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Abstract

Global Value Chains (GVCs) started to play an increasing and key role in the global economy from the 1990s on. The market mechanism in GVCs supports industrialisation in the Global South and under certain conditions product and process upgrading. But GVCs do not lead to the catching-up of countries in the sense of them approaching real GDP per capita levels comparable with developed countries. These arguments are supported by a critical interpretation of the traditional trade theory, the New Trade Theory and specific approaches to explain GVCs, especially different governance structures and power relationships. Several case studies support these arguments. For catching-up, countries need comprehensive horizontal and vertical industrial policy and policies for social coherence. The small number of countries which managed to catch up did this in different variations.

Keywords: Global Value Chains, Under-development, Rent-seeking, Industrial Policy

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I**ntroduction**

The early movers in capitalist development still belong to the top group of industrial countries today, known as the Global North in comparison to the Global South. Before World War I some countries, especially the United States, were able to join this leading group. After World War II until today only a small group of countries managed to initiate a catching-up process. Examples are Japan in the 1950s and 1960s, later South Korea and other Asian Tigers. A very rough indicator of catching up is the development of real GDP per capita in a country in relation to real GDP per capita of the US. From the 1960s until today India, Pakistan or Bangladesh have remained at levels of around or below 10 per cent of US per capita GDP. Latin American countries stagnated at levels of 40 per cent or lower. The majority of African countries stagnated below 10 per cent of US GDP per capita; South Africa started with the highest level at around 40 per cent in the 1960s and fell over the decades to substantially lower levels. Some Asian countries, as mentioned, were able to reach real GDP per capita levels comparable to the US; Singapore was even able to overtake the US. China is the prime example for reducing the GDP per capita gab with the US (Herr 2018; Pen World Table 2019).

There are great hopes that the spread of global value chains (GVCs) and foreign direct investment (FDI) especially from the 1990s on has been helping countries in the Global South to catch up to GDP per capita levels of the Global North. This contribution discusses whether or not these hopes are justified. The key question asked is whether *market forces* lead to catching-up or whether massive government interventions are needed to reach this goal. Traditional trade theories based on absolute and comparative advantages contribute to the understanding of GVCs. The same is the case for trade theories based on economies of scale (including economies of scope). But to understand GVCs the analysis has to go beyond these approaches and has to include the specific features of GVCs.

In section two the traditional approaches of comparative and absolute advantages are discussed. Section three discusses relevant elements of the new trade theory, especially the introduction economies of scale and product diversification. Section four focuses on the analysis of GVCs. In this section it is analysed which traditional models can be used to analyse GVCs and which new concepts have to be added to understand GVCs. Section five presents case studies of economic and social upgrading. Section six concludes.

1. Comparative and absolute advantages

The model of comparative advantages goes back to David Ricardo (1817) who correctly analysed the kind of international distribution of labour the market mechanism leads to under free trade. We share this part of the model, but reject the argument that free trade in all circumstances leads to an increase of the welfare of nations. Free trade can undermine the welfare hypothesis of the model of comparative advantages, especially under long-term considerations.

Suppose a comparison of a country named South and a country named North, respectively producing cloth and computers. South is inferior in the production of all tradable goods (always including tradable services). If the inferiority is bigger in the production of computers than in cloth, the South will concentrate on the production of cloth. North has the biggest advantage in the production of computers, so it produces the latter.[1] The transition from autarchy to free trade allows that the same worldwide input of labour increases world output. Thus, free trade increases the welfare of nations. The reason for the welfare gains is based on the effect that the consumers in the inferior country benefit from the high productivity of the more developed country and the consumers in the developed country benefit from the high quantity of cloth they can exchange against one computer. However, it cannot be excluded that under free trade South falls back to a lower productivity compared to the situation before free trade. South may lose the computer production which was for South a high-tech production with a much higher productivity than in the cloth production. The neoclassical Heckscher (1919)-Ohlin (1933) model bases comparative advantages on different stocks of capital per worker and assumes the same technological knowledge in all countries in the world. We assume that North has a higher capital stock per worker than South and the production of computers is relative capital incentive. Then North will have a comparative advantage to produce the capital-intensive computers and South the labour-intensive cloth. Also it can be assumed that, compared to South, North has a more skilled labour force. In this case North concentrates on the production with the need of more skilled labour, computers, and South on the production which needs relatively less skilled labour, cloth.

In short: The model of comparative advantages tells us that North concentrates on high-tech-high-skill-capital-intensive goods and South on low-tech-low-skills-labour-intensive goods. This is the outcome of market forces. Assuming no international capital flows and an exchange rate which leads to a situation in which no industry in South is competitive, the demand from consumers and firms from South for imports from North leads to a real depreciation of the currency of South until the first industry in South becomes competitive. This will be cloth which than can be exported for imported computers from North. The exchange rate protects the inferior country from the competition of the superior country

[1] It should be noticed that no welfare gains are possible if the disadvantage of the inferior country is the same in all productions.

and in the absence of capital flows the current account will be balanced by definition. In this model implicitly constant returns to scale are allowed. This assumption reproduces competitive markets as the size of firms does not influence production costs. As soon as higher than normal profits are earned new firms will enter the market, increase supply and bring prices and profits down. Rent-seeking under this assumption at least in the long-term is not possible.

Free trade has far reaching *distributional effects*.[2] For example, compared to the situation before free trade, the higher production of computers leads in North to increasing demand for skilled workers and decreases demand for unskilled workers. If there are no labour market institutions which control and moderate this development wages of high-skilled workers in North increase and wages of low-skilled workers will decrease. In South the demand for skilled workers will decrease and unskilled workers will benefit from the increase of cloth production (Stolper / Samuelson 1941). However, as long as there is excess labour in developing countries in rural areas or city-slums, wages for unskilled workers will not increase (Lewis 1954). Distributional effects make it even in mainstream models difficult to argue without qualification that free trade is welfare increasing. Following basics of neoclassical welfare economics, a comparison of welfare between individuals is not possible (Pareto 1906). It is open whether the reduction of welfare of lower paid engineers in South and unskilled workers in North is lower than the benefit of the high-skilled worker in North or low-skilled workers in South. To solve this problem a "trick" is used. It is assumed that that the winners in each country will completely compensate the losers. In the case of low-skilled workers in North it follows: "Thus, the issue of whether globalisation is welfare enhancing comes back to the question … is it possible to ensure, either through redistributive taxes or changes in institutions/rules, that workers are not made worse off." (Korinek / Stiglitz 2017: 17) The big question is whether the losers are strong enough to lobby for compensation. In many or even most cases losers are not able to change rules and institutions or successfully lobby for redistributive taxes and social policy. The US' fundamental change in income distribution is a good example that losers are not compensated by winners (Piketty 2014). The unqualified believe in free trade as welfare enhancing unmasks itself as pure ideology.[3]

Models of comparative advantages usually assume full employment. Behind this argument stands Say's Law which implies that in flexible markets the supply side creates automatically sufficient demand to guarantee full employment. From a Keynesian point of view Say's law does not hold. A jump in efficiency, for example caused by international trade, not combined with sufficient demand can lead to higher unemployment. Export-led growth with

[2] Technological developments or institutional changes in labour markers have distributional effects as well.

[3] A further problem is that it may take a long time to solve the structural changes caused by trade. Unskilled workers in the cloth sector in North may have problems to switch to the computer sector. The same may happen to capital; machines to produce cloth in North cannot be easily used to produce computers. In South, for example, the extinct computer industry leaves unemployed experts which may be reluctant to work as cloth workers.

current account surpluses can become a strategy of countries to increase domestic demand and employment at the cost of other countries. But to allow such beggar-my-neighbour policies capital flows must be allowed as current account surpluses are combined with net capital exports. A country which integrates further into the global economy and is confronted with high capital inflows is pushed in a constellation of current account deficits and can suffer from increasing unemployment as domestic production is substituted by imports.

But the key question in our context of economic development is: is it advantageous for the long-term development of South to have free trade and concentrate on the production of low-tech-low-skill-labour-intensive goods even if the world as a whole benefits? Friedrich List was one of the first authors arguing that free trade would kick away the ladder of development for less developed countries.[4] "I perceived that the popular theory took no account of nations, but simply of the entire human race …. I saw clearly that free competition between two nations … can only be mutually beneficial in case both of them are in a nearly equal position of industrial development, and that any nation which owing to misfortunes is behind others in industry, commerce, and navigation ... must first of all strengthen her own individual powers, in order to fit herself to enter into free competition with more advanced nations" (List 1885: xxvi). Under a dynamic perspective the distribution of global production under free trade concentrates all the important learning effects and skilling, the research in the field of leading technologies and the development of future leading industries in North. South is stuck in a structure of productions which prevents a dynamic development. Free trade becomes a recipe for the reproduction of underdevelopment.

In case of absolute advantages the potential positive effects of free trade are obvious. If Switzerland exchanges with Costa Rica mountain holidays against pineapples both will benefit. Countries in the Global South in many cases have absolute and / or comparative advantages in the export of natural resources. Traditionally these countries concentrated their exports on primary products, from reproducible ones such as coffee, bananas or cotton to non-reproducible ones such as oil or rare earths.

The production and export of reproducible natural resources has many similarities with the export of low-tech-low-skill-labour-intensive manufacturing goods. All these productions do not belong to the dynamic and innovative industries at the front of technological development. After World War II the Latin American economists Hans Singer (1949) and Raul Prebisch (1950) argued correctly that the concentration of exports on primary commodities involves a number of negative effects. The income elasticity for primary

[4] Friedrich List was influenced by Alexander Hamilton. When Georg Washington became US-president in 1789 he appointed Alexander Hamilton to the federal government Treasury Secretary. In 1791 Hamilton presented an 11-point plan to build American manufacturing, which was later largely accepted by Congress. The United States were able to catch-up under a regime of heavy protectionist measures and support for the domestic industry.

products is low compared to manufacturing products as most of these exports contain inferior goods whose demands do not increase much with increasing income. In addition these goods are sold in competitive markets without much room to increase prices; exporters are even confronted with demand oligopolies for their products. Lastly productivity increases to produce reproducible natural resources lead to falling prices and mainly benefit industrial countries. In contrast, industrial production involves the permanent development of new products with the potential to earn high profits. Singer and Prebisch assumed that as a result of the distribution of labour under absolute and comparative advantages under free trade it would be difficult for the Global South to industrialise. The consequence would be a secular erosion of the terms of trade[5] for countries in the Global South with higher welfare gains for the Global North.

Oil, gas and some rare earths realised from the 1970s on partly very high price hikes. In many cases at least in real terms these prices dropped again to relatively low levels, increased again substantially and overall remained volatile (Evans / Herr 2016). Countries with large reserves of non-reproducible resources have an absolute or comparative advantage to export these resources. The market mechanism will lead to a partly extreme concentration of exports in the field of natural resources. Many countries with such an export structure, from Venezuela and Russia to Nigeria and the Islamic Republic of Iran, were not able to trigger a successful industrial development. Other countries like Saudi-Arabia, usually with a low population, use large amounts of money earned to build an industrial base or become financial centres.

The overall very poor development of natural resource rich countries became known as "Dutch disease". In the 1950s the Netherlands discovered offshore oil and gas. This led to an unexpectedly poor industrial development during the following decade. The main cause for this was a real appreciation of the Dutch currency which made domestic industrial products internationally less competitive. The market led to the result one could expect. The Netherlands started to increase its exports in natural resources and imported more manufacturing products leading to a shrinking of the industrial sector. The country suffered form an overvaluation of the exchange rate for the industrial sector even if it realised overall current account surpluses. Also employment performance was poor as the extraction and export of natural resources is less labour intensive than manufacturing production (Corden /Neary1982).

There are more negative effects. Natural resources prices are highly volatile. The main reason for this is a relatively low price elasticity of supply. In addition natural resources came under the control of cartels, as well as becoming subject to speculation in futures markets. The volatility of natural resource prices creates shocks, especially for the countries

[5] Terms of trade are defined as the number of foreign goods a country can get for a given quantity of export goods. An improvement of terms of trade implies that a country gets more imported goods for the same quantity of export goods.

exporting natural resources. Finally, natural resource richness stimulates rent-seeking of domestic elites and foreign companies, which leads to the so-called “resource curse”, which hinders development as well (see Humphreys et al. 2007).

2. External and internal economies of scale

External economies of scale were already analysed by Alfred Marshall (1920). They are based on the interrelation of specialised firms for specific productions, a more specialised and qualified workforce, joint utilisation of infrastructure and knowledge, cooperation and trust among firms, personal contacts between researches and managers, and so on. In short, there are positive external effects, synergy and network effects and possibilities to reduce information and transaction costs. As soon as external economies of scale exist regional and / or industrial clusters develop. The explanation is that production costs in such clusters are smaller and their innovative power is higher than outside such clusters. Economic dynamic is concentrated in clusters which become stronger and stronger and the market mechanism leaves regions and whole countries without such clusters behind.

In almost all important industries internal economies of scale also exist. This means that big companies can produce more efficiently than small companies. There are many arguments for this. For example, due to indivisibilities a certain technology, let us say an assembly belt, is only applicable when a high quantity is produced. Indivisibilities also exist in research or branding. In the cases of Facebook or Twitter strong network effects lead to high economies of scale. According to the square-tube law a big factory building needs less building material as many small ones with the same capacity, etc. In the case of internal economies of scale, low average costs and thus low selling prices can only be achieved if high volumes are produced. Incumbent firms in such markets are protected by high entry barriers of new firms. To become competitive, new firms would have to jump immediately to very high production volumes which involve huge amounts of capital. In addition, a new company may need a long learning time to manage production. Last but not least incumbent firms can discourage the entry of new companies in the market by temporarily reducing prices. Markets with internal economies of scale endogenously develop oligopolistic or even monopolistic structures. Oligopolies and monopolies can and will use their market power for rent-seeking via creating cartels, adhering to the price leadership of one firm, competing with non-price measures etc., as means to realise extra profits.

The neoclassical paradigm avoids economies of scale like the plague. The reason is among other things that they destroy endogenously pure competition, the General Equilibrium Model in the tradition of Leon Walras and the Pareto-optimality of markets. Economies of scale challenge the neoclassical conclusions concerning free trade in a fundamental way.

Let us start with external economies of scale and at the same time assume constant returns of scale for all individual firms and product differentiation. Such models of monopolistic competition are attractive and can be found in many textbooks as they lead only to normal

profits of firms and avoid the analyses of cumbersome and welfare-reducing rent-seeking among firms (see Krugman 1979 who substantially shaped the New Trade Theory). Positive external economies explain that if by historical circumstances or by chance, clusters for mechanical engineering developed in one country (e.g. Germany) and software development in another (Silicon Valley, USA), the two countries exchange machines against software. Due to product differentiation there might be a cluster for sports cars in a different country as for family cars. In this case international trade within the same industry can be explained. There is doubt; under external economies of scale international trade can increase the efficiency of production as it allows a better exploitation of the economies.

But what does this mean if clusters developed in all industries in North, but there was no industrial development in South? Under such conditions the market leads to a structure of international trade in which South exports goods with no (strong) external economies of scale (besides natural resources). Examples of this may be tourism or traditional carpets or embroideries. The force of the market leads to the result that industries with strong external economies of scale remain concentrated in developed countries. Even assuming a certain level of technological knowledge, clusters become more productive when they grow. But the real disaster for the Global South is that, under a dynamic perspective, such clusters are much more efficient at creating new innovation including new technologies and new products than productions outside such clusters. Paul Krugman (1981) developed a model in which developed countries by chance first could exploit external economies of scale. He showed that based on this assumption an uneven development starts with a low real GDP per capita growth in the Global South and high GDP per capita growth in Global North. The different developments are based on different productivity developments in the South and North. The model leads by endogenous forces to increasing differences of per capita living standards between North and South.

Oligopolies and monopolies are, if not created by the state, the result of internal economies of scale. In the area of tradable goods historically big companies were first established in developed countries. This implies that even under the condition of the same technological and managerial knowledge of all companies in the world the Global South has no chance entering industries with high internal economies of scale. Economies of scale can violate the law of comparative advantage. Even if South was able to produce a product with economies of scale cheaper than in North, economies of scale can prevent the formation of a company in the South producing this good.

There is one important additional point. Under a dynamic perspective it is very likely that oligopolies or monopolies are the most innovative companies – aside from governments in developed countries which have more means to support research of their companies. Also innovation of smaller firms can be bought by oligopolies, in many cases together with the whole firm. Technological leadership creates a very powerful source of monopolistic position. The TRIPS (Agreement on Trade Related Aspects of Intellectual Property Rights)

which became effective in 1995 together with the World Trade Organisation hardened the patent law and intellectual property rights, and in this way strengthened the monopoly power of firms. The pendulum between knowledge as a public good which should be allowed to be used by everybody and a private good which is owned by the firm developing an innovation swung much too far in the direction of a private good (Stiglitz 2006). This makes it much harder for companies in the Global South today than in the past to imitate existing technologies.

Forbes Global 2000 uses an index based on sales, profits, assets and market value to find the 2000 world biggest companies in the world. From these 525 came from the USA, 301 from China (including 58 from Hong Kong), 93 from the UK, 67 from South Korea, 58 from India, 57 from France, and 54 from Germany (Stoller 2018).[6] The high number of Chinese companies within the biggest 2000 companies in the world can be explained by state ownership and / or substantial government support and protection. Also the big companies in Asia Tiger countries like South Korea or Taiwan are to a large extent the result of past government protection and support.

Oligopolies and monopolies in North can exploit their market power to set the prices for their products. For new products introduced in the market high prices can be achieved. Rent-seeking allows these companies to earn much above average profit rates. It seems that rent-seeking possibilities have never been so widespread in developed countries before. They contributed substantially to the increasing inequality of income distribution and wealth concentration in developed countries (Stiglitz 2012; Piketty 2014). The increasing role of multinational companies (MNC) is part of the type of capitalism which developed from the 1980s on when the more regulated type of capitalism in the tradition of the New Deal was transformed in a more neoliberal one (Dullien et al. 2011) Colin Crouch (2016 :3) correctly named the new type of liberalism “corporate liberalism” which is very much distinct from the classical liberalism which stressed competition and saw rent-seeking as violating the rule of the market.

Rent-seeking based on economies of scale or technological leadership does not only harm consumers and smaller firms in the Global North. It is also harmful for the Global South which has to pay higher prices and accept a further erosion of its terms of trade. External and internal economies of scale and technological leadership support each other and create barriers for catching-up.

[6] The list is followed by Taiwan 47, Australia 39, Sweden 27, Italy 26, Russia 25, Netherlands 22, and Switzerland 21. In many developing countries there is no company among the biggest 2000, in others only one or a very small number (Stoller 2018).

3. The analysis of GVCs

Tasks and the smile curve

In GVCs the production process is split into different tasks. These tasks are then allocated all over the world by a lead firm. Organisers of GVCs or lead firms are mainly MNCs as the management of a GVC requires management skills and firm-based institutions which are difficult to achieve by small companies. In the 1980s and 1990s several elements came together. Firstly, if transportation costs are high production stages are performed in close proximity. The revolution in transportation technology, for example container technology, cut production costs substantially and allowed geographically dispersed production. Second, coordination is in many areas of production of key importance. Proximity lowers coordination costs. The revolution in information technology reduced coordination costs substantially and allowed a geographical dispersion of production (Baldwin 2013). Thirdly, GVCs became possible after the deregulation of international financial markets, international capital flows and further deregulation of international trade after the success of the conservative revolution in the 1970s and 1980s (Dullien et al. 2011).

Trade in GVCs has been increasing sharply during the last decades. Today more than two-thirds of world trade occurs through GVCs (Dollar 2019: 1). Goods cross at least one border and typically several borders before the final assembly takes place. Already in 1999 UNCTAD (1999: 232) extrapolated form U.S. data that multinational firms "would account for two-thirds to three-quarters of world exports, and more than a third of world exports would be between affiliated firms."

The geographical dispersion of tasks depends on comparative advantages and economies of scale. According to these two criteria, production can be specialised horizontally and vertically. In the case of horizontal specialisation firms outsource to specialised firms which can perform tasks better than the own firm because of technological leadership or economies of scale. Horizontal specialisation within one sector within the Global North can be very intensive and is a key argument to explain trade between similar countries. The Boeing 787 "Dreamliner" is a good example of a horizontal supply chain, with various components manufactured in the UK, France, Sweden, Japan, Canada, Italy, South Korea and elsewhere before being assembled in the US (GHY 2015). In the case of vertical specialisation in GVCs the cut of costs is in the centre, especially the costs for wages including the standard and enforcement of labour rights.[7] In what follows we concentrate on vertical GVCs.

According to traditional trade theory developing countries have a comparative advantage in low-tech and low-skilled tasks, while developed countries have a comparative advantage in high-tech and high-skilled tasks (Feenstra 2010). For example, in garment production, countries like Bangladesh or Vietnam take over low-tech-low-skilled tasks, such as trimming

[7] Also costs for ecological protection, real estate or taxes play a role.

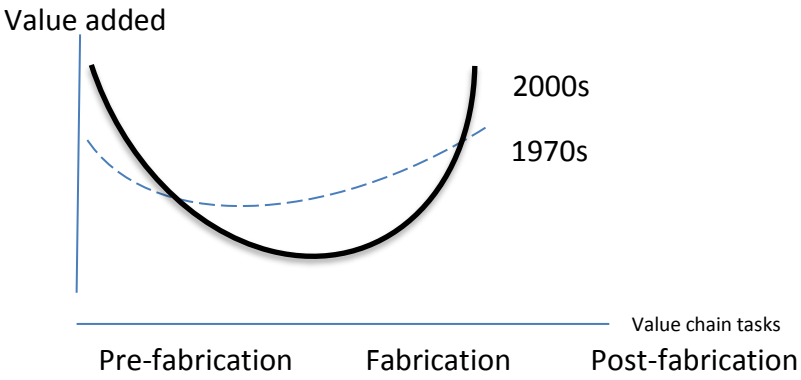
and cutting, whereas high-value activities like design, research for new material, branding, or logistics are taken over by lead firms and big intermediate traders. Low-value tasks are mainly transferred to the Global South which has a comparative advantage in this area. In the 1990s together with the rise of GVCs the corresponding management strategy became popular. The firm should concentrate on tasks in which the firm is superior in and which create high value; and it should outsource tasks with relatively low-value creation (Porter 1985; Prahalad / Hamel 1990). The old strategy of management to build up a big firm with increasing production and many employees, accompanied by a moderate profit rate was substituted by the strategy to increase shareholder value and maximise profit rates whatever the costs.

In the framework of comparative advantages, developing countries now do not only produce low-tech-low-skill-labour-intensive goods as in traditional trade, they produce the low-tech-low-skill-labour-intensive tasks in the production of *all* goods and lose any types of production that are ambitious technologically or from a skill perspective. In our example of computer and cloth production, South takes over the low-tech-low-skill manufacturing stage in the production of computers *and* cloth whereas design, research, branding, marketing and other high-tech-high-skilled tasks for all goods are produced in lead firms in developed countries.

The resulting distribution of tasks according to comparative advantages can be shown in the so called "smile curve" designed by Stan Shih (1996) (see Figure 1). According to this curve, the upstream and downstream part of the value chain is characterised by higher value adding tasks compared with fabrication tasks. Pre-fabrication tasks are typically research and development, design, logistics; post-fabrication tasks are typically logistics, marketing and services. Developing countries have a comparative advantage in fabrication; developed countries especially in research and development, design or marketing. [8] Services are an integrated and important part of GVCs and the smile curve including transportation, banking, insurance, IT services or after sales services (Low 2013). Services can make the simile curve more complicated. For example part of the services in the pre- or post-fabrication stage can be shifted to the Global South, such as part of bookkeeping or call centres. Services are tasks which can be analysed with same analytical tools as other tasks in GVCs.

[8] There exception to this. For example in the precision metal industry or machine building industry also in the fabrication stage value added is high. Also the smile curve does not show how much absolute value in the different production stages of a good are earned. Examples are given below.

Figure 1: The smile curve



Source: Author's illustration based on OECD (2013)

Economies of scale also play a role. For example, in many countries of the Global South with bigger domestic markets big multinational car producers built assemblers whereas around them a cluster with supplier firms developed exploiting external economics of scale. Very small firms in vertical GVCs only survive on the basis of very low wages or self-exploitation. Internal economies of scale result in bigger firms in GVCs also in the Global South.

Lead firms can establish own firms in the Global South in form of FDI or they can use subcontracting to legally independent firms to shift tasks to low cost countries. The decision between FDI and subcontracting depends on a number of factors. If there are no suitable firms in the Global South because of technological standards and /or size of firms, a lead firm may chose FDI to start the production of low-value creating activities in a developing country. GVCs can also take the form that big intermediate firms invest massively in form of FDI in the Global South. For example, in the electronics industry Samsung uses FDI in developing countries to produce its products. Apple and other firms use the Taiwanese company Foxconn as a supplier and Foxconn holds many FDI firms in developing countries. In the garment sector technological standards and economies of scale are not as high as in electronics. In this sector subcontracting by big retailers or fashion brands is more common. The advantage of subcontracting is that lead firms become more flexible and can shift the risk of demand volatility to their suppliers.

FDI exploded together with the increasing importance of GVCs. Worldwide net FDI inflows in per cent of world GDP until the mid-1980s were almost zero. Then net FDI flows jumped until 2000 to 4.3 per cent of world GDP, dropped for some years and increased until 2007 to 5.4 per cent of world GDP. After 2007 world net FDI inflows were volatile and dropped 2018 to 1.2 per cent of world GDP. Net FDI inflows in low- and middle-income countries were until the mid-1980s close to zero per cent of the GDP of these countries. Net FDI inflows increased to 2.6 per cent in 2000, reached their maximum in 2013 with 2.6 per cent and dropped until 2018 to 1.5 per cent of the GDP of this country group (World Bank 2019).

These figures show the enormous increase of FDI flows globally and also in countries of the Global South.

Governance structures and value grabbing

Traditional theory of comparative advantages and economies of scale are insufficient to understand GVCs. The main reason is that in GVCs specific and asymmetric governance structures exist which create positive effects for developing countries, but also negative ones. The seminal classification of governance in GVCs goes back to Gereffi et al. (2005). *Market relationships* which are most likely to exist when tasks are easily codified, product specifications are relatively simple, suppliers can take over the task with little input from buyers and asset specificity is not important. *Modular relationships* exist when a supplier is able to deliver full packages and modules. This implies the exchange of complex information with the buyer. *Relational relationships* exist when product specifications cannot be codified, transactions are complex and tacit knowledge must be exchanged. *Captive relationships* dominate when capabilities of suppliers are relatively low and intervention and control of task producers by lead firms are high. Captive suppliers usually take over a narrow range of tasks. *Hierarchical relationships* exist when product specifications cannot be sufficiently codified and no competent suppliers can be found to deliver the task cheaply and well. In this case the lead firm choses in-house production in the form of FDI. Depending on the industry and the specific lead firms' strategies, one can usually find several governance types even in one GVC. For example, in the garment sector a big retailer may buy products from a big intermediary which has modular relationships with several bigger suppliers whereas these suppliers have captive relationships with their supplies.

The classification by Gereffi et al. (2005) is not identical with the type of markets buyers and sellers interact in GVCs. The type of market determines to which extent firms can successfully follow rent-seeking strategies respectively value grapping in GVCs. Typical for the integration of the Global South in GVCs are monopsony or oligopsony structures (Milberg / Winkler 2013). This means that many suppliers in GVCs act in an environment of hyper-competition and are confronted with oligopolistic or monopolistic lead firms or big intermediaries from the demand side. In case of captive governance this is obvious as in this case supplies are to a large extent dependent from their buyers. But also in relational and modular governance structures suppliers can be in a monopsony or oligopsony structure. For example, suppliers of simple modular garment products which can be produced worldwide by a great number of firms are confronted with a small group of firms on the demand side. Duopolistic tendencies can exist between lead firms and first tier suppliers, for example between original equipment suppliers and lead firms in the automotive industry.

A monopsony does not need to have a strong position in its own selling market. It can sell its good even under pure competition and still can make an extra profit. Of course in many cases lead firms sell their product in oligopolistic market. Oligopolies have different strategies in order to avoid competition with each other. They can create a cartel; they can

follow without any personal interaction a market leader which determines price development; or they can avoid price wars by competing with real or artificial product differentiation. The typical lead firm in a GVC is in an oligopsony position and can earn rents through its buying *and* selling markets. Such firms are in a true paradise for rent-seeking.

Power asymmetries in GVCs lead to value grabbing which can take two forms. In cases of subcontracting lead firms or big first tier or even second or third tier firms can dictate the price for the task of their suppliers. They will set the price for inputs to a level which minimises or completely destroys profits of suppliers. Suppliers are under permanent pressure to cut costs. Suppliers will try to use better technology, cut wages, downgrade working conditions and ecological standards, and so on. It does not require much imagination, to comprehend that in a typical developing country with weak institutions GVCs easily lead to business practices which hinder or even prevent social upgrading. For example, in the garment industry the prices of tasks permanently decrease as the result of a race to the bottom with bad working conditions and violation of workers' rights (Anner 2015).

In the case of FDI firms large parts of profits will be transferred to lead firms abroad. For this purpose lead firms can set the selling price of their subsidiary to the level they want and in this way transfer profits. Or they can openly transfer profits. Profit outflows of FDI firms from low- and middle-income countries were until the mid-1990s very small (e.g. $17 trillion in 1994). Then it jumped to $363 trillion in 2011, but dropped to $297 trillion in 2017 (World Bank 2019).

Overall the smile curve in Figure 1 has deepened over the decades. The explanation can be found in increasingly shifting simple tasks to low-wage countries. If lead firms at the same time transfer advanced technology to the Global South to let this tasks produced costs can be massively reduced and with it value creation in the Global South (OECD 2013: 213f.). In addition asymmetric power relationships leave low profits in countries of the Global South and at the same time create high pressure to keep wages low.

To give some examples for the unequal distribution of value creation: A suit made in China and sold in the US has the following cost structure: Manufacturing costs are 9 per cent, the remaining 91 per cent are services (retail, logistics, banking etc.), intellectual property rights, profits and some unknown costs). Overall 86 per cent of the price of the suit is earned in the US (Low 2013). The parts to produce a Nokia95 phone were 33 per cent of the price and assembly only 2 per cent. The remaining percentages accounted for Nokia's internal support like services (31 per cent), licenses (4 per cent), distribution (4 per cent), retailing (11 per cent) and operating profit (16 per cent) (Ali-Yrkkö et al. 2011). From Apple's iPhone selling price, Chinese labour costs are 2 per cent, other input costs for material from China 22 per cent, costs of labour from other countries 3 per cent, Apple's profit 58 per cent; the rest is mainly profit earned in other countries (Kraemer et al. 2011).

It should be obvious that low prices for tasks and profit outflows dampen investment as domestic firms lack profits which could be invested. This effect should not be underestimated as in the Global South financial markets are typically distorted with a lack credit supply and high interest rates. Also consumption demand in the Global South suffers from value grabbing.

Economic and social upgrading

GVCs allowed the Global South to industrialise more easily than expected by the approaches of comparative advantages and economies of scale. In 1970 the "headquarter economies" (G7 economies) had a share of world industrial production of over 70 per cent, this went down below 50 per cent before the Great Recession in 2009. China and South Korea increased their share from 4 per cent in 1990 to 17 per cent in 2009. Five other countries from the Global South could increase their share from 3 per cent to 5 per cent across the same period. The rest of the world stagnated at a percentage slightly below 30 per cent from the 1970s until 2009 (Baldwin 2011: 23). This shows that the wave of industrialisation in the Global South became concentrated in a very small number of countries, especially in China and South Korea. China and South Korea are countries with heavy government intervention to support industrialisation and economic upgrading.

GVCs led to industrialisation because it is easier to produce a simple task in a fabrication stage than to produce a whole industrial product. Also the classification of GVCs by Gereffi et al. (2005) makes clear that in the typical GVC a more or less intensive interaction between lead firms and firms in lower tiers of GVCs exists which potentially leads to the transfer of technology and skills. Even in case of captive relationships lead firms have a high interest that suppliers produce with a high quality and have self-interest to provide certain technology and skills to suppliers. Supported was industrialisation by FDI from the Global North which built big manufacturing plants in the Global South to cut costs and at the same time exploit economies of scale. For domestic companies in the South in many cases it would have been difficult to raise the capital needed for such productions, apart from the lack of management skills, export channels and risk of such big investments. There is no doubt that via FDI GVCs led to a transfer of technology and skills. However, a key question is whether GVCs help the Global South to catch up to GDP per capita levels of the industrialised world or whether the market mechanism keeps the countries in the Global South for ever in second class position.

To discuss this question it is useful to follow the different types of economic upgrading in GVCs differentiated by Humphrey and Schmitz (2002). They distinguish between product upgrading (produce a task with a higher quality), process upgrading (use a better technology to produce a task), functional upgrading (take over higher value-creating functions in a GVC) and inter-sectoral upgrading (start production in related or new industries).

In the case of captive or relational governance lead firms most likely share knowledge and transfer skills to their suppliers. An example is when global shoe brands give detailed description and guidelines to suppliers for the fabrication of sneakers. Lead firms have a high interest in the quality of the product being high and in some cases consumers demand the fulfilment of certain ecological or social standards. In subcontracting relations product upgrading can be considered as frequent and in some cases even process upgrading can be expected. The biggest hopes for technology and skill transfers are in the area of FDI. It is very likely that a lead firm will transfer technology and skills in the field of product and process upgrading to its subsidiaries in the Global South. Even the newest technology may be transferred to produce simple tasks in the subsidiary. But a lead firm has no interest that a supplier takes over high-value adding functions in GVCs because these belong to the core-competence of the lead firm itself. In addition, conditions for research, developing new products, design, branding, etc. are usually much better in the home country of the MNC in which it is integrated in highly efficient economic clusters. Analysing the incentives of different actors in GVCs the conclusion is that product and process upgrading is likely, but functional and inter-sectoral upgrading unlikely (Humphrey / Schmitz 2002).

Alice Amsden (2001: 207) found that transnational companies invest virtually nothing in local research and development in the Global South. Lead firms defend their technological superiority. Such a strategy is from the firm perspective rational as it supports rent-seeking also in the future. The successful catching-up of Asian countries and the lack of substantial catching-up in Latin America can to a large extent be explained by the different ownership structure. In Latin America big firms are usually owned by FDI firms, whereas in Asia states supported domestically owned firms and tried to create national champions (Shapiro 2007). In a new study Gale Raj-Reichert (2019) found for the Malayan electronic industry that its excessive reliance on FDI, particularly contract manufacturers, is the reason for the industries inability to upgrade, and this substantially contributed to the middle-income trap Malaysia seems to have been in since the early 2000s. It seems that the higher the dependence of the supplier from the lead firm is, especially in case of captive and relational governance and FDI, the less likely functional and inter-sectoral upgrading becomes.

A further problem is that FDI and subcontracting of lead firms remain isolated. In the extreme all material inputs are imported, the inputs are processed and the output is exported, without creating backward and / or forward linkages with the domestic economy. In this case the integration of the country in GVCs produces only very small advantages for the whole economy (Hirschman 1958).

Looking at technological spill-overs there is a further drop of bitterness. A lead firm may use the most modern technology in the Global South to produce very simple tasks. Product and especially process upgrading may jump to high levels. However, the negative employment effects may be huge and the skill level to handle this technology might except a very small number of employees be simple as well. Even more important is an effect Bhagwati (1958)

called immiserizing growth. The jump in productivity for an exported good measured in physical units per worker might be so high and the prices of the export good may drop to so low levels because wages do not change much that the country has a substantial higher output but no increase in welfare. All the positive effects of productivity increases can be found abroad.

In traditional trade models unskilled workers in South are the relative winners – if there is no excess supply of labour (see above). GVCs add an argument to the debate about wage dispersion. When tasks are classified from very low-skilled ones to very high-skilled ones, South at a certain point of time takes over certain low-skilled tasks and North certain high-skilled tasks. If South takes over more tasks, in South *and* North the relative demand for skilled workers increases and the unskilled are the relative losers. This is the case because the relatively high-skilled workers in South take over the relatively low-skilled task in North (Feenstra / Taylor 2014: 199ff.). This result fits to the empirical observation that wage dispersion is high or increasing worldwide and in developing countries the more skilled workers benefit from GVCs (see Hollweg 2019). An example of this is the IT-sector in India. Relatively high-skilled workers in India take over the relatively low-skill tasks from the Global North.

A last point is worth mentioning. Economic upgrading as defined as higher productivity and increasing innovative power is the precondition for important elements of social upgrading, for example higher real wages or shorter working time. But there is not automatism. Only under certain conditions economic upgrading is combined with social upgrading. Important for social upgrading is the existence and strength of trade unions, enforced labour laws which limit precarious employment, and policies to prevent too high inequality. A lack of social upgrading can become a hurdle for economic upgrading. Resent research has made clear that high inequality itself becomes a barrier for development. It reduces aggregate demand, creates negative supply conditions like insufficient expenditure for education or health, and also reduces productivity (Berg / Ostry 2017).

Employment effects

A frequent argument is that the integration of a country in GVCs leads to positive employment effects. This happens, for example, when investment demand does not crowd out domestic investment and additional domestic demand is created. The latter is fulfilled when the FDI firm builds a new factory hall with domestic material or a domestically produced machine. If investment goods are imported or if there is only a change in ownership no new demand is created. Another argument is that integration in GVCs increases exports. However, aggregate demand only increases when the integration increases current account surpluses. There is no guarantee for this. Exports of GVCs may increase, but other sectors may realise higher imports and shrink. When we follow the theoretical simplification of Ricardo, Heckscher and Ohlin and assume no international capital flows then the current account of a country is balanced by definition. In these

theoretical approaches unemployment is no problem as full employment is assumed. But we can learn that an increase of exports does not automatically increase employment via higher aggregate demand.

4. **Case studies**

The following case studies about GVCs do not claim to cover all empirical cases and they cannot be generalised. They are selected according to researchers mainly in the Global Labour University network and cover the automobile, garment, electronics and IT sectors in different countries. Three results are reported: a) Which governance structures and power relationships exist in the GVCs? b) Is there functional or inter-sectoral upgrading and a tendency of catching-up in the sector? c) Is there social upgrading? To answer the last questions we ask whether the sector we look at has substantial better wages and working conditions than the rest of the economy.[9]

Automobile sector

The global acting lead firms in the automobile sector come almost completely from the Global North.[10] Based on FDI they produce in all regions of the world. Between lead firms and their first-tier suppliers, so called original equipment manufacturer (OEMs) like the German company Robert Bosch, exists relational governance. The complexity of tasks taken over by these suppliers needs long-term cooperation. First-tier suppliers are MNCs as well which usually locate their production sides close to assembly plants. First-tier suppliers have a number of own suppliers with partly domestic ownership. Governance between first- and second-tier suppliers is relational or captive. Power relationships between lead firms and first-tier suppliers are relatively balanced. Suppliers in second or third tiers are confronted with oligopsony of monopsony structures.

Such typical clusters exist in South Africa and Brazil. After the end of apartheid in 1994 the world leading car manufacturers as well as foreign OEMs settled down in South Africa. In Brazil also automobile clusters were established with foreign lead firms in the centre and foreign OEMs. In the clusters also domestic second- and third-tier suppliers settled down. Both countries were not able to establish own relevant car brands. The consequence is that – very much in line with the smile curve – most of design, research or branding is done in foreign headquarters. Attempts to take over higher value creating tasks by domestic firms failed.

The showcase for the development of a domestic car industry is China. China started in the early 1980s and more intensively in the early 1990s to use FDI to modernize its automotive sector. However, until the end of the 1990s only joint ventures were allowed with no more

[9] The cases are based on the Hans-Böckler Foundation research project mentioned above (see also Dünhaupt et al. 2020).

[10] For South Africa see Mashilo (2019), for Brazil dos Santos et al. (2019), for China Dick and Wu (2014) and Lüthje (2014), for India Jha and Kumar (2019) and Sturgeon and Van Biesbroeck (2010).

than fifty per cent foreign ownership. China joined the WTO in 2001. Before massive local content requirements forced FDI firms to use and technologically develop Chinese first- and second-tier suppliers. China also never gave up to develop own big domestic brands which benefitted massively from know-how and skills-spill-over which could not be prevented by foreign firms. An advantage was that big Chinese car manufacturers were state-owned and could be integrated together with FDI in a long-term oriented industrial policy strategy. The Chinese financial system, which is until today over 90 per cent state owned and channels credits according to industrial policy focuses, has been helpful to this development. Chinese automobile brands so far have not been able to enter the global car market and export Chinese cars, but this cannot be excluded in the future. But Chinese car manufacturers managed domestically to compete with global brands. They seem in a kind of leapfrogging strategy to manage functional and even inter-sectoral upgrading in the field of electro mobility.

With the support of industrial policy and protection from foreign competition India has a long tradition to develop own brands in the car industry. This was successful in the sense that Indian brands dominate in the domestic market. But except in some niche markets in developing countries Indian cars are not exported and globally not competitive. Looking at governance and power relationships between lead firms and the different tiers there is no important difference compared with international praxis.

Social upgrading is very different in the four countries. In Brazil and South Africa strong trade unions and governments enforce labour laws in the sector, real wages, compared with the national standard, are high – highest in the assembly plants of the global brands, lower in the first-tier suppliers and again lower in further tiers. Working conditions and freedom of association is realized. In China the situation is very much differentiated. Overall and compared with other sectors development of real wages is relatively good. In state-owned companies wages and working conditions are relatively good, state trade unions play a social role and a kind of paternalistic corporate governance exists. In private firms, partly also FDI-firms, and first- and second tier suppliers leasing work plays an increasing role dividing the workforce into regular workers and workers in precarious conditions. Freedom of association is not realized in China. Wildcat strikes happened frequently as a kind of substitute for the lack of collective wage bargaining. In India leasing work in the car industry has been exploding the last decades. A large part of the workforce had to accept precarious working conditions. Real wage increases for most of the workers of the sector haven been low and working conditions are bad. Trade unions are politically divided and weak.

Garment

In the garment sector big brands and big retailers almost completely shifted production to the Global South. Due to the relative simple technological standard in the sector subcontracting plays a relatively big role, which shifts the pressure for quick delivery and volatile production volumes to firms in the Global South. Big intermediate firms are

common, however they do not produce themselves. For example Li & Fung, a company from Hong Kong, manages 15000 suppliers from all over the world. Lead firms and big intermediate firms are in a powerful position as the competition between suppliers worldwide is extremely high. This led to a race to the bottom with massively falling prices for garment products (Anner 2015). Specific in the sector is that lead firms in many cases themselves sell their products in very competitive markets. For long time only captive governance structures dominated the garment sector. However, in the last decades more modular governance developed with bigger suppliers. Some of the bigger suppliers upgraded and became able to deliver finished goods including design (Gereffi /Frederick 2010; Elms 2013). However, this shift toward more modular governance did not change the oligopsony and monopsony structure in the market which pushes profits of suppliers to very low levels. Tiers in the garment sector are differentiated across many levels, including home work. Compared to national standard wages are low; jobs are precarious and working conditions bad.

The Vietnamese garment industry is at the bottom of the GVC and mostly takes over the tasks of cutting, sewing and trimming.[11] In the sector there are a number of big domestic companies, former state-owned firms, and a number of FDI firms, many from Asia. But most of the 2500 exporting companies are relatively small. In addition, many small companies produce for the domestic market. Functional upgrading is very limited; own important brands do not exist. Frequent wildcat strikes try to improve wages and working conditions in the sector.

With a share of total garment exports of over 30 per cent, China is the biggest garment exporter in the world, followed by Bangladesh and Vietnam, both below 7 per cent of world export (WTO 2018). The sector in China is dominated by medium-sized and small producers in around 150 clusters. Most companies are domestically owned; some of the bigger ones have foreign Chinese owners. Especially after the crisis 2008/09 the sector underwent a structural change. Many domestic Chinese producers very actively started to build up brands, particularly for the domestic market, as well as mechanizing production and increasing productivity substantially. Some shifted productions to neighbouring countries via FDI. However, around 60 per cent of producers are still simple original equipment manufacturers.

In Bangladesh around 80 per cent of exports and 25 per cent of GDP come from the garment sector. FDI played in the past an important role, but domestic producers have dominated since. Captive governance structures dominate the sector. Productivity increased substantially, however functional upgrading could only be managed, similar to Vietnam, by a very limited number of bigger companies.

[11] For Vietnam see Do (2017), for China Butollo (2014), Liu (2019), Lüthje et al. (2013) and Witt (2015), for Bangladesh Moazzem and Sehrin (2016) and Curran and Nadvi (2015).

In the garment sector in the Global South mostly young women work; many of them are domestic migrant workers. In the three countries analysed, real wages increased along with the national trend. In China there were substantial real wage increases due to increasing minimum wages and a shortage of workers. This is the main explanation for the substantial structural change in the Chinese garment sector. As a rule, working conditions in the garment industry in the Global South are bad. A symbol of this is the Rana Plaza accident in 2013 which left more than 1100 dead. Pressure from consumer organisations led to improvements of working conditions in some areas – for example the multi-stakeholder Bangladesh-Accord to improve safety standards – but overall working conditions remained poor. One explanation of this is the lack of independent trade unions in China and Vietnam and the weakness and partly anti-union policy in Bangladesh. Enforcement of labour laws is also poor.

Electronic hardware

The electronic hardware industry in its first tier is characterized by modular governance structures. For example, lead firms like Apple concentrate on their technological leadership and outsource the production to contract manufacturers like Foxconn, which operates mostly in the Global South.[12] Both the brand companies and above all the contract manufacturers procure parts and components from a large number of component manufacturers. Some of these are also large MNCs, such as Microsoft and Intel, while others are very small companies that contribute components with very low added value. Samsung and LG, both from South Korea, use more in-house production via FDI. FDI and captive governance dominate the lower tiers of the electronic hardware in the Global South. In the latter case oligopsony and monopsony structures exist.

Vietnam as a low-cost location attracted substantial FDI in the electronic hardware sector. The FDI firms in Vietnam assemble imported intermediate products and export their output completely. Samsung, for example, assembles in two locations in Vietnam one third of its worldwide sold mobile telephones. In 2015, these two locations employed over 325,000 persons, 70 per cent of them women. No relevant forward or backward linkages developed. Value creation in Vietnam remained low. Even after over twenty years of production in the sector there has been no economic upgrading. Samsung seems to be happy with the simple tasks produced in Vietnam and has no incentive to change this. Domestic firms in Vietnam in the sector are unimportant.

MNCs also established production sides in the electronic hardware sector in Brazil. The explanation is not to exploit cheap labour as wages are high in comparison to Vietnam. This is due to the high tariffs for final products and low tariffs for components in the sector. In Brazil almost all intermediate products are imported, similar to Vietnam. Assembled

[12] For the electronic hardware sector see ILO (2014), for Brazil van Wetering (2015) and Sproll (2014), for Vietnam Do (2019) and Goto and Ara (2017).

products are sold in Brazil or exported to other Latin American countries. To a limited extent domestic firms are integrated in captive governance. There has been no substantial upgrading for decades.

Working conditions in the electronic hardware sector in Vietnam are poor and even worse than in the garment sector. Employees are mainly young women from the countryside. Typically, they work for some years in the factories and then go back or search for better jobs in the city. Wages for the majority of workers are below the national subsistence level. Excessive overtime plays a big role to increase monthly wages. Strike actions are less than in the garment sector. The situation is completely different in Brazil. Strong trade unions and enforced labour laws led to good working conditions and compared with the Brazilian standard good wages in the sector. Due to this fact, MNCs in Brazil have not succeeded in enforcing the poor labour standards and anti-union policies practiced, for example, in Vietnam.

IT service sector

The IT service sector is very much fragmented with some MNCs but also many medium-sized and small companies. This has to do with the diverse products the sector sells and its high innovative dynamic. The governance structure is diverse as well and depends on the tasks taken over in GVCs. From the 1990s on IT services are increasingly outsourced to the Global South.[13]

India is by far the most important country for service outsourcing in GVCs. The qualification level of employees in India in the sector is relatively high and wages compared to the Global North relative low. India was able, supported by industrial policy, to develop own global champions in the sector and develop IT clusters. In 2017, of the 25 revenue strongest IT companies in the world five came from India. There has been substantial economic upgrading in the sector, with some Indian companies managing to establish relational governance model with lead firms in the Global North. However, until today India mainly only takes over simple IT tasks in GVCs. In many cases captive and monopsony structures exist, for example in widely common call centers in Indian IT clusters.

China is positioned more broadly in comparison to India. Besides substantial upgrading in electronic hardware, China also shows substantial upgrading in the IT service sector. Huawei, for example became a world leading IT company in the field of hardware and software. In comparison to the automotive sector China managed substantial economic upgrading in the IT sector without any FDI. Comprehensive industrial policy and high demand for IT products stand behind the success story of the Chinese IT industry. Mainly because of political reasons, China is not integrated in GVCs in the IT service sector. But it is

[13] For India see Fernandez-Stark et al. *(*2011) and Snowdon and O'Donoghue (2018), for China Schaffland (2017), Lo and Wu (2014) and Zhu and Morgan (2018).

very likely that China becomes in the hardware and IT service sector a global player at least in developing countries with potential of inter-sectoral expansion.

In India social upgrading in the IT service sector is ambivalent. Wages are high compared to the national standard and jobs belong to the formal sector. Burdens for employees are excessive overtime, night work and jobs below the qualification level. In China payment is high in national comparison. In both countries related to the diversification of IT services, wage dispersion is high and working conditions vary substantially. Trade unions play no substantial role in the IT service industry in either country.

Summary of case studies

In the country cases substantial functional and inter-sectoral upgrading, without comprehensive horizontal and vertical industrial policy in form of government support and protection, did not exist. In the cases looked at, China achieved substantial economic upgrading triggered by different methods – in the automobile sector using FDI, in the IT sector developing top players without FDI, in the garment sector pressure from higher wages. India to a lesser extent is also a show-case for upgrading and industrial policy. Vietnam, Bangladesh, South Africa and Brazil are cases of integration in GVCs without tendencies of relevant functional or inter-sectoral upgrading. Working conditions and wages compared with national standards depend in the cases presented mainly on trade union strength, shortage of labour and government enforcement of labour laws.

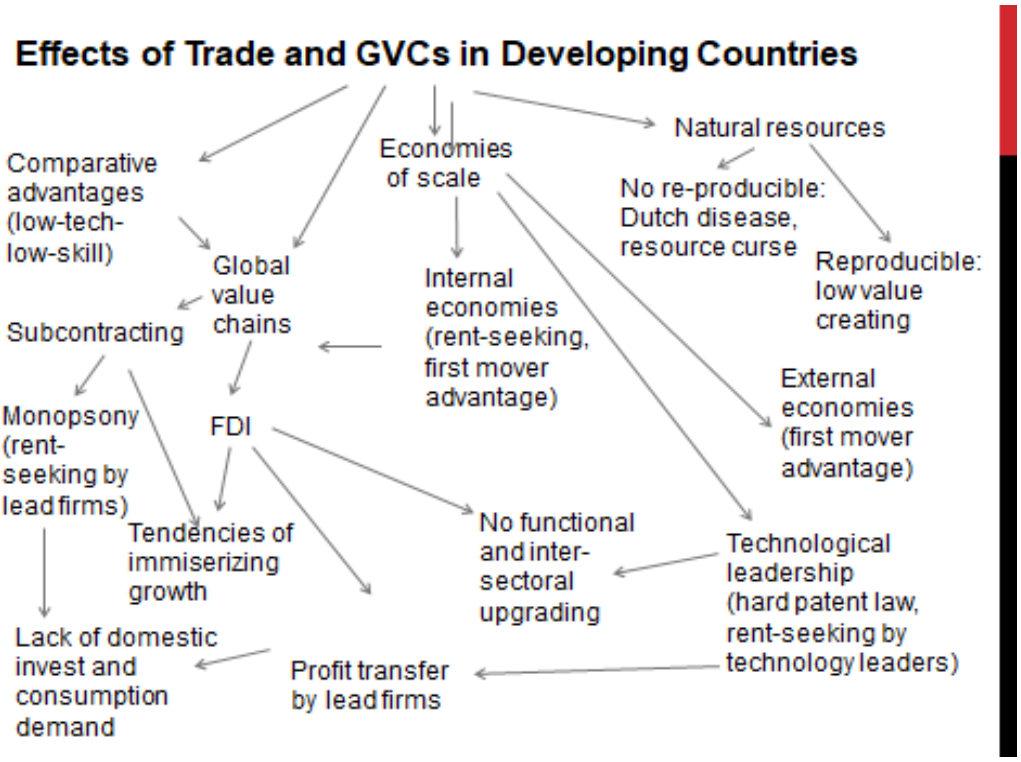
5. Conclusion

The main massage of this paper is that market mechanisms in vertical GVCs support industrialisation and also product and process upgrading under certain conditions. But the market mechanism does not lead to a catching up of countries in a sense that they approach real GDP per capita levels comparable with developed countries. We can agree with Baldwin (2013: 39) when he writes: “Smile curve economics suggests that the fabrication stages in manufacturing may not be the development panacea as they once were.” This is supported by the theoretical analysis and case studies presented above.

Figure 2 givens an overview of the main arguments why market forces are hostile to catching up:

- Comparative advantages push countries form the Global South to low-tech-labour-intensive productions (including services) with low economic dynamic compared to the specialisation of developed countries. This is also the case in vertical GVCs.
- External and internal economies of scale give clusters and firms in the Global North a systematic advantage as the Global South has great difficulties to compete in the areas where economies of scale exist. Internal economies of scale lead to oligopolistic and monopolistic structures and rent-seeking also at the expense of the Global South.

Figure 2: Effects of Trade and GVCs in Developing Countries



Source: Authors' illustration

- Firms in the Global North, partly based on economies of scale and advantages of clusters, take over technological leadership. This strengthens the existing distribution of labour between the Global South and North and rent-seeking.
- Non-reproducible natural resources lead to a specialisation in which the natural resource rich country exports natural resources and imports manufacturing products. The exchange rate for the manufacturing sector shows an overvaluation. Value creation and economic dynamic in the production and export of reproducible resources is, as a rule, relatively low. All natural resources show a volatile price development.
- Economic power relationships in vertical GVCs are asymmetric. In cases of subcontracting, monopsony and oligopsony structures push prices and profits for tasks produced in the Global South to low levels. In case of FDI profits will be to a large extent transferred to the Global North. Both dampen investment and consumption demand in the Global South.
- FDI can help product and process upgrading, but is usually not helpful in functional and inter-sectoral upgrading as lead firms do not transfer core competences. FDI follows comparative advantages and reproduces its disadvantages for the Global South. In addition FDI firms do not automatically create forward- and backward linkages with the domestic economy.

- There can be tendencies of immiserizing growth. This means that when lead firms bring the latest technology to the Global South to produce simple tasks, the prices of these tasks may decrease to low levels and all the advantages of productivity increases go to the Global North. In an extreme case the new technology reduces the welfare of the country in spite of higher GDP.
- GVCs lead to higher inequality. In contrast to traditional trade theory in most cases they do not increase the wages of workers in the Global South. Pressure by lead firms and monopsony structure in vertical GVCs can lead to bad and precarious working conditions. Higher inequality and bad working conditions reduce growth in the Global South.

One conclusion of this is that for catching-up, countries need comprehensive horizontal and vertical industrial policy. Showcases of late catching-up, such as Japan in the 1950s, later South Korea, Taiwan or still later China, all used extensive vertical and horizontal industrial policy including a highly regulated financial system to develop their economies (Stiglitz 1996; Stiglitz / Uy 1996). To follow comparative advantages to start simple productions in GVCs is a recommendable strategy which, however, should not privilege foreign companies at the expense of domestic ones. But this is not enough. Active policies to take over higher value creating functions in GVCs are essential. And industrial policy has to violate the market logic of comparative advantages. It has to create comparative advantages, clusters and big national firms which are able to compete internationally. One important element of an industrial policy package is sufficient demand for industries which should be developed (Lo / Wu 2014). The exchange rate plays a key role through a level to avoid current account deficits. It should function as a general protection in a world of low tariffs; vertical industrial policy should support selected sectors in GVCs and beyond.[14]

Social upgrading does not automatically follow economic upgrading. The case studies above have shown that strong trade unions and good labour laws which are enforced are essential for social upgrading. Since social upgrading also includes policies to limit income inequality, it is not only a question of fairness; it is one of the pre-conditions for sustainable economic upgrading.

[14] For a summary of industrial policy strategies see Herr (2019).

Literature

Ali-Yrkkö Jyrki; Rouvinen, Petri; Seppälä, Timo; Ylä-Anttila, Pekka (2011): Who captures value in global supply chains? Case Nokia N95 smartphone, in: Journal of Industry, Competition and Trade, vol. 11, 263-278.

Amsden, Alice H. (2001): The Rise of the Rest: Challenges to the West from Late-Industrializing Economies, Oxford: Oxford University Press.

Anner, Mark (2015): Stopping the Race to the Bottom: Challenges for Workers' Rights in Supply Chains in Asia. FES Briefing Paper. Hanoi: FES Vietnam, December, http://library.fes.de/pdf-files/iez/12321.pdf

Baldwin, Richard (2013): Global supply chains: why they emerged, why they matter, and where they are going, in: Elms, Deborah K.; Low, Patrick (eds.), Global value chains in a changing world, World Trade Organisation, Geneva, 13-60.

Berg, Andrew G. and Jonathan D. Ostry (2017): Inequality and Unsustainable Growth: Two Sides of the Same Coin?, in: IMF Economic Review, vol. 65, 792–815.

Bhagwati, Jagdish (1958): Immiserizing Growth: A Geometrical Note, in: Review of Economic Studies, vol. 25, 201-205.

Butollo, Florian (2014): The End of Cheap Labour? Industrial Transformation and "Social Upgrading" in China. New York: Campus Verlag.

Corden W. Max; Neary J. Peter (1982): Booming Sector and De-industrialisation in a Small Open Economy, Economic Journal, vol. 92, 825–848.

Crouch, Colin (2016): The Knowledge Corrupters. Hidden Consequences of the Financial Takeover of Public Life, Malden: Polity Press.

Curran, Luise; Nadvi, Khalid (2015): Shifting Trade Preferences and Value Chain Impacts in the Bangladesh Textiles and Garment Industry. In: Cambridge Journal of Regions, Economy and Society, vol. 8, H. 3, 459–474.

Do, Chi (2017): The missing link in the chain? Trade regimes and labour standards in the garment, footwear and electronics supply chains in Vietnam, in: Who benefits from trade?, Friedrich-Ebert-Foundation, Asia, 44 – 56, http://library.fes.de/pdf-files/bueros/singapur/13430.pdf.

Do, Chi (2019): Social and Economic Upgrading in the Electronic Supply Chain in Vietnam, will be published Global Labour University Working Paper.

Dollar, David (2019): Executive Summary, in: Global Value Chain Development Report 2019, World Trade Organisation, Geneva, 1-8.

dos Santos, Carlos, Dari Krein, J., Maracci Gimenez, D. (2019): Global Value Chains – Economic and Social Upgrading. The Case Study of the Automobile Sector in Brazil, unpublished manuscript.

Dünhaupt, Petra; Mehl, Fabian; Herr, Hansjörg; Teipen, Christina (2020): Entwicklungschancen durch Integration in globale Wertschöpfungsketten: ein Länder- und Branchenvergleich, in: WSI Mitteilungen, in process of publishing.

Dullien, Sebastian; Herr, Hansjörg; Kellermann, Christian (2011): Decent Capitalism. A Blueprint for Reforming our Economies, London: Pluto Press.

Elsms, Deborah K. (2013): Views of GVCs operators, in: Elms, Deborah K.; Low, Patrick (eds.), Global value chains in a changing world, World Trade Organisation, Geneva, 161-169.

Evans, Trevor; Herr, Hansjörg (2016): Financialisation in Currency, Energy and Residential Property Markets, IPE Working Paper No. 62/2016.

Feenstra, Robert C. (2010). Offshoring in the global economy. Microeconomic structure and macroeconomic implications, Cambridge: MIT Press.

Fernandez-Stark, Karina; Bamber, Penny; Gereffi, Gary (2011): The Offshore Services Value Chain: Upgrading Trajectories in Developing Countries. In: International Journal of Technological Learning, Innovation and Development, vol. 4, H. 1-3, S. 206–234.

Gereffi, Gary; Humphrey, John; Sturgeon, Timothy (2005): The governance of global value chains, in: Review of International Political Economy, vol. 12, 78–104.

Gereffi, Gary; Frederick, Stacey (2010): The Global Apparel Value Chain, Trade and the Crisis, in: Cattaneo, Oliver; Gereffi, Gary; Staritz, Cornelia (eds.): Global Value Chains in a Postcrisis World - A Development Perspective. Washington D.C.: The World Bank, 157–208.

GHY (2015): New Directions in Global Supply Chains, posted June 01, 2015, https://www.ghy.com/trade-compliance/new-directions-in-global-supply-chains/

Griffin, Keith; Gurley, John (1985): Radical Analysis of Imperialism, the Third World, and the Transition to Socialism: A Survey Article, in: Journal of Economic Literature, vol. 23, 1089-1143.

Goto, Kenta; Arai, Yukiko (2017): More and Better Jobs Through Socially Responsible Labour and Business Practices in the Electronics Sector of Viet Nam, Generva: International Labour Office.

Heckscher, Eli (1919): The Effect of Foreign Trade on the Distribution of Income, in: Ekonomisk Tidskrift, 497-512.

Herr, Hansjörg (2018): Underdevelopment and Unregulated Markets: Why Free Markets do not Lead to Catching-up, in: European Journal of Economics and Economic Policy: Intervention, vol. 15, 208-219.

Herr, Hansjörg (2019): Industrial Policy of Economic and Social Upgrading in Developing countries, Friedrich-Ebert Foundation Singapore, February.

Hirschman, Albert O. (1958): The Strategy of Economic Development, New Haven: Yale University Press.

Hollweg, Claire H. (2019): Global value chains and employment in developing economies, in: Global Value Chain Development Report 2019, World Trade Organisation, Geneva, 63-82.

Humphrey, John; Schmitz, Hubert (2002): How does insertion in global value chains affects upgrading in industrial clusters, in: Regional Studies, vol. 36, 1017-1027.

Humphreys, Macartan; Sachs, Jeffrey; Stiglitz, Joseph E. (eds.) (2007): Escaping the resource curse, New York: Columbia University Press.

ILO (2014): Ups and Downs in the Electronics Industry: Fluctuating Production and the Use of Temporary and Other Forms of Employment. International Labour Office, Sectoral Policies Department, Geneva: ILO.

Jha, Pravin; Kumar, D. (2019): India's Participation in the GVCs and Some Implications for Economic and Social Upgrading: A Case Study of the Automobile Sector, unpublished manuscript.

Korinek, Anton; Stiglitz, Joseph. E. (2017): Artificial intelligence and its implications for income distribution and unemployment, NBER Working Paper Series, No. 24174.

Kraemer, Kenneth L.; Linden, Greg; Dedrick, Jason (2011): Capturing Value in Global Networks: Apple's iPad and iPhone, July, http://econ.sciences-po.fr/sites/default/files/file/Value_iPad_iPhone.pdf

Krugman, Paul (1979); Increasing returns, monopolistic competition, and international trade, in: Journal of International Economics, vol. 9, 469–479.

Krugman, Paul (1981). Trade, Accumulation, and uneven development, in: Journal of Development Economics, vol. 8, 149-161.

Lewis, W. Arthur (1954): Economic development with unlimited supplies of labour, in: Manchester School or Economics and Social Studies, vol. 10, 139-191.

List, Friedrich (1885): The National System of Political Economy, (in German 1841), translated by Sampson S. Lloyd M.P., London: Longmans, Green, and Co.

Liu, M. (2019): A Report on China Apparel Industry: Social and Economic Upgrading. China: Southwestern University of Finance and Economics, unpublished manuscript.

Lo, Dick; Wu, Mei (2014): The State and Industrial Policy in the Chinese Economic Development, in: Xirinachs-José M.; Nübler, Imgard; Kozul-Wright, Richard (eds.): Transforming Economies: Making Industrial Policy Work for Growth, Jobs and Development, Geneva: ILO.

Low, Patrick (2013): The role of services in global value chains, in: Elms, Deborah K.; Low, Patrick (eds.), Global value chains in a changing world, World Trade Organisation, Geneva, 61-81.

Lüthje, Boy (2014): Labour Relations, Production Regimes and Labour Conflicts in the Chinese Automotive Industry, in: International Labour Review, vol. 153, H. 4, S. 535–560.

Lüthje, Boy; Luo, Siqi; Zhang, Hao (2013): Beyond the Iron Rice Bowl, Frankfurt: Campus

Marshall, Alfred (1920): Principles of Economics, London: McMillan.

Mashilo, Alex (2018): Auto Production in South Africa and Components Manufacturing in Gauteng Province, will be published as Global Labour University Working Paper.

Milberg, William; Winkler, Deborah (2013): Outsourcing Economics. Global Value Chains in Capitalist Development, Cambridge: University Press.

Moazzem, Khondaker G.; Sehrin, Farzana (2016): Economic Upgrading in Bangladesh's Apparel Value Chain during the Post-MFA Period: An Exploratory Analysis. In: South Asia Economic Journal 17, H. 1, 73–93.

OECD (2013): Interconnected Economies: Benefiting from Global Value Chains, Paris: OECD Publishing.

Ohlin, Bertil (1933): Interregional and International Trade, Cambridge: Harvard University Press.

Pareto, Vilfredo (1906): Manual of Political Economy, Oxford: Oxford University Press.

Raj-Reichert, Gale (2019): Global Value Chains, Contract Manufacturers, and the Middle-Income Trap: The electronics industry in Malaysia', Journal of Development Studies, DOI: 10.1080/00220388.2019.1595599

Piketty, Thomas (2014): Capital in the Twenty-First Century, Cambridge: Harvard University Press.

Ricardo, David (1817): On the Principles of Political Economy and Taxation, London: John Murray.

UNCTAD (United Nations Conference on Trade and Development) (1999): World Investment Report: Foreign Direct Investment and the Challenge of Development, New York and Geneva: United Nations.

Schaffland, Hendrik (2017): Globalisierung von Forschung und Entwicklung in der IKT-Industrie: Verlagerung der Innovationsschwerpunkte in dynamische Schwellenländer, Wiesbaden: Springer Gabler.

Shapiro, Helen (2007): Industrial Policy and Growth, United Nations Department of Economic and Social Affairs, DESA Working Paper No. 53.

Shih, Stan (1996): Me-Too is Not My Style: Challenge Difficulties, Breakthrough Bottlenecks, Create Values, The Acer Foundation, Taipei.

Singer, Hans (1949): Economic progress in under-developed countries, in: Social Research, vol. 16, 236−266.

Snowdon, Jamie; O'Donoghue, Ollie (2018): What Does the IT Services Market Look like in 2018? HFS Research, 30 Aug 2018, https://www.hfsresearch.com/market-analyses/what-does-the-it-services-market-look-like-in-2018, (excess 15.03.2019).

Stiglitz, Joseph, E. (1996): Some Lessons from the East Asian Miracle, in: World Bank Research Observer vol. 11, 151-177.

Stiglitz, Joseph E.; Uy, Marilou (1996): Financial Markets, Public Policy, and the East Asian Miracle, in: The World Bank Observer, vol. 11, 249–276.

Stiglitz, Joseph E. (2006): Making Globalisation Work, New York: Norton.

Stiglitz, Joseph E. (2012): The Price of Inequality, New York: Norton.

Stoller, Kristin (2018): Frobes Global 2000: The World's Largest Public Companies 2018, retrieved May 30, 2019.

Stolper, Wolfgang F.; Samuelson, Paul (1941): Protection and Real Wages, in: Review of Economic Studies, vol. 9, 58–73.

Sturgeon, Timothy J.; Van Biesebroeck, Johannes (2010): Effects of the Crisis on the Automotive Industry in Developing Countries - A Global Value Chain Perspective, World Bank Policy Research Working Paper 5330.

Sproll , M (2010): High-Tech für Niedriglohn: Neotayloristische Produktionsregimes in der IT-Industrie in Brasilien und Mexiko, Münster: Westfälisches Dampfboot.

Pen World Table (2019): https://www.rug.nl/ggdc/productivity/pwt/pwt-database

Porter, Michael E. (1985): Competitive Advantage, New York: Free Press.

Prahalad, Coimbatore, K.; Hamel, Gary 1990: The Core Competence of the Corporation, in: Harvard Business Review, May-June, 79–91.

van Wetering, Hans; Gomes, Marcel; Schipper, Irene (2015): Brazil, the New Manufacturing Hotspot for Electronics? Good Electronics Network, https://reporterbrasil.org.br/wp-content/uploads/2016/09/Brazil-the-new-manufacturing-hotspot-for-electronics.pdf, (excess 24.4.2019).

Witt, E. (2015): Arbeitsbedingungen in der Textil- und Bekleidungsindustrie in China im 21. Jahrhundert - Lösungsansätze zur zeitgemäßen Umsetzung sozialverträglicher Unternehmenspolitik, https://d-nb.info/1075317371/34, (Abruf 26.4.2019).

World Bank (2019): Data, https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD

WTO (2018): World Trade Statistical Review 2018.

Zhu, Jingqi; Morgan, Glen (2018): Global Supply Chains, Institutional Constraints and Firm Level Adaptations: A Comparative Study of Chinese Service Outsourcing Firms. In: Human relations, vol. 71, 510–535.

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