

New economic globalization, new industrial policy and late-development in the 21st century

a critical analytical review

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Abstract

After having been put aside for three decades, industrial policy has reappeared in the research and policy debate on economic development in the Global South. However, it has also been argued that fragmented and decentralised value chains have foreclosed the traditional role of industrial policy. The article reviews three strands of thinking, exploring to what extent and how one can align the call for new industrial policy with the expansion of global value chains? It is shown how the research agenda can be moved forward by realigning contributions from global value chain scholarship with researchers that take their point of departure concerning a new industrial policy in structural transformation, technological capability and innovation system thinking.

Key words: industrial policy, global value chain, political economy, structural transformation, economic upgrading, innovation

Introduction

In recent years, industrial policy² has made a surprising revival in the research and policy debate on economic transformation in late developing countries. The ascendancy of orthodox neo-liberal thinking from the late 1970s and onwards put industrial policy as an instrument for economic development in the corner for three decades. However, the global financial crisis and the ramifications of the rise of China as an economic giant have changed the global geopolitical ecology of investment, production and trade so that industrial policy has reappeared as being indispensable and legitimate in the global North and South (see e.g. The Economist 2010, Devling and Moguillansky

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² Industrial policy refers to deliberate efforts on part of the government to shift economic activity towards more dynamic and rewarding activities with an array of policy tools. It encompasses what are sometimes labelled trade policy and technology policy just as it is not limited to industry per se but includes policies targeted at non-traditional agriculture and services. Hence, some scholars and agencies prefer to call it productive development policy.

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2012, Stiglitz *et al.* 2013). Concurrently, global value chain (GVC) perspectives have permeated the research and policy agenda of international economic organisations with the message of 'joining global value chains' rather than 'building development' by means of industrial policy.

This has led to a paradoxical situation. On the one hand, it is stated that well-designed and well-implemented industrial policy is essential for developing more dynamic, robust and rewarding production structures in a globalised world. On the other hand, it is argued that dis-integrated and dispersed supply- or value chains have foreclosed the traditional role of industrial policy in economic development.

What is the precise nature of this apparent paradox? What is the underlying thinking behind these competing arguments? To what extent and how can one align the call for new industrial policy with the call for joining global value chains? These are the overall questions addressed in the article. More specifically, the aim of the present paper is to review and reflect upon recent academic literature and policy research representing these competing perspectives and through that come up with suggestions for future research avenues that can bring us beyond this paradoxical divide.

The article discusses three lines of reasoning. First, I look at the view that fragmented GVCs make traditional industrial policy inappropriate suggesting instead join-development policies. Next, the attention is directed at scholars that claim that new industrial policies are needed to further structural transformation, linkage-formation and development of indigenous technological capabilities. Lastly, I deal with recent contributions that suggest that the new role of emerging economic powers as production hubs and end-markets opens for new types of industrial policy.

For each of the three strands of thinking I ask: What is new, what is promising, what is problematic and what is missing? Based on the review I outline avenues for future research on industrial policy in the 21st century. Of particular interest is the issue of compatibility between new trends in economic globalisation and new trends in industrial policy. I will use evidence mostly from secondary sources to substantiate the arguments and suggestions put forward. Besides presenting avenues for further research, the overall and cross-cutting argument in the article is that even in a highly globalising economy effective industrial or productive development policies are needed for economic and social transformation, and that the juxtaposition of 'joining development' and 'building development' does not bring scholarly work on industrial policy forward.

The rest of the article is organised as follows. The next three sections present and discuss the reasoning behind the above-mentioned three strands of thinking. Then follows a section on promising avenues for future research. The final section comes up with some concluding remarks.

Keep industrial policy out: 'Join-instead-of-build-development'

At a speech about emerging economies in Istanbul the WTO Director-general Pascal Lamy (2013) talked about 'the global production networks in which the vast majority of products are "Made in the World", rather than made in only one country', and about how that made import tariffs increasingly 'a bullet fired by a country at its own exports of product components.' This is indicative of new ways of thinking about trade and development and is a stepping-stone for arguing that the late-development model and strategic industrial policy have become obsolete in the new century.

Patrick Lamy's comments must be seen in the context of a new set of thinking in Academia as well as in leading multilateral economic agencies. Thus, Richard Baldwin (2011, 2012) argues that the ICT revolution has led to globalisation's 2nd unbundling, changing comparative advantage from a very national concept to an increasingly regional concept, and goods are packages of many nations' productive factors, technology, social capital, and governance capacity (Baldwin 2011, 13). This has important policy implications. Rather than building a supply chain and industrialise in the old-fashioned way, as for example South Korea did through pro-active industrial policies, it is in the 21st century possible to industrialise simply by joining international supply chains. This is what Thailand has done becoming the "Detroit of Southeast Asia" by taking advantage of the fact that global firms offshore some stages of their production and at the same time move specific slices of their know how abroad. Therefore, '[t]oday's nations might do better to look at Thailand starting from the late 1980s, rather than Korea and Taiwan from 1970 to 1997.' (ibid., 30). Finally, Baldwin argues that joining supply chains raises a totally different set of policy concerns, but the precise nature of appropriate complementary policies is left as a set of open questions (ibid. 6, 26, 29-31).

The inappropriateness of the classical late-development model and the related industrial policy thinking is also the message in Whittaker *et al.* (2010). They argue that the dominant production paradigm has changed fundamentally. Global value chains (GVCs) 'create powerful challenges to nationally and vertically integrated production systems, effectively foreclosing the late development model path to most recent developers' while at the same time creating 'new platforms for development and opportunities for participation with limited initial resources (both capital and

intellectual) by providing access to complementary resources that can accelerate development' (ibid., 447-48). More specifically, the authors argue that this compressed development model invalidates stages of development thinking and that the mode of industrial policies suggested by scholars of late development: 'sectoral targeting, arms-length technological learning, a focus on process improvements in manufacturing, the nurturing of national champions, the development of vertical integrated industries, the sequential implementation of import substitution and export promotion policies' are historically specific and now inappropriate (ibid., 442).

This new thinking has permeated the research and policy agenda of major multilateral economic institutions. The join-instead-of-building-development strategy has rapidly diffused into reports from these institutions presenting global value chains as benign escalators of development. Value chain development (VCD) is put forward as a new and easier road to development, which opens opportunities for small countries and small enterprises as chain participants and for a narrow focusing on a specific chain-segment.

Thus for instance the OECD (2013, 33-34, 46) stresses that most goods and a growing share of services are made-in-the-world; that it makes no sense to build complete vertically-integrated domestic value chains by means of old style industry-specific support policies; that policies instead should focus on specific activities and tasks; and that countries can get a fast track to development and industrialisation by joining existing global chains. In order to be able to join GVCs developing countries are advised to open their economies to foreign trade and investment, strengthen trade facilitating measures (including fast and efficient customs and port procedures as well as adherence to international standards), and establish a conducive business environment (e.g. well-functioning contractual institutions and efficient services) (ibid., 25, 34).

Similarly, the World Bank Poverty Reduction and Economic Management (PREM) network³ contracted a group of scholars to work with them on the development potential of GVCs during the post-crisis period. This resulted in more publications seeking to advance an extended version of the benign escalator idea – 'joining, maintaining and moving up in the value chains.' In Cattaneo *et al.* (2013) the way forward is not about developing integrated industries and picking the winners, but about identifying its best position in the GVC. This is followed by a capacity to remain part of the chain and a long-term strategy of moving up the value chain to be able to capture higher value added parts of the GVCs, which are typically found in pre- and post-fabrication activities. The public

³ For more details see for example Werner *et al.* 2014, 19-20 and Wade 2012, 235-36.

initiatives relevant for the first joining stage are a set of standard neoliberal policies: ensuring cost competitiveness, lowering import barriers for in particular foreign intermediate goods, lowering behind-the-border-barriers, including protection of foreign assets, improving the business climate, introducing adequate process- and products standards, developing the capacity for scale production and innovation, having an adequate skilled and educated workforce, and improving the availability of infrastructure and manufacturing services (ibid, 17-34).

Though the suggested strategic framework for VCD is multidimensional and complex, there is generally a focus on policies and institutional reforms that seek to expand world market integration by lowering barriers for traders and investors at-the-border as well as behind-the-border. Becoming a competitive participant in GVCs is as much about being an efficient importer of world-class inputs as about developing a capacity to export. It is even argued that in contrast to the mercantilist approach, the new trade paradigm will 'reward unilateral trade openings that most efficiently reinforces the country's competitiveness' (ibid., 18-19). Finally, initiatives that seek to match the supply capabilities with market needs and through incentives reward foreign firms for helping local industries are advocated.⁴

What is then new and what is promising in this join-instead-of-build-development literature? First of all it is promising that the GVC-turn in development reflects (some of) the changes that have taken place in the global political economy, in particular the trend towards fragmented, yet compacted, development processes and the shift from trade-in-goods to 'trade-in-tasks. Second, joining GVCs do present local suppliers with the opportunity to learn from lead firms (buyers), i.e. the exposure to foreign technology, demanding standards and demanding buyers as well as stronger competition induce developing country firms to upgrade their production, technology and marketing capabilities.

Still, there are also serious limitations, so what is missing or problematic. First, as applied by international organizations the global supply/value chain approach tends to recycle well-known

⁴ The two reports are only a fraction of the reports from multilateral economic institutions promoting a value chain development. Stamm and Drachenfels (2011) have produced a useful review of VCD approaches in seven UN agencies; Gereffi (2014a) refers to eight major reports from international organisations using GVC analysis; Neilson (2014) lists 27 papers from international development agencies with a principal value chain focus; and Werner *et al.* (2014) analyse in detail the GVC-turn in four major agencies (UNIDO, ILO, IADB and the World Bank).

orthodox policy advice: foreign trade and investment opening, trade facilitation and establishment of an enabling business environment.⁵

Second, VCD reports fail to see the structural and organisational set-up as a part of an asymmetrical global political economy working to the disadvantage of the global South. Neither the structural power of the drivers of the value chains, nor the constraining role of the northern-driven trade and investment regimes are sufficiently taken into account. One aspect is the value capture of lead firms, who outsource the least profitable commodity-like parts (i.e. production activities) and keep the most profitable, rent-intensive parts of the chain (i.e. R&D, marketing and branding) for themselves. Another aspect is the accelerating cost-quality-delivery requirements implying that suppliers have to meet higher quality, lower costs and flexible delivery, which in turn also affect the social conditions of production. In brief, there are strong structural forces at play that also may explain the observed term-of-trade losses in labour intensive manufactured export since 2000 (see for example UNCTAD 2013, 51).

Third, while acknowledging the need for lengthening the domestic segment of the value-chain over time, there is generally stronger emphasis on the virtues of external integration than on internal integration. This is problematic when export demand is not the main source of economic growth and when a successful internal integration appears to be a precondition for successful external integration (see for example Wade 2003, 635 and Saad-Filho 2014, 595). Rather than the suggested expansionary effect of increasing exports, a unilateral import liberalisation for intermediate goods may lead to the replacement of local suppliers with foreign suppliers and the macro-economic impact could be income contraction.

Fourth, and related, there is an inclusionary bias towards expanding production frontiers that conceals processes of exclusion and disarticulation. While certain actors and places are incorporated in global value chains others are simultaneously disconnected or expelled through processes of disinvestment and devaluation (see Bair and Werner 2011a and 2011b)

⁵ Gereffi (2014a, 27) is also fairly critical towards the VCD-model concluding that ‘much of the literature that uses the GVC moniker misses the point and doesn’t apply the framework consistently.’ Neilson (2014, 38) goes further considering the VCD applications ‘to be perpetuating a neoliberal development agenda, which is facilitating the enhanced penetration of multinational capital into the economy and lives of the rural and urban poor’, and Fernández (2015) sees them as a neoliberal devices favouring the transnational fraction of capital.

Fifth, GVCs can work against further upgrading by locking local suppliers into low-value added assembly operations.⁶ This appears to be the case in e.g. Malaysia that during the 2000s experienced a slowdown in manufacturing value-added, trade performance and productivity (Rasiah 2011). Even though Malaysia managed to develop a huge export of electronics and expanded from assembly to testing and packaging functions, it seems to have specialized in, and be stalled in, low-cost, labour-intensive forms of production with increasing use of foreign migrant workers.⁷

Sixth, VCD reports tend to downplay the issue functional upgrading. This is important because it is about getting access to the high value-added stages/tasks located in pre- and post-production activities. Seventh, while development of domestic productive capacity is taken into account, the recommended public policies rest upon a strong belief in GVC-internal transfers of knowledge while downplaying chain-external drivers of economic upgrading.⁸

Finally, though minimization of risks of participation in GVCs - including responsible labour practices, environmental sustainability and transfer pricing - are mentioned, VCD reports are superficial when it comes to the link between economic upgrading and social upgrading just as tax avoidance and other means to hide and relocate wealth are left out. The latter is surprising after thirty years of financialisation with expanding practices of tax evasion.⁹

In short, though reflecting new realities on the ground there appear to be good reasons to deem join-instead-of-building-development as a model with serious shortcomings. GVCs are certainly

⁶ Joining GVCs may even lead to downgrading to less processed goods as shown by e.g. Kaplinsky *et al.* (2010) in relation to Chinese-driven value chains with cases from Thailand (cassava) and Gabon (timber).

⁷ As suggested by Rasiah (2011) and Henderson & Philips (2007) this may be caused by ineffective institutional and policy support but it may also be due to lock-in effects for domestic producers stemming from the way business is organized. Thus Samel (2013) studied the most-likely case for upgrading with global value chains – the Penang electronics cluster - and showed that even here upgrading efforts seem to fail ‘because the tendency of volatility to drive capable firms into a local equilibrium’ that fits to the need for flexible (immigrant) labour to reduce the fixed costs of assemblers, and where they specialize in scaling up and down as fast as necessary but have no incentive to move into risky upgrading activities

⁸ Ravenhill (2014, 271) reminds us that ‘when it comes to the actions that the international community might take to promote upgrading, the reports simply lack imagination and rarely go beyond the aid-for-trade facilitation agenda.’ Moreover, so-called demand-driven policies are advocated, which seem to indicate that policies should be responsive to the needs of global lead firms rather than local development needs.

⁹ On Global Wealth Chains (GWCs) see Seabrooke and Wigan 2014. On financialisation and its impact on GVCs see for example Palpacuer 2008, 394ff.

windows of opportunity with possible gains and risks but to materialise they have to be exploited by local firms with extra-firm (state) support. This leads to the second strand of thinking.

Bringing Industrial Policy in: Structural Transformation, Local Networking and Capacity building

Instead of having global inter-firm networks as the unit of analysis, the second strand goes directly to the new industrial policy (NIP) taking countries (clusters, sectors and industries) as the unit of analysis. Scholars in this strand are less convinced about the virtues of just joining deep globalisation and more concerned about growth-enhancing structural transformation that moves labour from lower into higher productivity sectors of the economy, industrial deepening that generates productive linkages, and economic upgrading that creates more rewarding production activities. Hence, this strand tends to be less concerned with how much countries are integrated into the world economy and more focused on how they are integrated. Further, late development is not considered as being about specialisation according to existing comparative advantages but about mastery of a fairly broad range of activities – diversification - at an early stage of development.

Altogether, this gives a stronger scope for a NIP that supports growth-enhancing structural transformation by compensating for market- and government-failures and/or by supporting technological capability accumulation. Finally, this literature also tends to criticise the present wave of deep globalisation for constructing a screwed playing field (e.g. high entry costs) and for limiting the national policy space - thus constraining relevant industrial policy measures. Nevertheless, it still argues that a NIP is not just needed but also possible in the 21st century.

One starting point in relation to NIP is macroeconomic and starts from the classical insight that development entails structural change and that the manufacturing sector are especially important because it can absorb a large number of workers with moderate skills and provide them with higher wages. Danny Rodrik is an influential scholar in this group of scholars. He argues that manufacturing firms in developing countries actually catch-up productivity-wise with firms in developed countries, and that this happens regardless of whether goods are exported or sold at the domestic market. From this perspective, the development problem is the insufficient shift to, and boost of, industrialisation – a sector, which is considered superior when it comes to generation, as well as diffusion, of technological progress to other sectors of production and hence for raising the economy's overall productivity (Rodrik 2013, Hausman 2009).

This problem is seen as particular severe in Latin America (1990s and 2000s) and Sub-Saharan Africa (in the 1990s) where globalisation has fostered productivity-reducing structural change. This happens because natural resource based growth stunted the process of structural transformation and because the least productive firms have left industry while the remaining ones have rationalized shedding surplus workers, which subsequently have moved into lower productivity activities - e.g. services in the informal sector (McMillan and Heady 2014; McMillan *et al.* 2014).

As structural change is not an automatic process but a process encompassing considerable costs and risks, it needs nudging in the form of a (new) industrial policy¹⁰ that helps discovery and development of new activities, which can be produced at low enough costs to be profitable. This requires a set of targeted policies.¹¹ Besides the focus on selectivity, there is also a strong emphasis on state-business interaction and on industrial policy as a pragmatic learning process, i.e. 'a more flexible form of strategic collaboration between public and private sectors, designed to elicit information about objectives, distribute responsibilities for solutions, and evaluate outcomes as they appear' (Rodrik 2007, 112).

A second starting point in relation to NIP is microeconomic and focuses on building technological capabilities in firms. This approach is more evolutionary and neo-Schumpeterian – bringing non-equilibriums, impulses from and selection by market competition, and specific firm-level learning efforts to the forefront. However, if matters are left to the market this can hold back both increases in local content and entry into more technological demanding activities. Similarly, openness to trade and foreign investments is not considered to matter much for growth (see e.g. Fagerberg and Srholec 2008, 1427).

Technological capabilities are perceived as important because they make it possible for firms in developing countries to import, use, adapt and improve existing technologies. The accumulation of such capabilities requires both strong firm-level efforts and industrial technology policies. Both become increasingly important as countries moves up the industrial ladder and as they become

¹⁰ Industrial policy refers here to 'restructuring policies in favour of more dynamic activities generally, regardless of whether they are located within industry or manufacturing per se' (Rodrik 2007, 100).

¹¹ According to Rodrik (2007, 2008) the theoretical justification for industrial policy interventions in support of structural change is fairly strong and found in market failures related to information (-externalities), coordination (-externalities) and the need for specialised inputs. The latter refers to the fact that in order to move to new activities and new technology producers require a set of rather specific (and complex) inputs – indicating that broad-based horizontal policies are of little use and that policies therefore must be custom-based, targeting specific activities or technologies.

exposed to globalisation processes (Lall 2004). There is also a broader and systemic dimension around technological capabilities, which is further developed in the innovation system literature. The latter focuses on the systemic interaction and interdependence between firms and a range of non-market institutions (public research systems, universities, technical support agencies, technical societies and government programmes). Innovations systems can be found at the national, sectoral and regional levels.¹² The role of NIP is to stimulate innovative activities and organisations as well as to resolve the systemic problems that firms and markets cannot solve on their own.¹³ Further, it is obvious that policy intervention must be selective (specific processes, products or technologies) and has to take into account whether the state has the policy capacity (Edquist and Chaminade 2006, 116-119).

So far I have in this section chosen to present two main rationales within the NIP strand of reasoning. One focuses on correcting market failures, another has development of technological capabilities and extra-firm support as the central point. In the following I will discuss the two rationales together as they inform the policy advice given by the NIP literature.¹⁴

What is then new and promising in the NIP thinking?

First of all, the emphasis on a proactive strategy concerning learning, capabilities and structural transformation is consistent with the empirical knowledge about countries that have become successful producers and exporters. There are so far few, if any, cases of economically successful countries where proactive state interventions have not played a crucial role, which is of course not the same as saying that industrial policies have always been successful. This strand of research also makes it possible to explain cases where joining GVCs through simple export processing of goods with a low level of knowledge intensity does not seem to lead to sustained economic development.

¹² At the local level there is also a parallel literature on flexible specialisation and small- and medium enterprises in industrial districts. Early contributions to this literature (not explored in the present review) that also has an industrial policy component are: Humphrey and Schmitz 1996; Schmitz and Nadvi 1999.

¹³ These include among others capability problems (limiting firms' capacity to adopt and produce new technologies), lock-in problems (due to socio-technological inertia), institutional problems (due to formal/informal rules) and network problems (including problems derived from too weak/strong linkages in the IS). These can only be revealed by empirical analysis in a particular context, i.e. through a diagnostic analysis (Edquist 2011).

¹⁴ As argued by Salazar-Xirinachs *et al.* (2014b, 11) there is across scholarly differences a kind of 'convergence around the idea that government should play a proactive role in facilitating as well as in shaping and orienting the development process, and that policies to promote structural and technological transformation and the catching-up process are relevant to the challenge facing contemporary economies.'

Second, the issue of robustness in production systems is dealt with. Rather than advancing policies that can support a subset of relatively advanced exporting firms de-linked from the domestic economy, the central point is broad-based economic transformation and system-wide competitiveness based on strong domestic inter-industry linkages, and with domestically owned producers in a key role.¹⁵

Finally, though acknowledging the potentials of exports, power asymmetries of a tilted international playing field, market volatility, and the fallacy of composition issue are also explicitly taken into account. In the words of Ocampo (2014, 52) 'in today's developing countries the key to robust growth is synchronization of export development, production linkages and technological capacity building.'

So what is then missing and what is problematic?

First, it is a heterogeneous group of scholars advocating NIP from various rationales. Some start from the notion of an essentially sound market system, cling to the market-failure notion and set structural change in focus, while others are less inclined to privilege one mode of economic coordination (the market), tend to put more emphasis on non-market institutions and systemic problems, and focus on technological capability accumulation. Even though they all converge in seeing structural and technological transformation as the core mechanism of economic development, there is still a missing link between the two theoretical rationales.

Second, in contrast to GVC theory that gives attention to vertical disintegration of production activities, the NIP approach have been more concerned with horizontal economic diversification, final products and 'what you export'. Still, this does not fully take into account that 'trade-in-tasks' prevails making export of intermediate goods the dominant form of trade - accounting for half of global trade.

Third, and somewhat linked, scholars dealing with structural change and technological capabilities tend to follow the principle of methodological nationalism making it more difficult to catch the dynamics that cut across different levels of scale. Though different modes of international technology transfer are explicitly taken up in the technological capability analysis, the focus is on the absorptive

¹⁵ In this context, it is interesting that Jarreau & Poncet (2012) found that the export-related growth-enhancement in China was primarily due to ordinary export activities by domestic-owned firms rather than to more sophisticated processing export of foreign producers.

capacities and efforts of receiver-firms and their national inter-firm and extra-firm relations, which makes it challenging to fully account for the intended (and unintended) global learning mechanisms within GVCs. Furthermore, the organisational decomposition of the innovation process described by for example Schmitz and Stambach (2008) might facilitate global dispersion of (some type of) innovation in ways not anticipated in the innovation system literature.

Finally, there is a certain bias towards incrementalism and the core issue of the political economy of industrial policy have been given little attention. In most recent accounts, the suggested NIP is highly pragmatic in nature with its focus on context-sensitive, industry-, activity- and problem-specific, constraint-relaxing interventions, and the priority is given to the policy process rather than to policy instruments. This raises the issue whether this industry-policy-in-the-small with its problem-solving networks are relevant in all cases and phases – be it industrial start-up, keep-up, or catch-up. Next, networking is not necessarily a panacea and collaborative implementation of policies is not just a technical issue. It is much more about political exchange relations and social coalition building.

Bringing Industrial Policy into Global Value Chain thinking

GVC scholars have after the global financial crisis observed that industrial policy is on the upswing and foresee that industrial policy 'is likely to become more significant' due to the new focus on regional supply networks and new end-markets in the global South (Gereffi 2014a, 29; Gereffi 2014b, 437). Therefore, they are in the process of discussing how an industrial policy that fits to GVC-oriented industrialisation may look like.

As a backdrop, Gereffi (2014a) emphasises that many small and least developed countries will at best have limited and uneven benefits from entering the simple export-oriented industrialisation model; that there seems to be a shift from global to regional value chains; that the domestic markets in large emerging economies are becoming major end-markets; that there has been a geographic concentration of production in a few emerging economies; that an organisational consolidation has taken place that has strengthened a smaller group of large contract manufacturers at the expense of smaller suppliers; and finally that social upgrading in GVCs in the form of reasonable labour conditions and better paid jobs often remains a major challenge.

Therefore, it becomes a major scholarly task to determine under what conditions participation in GVCs contribute to economic and social upgrading (Gereffi and Lee 2012, 29-20). Among these conditions, public policies are considered to be important. How all that relate more precisely to industrial (and social) policy is not totally clear. On the one hand Gereffi and Luo (2014b, 4) suggest

that new realities of GVCs may lead to 'hybrid arrangements that include both neo-liberal and development precepts.' On the other they seem to warn against specific government interventions because 'policy makers do not know enough about the intricacies of global industries to spur forms of innovation in GVCs'. Therefore, they come up with a standard set of facilitating policies in relation to human capital, information about global markets and global match-making (Gereffi and Luo 2014a, 20).

Still, Gereffi, Sturgeon and Milberg have developed the notion of a GVC-oriented industrial policy, and argued that it is different from protectionist, producer-driven import-substitution industrialisation policies as well as from North-South buyer-driven export-oriented policies.

Moreover, the case for industrial policy has according to Milberg *et al.* (2014) not diminished as we have moved into a new type of industrialisation characterized by a high level of vertical integration but the nature of intervention must be different. Thus, it must safeguard import of necessary intermediates, keep export competitiveness as an important attribute and go well beyond trade liberalization towards a more regional-oriented industrial policy.¹⁶

The central aim of GVC-oriented industrial policies is for domestic producers to move into niches in a given (or new) GVC that can engender more value added. This is a difficult balancing act because GVCs on one hand provide mechanisms for fast learning, skill acquisition and economic upgrading but on the other hand they create barriers to learning, drive uneven development that tend to favour lead firms, and crowd-out opportunities for locally-owned firms. Therefore, a GVC-oriented industrial policy must manage and 'leverage international supply chain linkages or dynamics to improve a country's role in global and regional value chains' (Gereffi and Sturgeon 2013, 342).

The GVC-oriented industrial policy is not about picking winners but about improving the performance of existing industries that link domestic firms to the global economy (Gereffi 2014b, 446).¹⁷ There is a special focus on using modest and targeted local content requirements to get global suppliers/contract manufacturers (e.g. Foxconn) rather than just lead firms (e.g. Apple) to make new investments in the country, and to facilitate import of intermediate goods and services to be used in

¹⁶ Milberg (2013) distinguishes between a liberal view on GVCs where the emphasis is on imports of inputs for export performance, widespread trade liberalisation (trade facilitation), and a developmental view where the presence of GVCs enable market access, value added increase, skill & technology formation and regional networking, and where industrial policy, trade policy and support for labour are required to capture the gains.

¹⁷ The GVC approach is not state- but firm-centred, so the GVC-industrial policy stresses the role of the private sector. 'Industrial policy will need to promote business directly and to build skills and capacity in response to private sector needs' (Milberg *et al.* 2014, 169).

the targeted higher-value niches fitting existing local capabilities. Such uses of extra-territorial linkages and bargaining are designed to manage GVCs and provide domestic firms access to world-class inputs. In turn, this lowers both risks and barriers for the entry of domestic firms (Gereffi and Sturgeon 2013, 353-54).

Vertical specialisation increases the import content in exports leading to value-added-thinning when a company enters the GVC but due to economic upgrading policies encouraging domestic production of these same pieces - first by global suppliers and eventually by domestic firms - it is expected to decline subsequently (Milberg *et al* 2014, 155, 174).¹⁸ According to the GVC scholars the extra-territorial connectivity will also ensure that industries in developing countries do not produce outmoded products. 'This sort of value chain specialization assumes an ongoing dependence on imported inputs and services...but is also assures ongoing involvement in leading-edge technologies, standards and industry "best practices"' (Gereffi and Sturgeon 2013, 354)

As stated by Gereffi and Sturgeon these types of policy are mostly applicable to large emerging countries but when value chains are regionalising and more regional industrial policies introduced, they may also be relevant for smaller developing countries in the region.¹⁹ Consequently, there will be a high degree of South-South trade and upgrading will increasingly be oriented towards regional and domestic markets. When large emerging countries concentrate ever more on domestic and regional production networks, they have more leverage to demand local content and can rely more on regional industrial policies to achieve economies of scale and scope as well as to facilitate functional upgrading that usually tend to be blocked in GVCs (*ibid.*, 338).

Summing up, in the age of vertical fragmentation of production in GVCs, industrial policy has to take the form of a GVC-oriented industrial policy that focuses on the linkages between value chain actors, that considers export and import to be entangled, that targets specific tasks/stages in the GVC by means of fine-grained policies, that builds upon existing regional production networks and supply bases in developing countries and puts greater emphasis on upgrading for domestic and regional markets.

¹⁸ Two other GVC-pioneers – Kaplinsky and Morris (2016) – have pointed out that while vertical specialised GVCs (at least initially) are characterised by 'thinning-out' of value added in the chain because of increased use of imported intermediates in production, so-called additive GVCs opens for a 'thickening process' in which targeted linkage development is relevant. Additive GVCs involve a process of sequentially adding value to each stage of the chain predominate within resource-based industries.

¹⁹ The obvious cases of regional industrial policies mentioned are South Africa/Sub-Saharan Africa; Brazil/Mercosur countries, China/Southeast and Central Asia (See e.g. Milberg *et al.* 2014, 166-68).

What is then new and what is promising in the GVC-oriented industrial policy approach?

First, there can be little doubt that this version of the join-development-approach gives a more realistic account for the opportunities and constraints involved in GVC connectivity. GVCs provide information, new market opportunities, inclusivity, fast learning opportunities for local suppliers as well as needed employment, but they also create exclusivity and barriers for learning and they may lock local firms and industries into segments of the value chain characterised by cutthroat competition, slim profits, high volatility and inferior employment conditions. Second, there is also a stronger emphasis on the weaknesses of simple EOI regimes (e.g. assembly work in export processing zones) in relation to wealth creation and innovation.

Third, it is fruitful that it takes into consideration significant post-global financial crisis developments - among others organisational consolidation, geographical concentration of production and shifting end markets. Fourth, there is an explicit focus on the strategies and interests of lead firms and on how constellations of power among lead firms, supplier firms and workers determine who capture how much value within the chain. Fifth, it acknowledges that the government has a key role to play in relation to both economic and social upgrading. Seventh, the approach features the different options that small developing countries and large dynamic emerging economies have in relation to take advantage of - and influence - lead firms. Finally, there is a call for context-sensitive, industry-specific, activity-specific, flexible, experimental and pragmatic industrial policies – along the lines suggested in the previous section on NIP (Gereffi and Sturgeon 2013, 352; Milberg *et al.* 2014, 171).

What is then missing and what is problematic in GVC-oriented industrial policy approach?

First, it is not totally clear how the mixture of neo-liberal and developmentalist precepts looks like.²⁰ How much is it about exploiting existing comparative advantages and existing technological capabilities, and how much is it about defying comparative advantages and building up new technological capabilities and related competitive advantages? The strong criticism of the picking winners approach and the emphasis on existing (rather than new) industries points at the former. Against that Milberg *et al.* (2014, 156) state that '[o]n the other hand, upgrading within GVCs requires some "defiance" of comparative advantage, typically encouraged by policy intervention', so the position is not well-defined.²¹

²⁰ Milberg *et al.* (2014, 170) also state that they will not 'present a full-blown theory of industrial policy in VSI.'

²¹ Milberg and Winkler (2011, 361) are clearer when stating: 'The notion of economic upgrading is largely about gaining competitiveness in higher value added processes, a strategy that may conflict with the dictates of the

Second, there is still a strong belief in the benefits of importing intermediate goods and services while the resulting thinning of value added and lack of local linkages is not given sufficient attention, and the sustainability of import-intensive industrialisation is taken for granted.²² Though it makes sense to stress the importance of easy and cheap access to ‘necessary intermediates’, it is just as (if not more) important to highlight both agglomeration advantages and support to existing and new domestic producers of intermediate goods, capital goods and producer services.

Third, there is not much concern about ownership patterns and whether local value added actually ends up in domestic firms but much concern about giving transnational companies a level playing field. Thus, Brazil’s “Third Way Developmentalism” is criticised for disadvantaging multinational firms (Sturgeon et al. 2013, 11). In addition, the scholars seem to give priority to global supplier firms, while domestic suppliers are mostly supposed to come into play at a later stage.

Fourth, and related, the strong belief in the developmental potential of incoming contract manufacturers - that are supposed to serve many customers, satisfy local content requirements and create jobs - is somewhat surprising. While it is obvious that it will give other firms access to advanced inputs and lead to more local content, ‘the local’ here actually refers to global suppliers that have invested in the host country. Due to the integrated nature of contract manufacture production the developmental impact on domestic firms may be limited just as their broader contribution is constrained by their low value added capture and thin profit rates. Similarly, while job creation takes place, one may question the quality of the jobs.²³

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principle of comparative advantage in which the ‘optimal’ pattern of grade may call for countries to remain specialized in low value added goods.’

²² The risk of ‘thin’ industrialisation is taken up in Milberg *et al.* (2014, 171) but it seems to refer to situations where upgrading is blocked rather than to industrial deepening in the sense of having a strong locally-owned supplier base.

²³ The Wall Street Journal refers to margins of 1.7 per cent and 0.8 per cent for Foxconn and Pegatron (a new Apple supplier), respectively. The value added in China of an iPhone4 with (a retail price of 600 US\$ and) a factory gate price of US\$ 194 was only US\$ 6.5, while Apple got a margin of US\$ 270 to cover its costs and profits (OECD 2011, 24 and 40). The many protests and poor working conditions in Foxconn’s Chinese and Mexican factories, and the high labour turnover among contract manufacturers elsewhere indicate the lack of decent work (see e.g. New York Times January 25th 2012; Sacchetto and Cecchi 2015; Henderson and Philips 2009).

Apart from referring to the revival of industrial policy thinking in the wake of the Global Financial Crisis²⁴ the present article has explored three strands of political economy literature – two of which include a new industrial policy. Where and how do we move forward from here – taking into account both the strength and weaknesses referred to in previous sections? In the following, I will point at selected points of departure for a research agenda on a new industrial policy from the perspective of economic (and social) transformation in a globalising world.

One avenue is to find common ground of GVC and NIP scholars that may serve as a stepping stone for future research. First, scholars in both strands acknowledge that deliberate industrial policy is a necessary condition for developing countries to transform their economies and sustain economic development.

Second, even though there is some disagreement about the exceptional role of manufacturing, there seems to be a common ground in arguing that industrial policies should focus on dynamic and rent-rich activities, regardless where they are positioned along a production chain. Therefore, the future research should study policies related to the process of upgrading towards dynamic parts of the production cutting across the traditional sectors of agriculture, mining, manufacture and services, while acknowledging that premature de-industrialisation – as observed in Latin America and Sub-Saharan Africa – constitutes a problem.

Third, there is a common call for a problem-driven analytical approach, in which upgrading challenges, market failures and systemic problems are seen as specific in nature and therefore have to be addressed through selective and tailor-made policies varying according to position in the value chain and/or stage of development.

Fourth, one can identify a neo-Schumpeterian meeting point around innovation, upgrading and competitive advantages. Both strands are concerned with top-down technology transfer as well as down-up local learning processes. A possible stepping stone here is the analytical frameworks developed by Morrison et al (2008) and Pietrobelli & Rabelloti (2011). They aim at covering the two-way interaction between first various types of GVCs governance and accumulation of technological capabilities, and second between GVCs and local innovation systems, respectively. While new

²⁴ It is worth noticing that this led to a range of international scholarly conferences and related edited volumes on a NIP (for example Stiglitz and Lin 2013; Szirmai, Naudé and Alcorta 2013; Felipe 2015).

industrial policy is not at the core in these two contributions, a future research avenue is to develop that further in the context of the technological dynamics of GVCs.²⁵

Fifth, both strands advocate a stronger research focus on the task of setting up new industrial policies oriented towards the internal and regional markets. One element is the dynamics of domestic demand (see below). Another is how the shift to regional end-markets with lower entry barriers and less stringent standards opens opportunities for frugal innovations but also may result in economic downgrading and low-technology lock-in.

Finally, there is commonality concerning the trade-off between deep processes of globalisation and the national policy space for using industrial policy instruments. GVC scholars have for long studied how trade agreements affects value chain participants, and scholars concerned with structural change and capability issues have studied how the WTO through TRIPS and TRIMS limits domestic policy autonomy. Currently the relevant issue as suggested by e.g. Shadlen (2005) and Bruhn (2014) is to what extent and how behind-the-border regulations in the accelerating number of bilateral and regional trade agreements translate into more limited space for industrial policy.

However, future research on the NIP cannot just rely on finding the common ground but also have to develop new ways to address other important issues.

A first area of interest encompasses the link between industrial policy and the broader macro-economic policy, and the policy implications of a more domestic-demand-oriented growth pattern in the future. While the GVC literature presents itself as a meso-level approach (Gereffi 2014a, 26), the structural change literature has developed more in the direction of including macro-economic policies, including issues related to commodity cycles and financial instability. Thus, the important role of stable pro-growth macro-economic policies and sustainable external accounts have been emphasised by UNCTAD-related scholars (see e.g. Mayer 2009, 383ff), and by ECLAC people (Bielschowsky 2009, 181-82; Ocampo 2014) that have pointed at the importance of counter cyclical policies under financial volatility. Similarly, Bresser-Pereira's (2011b) in his structuralist macroeconomics of development emphasises demand-side economics and gives weight to solving problems of wage-depression and exchange rate overvaluation. In turn, this can be linked to research

²⁵ An important recent contribution is Kaplinsky and Morris (2016) that brings insights from GVC-, linkage- and innovation studies together and discuss how a productive sector policy can further 'the capacity to identify, appropriate and protect rents, and in the context of intense global competition, to develop the capacity to master dynamic capabilities in order to generate rents on a sustainable basis (ibid., 2). The rent management perspective on industrial policy is also developed by Schmitz *et al.* (2015).

that looks at industrial policies aimed at supporting indigenous firms in their endeavour to conquer new domestic markets. In short, the interplay of macroeconomic policies and industrial policy should be part of future research.²⁶

A second area is the link between economic transformation and productivity growth on one hand and the need for creation of more and better jobs on the other. How can one avoid that employment concentrates in lower-productivity activities (in e.g. the informal sector); how to organise structural change so that it sustain decent employment; and under what circumstances can one avoid that joining GVCs ends up in a “race to the bottom”? The answer to these questions can fruitfully build upon both NIP-structural change and GVC literature. The former looks at wages not just as a cost but also a source of demand. It shows how strong productivity growth may lead to job destruction if not combined with strong demand and structural change regimes, and how only strengths in all three elements can lead to a virtuous circle with fast high quality employment growth (see also Astorga 2014, 82-85). GVC scholars have moved from looking at labour as a productive factor to increasingly studying labour as social agents at the workplace and beyond, trying to find out under what circumstances both firms and workers can gain from a process of upgrading? Thus, Milberg and Winkler (2011) and Barrientos *et al.* (2011) have come up with typologies that cover upgrading and downgrading in relation to both the economic and social realm and with promising research suggestions. In brief, a major challenge for future research is to move beyond capability building, structural transformation and economic upgrading and put stronger emphasis on employment and working conditions.

A final research avenue is the political economy (and politics) of industrial policy. Industrial policy produces winners as well as losers, and it is not obvious that self-interested political elites and short-term profit-seeking business elites are motivated to support formulation and in particular implementation industrial policies with a long-term horizon (Lauridsen 2010, 2012). A first step is to distinguish between early stage industrialisation, later stage diversification and last stage catch-up industrialisation because the difficulties of specific policy tasks and institutional capacities required increase. Here, Richard Doner’s (2009, 67ff) collective-action-problem-centred model with three levels of development challenges (static efficiency, diversification, upgrading) can serve as a platform for future research. It brings the discussion beyond the call for context-sensitive and flexible industrial policies as it actually tries to clarify under what conditions particular types of intervention

²⁶ A macro-economic view is also needed to be able to comprehend the processes on exclusion and disarticulation referred to previously.

and institution-building are relevant. The next step is to study the coalition-building and political settlements that make effective industrial policy possible or diverts political attention in other directions.²⁷ An important issue is here how transnational producers/buyers influence the sectoral/national socio-political coalition building process and how that in turn impact upon both the will and capacity to support industrial transformation.²⁸

Concluding remarks

The present article started by presenting a paradoxical situation in the research and policy debate on economic development. On the one hand, it is argued that fragmented and decentralised value chains have foreclosed the traditional role of industrial policy in economic development. On the other hand, it is declared that a well-designed and well-implemented industrial policy is a prerequisite for economic progress in a globalised world.

However, the paradox disappears if the “join-instead-of-build-development” view, which is rapidly spreading among leading donor agencies, is seen as mostly a recycling of fruitless orthodox policy advice. This leaves us with updated GVC scholarship that is sensitive to industrial policy as well as social upgrading issues. As demonstrated, there is both common ground and considerable complementarity between these scholars and new knowledge produced by researchers that take their point of departure concerning a new industrial policy in structural transformation, technological capability and innovation system thinking. By developing the meeting points further, and by explicitly dealing with the volatility of world market integration, the issue of decent employment, and the political economy of industrial policy making the research frontier can be moved forward. Hence, rather than recycling an orthodox policy agenda in the form of value-chain-development and join-development buzzwords, this article has tried to show that promising cross-fertilization of new more heterodox approaches may improve our understanding of under what conditions and how value chain dynamics and in particular industrial policies can further local competitive advantages, deepen

²⁷ On coalition building and political settlements in relation to industrial transformation see for example Kohli 2004, Khan 2013, Whitfield *et al.* 2015.

²⁸ Peter Evans (1995, 16) addressed that issue at an early stage with reference to what he named the new internationalization: ‘Firms had, in effect, traded rents associated with state protection of the local market for those associated with their transnational corporate allies’ proprietary technology and global market power. The new alliance of local entrepreneurs and transnational corporations make it harder to sustain the old alliance between local capital and the state.’

local industrialisation, create more higher quality jobs and through that improve living standards in developing countries.

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