

Protectionism and global production networks of the dynamic core: implications for Mexico

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Abstract

The global financial-productive crisis of 2007-2009 inaugurated a new era of protectionism, as opposed to globalization, as a process for constructing a new global space in accordance with a new phase of capitalist development. In this new context, the electronic-computing and telecommunications sector (SE-IT) constitutes the dynamic nucleus of a new industrial cycle, around which the most highly-internationalized global production networks (GPNs) operate; Mexico can be considered as owning a sector of intermediate size. The initial effect on the GPNs of the dynamic core accentuates the regionalization processes around the main world nodes of China, Germany, and the US, with Mexico deepening its productive integration and GPNs with the US and diversifying its imports from third countries.

Keywords: new protectionism; global production networks (GPNs); development stages and directions; dynamic core.

1. INTRODUCTION

After the global financial-productive crisis of 2007-2009, a new international protectionist course of action came about, taking the offensive with the arrival of Donald Trump as president of the United States. The most notable aspect of this offensive is the trade war between the US and China.

The new protectionism led by the United States, despite being the paradigmatic country of neoliberalism, is contrary in nature to globalization which is understood to be a process of creating a new global space corresponding to a new emerging developmental phase of capitalism –here called knowledge capitalism– in which the electronic-computer and telecommunications sector (SE-IT)¹ becomes the dynamic core of a new industrial cycle by structuring and invigorating world trade and growth. This dynamic core is also the industrial and service complex around which global productive networks (GPNs) with the highest degree of internationalization are deployed, thereby providing the solid underpinnings of globalization. This includes Mexico as it has developed an SE-IT of intermediate size relative to the global scale.

A question then arises regarding what consequences there are to this new international protectionist course and the trade war, their effect on the globalization process and the primary support it finds in the dynamic core's GPNs. This is critical to understanding recent changes and in the future for GPNs' spatial deployment in the sector, its impact on the productive fragmentation and relocation processes, as well as on the dynamics of international trade, its relationship with the new processes of regionalization, in particular with the one involving the North American space. This raises two specific questions about the United States' intraregional integration processes in relation to the effects on the productive and spatial deployment of SE-IT GPNs in Mexico and the new challenges and opportunities that this presents for the country.

Within this framework, this article will study the initial effect of the new international protectionist course on the dynamic core's GPNs and what this means for Mexico. This study has four sections after the introduction: the first takes on the perspective of so-called deglobalization with the aim of situating the new international protectionist course within the framework of capitalism's transition to a new developmental phase and its spatial aspect in the form of globalization's deployment, and the neoliberalist crisis as the main development path taken by this new phase; the second studies the trade war, and its various fronts, as the most visible manifestation of the new protectionist course; the third studies the effects on the dynamic core's GPNs on a trans and international scale; and the last one takes on the effects, primarily as felt by Mexico's dynamic core's GPNs and what it means for this country. After this come the conclusions.

2. THE DEBATE OVER THE SO-CALLED “DEGLOBALIZATION” AND SITUATING THE NEW INTERNATIONAL PROTECTIONIST ERA

The idea of “deglobalization,” which *The Economist* attributes to Bello (2002), arose at the beginning of the XXI century, at the height of anti-globalist social movements, and became relevant once again with the global financial-productive crisis of 2007-2009, and in the subsequent period. It is characterized by a weak recovery with a slow accumulation process, low profit and investment rates, combined with low interest rates and high domestic savings rates in developed countries (the United States, the European Union and Japan). This situation was exacerbated by the global spread of the coronavirus.

Thus, in its most recent meaning, so-called deglobalization accounts for phenomena associated with the slow recovery following the crisis, such as slowdowns in the volumes of world trade, portfolio and foreign direct investment flows, international bank financing, and touristic and migratory flows

(García, 2019). This is in addition to the decline of the US hegemony, the emergence of the global South and the China-led transition to multipolarity (Guerrero, 2014).

Generally, deglobalization assumes an ahistorical take on globalization, seeing it as only the most recent moment of intermittent processes of globalization throughout history, which started with Holland-based international trade in the seventeenth century. The current one stands out due to its neoliberal nature –so in this regard, and only in this regard, we talk of neoliberal globalization. With this approach, the interpretation of deglobalization intersects with Arrighi's and Silver's (2001) vision of the world system and Polanyi's (1944) of the double movement.

In its most complex versions –such as Bello's (2002) and others'– deglobalization is proposed as an alternative to globalization and assumes the following: a reversal of world integration processes and a return to national economies which grow based on internal demand inspired by Keynesianism, combined with the progressive demands of anti-globalist movements such as income redistribution, reduction in social inequality and redistribution of land as a condition of a dynamic internal market; mixed economies including community cooperatives, private and state-owned businesses (excluding, of course, transnational corporations); the spread of the principle of subsidiarity to the economy; or civil society's control over business and the State (Bello, 2009; Guerrero, 2014).

The ahistorical quality of the deglobalization approach does not allow it to comprehend globalization as the spatial dimension of a new developmental phase of capitalism. The idea of the developmental phase provides for a more concrete historical-spatial dimension with regards to Marx's mode of production, and refers to changing units among economy, politics, ideology, cultural institutions, and their respective spaces which make up the historical-spatial phases of development within the mode of production. These result in Chesnais's (2002, p. 1) and Ordóñez's (2021a) "momentary overcoming of the inherent limits in the capitalist mode of production."

The material underpinnings of the developmental phases are the techno-industrial revolutions, which indicate the presence of industrial cycles differentiated specifically by their dynamic core, or the productive complex which structures and invigorates world trade, growth and production in each phase of development. As such, the telecommunication and electronic-computing techno-industrial revolution has made up the material underpinnings of knowledge capitalism as a new phase of emerging development since the 1980s, where the processes of knowledge, learning and innovation take on unprecedented economic preeminence and constitute the main productive force. It is to this that a new industrial cycle belongs, with a dynamic core composed of the SE-IT (Ordóñez, 2004).

As such, globalization refers to the process of creating a new global space which is the result of the transformation of the State's space, a nation-centric and territorially integrated geography, by means of capital and its global and territorially integrated geography. This flips the terms of the relationship of geographical transformation which prevailed in the preceding Keynesian Fordist phase of development (Brenner, 2004, p.16).

Therefore, globalization has its foundation in the overlap and the growing weight borne on the configuration of the world space by a new inter-industrial division of labor (NIIDL), with regards to the (old) international division of labor and its multinational dispute in which capital competed based on its presence in the various national spaces.

The NIIDL, in turn, is based on the process of imbuing knowledge with value as a new countertrend to the continued drop in the profit rate typical of the new phase of development. This is because the process of imbuing knowledge with value, as seen within the field of the value network, assumes that the companies that manage to raise the value of knowledge intensive activities will be the ones that benefit the most from the new possibility of counteracting the downward trend in the profit rate² (see Ordóñez, 2004 and 2009).

In this regard, the NIIDL allows companies to seek the valorization of knowledge through the productive cycle's territorial spread and separation, consisting of conceiving and designing processes or products –concentrated in OEM and ODM³ companies– on the one hand, and related manufacturing and support services –concentrated in CM and CS⁴ companies– on the other. This is developed through a very broad offshoring and outsourcing process, and the ensuing deployment of GPNs as core support for the new global space.

Nevertheless, there are different types of nations and groups of nations deploying this phase, or course of development,⁵ with behaviors which differ from the industrial cycle, structuring and dynamic capabilities clearly differentiated from its dynamic core, and diverse productive-spatial configurations of the GPNs around it. One can identify the presence of at least three development paths in operation today: neoliberalism as the predominant development path, the Scandinavian path and that taken by Asian countries.

The aim of this study is not to deepen the study of the various development paths. It will only touch upon the distinctive features of neoliberalism and how it creates the predominant socio-spatial and institutional context for the new phase of development, and whose supranational reach shapes neoliberal and unipolar globalization. As such, it will not only be in a position to conceptually define the latter in the debate with the deglobalization approach, but also to understand the framework in which the new international protectionist course takes place (for an in-depth study of the various development paths, see Ordóñez, 2021a).

As the predominant path, neoliberalism can be understood as a process of liberalizing capital's "spiritual" and material forces, on the foundation of the telecommunications and electronic-computing techno-industrial revolution, and the trans-nationalization of capital. This explains its enormous transformative capacity in the technological-productive and financial fields, and in reshaping the world space, starting in the 1980s (Ordóñez, 2021a).

The liberalization of capital's material and "spiritual" forces takes place within the socio-spatial and institutional context that arose from the New Deal resulting in America's Keynesian Fordism, and which following WWII spread under their own national modalities to all the developed countries in the West. In Latin America it takes the form of a State corporatism focused on the historical undertaking of industrialization by means of import substitution.

However, the liberalization process meant breaking old distributive commitments and, to some extent, corporate ones as well, with the classes and subordinate groups of Keynesian Fordism and import substitution in Latin America. It also meant a focus on the national scale and an attempt over time to unilaterally assimilate those classes and social groups into the logic of capital, after their defeat, without the incorporation of historical objectives and their elements (Ordóñez, 2021a).

Liberalizing capital's forces in their projection in the trans, supra and international spaces brings with it the creation of globalization in its neoliberal and unipolar form, consisting of the rationalization of the Hegemonic State System's (HSS) institutional complex led by the United States –whose economic aspect consists of the International Monetary Fund (IMF), the World Bank, and the World Trade Organization (WTO)– and the establishment of the dollar as an international currency and means of payment. These go on to operate as vehicles for the free expansion of trans-nationalized capital in its trade, productive, and financially functional forms within the new global space.

The rationalization of the United States' HSS institutional complex is complemented by the overlap of a new institutional construction consisting of the global economic and political networks (GE-PNs), in which international financing agencies and transnational companies play a prominent role, based on the deployment of GPNs and cut across nation States, reallocating skills, resources and functions to actors at the trans, supra and sub-national levels. Thus, is a new "glocalizing" spatiality promoted, a tendency where the trans and supranational level directly shape and subjugate regional and local levels without the mediation of the national level. Consequently, the process trends towards the fragmentation and dismantling of national spaces (Fernández, 2017, p. 29).

Within this approach, liberalizing capital's forces within the framework of the telecommunications and electronic-computing techno-industrial revolution is, above all, the liberalization of the forces of finance capital itself and in relation to the other functional forms of capital. Thereby is a more volatile and fluid form created, at the same time as valorizing that which is most suited to the nature of capital (Marx, 1894).

This made possible the development of a new financial capital based on computerization and the subsequent automation and unprecedented increase in the speed of monetary circulation, with the resulting expansion of the sphere of financial valorization. This brought about the diversification and increased complexity in new financial instruments and agents (Dabat, 2009). Under these conditions, the new financial capital was initially, until the NASDAQ crisis of 2001-2002, huge leverage for the global deployment of a new technological-productive base (Ordóñez, 2018, p. 209).

Subsequently, such a process would result in financial capital becoming autonomous with respect to productive capital, the creation of a large plethora of the latter and the predominance of speculative and parasitic practices. These practices led to a process where financial capital was dysfunctional and disengaged from the requirements of real accumulation (Carcanholo, 2011); in turn, this manifested a deep dissociation between the process of appropriating value and generating it (Choonara, 2018), which reached its furthest point and led to the global financial-productive crisis of 2007-2009.

Therefore, this did not express a crisis of the new phase of development but of neoliberalism as the predominant path within it. The new phase is structured with global geoeconomic-political change geared towards a new multipolar form of globalization, the result of shifting the global economy's dynamic center to eastern Asia, the emergence of China and the rest of BRICS (Brazil, Russia, India and South Africa). Within this context north-south power relations found themselves modified along with an unprecedented recent growth of the global South (which until recently had become the driving force for accumulation worldwide) (Ordóñez and Sánchez, 2016; Fernandez, 2017).

The framework for a new international protectionist course of action is thereby created where one can identify two distinct periods, one with a defensive stance after the crisis of 2007-2009 and one with an offensive stance starting in 2017 with the arrival of Donald Trump as president of the United States.

In the first period, contrary to multilateral trade rhetoric, developed and developing countries reacted in a defensive protectionist manner when faced with the global financial-productive crisis, "shortly after the commitment made by the G20 leaders on November 15, 2008 to 'underscore the critical importance of rejecting protectionism and not turning inward in times of financial uncertainty. In this regard, within the next 12 months, we will refrain from raising new barriers to investment or to trade in goods and services, imposing new export restrictions, or implementing WTO inconsistent measures to stimulate exports,' 17 of the 20 countries announced protectionist measures" (Gamberoni and Newfarmer, 2009), included in the economic stimulus packages (Bussière *et al.*, 2012, p. 2). That initial protectionist course started to decline after reaching its height in 2013 (Deutsche Bundesbank, 2017).⁶

The second period begins with the arrival of Trump in the presidency; it is then that the United States seeks to reposition itself geoeconomically and politically, withdrawing from its international hegemony to prioritize its internal bases of expansion, under the (contradictory) formula of a "nationalist-neoliberalism." This consisted of strengthening neoliberal policies in the national space (financial, environmental and industrial deregulation linked to fossil fuels, corporate tax reductions, rolling back net neutrality, etc.) and was combined with defensive measures and an attempt to redeploy at the international level, resulting in the second period of this protectionist approach, now offensive in nature. This second period is complemented by the creation of a project for investing in national infrastructure, initiatives to reposition the state and create and promote cutting-edge technologies such as 5G networks and semiconductors, the closure of borders to immigration and a new xenophobic discourse.

The most visible aspect of the new international protectionist course is currently the trade war started by the United States within the framework of “nationalist neoliberalism.”

3. THE TRADE WAR AND ITS VARIOUS FRONTS

While the trade war is now specifically focused against China, it initially focused on America’s closest allies such as South Korea in the first stage, dealing with solar cells and washing machines. The second episode is focused against the European Union, Canada, Japan and Australia, as well as Mexico as an important trading partner. Thus, on March 1, 2018, the United States imposed 25% tariffs on steel imports and 10% on aluminum imports, equaling \$48 billion USD, which would primarily affect the aforementioned countries as only 6% of steel and aluminum imports came from China due to the anti-dumping measures imposed by the previous administration. These measures ran parallel to protectionist tariffs placed on solar cells equal to \$8.5 billion USD and certain washing machines and their parts equal to \$1.8 billion USD. The measures hit China hard as it sought to become a leader in one of the cutting-edge technologies affected (solar energy), as well as another ally, South Korea (Peterson Institute for International Economics [PIIE], 2020).

Since the trade tariffs were imposed, allies were gradually exonerated,⁷ thereby focusing the trade war on China. The most important episodes are shown in Table 1.

Table 1. The Trade War's Four Battles and First Deal

<i>Battle #1: Solar cells, washing machines and their parts</i>	January/22/2018: The Trump administration places protectionist tariffs on solar cell imports equaling \$8.5 billion USD, and on certain washing machines along with their parts, equaling \$1.8 billion USD.	August/14/2018: China files a formal complaint with the WTO claiming that duties on solar cells have hurt their commercial interests.		
<i>Battle #2: Steel and aluminum</i>	April/2/2017: Trump requests an investigation into whether steel and aluminum imports pose a security threat to the US. March/28/2018: Korea is made exempt from tariffs for steel imports if they limit their steel exports to 2.68 million tons, a 21.2% reduction compared to their exports in 2017. November/15/2018: US imports of steel grow 2.2% while those originating in less developed countries experience a drop of 12.1%	March/1/2018: US announced duties to be placed on trade allies equaling 25% for steel and 10% for aluminum, primarily affecting Canada, Mexico, Japan and the EU. April/30/2018: US announces tariff exemptions for the EU, Canada and Mexico are extended until June 1st, 2018. December/10/2018: after seven months of tariffs, there is an increase in steel prices within the US, generating 8,700 new jobs.	March/8/2018: US makes Canada and Mexico exempt from tariffs as long as they are in negotiations for a new deal. June/1/2018: exemptions for the EU, Canada and Mexico are canceled and 25% tariffs for steel and 10% for aluminum are restored, covering almost half of American imports of steel and aluminum. May/17/2019: US eliminates tariffs on steel and aluminum from Canada and Mexico after making progress in ratifying the new deal, called USMCA	March/22/2018: Trump extends duty exemptions to include the EU, South Korea, Brazil, Argentina and Australia. July/16/2018: US files separate complaints with China, Canada, Mexico, Turkey, and the EU due to their retaliatory measures against steel and aluminum tariffs.
<i>Battle #3: Unfair trade policies and Intellectual property</i>	April/3/2018: US announces 25% tariffs for around 1,333 products, equaling \$46.2 billion USD. The hardest hit sectors are machinery, mechanical devices and electrical equipment. August/13/2018: US approves protectionist law on budget to implement two important measures for monitoring FDI, both incoming and outgoing. These are known as FIRRMA and ECRA, which respectively monitor total investments and technology transfers. May/5/2019: US announces an increase in tariffs applied to Chinese imports, going from 10% to 25% and equaling \$200 billion USD.	June/15/2018: China announces that it will apply tariffs on \$34 billion USD worth of imports from the US and another \$16 billion USD's worth will be introduced gradually. December/1/2018: Donald Trump and Xi Jinping announce that the previously announced January 1st import tariff increases would not take effect. May/13/2019: China announces that it will carry out various increases to tariffs for American imports, ranging from 5% to 25%, equaling \$60 billion USD.	June/15/2018: US modifies list of products to receive the 25% tariff. The list focuses on intermediate and capital goods. February/15/2019: after half a year of tariffs, 14.9% of American imports are affected. The hardest hit countries are China, Canada, South Korea, Mexico and the EU.	July/10/2018: US introduces additional 10% tax on imports, equaling \$200 billion USD. Intermediate goods in the areas of auto parts and computing make up 47% of the list. Telephone equipment, computers, furniture, lamps and suitcases make up another 50%. February/24/2019: Trump announced that the increase in tariffs to be implemented March 1st has been delayed indefinitely while negotiations with China continue.
<i>Battle #4: Automotive sector as a national security threat</i>	August/27/2018: US and Mexico announce a preliminary agreement to replace NAFTA.	November/30/2018: USMCA is signed by the US, Mexico and Canada.	May/17/2019: President Trump delayed applying tariffs on the European automotive sector after the Secretary of Commerce advised measures be taken to adjust automotive imports in order to protect national security.	
<i>China-US trade agreement</i>	January/15/2020: US and China sign Phase One of a trade deal. Purchases: Chinese commitments include the purchase of an additional \$52 billion USD in energy exports, \$78 billion US in manufactured goods, \$32 billion USD in agricultural commodities and \$38 billion USD in services.	Reduction in import tariffs: US agrees to reduce tariffs by half, to 7.5%, on 120 billion Chinese goods. Trade secrets: the agreement states that American companies which operate in China should operate "openly and freely," free of any pressure to transfer their technology to foreign trade partners. They also agreed upon the creation of an office to resolve trade disputes.	Intellectual Property: China agrees to strengthen the protection of trade secrets and to evaluate penal sanctions for unfair appropriation of "intentional state secrets." Currency manipulation: China commits to not devalue its currency or carry out any sustained intervention in its currency market.	Financial Services: barriers are struck down to help American banking institutions, insurance companies and other businesses providing financial services expand into the Chinese market. Technology: a growth of \$37.9 billion USD is forecasted to occur in the category of technological services, including charges for services related to cloud computing and use of intellectual property.

Source: created by the author using information from PIIE (2020, February 8). <https://www.piie.com/sites/default/files/documents/trmp-trade-war-timeline.pdf>

The third and fourth battles, on commercial practices and intellectual property, and the automotive industry, respectively, were aimed directly against China and persisted until the advent of phase one of a new trade deal between the two countries in January 2020. Phase one of the deal includes commitments to import American products which would prove quite difficult to keep in the time that followed due to the circumstances caused by the spread of the coronavirus.

Contrary to its purpose of reestablishing the United States' place in the global space, the trade war has *boomerang* effects on the American economy itself, and effectively harms China, and global production and trade. It only benefits certain countries, among them Mexico, that act as substitutes for both the United States and China in their reciprocal trade.

The *boomerang* effects include the following:

- a) *On the competitiveness of U.S. exports.* China became the leading input provider in U.S. exports in 2015, accounting for 18.5% of total incorporated foreign content (up from 10.9% in 2011). The main import activities of foreign content in GPNs are wholesale and retail trade (12% of total foreign content), other business services (12%) and chemical products (6%). Furthermore, China established itself as the primary service provider of American manufacturing exports in 2015 (1% of manufacturing exports' total value), with the main incorporated services those of wholesale and retail trade, other business activities and financial services. Likewise, China is the main service provider in total exports (0.6% of total foreign content incorporated) (Organization for Economic Cooperation and Development [OECD], 2016 and 2018), which is why raising tariffs on manufacturing and service imports from China makes American exports more expensive.
- b) *On price levels in the United States and domestic purchasing power.* The United States is the main destination for Chinese exports, and China's share of all imports in America increases from 65.3% in 2011 to 82.5% in 2015, representing an increase in its share of total exported local content from 13.5% to 18.2% (OECD, 2016 and 2018),⁸ so an increase in Chinese imports increases the price levels and decreases Americans' purchasing power.
- c) *On employment levels in the United States.* Feenstra and Sasahara (2017) demonstrate that 2 million jobs were lost from 1995 and 2011 due to trade with China. Of these, 1.4 million were in manufacturing and 600,000 in services; however, growth in total American manufacturing exports for the same period meant 3.7 million jobs were created, 2 million in manufacturing, 500,000 in mining or energy resource industries and 1.2 million in related services. Furthermore, other activities related to China generated 2.8 million jobs in services, meaning that the industry had a net creation of 1.7 million jobs and net total trade of 4.5 million jobs. So reduced trade with that country means net job losses in the United States.

Furthermore, there are the following negative effects on world production and trade, and on trade between the United States and China: assuming an increase in tariffs in the United States of 25% and a retaliatory response from China of 50% –feasible in January 2019– the estimated impact on the global Gross Domestic Product (GDP) in 2019 was a 0.7% drop, meaning that the global economy would only grow 2.8% in 2019 (it actually only grew 2.4%); China would be the country most affected with a 0.9% drop in its forecasted growth, followed closely by the European Union due to indirect financial effects, with a drop of 0.8%, and then by the United States with 0.4% (World Economic Forum [WEF], 18/1/2019).

Another front of the trade war is its effects on international productive relocations and the spatial reconfiguration of GPNs, where it is easy to foresee some of the winning and losing countries. Among the winners are Vietnam, Mexico, Thailand, Malaysia and Indonesia. For example, Nidec Motor Corporation announced that it would relocate their engine and air conditioner production from China to Mexico, with an investment of \$178 million USD and plans to double its productive capacity in that country by March 2019 (but was not actually achieved until around November of the same year). For its part, Panasonic announced a few weeks earlier that it would transfer its production of car stereos from China (Suzhou and Shenzhen) to Thailand, Malaysia and Mexico (Global Trade Analysis Project [GTAP], 2020).

Furthermore, countries such as Indonesia and Thailand could benefit as possible substitutes for Chinese exports of SE-IT products: the former thanks to their role within the value chain as an intermediate supplier; and the second thanks to its recent growth of SE-IT exports, combined with initiatives such as Thailand 4.0 and the Eastern Economic Corridor which strive to drive the “high value added” industry in the country. Likewise, countries such as Vietnam where one can find OEM companies which also have a presence in China, such as Samsung and Intel, will most likely attract investments that would have gone to China before the trade war, in addition to their strong growth due to a dynamic domestic market (GTAP, 2020).

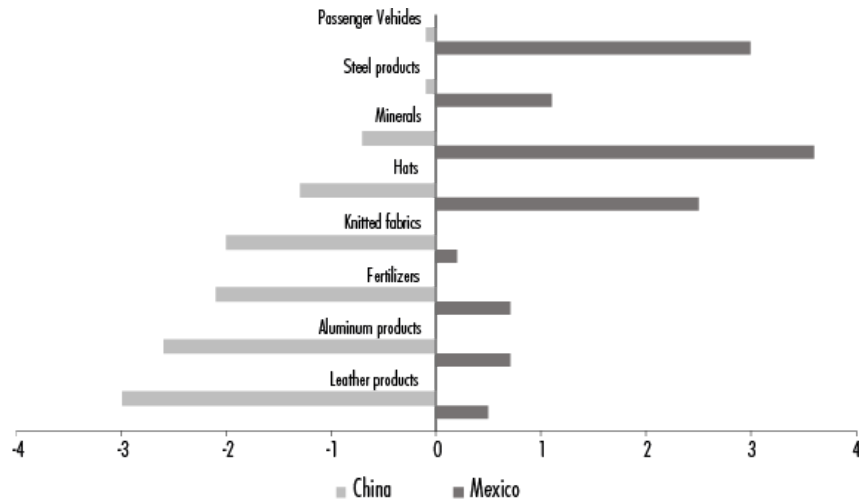
A process running parallel to this is Chinese productive companies' internationalization to countries such as Mexico and Vietnam as they seek to avoid tariffs and the establishment of new SE-IT GPNs. TCL Electronics Holding Limited, originally from Guangdong, would boost the operations of its television plant in Mexico, seeking to double its production from 2 to 4 million; while GoerTek, maker of Apple's iPods, has already transferred operations to Vietnam (GTAP, 2020).

Among the potential losers are countries such as South Korea, Taiwan and Japan, as their SE-IT product exports incorporate Chinese components (OECD, 2016 and 2018), or the Philippines, since it provides 16.9% of the imports in the sector's value chains for Chinese products which are then exported.

However, despite the productive relocation process stemming from the trade war, the United States does not receive any real benefit as while about a third of foreign companies operating in China are evaluating relocation plans, only 6% consider relocating to the United States.

Finally, Mexico increased its exports to the United States by 10% in 2018, largely due to the increase in consumption in that country and the drag effects on Mexican production, but also thanks to the process of substituting Chinese exports due to the increase in tariffs (see Figure 1).

Figure 1. Mexico picks up exports as China slips.
Change in share of total US imports, 2017-2018 (%)



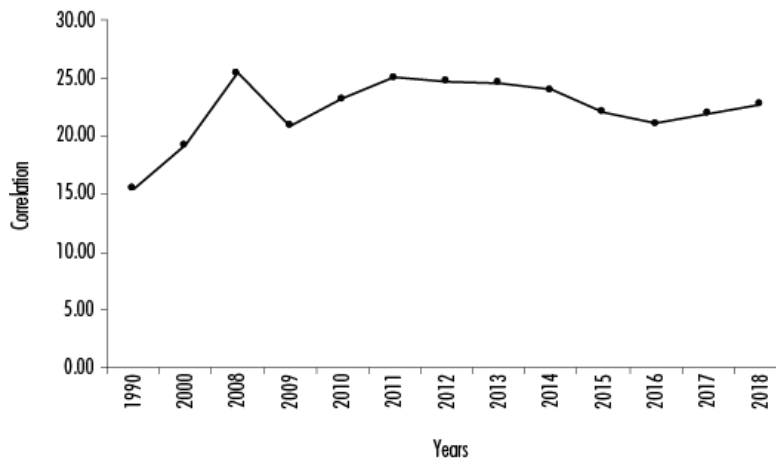
Source: created by the author using data from the United States Census Bureau (2020).
US imports. <https://www.census.gov/en.html>

4. THE TRADE WAR AND ITS INITIAL EFFECTS ON SE-IT GPNS

In the time before the crisis, the global production internationalization process grew, as the global product export ratio grew from 15% in 1990 to 19% in 2000, and then to 25.4% in 2008 (see Figure 2).

Figure 2 indicates that the trend towards stagnation is accompanied by a decrease in world trade in relation to production, where the effect of the new protectionist course was greater during its defensive period (the export ratio decreased to 24.5% in 2013). This is when one compares it to the offensive period starting in 2017, where the export ratio continued to increase within the context of a downward trend, which started in 2014 and was related to the European debt crisis and the Chinese slowdown.

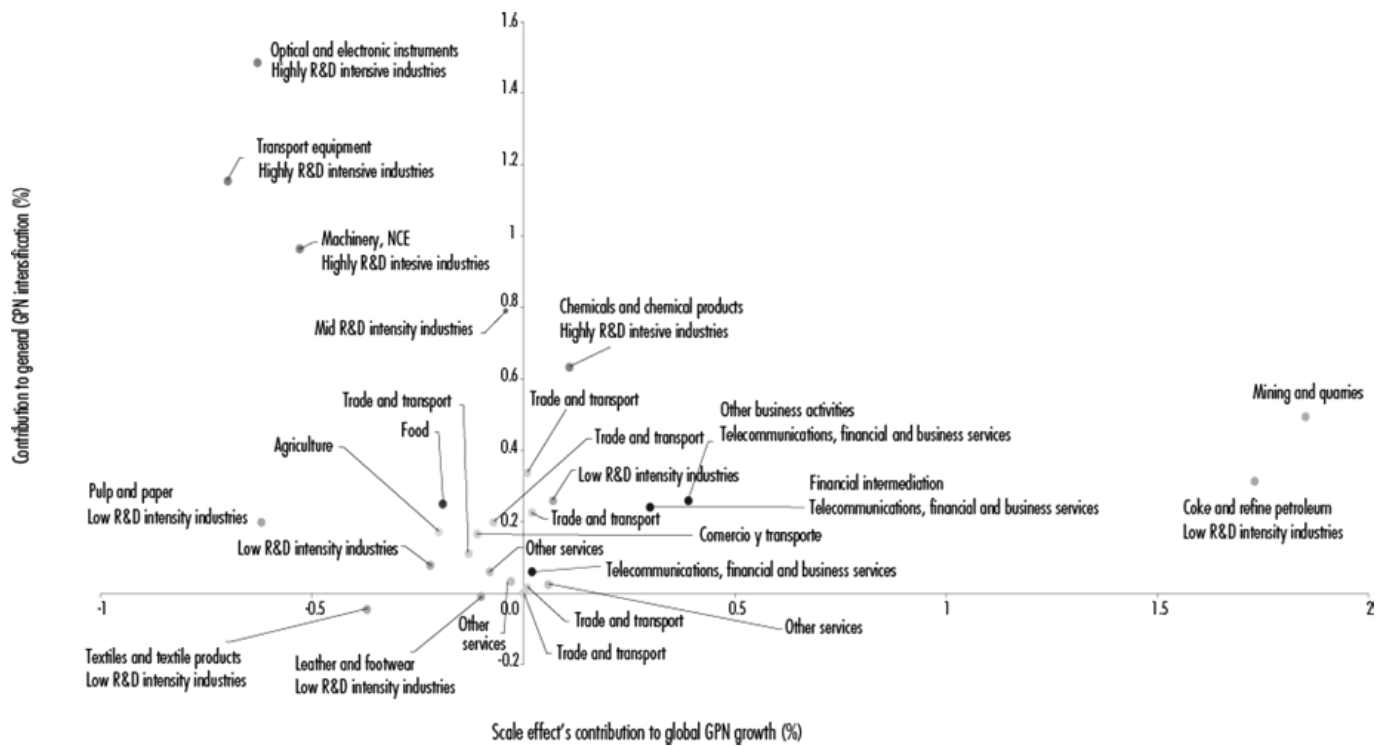
Figure 2. Global export ratio, select years (%)



Source: <https://datos.bancomundial.org/indicador/NY.GDP.MKTP.CD?end=2018&start=1990>
<https://timeseries.wto.org/>

On the other hand, in accordance with its character as the dynamic core of the new industrial cycle, the SE-IT constitutes the most internationalized manufacturing and service complex. As such, the GPNs which surround it are the material underpinnings of globalization, which manifests itself in its contribution compared to other activities, both in strengthening GPN formation as well as their spread between 1995 and 2011, as shown in Figure 3.⁹

Figure 3. Sectors which drive global GPN expansion between 1995 and 2011



Source: WDR team, 2020, using data from the WOD launch database, 2013. Taken from the World Development Report 2020, p. 28

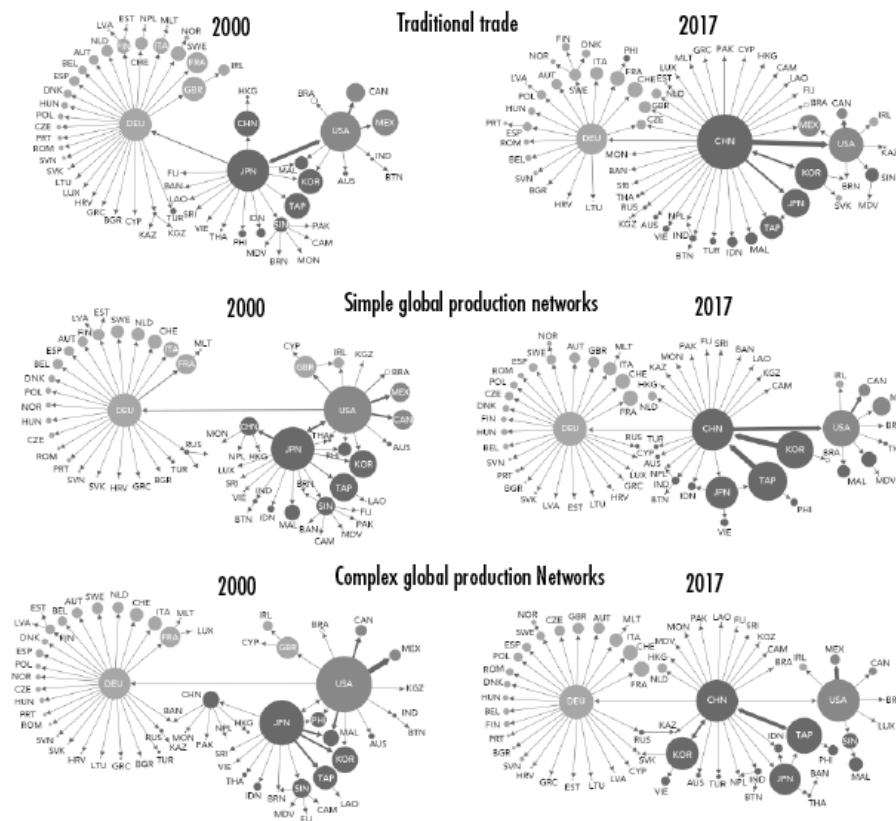
The SE-IT, represented in Figure 3, partly by the optical and electronic instruments, is a production complex highly intensive in Research and Development (R&D) with the greatest contribution to the intensification of GPN formation, above other activities such as transport equipment and machinery, complemented by telecommunications' contribution to extensive GPN formation (scale effect) found at the far right of the figure. At that end, the activities with the greatest contribution are mining and quarries, and coke production and oil refining.

The SE-IT GPNs are shaped by three main supply and demand nodes in Western Europe, East Asia and North America, and the most significant changes that they underwent from 2000 to 2017, some of which are likely to intensify as a result of the new international protectionist path (see Figures 4 and 5):

- a) China becomes the center integrating trade and GPNs in Asia, both in terms of value-added supply (Figure 4) and demand (Figure 5), ousting Japan from that position in terms of regional value-added supply and in the process multiplying the deployment of its GPNs to European and Eurasian countries, both for international value-added supply and demand. The United States was the center for integrating the value-added demand of Asian GPNs in terms of traditional trade (domestic value-added incorporated in an exported final product) and simple GPNs; that is, domestic value-added incorporated into an exported intermediate product that is processed and converted into a final product, and consumed, in the country of destination (exported value-added is incorporated in the production process of the destination country, thereby crossing borders only once). In complex GPNs, that is, when domestic value added is incorporated into an intermediate product that is exported and processed in the country of destination, and re-exported for subsequent processing (and export) or for final consumption (the exported value added crosses borders at least twice), Asian GPNs were split in two subregional centers: the first focused on demand in Malaysia and, to a lesser extent, Singapore; while the second developed around Taiwan's demand which, in turn, was connected to U.S. demand (World Trade Organization [WTO], 2019).
- b) In the supply of value-added supply through traditional trade and simple and complex GPNs, the United States has lost its central role of Asian supply. This was largely based on its trade and GPNs with Japan, allowing it to become a North American regional center supplying Mexico and Canada. Nevertheless, it has retained traditional trade and GPNs with Ireland and some Asian countries such as Singapore and Malaysia. With regards to demand for value-added in traditional trade and simple GPNs, the United States retains its link with Asia, but now based on Chinese demand for value-added, and increases its trade and GPNs with Europe, particularly with Great Britain, even though it has fundamentally lost its link with Asia in its complex GPNs, similarly in favor those GPNs' regional integration. Mexico also maintains itself as a growing regional demand center in complex GPNs (WTO, 2019).
- c) In the supply of value-added in GPNs and trade, Germany's importance grew as a supply center in Europe, at the expense of countries such as France, Great Britain and Italy, meanwhile the United States' supply of added value to the former simple and complex GPNs is replaced by new GPNs that from China provide both Germany and the United States. China also replaces Japan as the Asian supply center for both countries in traditional trade. In the demand for added value, the loss of importance experienced by countries such as France, Great Britain and Italy is clearer, even though these countries, along with other Western European nations, replace trade and simple demand GPNs with Germany with new links to the United States, particularly in simple GPNs. While Scandinavian and some Baltic countries maintain trade and supply and

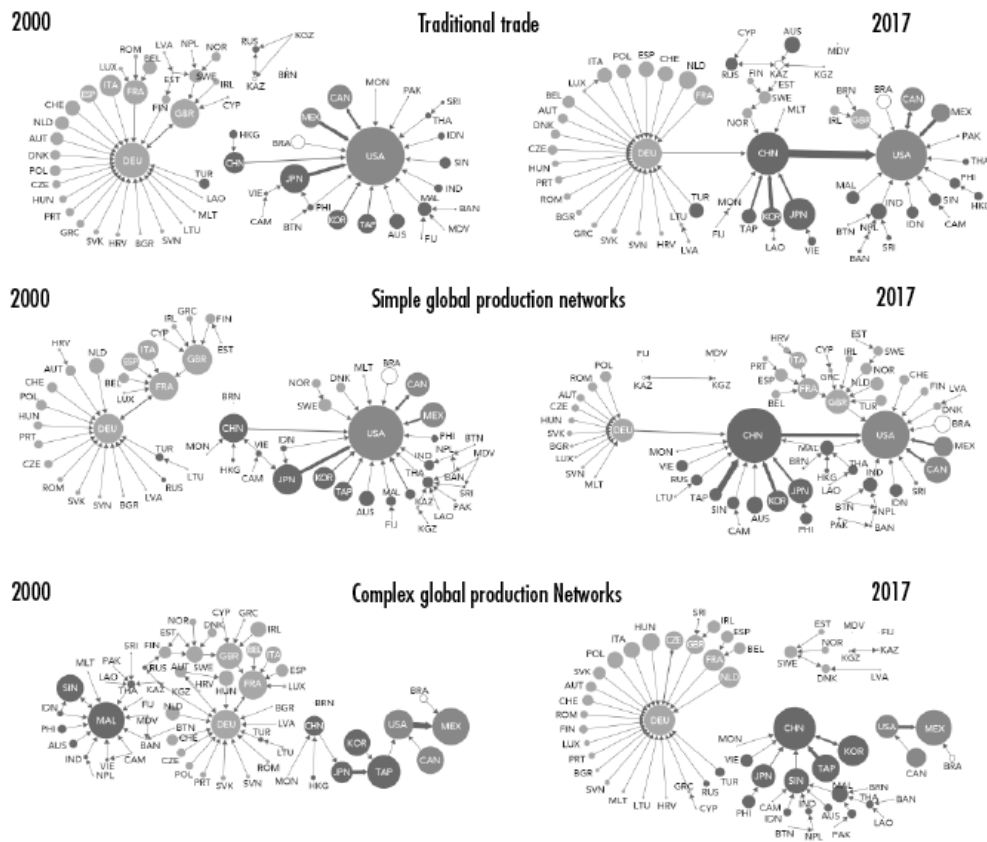
demand GPNs with Germany, those countries tend to deploy more or less integrated subregional trade and GPNs, with Sweden as a major demand hub. One can thus identify three new focal points: Chinese demand for subregional trade, American demand for the deployment of simple GPNs, and the formation of complex subregional demand GPNs of its own (WTO, 2019).

Figure 4. Value-added trade supply hubs in SE-IT networks



Source: Global Value Chain Development Report, 2019.

Figure 5. Demand centers of value-added trade in SE-IT networks



Source: Global Value Chain Development Report, 2019.

Under these conditions, the trade war acts as the spearhead for the new international protectionist course and has direct repercussions on global SE-IT growth dynamics in the following activities: intellectual property, network interconnectivity and the Huawei controversy, cloud computing and semiconductors, as explained below.

The management of intellectual property (IP) is a key issue that differentiates neoliberalism from the Asian path. In the former it constitutes an essential component of competition between private capital that differentiates hierarchical structure of companies in productive networks (those who own IP and those who do not); meanwhile, in the Asian approach, management of intellectual property serves as an instrument used by the State to acquire and develop the nation's technological capabilities in order to compete with other States (China makes access to its domestic market conditional on technology transfer processes through joint ventures and other restrictions).

The United States' response to China consists of the aforementioned measures to monitor Foreign Direct Investment, both incoming and outgoing, known as FIRRMA (Foreign Investment Risk Review Modernization Act) and its power to influence possible foreign acquisitions of US companies based on National Security concerns, and ECRA (Export Control Reform Act) that monitors external technology transfers, thereby making it possible to control exports (see Table 1).

With regard to interconnected networks, China is heading the rollout of the world's largest fifth-generation (5G) network covering 50 cities and 86,000 base stations as of October 2019, as part of the State's strategy to position itself at the forefront of the world. This includes their three big operators: China Mobile, China Unicom, China Telecom (SDX Central, 01/XI/2019). It is clearly ahead of the US in this process, where 5G deployment clearly follows the competitive strategies of its main operators, AT&T and Verizon (SDX Central, 18/XII/2018).

It is within these circumstances that we find the controversy surrounding Huawei, the producer of telecommunications infrastructure and equipment. The United States government seeks to block its access to hardware and software produced by American companies, as well as the use of American production equipment for its supply of semiconductors. Likewise, the government banned the subsequent deployment of its telecommunication networks in the United States and sought to have its allies do the same, arguing that the company creates back channels, which it introduces through mandatory updates, thereby allowing it to spy on its users and share the collected data with the Chinese government, which actively participates in its financing and operation.

Asia Pacific allies (Australia and New Zealand) follow the American directives, even though the Europeans –with Germany at the head– do not (Britain only fell in line with America's wishes post Brexit); meanwhile the Scandinavian companies Ericsson and Nokia are favored by the deployment of telecommunications infrastructure (particularly 5G networks) (International Business Times [IBT], 02/VII/2019).

As for *cloud computing*, Phase One of the January 2020 agreement proposes opening the Chinese market. At the global level, Alibaba has a share of just 5% in the global infrastructure while US companies together account for 70%: Amazon (52%), Microsoft (13%), Google (3%) and IBM (2%) (Gartner, 01/VIII/2020).

Where semiconductors are concerned, it is a strategic industry as it provides one of the technological foundations of SE-IT –along with software and digitalization– (Dabat and Ordóñez, 2009), which is why acquiring domestic capabilities is one of the objectives of the *Made in China 2025* plan. Meanwhile, the United States is at the forefront of R&D, but lacks manufacturing, packaging and testing capabilities, being dependent on China in the following related aspects: it provides it with the main and most dynamic market for semiconductors and associated technologies (\$221.2 billion USD in 2019) (Handel, 2020), in addition to being a source of components and assembly for American manufacturers. It also, to a lesser extent, provides a manufacturing and assembly base for those American manufacturers (U.S. Chamber of Commerce [USChC], 2021).

Thus, actions meant to hinder China's industrial development put in place by the Trump's administration consisted of blocking China's access to the supply of semiconductors produced by American companies¹⁰ and prohibiting the use of U.S. semiconductor production equipment to Chinese companies or others that provided them with semiconductors. This caused conflicts between the U.S. government and the U.S. industry due to its dependence on revenue from the Chinese market which is the largest in the world (for *Applied Materials*, for example, it accounts for approximately 26% of its profits).

The Joe Biden administration seeks to rebuild domestic value networks for manufacturing and packaging in the United States, in addition to incorporating allied countries in forming supply networks to maintain the United States' lead position in the R&D industry (Semiconductor Engineering, 23/III/2021). This is happening within the framework of a new trade policy focused not on breaking barriers to investments by multinational companies, but in empowering domestic productive capabilities which raises wages and employs high-paying skilled labor (*Wall Street Journal*, 24/II/2021).

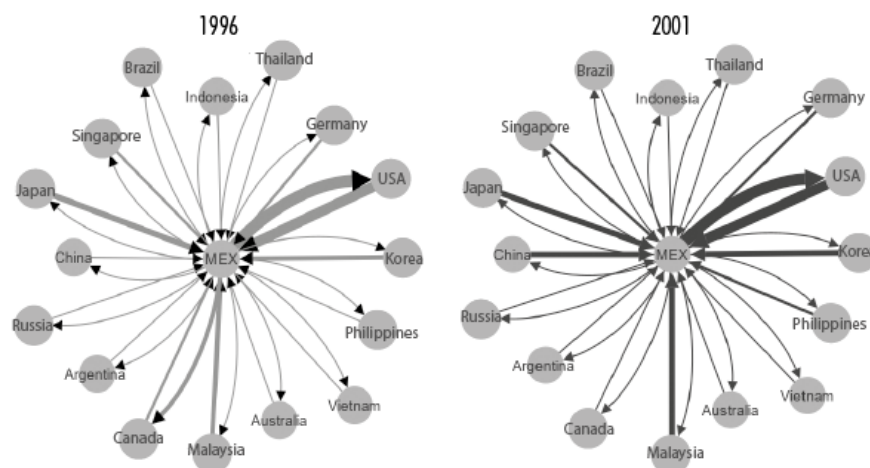
5. WHAT THIS MEANS FOR MEXICO

The United States' transition away from an integrating center of Asia's SE-IT value-added demand through traditional trade and simple GPNs, and from an integrating center of supply through its trade and GPNs with Japan, to a regional center of value-added supply and demand for Mexico and Canada, is accompanied by two major changes in SE-IT trade and GPNs in Mexico: a considerable increase in imports from China, and stronger complex demand GPNs with the United States (see Figures 4 and 5).

As a result, Mexico loses some of its competitive edge in relation to both countries. This is manifested in a process of denationalization of value-added exchanged through trade and GPNs with them, resulting in three distinct processes: a decrease in domestic content in exports to both countries; a decrease in their share as primary exporters of inputs from Mexico through GPNs; and an increase in their share as primary suppliers of foreign inputs in Mexico's exports through GPNs; this is quite significant in China's case. Conversely, in the electronics industry, as the main internationalized activity of the Mexican SE-IT, there is an increase in the domestic value-added content in total exports (Ordóñez, 2021b).

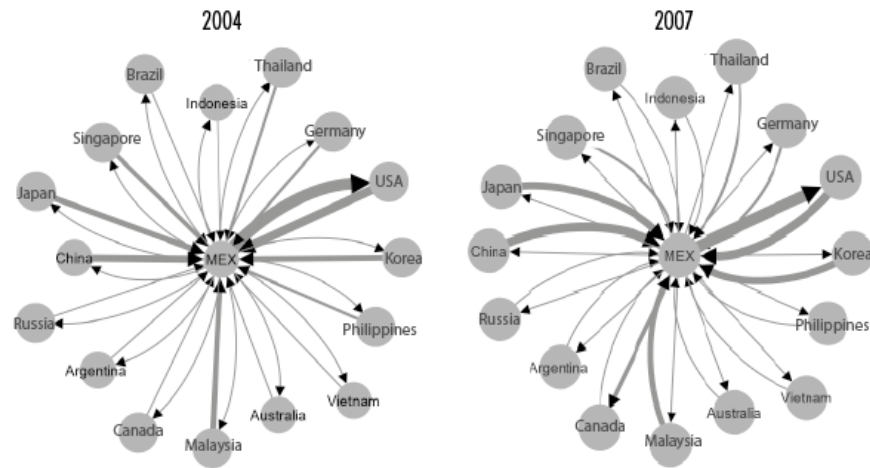
To the detriment of the US, this lines up with a diversification process for countries where the electronics industry's imports come from. The process started in the 1990s and continues to this day. It also lines up with a much more limited diversification process regarding destination countries for exports which mainly favors Canada (see figures 6, 7 and 8).

Figure 6. Foreign trade in the Mexican electronics industry, 1996 and 2001



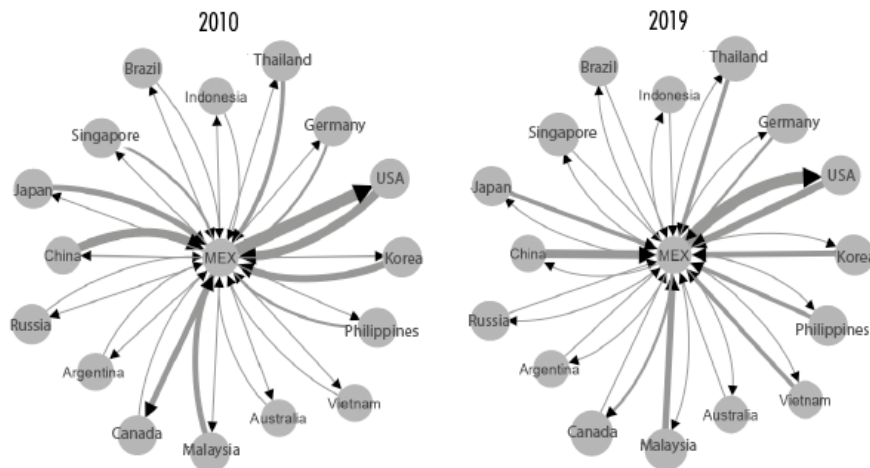
Notes: exit arrows are exports and input arrows are imports; the thickness of the arrows represents differentiated trade volumes.
Source: created by the author using data from COMTRADE, <https://comtrade.un.org/data>

Figure 7. Foreign trade in the Mexican electronics industry, 2004 and 2007



Notes: exit arrows are exports and input arrows are imports; the thickness of the arrows represents differentiated trade volumes.
 Source: created by the author using data from COMTRADE, <https://comtrade.un.org/data>

Figure 8. Foreign trade in the Mexican electronics industry, 2010 and 2019



Notes: exit arrows are exports and input arrows are imports; the thickness of the arrows represents differentiated trade volumes.
 Source: created by the author using data from COMTRADE, <https://comtrade.un.org/data>

Aside from the fact that by 2007 China had flows to rival those of the US, Japan, Korea, and Malaysia were incorporated into the diversification process for countries where imports originate with the incorporation of Thailand, Vietnam and the Philippines occurring later. On the side of exports, Canada was incorporated in the second half of 2000.

Therefore, the new international protectionist approach could strengthen the deployment of complex demand GPNs in Mexico in two ways. The first is with the United States for re-export to that country, given the new limitations introduced by the processes of displacing GPNs from the United States to China. The second is with countries favored by the trade war such as Malaysia, Thailand and Vietnam, with whom Mexico has diversified imports, to also export to the United States. Mexico could thereby potentially increase its share of the US market and increase the national/regional content of its exports.

6. CONCLUSIONS

The ahistorical quality of the deglobalization perspective does not allow it to comprehend globalization as the spatial dimension of a new phase of capitalism's development whose dynamic core constitutes the SE-IT and the GPNs which surround it; this consequently provides the main material underpinnings of the new global space.

For its part, the global financial-productive crisis of 2007-2009 and the subsequent period are marked by the crisis neoliberalism faces as the main development path for deploying this new phase with its supranational reach shaping the neoliberal and unipolar manifestation of globalization.

In this context, the new international protectionist approach and the trade war made up the United States' original offensive response to the neoliberal path's crisis, under the contradictory formula of a nationalist-neoliberalism. The initial effects of this approach on the SE-IT's GPNs are focused on strengthening the regionalization processes of GPNs' deployment around the world's main supply and demand nodes: China, Germany and the United States. However, China seems to be positioned to become node with the greatest global reach.

The regionalization process, which leads the United States to become a regional value-added supply and demand center for Mexico and Canada is accompanied by two important changes in Mexico's trade and SE-IT's GPNs: a considerable increase in imports from China, and the increased complexity in demand GPNs with the United States. This could result in an increase of its share of the U.S. market at the expense of China and other east Asian countries.

Both processes are expected to intensify as a result of the new protectionist approach, which in turn will lead to greater productive integration with the United States, and perhaps with Canada, through the regional deployment of complex GPNs. This will include an important diversification of imports, not only from China in a process that will continue the previous trend, but from the countries which benefited from the trade war such as Malaysia, Thailand and Vietnam, among others.

This poses new opportunities and challenges for Mexico in terms of how to take advantage of the United States' intensification of regionalization processes to better position its regional SE-IT GPNs within the industry to in turn take advantage of the increases in regional/national production content promoted by the new USMCA, thereby shifting Mexico "upwards" in relation to China and other countries.

In national terms, this would mean the possibility of endogenizing the development of the SE-IT, enhancing its capacity to articulate and stimulate internal growth. This would necessitate a political stance and a comprehensive industrial policy which incorporates policies on labor, education and science and technology.

BIBLIOGRAPHY

Arrighi, G. and Silver, B. (2001). *Caos y orden en el sistema-mundo moderno*. Akal.

Bello, W. (2002). *Deglobalization: Ideas for a New World Economy*. Zed Books.

_____ (2009). The deadly triad: Climate change, free trade and capitalism. In U. Brand, N. Bullard, E. Lander and T. Mueller (eds.). *Contours of climate justice: Ideas for shaping new climate and energy politics* (pp. 42-44). Dag Hammarskjöld Foundation.

Borras, M. and Stowsky, J. (1997). Technology Policy and economic growth.

BRIE/University of California Berkeley. *Working Paper 97*. https://brie.berkeley.edu/sites/default/files/wp_97.pdf

Brenner, R. (2004). ¿Nueva expansión o nueva burbuja?: la trayectoria de la economía estadounidense. *New Left Review*, 25. <https://newleftreview.es/issues/25/articles/robert-brenner-nueva-expansion-o-nueva-burbuja-la-trayectoria-de-la-economia-estadounidense.pdf>

Bussière, M., Saxena, S. and Tovar, C. (2012). Chronicle of currency collapses: Re-examining the effects on output. *Journal of International Money and Finance*, 31(4). <https://doi.org/10.1016/j.jimon.2012.01.008>

Carcanholo, D. (2011). Conteúdo e forma da crise atual do capitalismo: lógica, contradições e possibilidades. *Revista de Cultura Política*, 1(3). <http://www.seer.ufu.br/index.php/criticasociedade/issue/view/711>

Castells, M. (1999). *La era de la información*. Editorial Siglo XXI.

Chesnais, F. (2002). A teoria do regime de acumulação nanceirizado: conteúdo, alcance e interrogações. *Economia e Sociedade. Revista Economia e Sociedade*, 18(44). https://econpapers.repec.org/article/eucancoec/v_3a18_3ay_3a2002_3ap_3a1-44.htm

Choonara, J. (2018). A economia política da grande depressão. *International Socialism*, 0 (158). https://www.researchgate.net/profile/Joseph-Choonara/publication/325398404_Thee_political_economy_of_a_long_depression/links/5b0be9030f7e9b1ed7fa4b5b/The-political-economy-of-a-long-depression.pdf

Dabat, A. (2009). Economía del conocimiento y capitalismo informático (o informacional). Notas sobre estructura, dinámica y perspectivas de desarrollo. In A. Dabat and J. Rodríguez (coords.). *Globalización, conocimiento y desarrollo. La nueva economía del conocimiento. Estructura y problemas. Tomo I* (pp. 57-73). UNAM-IIEc.

Dabat, A. and Ordóñez, S. (2009). *Revolución informática. Nuevo ciclo industrial y división internacional del trabajo: marco general para el estudio de la incursión internacional de México*. crim/iiec.

Deutsche Bundesbank (2017). Annual Report 2017. Deutsche Bundesbank. <https://www.bundesbank.de/resource/blob/670876/ab00fb7d38e00d2d-73c813e573710b49/mL/2017-annual-report-data.pdf>

Drucker, P. F. (1994). *La sociedad postcapitalista*. Norma.

Emerald Group Publishing Limited (2019). Relationship between intangible assets and productivity: proved fact or wishful thinking? <https://www.marketresearch.com/Emerald-Group-Publishing-Limited-v2733/Relationship-intangible-assets-productivity-Proved-12761533/>

- Ernst, D. (1998). What Permits small firms to compete in high tech industries? Interorganizational knowledge creation in the Taiwanese computer industry. *Danish Research Unit for Industrial Dynamics (druid), Working Paper, 98-3*. <https://wp.druid.dk/wp/19980003.pdf>
- Feenstra, R. and Sasahara, A. (2017). The "China shock", exports and U.S. employment: A global input-output analysis. *Review of International Economics, 26(5)*. <https://www.nber.org/papers/w24022>
- Fernández, V. (2017). *La trilogía del erizo-zorro: redes globales, trayectorias nacionales y dinámicas regionales desde la periferia*. Anthropos Editorial.
- Gamberoni, E. and Newfarmer, R. (2009). Aid for trade: do countries that need it, get it? *Policy Research Working Paper, 1(1)*. <http://documents.worldbank.org/curated/en/214871468147578658/Aid-for-trade-do-countries-that-need-it-get-it>
- García, A. (2019). From globalization to deglobalization: Zooming into trade. *Las claves de la globalización 4.0 (165)*. <https://www.bruegel.org/wp-content/uploads/2020/02/Globalization-desglobalization.pdf>
- Gartner (August 1, 2020). Gartner says worldwide IaaS public cloud services market grew 29.5 percent in 2017.
- Gartner. <https://www.gartner.com/en/newsroom/press-releases/2018-08-01-gartner-says-worldwide-iaas-public-cloud-services-market-grew-30-percent-in-2017>
- Global Trade Analysis Project (GTAP) (2020). Trade wars and their implications for developing countries. Global Trade Analysis Project. https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=6022
- Global Value Chain Development Report (2019). Technological innovation, supply chain trade and workers in a globalized world. World Trade Organization. https://www.wto.org/english/res_e/publications_e/gvcd_report_19_e.htm
- Guerrero, G. (2014). The deglobalisation paradigm: A critical discourse on alternatives. *Systemic Alternatives*. <https://systemicalternatives.org/2014/07/29/the-deglobalisation-paradigm-a-critical-discourse-on-alternatives/>
- Handel, J. (2020). Whitepaper: Semiconductor industry from 2015 to 2025. *International Business Strategies*. <https://www.semi.org/en/semiconductor-industry-2015-2025>
- International Business Times (IBT) (July 2, 2019). Nokia, Ericsson could be winners in US, China trade wars. IBT. <https://www.ibtimes.com/nokia-ericsson-could-be-winners-us-china-trade-wars-2760809>
- Marx, K. (1894 [1977]). *El capital: crítica de la economía política, Tomo III*. Siglo XXI Editores.
- Ordóñez, S. (2004). La nueva fase de desarrollo y capitalismo del conocimiento: elementos teóricos. *Comercio Exterior, 54 (1)*. http://ru.iiec.unam.mx/133/1/LaNueva_FaseDeDesarrollo.pdf-revHEAD.svn000.tmp.pdf
- _____ (2009). El capitalismo del conocimiento, la nueva división internacional del trabajo y México. In A. Dabat and J. Rodríguez (coords.). *Globalización, conocimiento y desarrollo. La nueva economía global del conocimiento: estructura y problemas. Tomo I* (pp. 383-416). UNAM-IIEC.
- _____ (2018). A nova fase de desenvolvimento do capitalismo, para além do neoliberalismo, e a América Latina. In C. Brando (org.). *Teorias e políticas do desenvolvimento latino-americano* (pp. 195-231). Centro Internacional Celso Furtado de Políticas para o desenvolvimento.
- _____ (2021a). *Ciclo industrial, núcleo dinámico y vías de desarrollo en el mundo actual: la originalidad de México*. IIEC-UNAM. En prensa.
- _____ (2021b). Ciclo industrial, núcleo dinámico y política industrial en México. In J. Basave (coord.). *Política industrial en México. Antecedentes, lecciones y propuestas*. IIEC-UNAM. Entregado y en proceso de dictamen.
- Ordóñez, S. and Sánchez, C. (2016). Knowledge capitalism, globalization and hegemony: Towards a socio-spatial approach. *World Review of Political Economy, 7(1)*. <https://doi.org/10.13169/worrevipoliecon.7.1.0004>
- Organización para la Cooperación y el Desarrollo Económicos (OCDE) (2016). Trade in value added. https://stats.oecd.org/Index.aspx?DataSetCode=TIVA_2016_C1
- _____ (2018). Trade in value added. <https://www.oecd.org/sti/ind/measuring-trade-in-value-added.htm>
- Peterson Institute for International Economics (PIIE) (February 8, 2020). Trump's trade war timeline: An up-to-date guide. Peterson Institute for International Economics. <https://www.piie.com/sites/default/files/documents/trump-trade-war-timeline.pdf>
- Polanyi, K. (1944). *The great transformation*. Beacon Press.
- Quinn, J. and Hilmer, F. (1994). Strategic outsourcing. *MIT Sloan Management Review*. <https://sloanreview.mit.edu/article/strategic-outsourcing/> Semiconductor Engineering (March 23, 2021). Washington takes key steps to bolster U.S. semiconductor manufacturing and supply chains.
- Semiconductor engineering. <https://semiengineering.com/washington-takes-key-steps-to-bolster-u-s-semiconductor-manufacturing-and-supply-chains/>
- SDX Central (December 18, 2018). AT&T launches mobile 5G in 12 markets. SDX Central. <https://www.sdxcentral.com/articles/news/att-mobile-5g-launches-in-12-markets/2018/12/>
- _____ (November 1, 2019). Chinese operators activate world's largest 5G Network. SDX Central. <https://www.sdxcentral.com/articles/news/chinese-operators-activate-worlds-largest-5g-network/2019/11/>

Stewart, A. (1997). *Il capitale intellettuale. La nuova ricchezza*. Ponte alle Grazie.

U.S. Chamber of Commerce (USChc) (2021). Understanding U.S.-China decoupling: Macro trends and industry impacts. U.S. Chamber of Commerce. <https://www.uschamber.com/report/understanding-us-china-de-coupling-macro-trends-and-industry-impacts>

Wall Street Journal (January 24, 2021). Biden team promises new look in trade policy. *The Wall Street Journal*. <https://www.wsj.com/articles/biden-team-promises-new-look-in-trade-policy-11611484201>

World Economic Forum (WEF) (January 18, 2019). How a trade war would impact global growth. <https://www.weforum.org/agenda/2019/01/how-trade-war-would-impact-global-growth-tari/>

World Trade Organization (WTO) (2019). Informe de desarrollo de la cadena de valor global 2019. Innovación técnica, comercio de cadenas de suministro y trabajadores en un mundo globalizado. World Trade Organization. https://www.wto.org/english/res_e/booksp_e/gvc_dev_report_2019_e.pdf

¹ TL note: from the Spanish name “sector electrónico-informático y de las telecomunicaciones.”

² The same underlying idea is implicit in the findings in literature on human capital regarding the new type of “model” corporation (Stewart, 1997; Drucker, 1994; Castells, 1999, etc.), and the causes for the new inter-industrial division of labor’s global deployment in the 1990s (Emerald Group Publishing Limited, 2019). Authors such as Borrus and Stowsky (1997), Ernst (1998) and Quinn and Hilmer (1994) conclude that companies considerably decrease their investment in machinery and equipment by specializing in product design.

³ According to business terminology, which is not very precise when it comes to the specialized activities of these businesses: *Original Equipment Manufacturing* and *Original Design Manufacturing*.

⁴ Manufacturing contractors (*Contract Manufacturing*) and service contractors (*Contract Servicing*).

⁵ This idea was originally Marx’s but was adapted to capitalism’s temporal landscape in terms of successive stages of development. Marx differentiates between the farmer’s (*progressive*) developmental path for capitalism, based on the dissolution of landed property and the creation of small capitalist property, with this path taken by countries like England and the United States, and the *yunker (reactionary)* path, characterized by the transformation of large landed property into large capitalist property, accompanied by having the State take on a more active and coercive role (replacing the nobility with the State) in original accumulation, taken by countries such as Germany and Russia. For a deeper analysis, see Ordoñez (2021a).

⁶ After a temporary increase in 2013, the number of new trade restrictions adopted by the G20 countries, which account for most of the world’s trade, has been relatively stable (Deutsche Bundesbank, 2017, p.2)

⁷ On March 8th, 2018, Trump announced that Canada and Mexico were exempt while negotiations continued for what would become the USMCA. This accounted for one third of total steel and aluminum imports. On March 22nd, 2018, these exemptions were expanded to include the European Union, South Korea, Brazil, Argentina and Australia, meaning that two thirds of steel and aluminum imports were exempt from these tariffs.

⁸ Seven months after tariffs were imposed (December 20th, 2018), there is an estimated increase of 9% in the price of American steel and 8,700 jobs generated. This means that each job generated by the industry due to the new tariffs cost steel consumers \$650,000 USD. In aggregate terms, the American steel industry saw an increase of \$2.4 billion in gross revenue, while steel consumers saw their expenses grow by \$5.6 billion USD, with the government pocketing the difference.

⁹ The WIOD 2013 database is used because it offers a more detailed sector classification than Eora26. Furthermore, the 2013 version (which covers 1995-2011) is used instead of the latest version from 2016 (which covers 2001-2014) to compare the change in GPNs’ share in the 2010s with that of the 1990s. The GPN share measure reflects the share of a country’s exports which flow across at least two borders. It is calculated as the share of GPN exports of total international exports. GPN exports include transactions in which a country’s exports incorporate the value added it previously imported from abroad (backward GPN share), as well as transactions in which a country’s exports are not fully absorbed in the importing country and are instead incorporated into the importing country’s exports to third countries (advanced GPN share). The 35 industries in the WIOD 2013 are classified into nine industry groups (see World Bank, 2019): (1) agriculture, hunting, forestry and fishing (ISIC Rev. 3 code 01T05); (2) food (ISIC Rev. 3 code 15T16); (3) mining and quarrying (ISIC Rev. 3 code 10T14); (4) highly R&D intensive industries (ISIC Rev. 3 codes 24, 29T34, 352, 353, 359); (5) medium R&D-intensity industries (ISIC Rev. 3, code 25T28, 351, 37); (6) low R&D intensity industries (ISIC Rev. 3 codes 17T23, 36); (7) trade and transport (ISIC Rev. 3 codes 50T52, 55, 60T63); (8) commercial, financial, telecommunications and postal services (ISIC codes Rev. 3 64, 65T67, 71T74); and (9) real estate, utilities, construction and other services (ISIC Rev. 3 codes 70, 75, 80, 85, 90T93, 95, 40, 41, 45). ISIC = International Standard Industrial Classification; NCE = not classified elsewhere; R&D = Research and Development.

¹⁰ In order to export semiconductors to China, it was necessary for the Asian corporation receiving the chips to be found on a list of entities approved by the Bureau of Industry and Security. This excluded companies such as Fujian Jinhua Integrated Circuit Co. Lt. (JHICC), Xiamen San’an Optoelectronics or Xi’an Jiaotong University, one of the most important universities in China and an important contributor the Chinese Academy of Sciences.