inward international M&A
Australia	13 436	49 332	27%
Brazil	7 975	38 069	21%
Canada	6 808	49 239	14%
France	1 591	18 106	9%
Norway	3 255	11 930	27%
Portugal	3 526	6 414	55%
Sierra Leone	1 500	1 500	100%
Switzerland	9 044	17 574	51%
United Kingdom	5 831	93 264	6%
United States	7 363	139 969	5%
Total	69 491	425 398	16%

Source: Dealogic M&A Analytics, OECD calculations.

StatLink  <http://dx.doi.org/10.1787/888932835214>

Policy implications

Policies towards GVCs are relatively new and the literature is just developing. One of the main reasons is that the traditional “units of account” around which international policies have been developed have been countries (e.g. the OECD Declaration on International Investment and Multinational Enterprises, regional and bilateral integration agreements), industries (e.g. traditional investment promotion, industrial policy), and firms (e.g. commercial codes and regulations). The idea of formulating investment policy with GVCs in mind is relatively new. A number of policy issues and questions that governments might need to focus more attention on include the following.

Is the international investment policy architecture keeping up with developments in GVCs?

Global value chains are, by definition, a multilateral phenomenon. Individual chains can span dozens if not hundreds of countries and involve thousands of firms, from SMEs to global MNEs. Lowering investment barriers is one of the most direct ways for countries to become more deeply integrated into GVCs through international investment. Bilateral and regional agreements can also be useful for facilitating trade and investment flows between key partners.

However, the complexity of the current international investment policy architecture, which includes thousands of bilateral and regional investment agreements, may be creating uncertainty and thus holding back international investment in GVCs. Multilateral co-operation is necessary to maintain the open and predictable international investment climates that have supported international investment in GVCs to date. The recent crisis, and a number of instances of de-globalisation that it has engendered, have served as a reminder that GVCs are not inevitable and that policies do matter for their development.

Policies for economic activities, not industries

The shift towards more industrially focused international investment strategies on the part of MNEs suggests that government investment promotion and facilitation policies should likewise take a more focused approach than attracting entire industries. Conversely, governments need to remain mindful of the dangers of incentive wars. Although different parts of GVCs can be described as generating more value than others, investing in infrastructure and human resource development will bring more sustainable, longer-term benefits from GVCs than offering incentives for international investment. OECD (2011) discusses how GVCs have changed policies to attract international investment across countries.

Governments also need to recognise the fluid nature of international investment in GVCs. International investment has been an integral part of the growth of international investment in GVCs, not simply the result of cyclical downturns. From an investment promotion and facilitation perspective, this fluidity underscores the importance of after-care services for investors once they have made an initial investment. A significant proportion of international investment takes the form of “follow-on” investments to build up an initial investment project once it proves valuable to the firm.

Given the broad welfare implications of GVCs, governance issues matter

Large MNEs, including in some cases SOEs, have become prominent players in certain upstream parts of GVCs through international investment. This has given rise to policy concerns about the effects on competition and markets further downstream. More generally, given the broad welfare implications of GVCs, governments and other stakeholders need to remain mindful of their respective roles and responsibilities with respect to the governance of GVCs.

Different governance structures of GVCs will require different policy and regulatory approaches. They also have implications for the distribution of the benefits associated with GVCs, especially for developing countries. As Gereffi et al. (2005) put it, “the governance of global value chains is essential for understanding how firms in developing countries can gain access to global markets, what the benefits of access and the risks of exclusion might be, and how the net gains from participation in global value chains might be increased”.

GVCs can be a channel for responsible business conduct

On a related topic, GVCs can serve as a channel for best practices with respect to responsible business conduct, including on environmental issues. Indeed, to the extent that MNEs have become sensitised to the negative impact of non-responsible behaviour (or even association with non-responsible behaviour), suppliers, and perhaps even countries, that do not live up to societal expectations might find it difficult to participate in certain GVCs. The OECD Guidelines for Multinational Enterprises and the OECD Due

Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas are examples of policy instruments that specifically address the issue of promoting responsible business through GVCs (Box 4.1).

Box 4.1. Reducing emissions through the supply chain: General Motors in China

General Motors took part in and supported a pilot project (the China Greening Supply Chain Pilot Project), involving eight top-level suppliers. The project was implemented by Shanghai General Motors (SGM) and the World Environment Center (WEC). After a short training course, suppliers were able to identify actions and investments that ultimately resulted in a combination of net financial savings and improved environmental performance, including: replacing electric-powered utilities with wind-powered utilities; eliminating or reducing electric lighting by installing transparent roofing and walls, dimmer switches and lower wattage lighting; eliminating leaks in air and water systems; reducing the need for emergency deliveries and the energy necessary to complete them; and installing sensors on conveyor belts that turn off power when no parts are present. These improvements, among others, resulted in net savings of over USD 200 000 and the reduction of over 1 800 tons of CO₂, as well as important savings in water consumption.

Source: World Environment Center, www.wec.org/programs-initiatives/capacity-building from OECD (2010), *Transition to a Low-Carbon Economy: Public Goals and Corporate Practices*, OECD Publishing. doi: [10.1787/9789264090231-en](https://doi.org/10.1787/9789264090231-en).

Where is international investment in GVCs creating value?

More analysis is needed to explore the creation and appropriation of income in the context of GVCs, including the role that income from knowledge-based capital plays in GVCs (e.g. income from royalties, licensing and other knowledge-based assets). Such analysis could develop more accurate measures of where international investment actually goes and how it is being financed in order to gain a better understanding of where and how it is creating value (see also Chapters 2 and 7).

Notes

1. For a comprehensive review of this literature, see Dunning and Lundan (2008).
2. Gereffi et al. (2005) and Moran (2001) provide case study analysis of different governance structures of GVCs involving international investment in different industries. Gereffi et al. identify five types of GVC governance: hierarchy, captive, relational, modular and market.
3. The data cover ten industries: chemicals, consumer products, automotive, food and beverage, telecommunications, computers and electronics, machinery, oil and gas, transport, and utilities and energy.
4. Employment is an obvious exception to this generalisation, but its share has also grown.

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