

CIDE

Opinion of the Article Titled “Development of the Latin American Metalworking Value Chain”¹

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1. Introduction

This opinion offers commentary on the article titled “Development of the Latin American Metalworking Value Chain” prepared by the GEA. These comments are offered toward forming an opinion of a scientific article, as is typically done for publication in a prestigious specialized journal. It bears mention that this document does not constitute an evaluation of public policy, and is restricted to the assessment of the arguments presented in the article under review.

In general, the article under review lacks analytical rigor and transparency in the information presented. We have organized our comments in four sections, the first of which corresponds to this

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introduction. Section two offers general comments and establishes an overall assessment of the article. Section three expands on the comments presented in section two, following the sequential order of the article under review. The last section offers other comments deemed to be of relevance.

2. General Comments

The article under review has three overall goals: the first is to argue that economic growth in Mexico is slow due to the reduction in the investment rate that occurred in the mid-1980s; the second goal is to argue that the poor performance of Mexican manufacturing, and in particular of the metalworking industry, has been affected over the past decade by trade policy with China; the final goal is to make policy recommendations, including the recommendation to halt tariff reductions with China. In general, the article lacks analytical rigor and transparency in the information presented.

We have organized this section by presenting comments on each argument and offering examples of the lack of transparency exhibited in the information presented.

2.1. Regarding whether growth in Mexico is slow due to the decrease in the investment rate

The first argument contrasts drastically with the findings of rigorous studies published in journals of international standing. Said studies show that the differences in per capita income between countries are explained largely by differences in total factor productivity (TFP), not by the accumulation of factors such as capital and labor. For example, Hsieh and Klenow (2010) indicate that total factor productivity explains between 50 and 70% of the income differences between countries. Likewise, the study by Bergoing et al. (2001) compares the trends in aggregate variables both in Mexico and Chile beginning with the crises experienced by both countries at the beginning of the 1980s. Chile managed to recover quickly, reducing the gap between its per capita income and that of the United States, while the recovery in Mexico has been slow and prolonged, and failed to reduce said gap. In this article, it is clear that despite the very different experiences in Mexico and Chile, the investment rates are very similar, fluctuating around 20%. In a more general way, Klenow and Rodríguez Clare (2005) argue that many countries share the same rate of growth despite having different rates of investment in physical capital, human capital, and research and development. Klenow and Rodríguez document the reduction in the growth of per capita GDP by comparing the years 1960-1975 to the years 1975-2000. They show that this deceleration occurred on a global level; the percentage of deceleration was the same for the 23 countries of the OECD and for 73 countries not included in the OECD. Despite this deceleration, the investment rate in physical capital was similar in all countries, falling from 15.8% on average in the years 1960-1975, to 15.5% in the years 1975-2000. The same occurred both for OECD countries and for non-member countries. If the investment rate explained growth, this deceleration would not have occurred. This all strongly contradicts the argument made by the authors of the article under review.

Within the literature on development macroeconomics, there is a growing interest in studying the factors that keep TFP low in Mexico and impede Mexico's accelerated growth (see Kehoe and Ruhl [2010] and Hanson [2010]). Said factors include: the existence of financial constraints which distort

capital allocation, the lack of competition in key input markets, the existence of a large informal sector which distorts the resource allocation, and others.

This argument is analyzed in more detail in Section 3.1.

2.2. Regarding whether the progress of China in the US market is harmful to Mexican industry

The second argument offers some interesting ideas, yet the lack of analytical rigor and transparency in the information presented undermine their credibility. The central argument is that the decrease in trade barriers with China, both in the US and in Mexico, has hurt Mexican manufacturing through two channels: 1) by replacing Mexican exports to the US market, and 2) by replacing Mexican products in the domestic market that compete with imported Chinese products.

The increase in Chinese exports to the US and its impact on exports from other developing countries like Mexico has been the subject of recent studies. Hanson and Robertson (2008) conclude the following: “Our results suggest that if the export capacity of China had been held constant from 1995-2005, the demand for exports from the 10 countries studied (including Mexico) would have increased between 0.8% and 1.6%. As such, even for the developing countries most specialized in manufacturing exports, the expansion of China has represented only a modest negative shock.” This implies that even without the Chinese expansion, Mexican exports would have suffered from competition with other countries and with domestic production in the United States. In terms of policy, the contrast between these two positions is not trivial, as they call for different actions. On the one hand, the arguments from the article under review call for protectionist measures against China, while the findings of Hanson and Robertson (2008) call for us to correct the distortions that reduce productivity in the Mexican export sector and that constitute a liability for Mexico’s successful competition in the US market, with or without the presence of China. The authors of the article under review are obligated to contrast their findings with those of Hanson and Robertson or of other similar studies. However, they fail to do so in their article. Section 3.2 offers further comments on this argument.

2.3. Regarding whether the opening of Mexico to China harms the Mexican economy

The last argument considers that the increase in Mexican imports from China has hurt the Mexican manufacturing industry. To prove this, statistics are shown that link the increase in Chinese imports to the performance of manufacturing in recent years. This is an interesting argument, but in order to be proven valid, the article would need to include at least two exercises which are essential in any scientific work: the first, to explore and contrast other potential causes for the aforementioned facts; the second, to assess other effects associated with the reduction in trade barriers with China that may be beneficial to the Mexican economy.

As an example of the former, note that the reduction in the share of the manufacturing industry in GDP is presented as a measure of the “deindustrialization” of Mexico, arguing that this process has been caused by government policy. However, this reduction may be associated with the natural process of structural change in market economies (Kuznets [1966]). Manufacturing employment has fallen around the world as a result of the more efficient use of labor, automation, and new information technologies. According to Baily et al. (2005), around 22 million manufacturing jobs were lost from 1995 to 2002, despite the efforts of policymakers to preserve them.

The second essential exercise that is not included consists of considering other effects associated with the reduction in trade barriers with China that may result in gains for Mexico. Considering these effects and comparing them with the respective costs is essential in evaluating trade policy. For example, among these benefits we could include lower prices for consumers. Broda and Romalis (2008) present evidence of this occurring in the US as an effect of reducing tariffs with China.

Some of the manufactured goods exported by China are used by Mexican companies as intermediate inputs. As such, a second benefit not considered by the article is Mexican companies' access to cheaper inputs, allowing Mexican companies to operate with lower costs, increasing their productivity. One of the most significant benefits of trade liberalization consists of increases in productivity; Melitz (2003) shows that liberalization can generate a reallocation of resources toward more productive export establishments. There are also empirical studies showing that imports do not stop growth, but to the contrary, can accelerate growth (Lopez-Córdova, 2002).

Section 3.2 offers further comments on these arguments.

2.4. Regarding the policy recommendations

The main argument (à la Rodrick) consists in stating that there are distortions in markets, and so government interventions to correct these distortions would generate better allocations. However, the article fails to perform a rigorous analysis of the existing market failures. The article dedicates some three pages to general information on the objectives and components of industrial policy before offering specific proposals. It is evident that there is zero consistency between the general proposals and the specific ones, given that while the general considerations seek to justify action to promote vertical integration, the specific measures in large part consist of actions that would reduce costs for any company. In addition, in several cases, these measures constitute transfers from taxpayers to producers.

It is appropriate for the private sector to request a system of public/private cooperation that seeks to obtain information on any market failures that can be rectified. However, the relationship between market failures and China's penetration is not made clear. To the contrary, as suggested already, trade can provide significant benefits. As such, for the purposes of establishing public/private cooperation to rectify market failures, it is irrelevant to study how Chinese imports have grown recently in our country. At any rate, in order to determine to what extent Chinese imports become an impediment to progress, the article would need to identify which market failure is attributable to these imports.

The first four specific measures proposed by the article under review consist of changes that would improve the operating conditions of any company, regardless of its sector: lower electricity prices, greater security, greater demand for domestic products through changes to domestic content legislation, and lower taxes. One of the measures seeks to achieve indiscriminate vertical integration of manufacturing (through domestic content), restricting the government's ability to select the most favorable conditions in terms of quality and price, which is undesirable. The request to reduce electricity rates must be based on a serious economic proposal that allows for regulation of the CFE based on incentive-based regulation models, and the calculation of depreciation of fixed capital in economic, as opposed to accounting terms.

The request for greater security is justifiable and is inherent to any company, not only the metalworking industry. However, a reduction in the tax burden of the metalworking industry implies a greater burden for the rest of the economy, which is clearly unjustifiable.

In Section 3.4, comments are made regarding each of the policy proposals.

2.5. Regarding the lack of transparency in information

Finally, there is an apparent lack of transparency in the information presented. For example, in the section “Productive performance of the value chain [...],” the article focuses on the performance of the metalworking industry from 2007 to 2010. The authors do not explain the reason it is important to focus on these years. The authors mention that the loss of employment was “substantially higher,” which goes without saying considering that the 2007-2010 period includes the year 2009, when the economy was in a serious recession. At any rate, applying the same logic, the authors could have selected the years 2006-2010 or 2008-2010 and found significant losses in employment and added value. Or they could have selected the period of the 2009 calendar year alone, reporting even more drastic falls in GDP and employment.

By way of example, consider the remarks from page 43: “the loss of jobs has had a significant impact on the Mexican economy insofar as workers from the metalworking sector have the highest wages in the formal sector.” Later the authors present Figure 33, showing that average wages per worker in the metalworking industry are two times the wages in the overall manufacturing sector. In any other context, this assertion would not require further comment. However, the article under review has attempted to argue that this loss in jobs is the result of the increase in Chinese exports. It is here that it becomes clear that this assertion lacks transparency, as further disaggregation is needed, presenting information on average wages, for example, for each sub-sector within the metalworking industry. On the one hand, we understand that in industries such as the automotive and auto parts sector, the loss of jobs was associated with the 2009 financial crisis, which reduced demand for durable goods in the United States, and not with Chinese competition (this is acknowledged by the authors themselves on page 37). Likewise, we know that in these activities, the wages paid are typically higher than average. On the other hand, goods exported from China to Mexico and the United States are labor-intensive light manufactured goods that typically pay low wages. Figure 33 fails to capture this heterogeneity, as it does not present disaggregated data for wages or for Chinese imports (later in the text, disaggregated data is presented for Chinese imports, but these data are not linked to the performance of the metalworking industry by sector or sub-sector), and so nothing can be concluded regarding the link between the increase in Chinese exports and the magnitude of the impact of job losses in the metalworking industry.

Throughout the rest of this document, and in particular in Section 3.3, more examples are offered of the lack of transparency of the information presented.

3. Comments by Section

3.1. Comments regarding “Macroeconomic Development Strategies since 1990”

The objective of the authors in this section is to document the adjustment to the national account imbalances of the past decades in Mexico, and to argue that this process has caused the slow economic growth of the country over the past 20 years. Certain time series are used for aggregate variables showing the adjustment to imbalances in the public sector and current account deficits, as well as the

greater stability in prices and exchange rate. A time series is also shown for public expenditure as a percentage of GDP, where it can be observed that during the 1970s this percentage trended upward (increasing from 15% to 40%), in the mid-1980s it fell, and since then it has remained constant at around 22%.

The argument of the article's authors suggests that economic growth in Mexico is slow due to the reduction in investment that occurred in the mid-1980s as a result of the aforementioned adjustments. This argument contrasts with the findings of rigorous studies published in journals of international standing which show that low levels of investment in developing countries do not constitute a significant factor in explaining low per capita income. For example, consider the study by Klenow and Hsieh (2007), which focuses on the positive correlation between real investment rates and the level of real income between countries. These authors conclude that "poor countries do not show a lack in investment efforts, but rather in the efficiency of production of tradable goods..." Or, take the study of Bergoening et al. (2001) which compares the trends of aggregate variables in Mexico and Chile beginning with the crises experienced by both countries at the beginning of the 1980s. Chile managed to recover quickly, reducing the gap between its per capita income and that of the United States, while the recovery in Mexico has been slow and prolonged, failing to reduce said gap. In this article, it is clear that despite the very different experiences in Mexico and Chile, the investment rates are very similar, fluctuating around 20%. This strongly contradicts the argument made by the authors of the article under review.

In addition, it is striking that the analysis presented by the authors lacks a systematic exploration of the potential causes of the slow economic growth in Mexico of recent decades. On top of the two aforementioned articles which strongly contradict the arguments under review, there is extensive literature examining the topic of income variation between countries and the reasons for the lack of accelerated growth in developing countries. These studies reach conclusions that contradict those presented in the article under review.

To see this, let us first consider that numerous studies show that the differences in per capita income between countries are explained largely by differences in total factor productivity (TFP), and not by the accumulation of factors such as capital and labor (see for example: Klenow and Rodríguez-Clare [1997], Hall and Jones [1999], and Hsieh and Klenow [2007]). What this means is that the lack of accelerated growth in poor countries is not due to limited efforts toward saving and investment, but rather to the way in which existing resources are utilized. In their study on Mexico and Chile, Bergoening et al. (2001) perform growth accounting for both countries and find that the different trends in per capita GDP are explained in large part by the changes in the countries' respective TFPs, and not by their investment rates.

Secondly, within this literature, there is a growing interest in studying the factors that keep Mexican TFP low and impede accelerated growth in Mexico (see Kehoe and Ruhl [2010] and Hanson [2010]). Said factors include: the existence of financial constraints which distort capital allocation, the existence of monopolies in key input markets, the existence of a large informal sector which distorts resource allocation, and others. Bergoening et al. (2001) argue that the key difference between Mexico and Chile lies in the fact that Chile managed to significantly expand credit as a percentage of GDP, which improved capital allocation and TFP, and this did not occur in the case of Mexico. In Mexico, according to Bergoening et al. (2001), who use a heterogeneous model of firms, the financial system poorly allocates resources, while inefficient bankruptcy proceedings and poor credit allocation result in low TFP. In addition, the existence of improper bankruptcy proceedings does not allow inefficient firms to be replaced by other more efficient ones, which diminishes the growth of TFP.

Hsieh and Klenow (2010) indicate that total factor productivity explains between 50 and 70% of the income differences between countries. They also argue that a fundamental element in total factor productivity is efficient resource allocation between companies and industries.

Restuccia and Rogerson (2008) and Hsieh and Klenow (2009) argue that resource misallocation between companies within an industry decreases total factor productivity⁴. For example, if there is an inefficient firm that does not pay taxes or social security contributions, it will provide, in effect, a lower wage than that of a firm that does pay taxes and social security contributions. As a result, the marginal productivity of the inefficient firm will be less, because the marginal productivity of labor will match the effectively paid wages. However, if we were to allocate the workers to more efficient firms, the total production of the industry would grow, and so too would total factor productivity, as we would have the same workers and the same capital assets, but with greater industrial production.

Informality represents a disadvantage for more productive companies, preventing a higher level of total factor productivity. This is precisely the objective of the Leal-Ordóñez study (2010), which with the help of a Dynamic General Equilibrium model simulates the elimination of informality in Mexico. The author finds that Mexico's per capita GDP would be 17% higher. Klenow and Hiseh [sic] (2009) conduct a more general exercise to estimate the increase in total factor productivity if productive factors were allocated toward more efficient firms. They estimate that for Mexico, total factor productivity would increase approximately 100% in the manufacturing sector, and between 250 and 300% in non-manufacturing sectors. This reallocation would not only require a more efficient system of operation for the financial sector (Bergoeing et al. [2001]) and reduced informality, but it would require elimination of all distortions present in Mexico.

At any rate, the authors under review are required to contrast their arguments with those presented in the above literature, which is widely recognized in the economics profession and presents policy recommendations and proposals which are very different from those made in the article in question.

3.2. Comments regarding "Deindustrialization of the Mexican Economy"

3.2.1. General Comments

In this section, the authors of the article under review link the growth of Chinese exports to the US and Mexico with a reduction in the value added share of Mexican manufacturing in GDP, and in particular, with the recent performance of the metalworking industry.

The central argument of the article is that the decrease in trade barriers with China, both in the US and in Mexico, has hurt Mexican manufacturing through two channels: 1) by replacing Mexican exports to the US market, and 2) by replacing Mexican products that compete with imported Chinese products in the domestic market. The article offers some interesting ideas, yet the lack of analytical rigor and transparency in the information presented undermine their credibility.

The first noted failure in the article under review is that it fails to provide context for the macroeconomic performance of the countries in question during the past decade. While China has shown positive rates of growth each year (above 9%), Mexico has experienced two significant recessions (thus implying negative growth). Despite this, the article tends to attribute the poor performance of Mexican manufacturing during the last decade to the progress of China in international

⁴ The argument is similar to that of Bergoeing et. al (2001) above

trade markets. A plausible explanation for macroeconomic behavior is proposed in the article by Kehoe and Rulh (2010). According to these authors, China's strong performance is associated with the development stage in which it finds itself, in which respect for property rights and the inefficiency of the financial system do not play an important part. Mexico, on the other hand, finds itself in a more advance stage, in which these disadvantages do play a role.

Recent studies have focused on the increase in Chinese exports to the US and their impact on exports from other developing countries like Mexico, and so it is essential that the article under review contrast its position with that of these other authors.

In particular, Hanson and Robertson (2008) arrive at the following contrasting conclusion: "Our results suggest that if the export capacity of China had been held constant from 1995-2005, the demand for exports from the 10 countries studied (including Mexico) would have increased between 0.8% and 1.6%. As such, even for the developing countries most specialized in manufacturing exports, the expansion of China has represented only a modest negative shock." This implies that even without the Chinese expansion, Mexican exports would have suffered from competition with other countries and with domestic production in the United States, which also would have resulted in a slowdown.

In terms of policy, the contrast between these two positions is not trivial, as they call for different actions. On the one hand, the arguments from the article under review call for protectionist measures against China, while the findings of Hanson and Robertson call for us to correct the distortions that reduce productivity in the Mexican export sector and that constitute a liability for Mexico's successful competition in the US market, with or without the presence of China.

The second argument presented in the article under review posits that the increase in Mexican imports from China has hurt the Mexican manufacturing industry. As evidence for this, certain statistics are presented showing the coincidence between the increase in Chinese imports and manufacturing performance in recent years. To measure manufacturing performance, the authors show the reduction in manufacturing's share of GDP ("deindustrialization"), measurements of job creation and real added value, and the index of physical manufacturing production.

This is an interesting argument, but in order to be proven valid, the article would need to include at least two exercises which are essential in any scientific work: the first, to explore and contrast other potential causes for the aforementioned facts; the second, to assess other effects associated with the reduction in trade barriers with China that may be beneficial to the Mexican economy. Finally, it also bears mention that the way in which the information is presented and interpreted undermines the credibility of the arguments made.

Regarding the "deindustrialization" of the Mexican economy, defined in the article as the reduction in the manufacturing sector's share of GDP, the article fails to perform an analysis (or at least an exploration) of other potential explanations for the reduction in said share. There is well established literature which studies "structural change" in economies, that is, the secular process that consists of an increase in the service sector's share of GDP and a decrease in manufacturing and agriculture (for example, see Kongsamut et al. [2001] and Rachel and Pissarides [2007]). This natural process of market economies was first documented by Kuznets (1966) and has occurred in countless countries during the past one hundred years; Mexico is no exception. As such, when we speak of the "deindustrialization" of Mexico, we must ask ourselves whether this phenomenon is part of the natural process of structural change.

It is well documented that manufacturing employment is declining in the world as a result of the more efficient use of labor, automation, and new information technologies. According to Baily et al. (2005), around 22 million manufacturing jobs were lost from 1995 to 2002, despite the efforts of policymakers to preserve them.

In the literature on “structural change,” a reduction in manufacturing’s share of GDP is related not only to the performance of the manufacturing sector, but also to the developments in the rest of the economy, taking into account the way in which all sectors of the economy are interrelated. For example, a decrease in the share of manufacturing and an increase in the share of services are both consistent with an increase in manufacturing labor productivity **relative** to service labor productivity (see Duarte and Restuccia [2010]). The reallocation of resources from manufacturing to services occurs because greater manufacturing productivity requires the use of less labor and capital per unit produced, while lower productivity in the service sector requires the use of more resources per unit produced. This only proves that in order to study the phenomenon described in the article (the deindustrialization of Mexico), we must consider not only what is happening in the manufacturing industry, but also in the other sectors of the economy: services, mining, and agriculture. In other words, “deindustrialization” can occur because of factors that have nothing to do with the specific performance of manufacturing, but that are in fact related to the performance of the service sector. For example, it is possible that the problem resides in the distortions that hinder the growth of labor productivity in the service sector, keeping said growth below the levels of the manufacturing sector. This situation would also cause “deindustrialization,” even if there is no related factor in manufacturing performance. If this were the case, the policy recommendation would be entirely different from that made in the article, as the focus would be on improving the productivity of the service sector, for example, by reducing informality (see V. Cavalcanti and Antunes [2007] and Moscoso-Boedo and D’Erasmus [2009]), and not necessarily through actions related to trade policy.

The second essential exercise that is not included in the article under review consists of considering other effects associated with the reduction in trade barriers with China that may result in gains for Mexico. Considering these effects and comparing them with the respective costs is essential in evaluating trade policy, and in general for any element of public policy. That is to say, in order to evaluate trade policy and make policy recommendations, analysis must be conducted in a context free of bias and partiality. For example, among these benefits we could include lower prices for consumers. Broda and Romalis (2008) present evidence of this occurring in the US as an effect of reducing tariffs with China.

Some of the manufactured goods exported by China are used by Mexican companies as intermediate inputs. As such, a second benefit not considered by the article is Mexican companies’ access to cheaper inputs, allowing Mexican companies to operate with lower costs, increasing their productivity. One of the most significant benefits of trade liberalization consists of increases in productivity; Melitz (2003) shows that liberalization can generate a reallocation of resources toward more productive export establishments. There are also empirical studies showing that imports do not stop growth, but to the contrary, can accelerate growth (Lopez-Córdova, 2002).

3.2.2. Specific Comments

The article posits that growth in Mexican exports slowed down during the period from 2001 to 2010 (see Figure 14). The article is not consistent in that it compares two periods with very different macroeconomic conditions, thereby skewing the analysis. A period of expansion in the US economy

(1994-2000) is compared to a period that includes two recessions (2001 and 2009) for the US economy (2001-2010). Let us recall that the 2008-2009 recession was the most dramatic to have occurred in the past 80 years. There is an additional factor that increased exports during the period from 1994 to 2000, that being the real depreciation of the exchange rate beginning in December 1994 (as shown in Figure 17). This had serious effects on the relative price of tradable goods versus non-tradable goods. Certainly the uninterrupted expansion of the US economy and the real depreciation of the exchange rate⁵ provided a very strong boost to exports during the period from 1994 to 2000. In 1998, with the low price of oil, the real exchange rate was again adjusted (see Figure 17) and the North American economy continued to expand. Likewise, the structural change generated by NAFTA allowed for a reallocation toward more efficient activities, which most certainly resulted in higher growth (see Lopez-Córdova, 2002). In the past decade however, the 2001 crash originated precisely in the United States, and there was no similar adjustment in the exchange rate (see Figure 17). The same occurred during the 2009 recession. During both episodes (2001 and 2009), the problems started with the purchasers of Mexican exports.

In the same section, foreign investment figures are compared. The article argues that foreign direct investment fell from 2001 to 2010. However, it bears mention that the article shows a very high peak in 2001, reflecting the purchase of Banamex by Citibank at a value of 12.5 billion dollars, 40% of foreign investment from that year. If we subtract that amount and consider only the end points, then foreign direct investment actually increased from 17.258 billion (subtracting the 12.5 billion from Citibank) to 19.6265 billion. The point of this comment is to highlight that the facts presented in this article do not illustrate all the underlying details. The selective use of information results in biased findings.

The article indicates that the share of Mexican exports to the United States reached a ceiling some nine years ago. While this can be observed in the aggregate, among highly competitive manufacturing industries, this is not the case. According to the most recent data, it is not clear that this has occurred for the automotive and auto parts industry. Taking into consideration the data from the automotive industry, we find that Mexican automobiles increased their share in US domestic sales from 7% in 2009 to 11% in 2010, a near 50% increase over one year. These data indicate that there are certain Mexican exports which are gaining market share in the United States. Japan and South Korea lost market share, totaling 2.3 and 4.7%, respectively. This indicates that automobile exports, for example, have not slowed down or reached a ceiling. Likewise, if we analyze automobile and transportation vehicle exports to the United States as a percentage of total vehicle and transportation imports, we find that this percentage increased from 15% in 2001 to 22% in 2010, an increase of nearly 50%. For auto parts, the share of imports rose from 19% in 2001 to 29% in 2010.

Likewise, as Figure 15 demonstrates, overall exports have continued in their upward trend, nearly doubling from 2000 to 2010. Exports to South America increased at an annual average of 11.6% from 2001 to 2010, while exports to Europe increased at 9% annually during the same period. In addition, in 2001, 89% of total exports went to North America. By 2010, this percentage decreased to 79%. Exports to South America in 2010 were 11% of total exports, while exports to Europe were 5.3%. While we may observe a ceiling in exports to the United States, this has not occurred for certain sectors. Exports to the rest of the world, in particular to South America and Europe, have shown great

⁵ The effect of the exchange rate to which we are referring is a short-term effect and cannot be extended as a strategy for long-term growth. Currency undervaluation as a policy for long-term growth has been analyzed by Rodrik (2008), who is heavily criticized by Woodford on issues of methodology.

dynamism. This trend toward diversification of the recipients of our exports constitutes an advantage in leveraging against shocks generated in the economies of our trading partners.

Figure 20 of the article shows the volume of manufacturing production, indicating that this index is 10% higher in 2010 than in 2000. Likewise, Figure 22 shows that manufacturing workers insured by the IMSS (Mexican Institute of Social Security) fell 18% during the same period. This could be indicative of greater labor productivity, which could be a result of a higher capital-output ratio (capital deepening) or of greater total factor productivity in the manufacturing sector. It could also be a result of better allocation of resources to productive firms, which could be beneficial to the country. Despite the fact that the article attempts to describe a negative picture of manufacturing, both figures, considered together, could indicate good results. These figures do not necessarily indicate a loss of competitiveness in manufacturing. To the contrary, they could mean greater competitiveness of remaining industries as well as greater potential future growth through a positive selection of more efficient industries.

The article continues by discussing how the share of manufacturing exports in total exports has fallen. However, this is not necessarily disadvantageous. In fact, this is explained in part by the rise in the price of oil, which increased the share of primary products. This is acknowledged by the article, but the authors continue to argue that it is a reflection of deindustrialization. It is one thing to note that petroleum has acquired a strong dynamic due to the increase in oil prices, but it is quite another to claim that manufacturing has lost dynamism. In fact, the moment at which the article suggests that manufacturing reached its greatest share of exports happens to coincide with very low oil prices (1998). The picture presented by the article does not prove a loss of competitiveness in manufacturing; rather, it is the changes in the price of oil that explain this behavior. If the authors wish to demonstrate a loss of competitiveness in Mexican manufacturing, they would need to conduct analysis that differentiates between the change in the price of oil and changes in competitiveness.

3.3. Comments on “Productive performance of the value chain of the metalworking industry”

The objective of this section is to provide a series of performance indicators for the metalworking industry over the past decade. Unfortunately, it would seem that throughout the article the authors draw their conclusions without providing sufficient evidence. For example, in the first paragraph of this section, the authors mention that “one of the sectors with the largest observed contractions in the Mexican economy is the metalworking industry.” However, the contraction of this sector was not compared to that of the rest of the Mexican economy (in fact, it was not even compared to GDP). The same paragraph also states that the causes of this contraction are “the global financial crisis [...] and the significant penetration of products from China,” but this assertion is not supported with a causal analysis of these factors.

The NAICS definition for heading 33 groups together varied and dissimilar industries, and so it is surprising that an industrial policy is being proposed for all industrial sectors. Combining such varied industries in this analysis is to mix apples and oranges, combining the automotive industry, mattress manufacturing, and curtain and blind manufacturing. If it is a sector-based industrial policy we are after, we must consider that the economies of scale, the presence of externalities, the impacts on other industries, as well as the industrial structure are all different for each industry, which would require specific actions and policy objectives. Likewise, it is surprising that the steel industry was not included

in the analysis. For example, if an industry has market power, a subsidy will remain in the hands of the firms producing in said industry and will not have the beneficial effects that are suggested in the literature on the new industrial policy. By definition, industries with market power produce less than is socially optimal, and a reduction in their marginal cost does not imply an increase in production similar to that achieved in a competitive industry. This has redistributive effects for the consumers of the goods produced by this industry; if these consumers are industrial producers, the subsidy would result in neither a lower price nor an increase in productivity, as would be desirable. Part of the subsidy would stay with the producer, while there is no guarantee that this amount is allocated to improving the conditions of their industry. If the products of this industry have special characteristics, the advantages of these products are not fully exploited when the industry has market power. If, on the other hand, the subsidy reduces the distortion caused by market power, this would be a costly way of combating market power. This is especially true if we take into account the social cost of obtaining the resources for a subsidy.⁶

The article continues by presenting statistics and graphs on the metalworking industry, with an apparent lack of rhyme or reason. Unsupported assertions are made and combined with statistics that lack transparency. For example, on page 39, the authors state that “the process of deindustrialization has been associated with a lower level of gross fixed capital formation,” and immediately after they provide as evidence the fact that foreign direct investment in the manufacturing sector represented just 40% of total foreign investment over the past ten years, which they contrast with the 60% it represented from 1994 to 2000. However, these percentages say absolutely nothing about gross fixed capital formation in Mexico. In fact, the appropriate statistical measure is that which the authors themselves present in Table 9 of the final section: Productive Investment / GDP. This table clearly shows that this measurement has not seen any significant changes over the past two decades. It is striking that no mention is made of these statistics beforehand (on page 39), when it is evident that the authors did in fact make this calculation. There are many potential reasons for the reduction in the share of foreign investment, but the article fails to identify what these reasons are and only presents this reduction as a negative data point.

The article continues in this section focusing on performance from 2007 to 2010, while the authors fail to explain why it is important to focus on this period. They mention that “the process of deindustrialization manifested itself with greater force” during this period, but this contradicts the information from Figure 19, which shows that in 2010 manufacturing’s share of GDP increased to 1993 levels. They also mention that the loss in employment was “substantially higher” during the period in question, which is an obvious assertion, considering that this period includes the year 2009, when a serious recession occurred. At any rate, applying this same logic, the authors could have selected the period from 2006 to 2010 or 2008 to 2010 and found significant losses in employment and added value.

Or they even could have selected the calendar year of 2009 alone, reporting even more drastic losses in production and employment.

Here the article argues that there was a reduction in employment of 13.7% between 2007 and 2010. This occurs with greater force during recessions, and aids in the selection of more efficient firms. The selection of efficient firms allows for higher TFP over the long term. The period in which this drop in employment took place coincides with one of the worst recessions experienced by Mexico during the

⁶ The subsidy could be, for example, lowering the price of electricity for all sectors.

past thirty years, and as such, it is not surprising that it did occur. During periods of recession, a selection occurs of more efficient firms.⁷ While painful, this contraction in activity has a positive effect in that it requires that firms improve their efficiency.

The assertions and data lacking transparency continue throughout this section. On page 43, the article mentions: “the loss of jobs has had a significant impact on the Mexican economy insofar as workers from the metalworking sector have the highest wages in the formal sector.” Later the authors present Figure 33, showing that average wages per worker in the metalworking industry are two times the wages in the overall manufacturing sector. In any other context, this assertion would not require further comment. However, the article under review has attempted to argue that this loss in jobs is the result of the increase in Chinese exports. It is here that this assertion reveals its own lack of transparency, as it is essential that average wages be broken down by type of metalworking manufacture. On the one hand, we understand that in industries such as the automotive and auto parts sector, the loss of jobs was associated with the 2009 financial crisis, which reduced demand for durable goods in the United States, and not with Chinese competition (this is acknowledged by the authors themselves on page 37). Likewise, we know that in these activities, the wages paid are typically higher than average. On the other hand, goods exported from China to Mexico and the United States are labor-intensive light manufactured goods that typically pay low wages. Figure 33 fails to capture this heterogeneity as it lacks disaggregated data, and it is not possible to conclude anything as to the extent to which the increase in Chinese imports affected the loss of jobs in the metalworking industry.

Most of the graphs presented (pages 45-51) on levels of production and employment from 2007-2010 are affected by the 2008 recession, which occurred in many industries and must be taken into account as a bias in the measurements. Likewise, a large part of the industries presented produce durable capital goods or intermediary goods, few of which are necessary commodities, and so a procyclical pattern is to be expected. In this regard, the data presented are hardly revealing. Showing the unfavorable performance of an industry during a recession does not enable us to identify whether this performance is due to the recession or to a structural problem in that industry.

Finally, in the sub-section titled “Identification of the manufactured goods China exports to Mexico,” this information must be linked to that presented prior regarding the performance of the sectors that make up the metalworking industry. Furthermore, this information could be used in a rigorous econometric analysis which includes all the manufacturing sub-sectors, using sectors that have not faced competition with China as control groups.

3.4. *Comments on “Public policy recommendations for Latin American governments”*

3.4.1. Overall Comments

This section begins with a defense of industrial policy in response to the idea that “the best industrial policy is no industrial policy.” The main argument consists in stating that there are distortions in markets, and so government interventions to correct these distortions would generate better allocations.

⁷ This does not mean that it is not difficult for part of the population to lose their job or their company. However, the way to help these people is through re-training programs, unemployment insurance, etc., not necessarily through a sector-based industrial policy.

The article acknowledges that policy actions risk becoming a source of further distortions in resource allocation and unjustified income.

The article dedicates some three pages to presenting general information on the objectives and components of industrial policy before offering specific proposals. It is evident that there is zero consistency between the general proposals and the specific ones. While the general considerations seek to justify actions to drive vertical integration, the specific measures largely consist of actions that would reduce costs for any firm. In addition, in several cases, these measures constitute transfers from taxpayers to producers.

The first four specific measures consist of changes that would improve the operating conditions of any firm, regardless of its sector: lower electricity prices, greater security, greater demand for domestic products through changes to domestic content legislation, and lower taxes. One of the measures would result in market power for domestic producers (through domestic content legislation), restricting the government from selecting the most favorable conditions in terms of quality and price, which is undesirable.⁸ The request for reduction in electricity rates must be based on a serious economic proposal that allows for regulation of the CFE based on incentive-based regulation models and the calculation of depreciation of fixed capital in economic, as opposed to accounting terms.

The request for greater security is justifiable, provided that tax relief is not sought for the security expenses incurred by metalworking firms. These expenses are incurred by the society as a whole, not only by the metalworking industry. A reduction in the tax burden of the metalworking industry implies a greater burden for the rest of the economy, which is clearly unjustifiable.

Based on the hypothesis (which is unproven by the article) that Chinese imports are harming the metalworking industry, then only trade defense measures would be appropriate for the sector. At the end of the article, two specific measures are proposed:

1. Stop the reduction in tariffs for Chinese products which began four years ago.
2. Regarding goods imported from China, ensure that the same treatment is given to Mexican products in terms of tariffs and quotas (reciprocity), prevent smuggling and triangulation practices, and enforce the corresponding Mexican certification.

The second measure is not a policy proposal, but rather a call for the authorities to enforce these aspects of the Law. At any rate, the article must show evidence that these aspects of the Law are not being enforced. It is obvious that the authorities are obligated to enforce the Law.

Regarding the first measure, clearly it is inappropriate to base this recommendation on a partial equilibrium analysis. As mentioned before, the reduction of tariffs on Chinese products can result in significant benefits, for example, by reducing prices for consumers. This type of argument must be compared and contrasted by the authors. Finally, neither of these measures would seem to stimulate the development of vertical chains in Mexico.

3.4.2. Specific Comments

⁸ López de Silanes (1997) offers a useful study that demonstrates why market power exists when tenders are limited to domestic suppliers. The author analyzes first-price sealed-bid actions for privatizations in Mexico, finding that prices were lower when there were no foreign firms participating and the number of bidders was lower. The restriction to Mexican content in public tenders decreases the potential number of bidders.

The article argues that the experience of Asian countries indicates that a selective industrial policy can be created to favor the development of metalworking sectors. It mentions that in the past, Asian countries used exchange rate policies, selective fiscal policies, and preferential-rate lending to encourage certain sectors.

Regarding exchange rate policies, the only significant example of which we are aware is the work by Rodrik (2008) regarding the impact of undervaluation on growth. This study has been heavily criticized because its approach suffers from issues of endogeneity (see Woodford's comments from the same issue of the published journal).

The article continues by arguing for public/private cooperation that detects market failures in the links of the metalworking industry and that can correct these failures. The article mentions the use of assistance programs to correct these problems. However, it fails to mention that there are systems of assistance in the financial market, such as the case of NAFINSA (*Nacional Financiera*), which uses its guarantee programs to finance small and medium-sized businesses (supply chain guarantee program). These programs finance small and medium-sized businesses from supply chains in which said businesses serve as suppliers for large firms. The program is also used for small and medium-sized businesses that serve as suppliers for federal and state government entities. The basic funding mechanism uses factoring by offering guarantees through second-tier banking. This program is clearly designed to correct failures in the credit market.

It is appropriate for the private sector to request a system of public/private cooperation that seeks to obtain information on any market failures that can be rectified. However, the relationship between market failures and China's penetration is not made clear. To the contrary, as suggested already, trade can provide significant benefits. As such, for the purposes of establishing public/private cooperation to rectify market failures, it is irrelevant to study how Chinese imports have grown recently in our country. At any rate, in order to determine to what extent Chinese imports become an impediment to progress, the article would need to identify which market failure is attributable to these imports.

Related to this issue is the promotion of value chains, which should only occur when it has been verified that spillovers and efficiency gains would increase with the creation of the value chain. Not all value chains should be encouraged, only those in which there are efficiency gains and some kind of coordination problem.⁹ However, the article does not clarify which market failure in the metalworking industry is prohibiting vertical coordination between firms. Likewise, it is unclear what the government can offer for the existing coordination problems and failures. In international markets there are coordination agreements between firms that perform operate in different stages of production for the same product, and in many cases governments are not needed to resolve coordination problems.¹⁰ Likewise, multinational companies can resolve these coordination problems.

The article requests more competitive electricity prices, and in this regard, the article makes a valid point in questioning current rates. However, the request to reduce electricity tariffs must be based on a serious economic proposal that allows for regulation of the CFE based on incentive-based regulation models, and the calculation of depreciation of fixed capital in economic, as opposed to accounting terms.

⁹ See Pak and Saggi.

¹⁰ See Pak and Saggi.

Regarding security, the article requests a temporary tax incentive program to compensate businesses in these industries for the costs associated with any expenses incurred for security purposes. However, it could be argued that if a tax incentive was to be implemented, it should be provided to everyone, as we all suffer from the effects of insecurity. At any rate, insecurity affects all industries and citizens, and it is not clear why one sector should be privileged (the metalworking industry).

The article also requests implementation of domestic content legislation, restricting the will of government institutions. It requests that legislation be changed so that all levels of government be subject to similar domestic content regulations. Although this type of regulation can increase demand for goods produced in Mexico, the article does not consider the fact that this request constitutes a restriction that affects the efficiency of the government in the provision of goods. The government is a consumer of inputs and provides goods and services for society. For example, the IMSS (Mexican Institute of Social Security) and PEMEX provide services and goods for society. Implementation of domestic content regulations in public tenders would require these institutions to acquire inputs that are not necessarily the cheapest or of the best quality. This is detrimental to the quality of the goods and services provided to the Mexican people. Private enterprise does not have such restrictions, and it is unclear why the government should, as the government also provides goods and services that affect the wellbeing of the Mexican people. As occurs throughout the article, this proposal fails to identify the market failure that this policy seeks to correct.

On matters of tax policy, the authors request that the tax burden be lowered, eliminating either the IETU (flat rate business tax) or the ISR (income tax). Of course lower taxes are always beneficial to the economy. On the other hand, the IETU serves as a control mechanism to prevent tax evasion, and so eliminating it would reduce revenue, affecting the government's capacity to provide goods and services. Again, to propose an industrial policy involving lower taxes, the market failure that would be corrected by lowering the tax burden must be clearly identified. The proposal to lower the tax burden for the entire metalworking industry is not supported by solid economic arguments, and in fact, in the absence of other distortions, this preferential treatment will divert resources from other production activities and could ultimately reduce aggregate productivity (see Restuccia and Rogerson [2008]).

The article states that there must be a quick response on the part of trade authorities to prevent anticompetitive practices (dumping). Strictly speaking, dumping is not an anti-competitive practice. In fact, for many years there has been a debate at the World Trade Organization regarding changing the criteria for imposing countervailing duties from an anti-dumping system to a pro-competition system. The standard for proving anti-competitive practices involves pricing below marginal cost or average long-run average incremental cost.¹¹ Anti-dumping systems never use these standards. It seems more reasonable to support a system of countervailing duties based on anti-competitive practices for countries with whom we have entered into free trade agreements. Given that the standard for proving dumping is very low, it has been used more often as a protectionist mechanism. To this end, we can analyze the trade disputes between the United States and Canada regarding timber, or that between Mexico and the United States regarding cement. US law allows the Department of Commerce broad discretion in labeling any trade practice as dumping. This is clearly unacceptable and harmful to international trade (and to the externalities involved as well).

The article requests that the unilateral tariff reduction initiated by the Mexican government be stopped. For this to constitute an appropriate industrial policy, the way in which stopping unilateral tariff reduction can benefit the overall economy must be identified. The article fails to do so.

¹¹ See Areeda and Turner (1975) and Ordober and Willig (1981)

4. Conclusions

Comments were made regarding the GEA article aimed at forming an opinion for a scientific journal, and it was found that in general, the article lacks analytical rigor and transparency in the information presented.

In particular, we have found that the GEA article fails to perform a good diagnosis of the problem of slow growth in Mexico and Mexico's low per capita income. The reason for this is that the authors offer explanations that have already been assessed and rejected by numerous authors. The article would have to assess the role played by Mexico's low total factor productivity in this area.

We also found that although it is claimed that China's progress in the US and Mexican markets has negative implications for the performance of Mexican manufacturing, no clear or convincing evidence is offered for this claim. To the contrary, the information presented very often lacks transparency, contributing little to the arguments and undermining the credibility of the article.

Finally, the article suggests that the Mexican government take certain policy actions, such as stopping tariff reductions. However, we found that a complete analysis of the costs and benefits associated with this action was not conducted.

5. References

- Areeda P. and Turner, "Predatory Pricing and Related Practices under Section 2 of the Sherman Act," *Harvard Law Review*, vol. 88 (February 1975), pp. 697-733
- Baily, M., D. Farrell, and J. Remes (2005): *Domestic services: The hidden key to growth*,_ McKinsey Global Institute.
- Bergoeing, R., P. Kehoe, T. Kehoe, and R. Soto (2001): *_A decade lost and found: Mexico and Chile in the 191980s*,_ NBER Working Paper.
- Broda, C., and J. Romalis (2008): *Inequality and Prices: Does China Bene?t the Poor in America?*,_ Mimeo. University of Chicago.
- de V. Cavalcanti, T. V., and A. R. Antunes (2007): *_Start up costs, limited enforcement, and the hidden economy*,_ *European Economic Review*, 51, 203-224.
- Coe, D y E. Helpman (1995)"International R&D Spillovers," *European Economic Review*,, vol. XXXIX. Pp 859-887.
- Duarte, M., and D. Restuccia (2010): *_The Role of the Structural Transformation in Aggregate Productivity**,_ *Quarterly Journal of Economics*, 125(1), 129-173.
- Hall, R. E., and C. I. Jones (1999): *_Why Do Some Countries Produce So Much More Output Per Worker Than Others?*,_ *The Quarterly Journal of Economics*, 114(1), 83-116.
- Hanson, G. (2010): *_Why Isn't Mexico Rich?*,_ *Journal of Economic Literature*, 48(4), 987-1004.
- Hanson, G., and R. Robertson (2008): *China and the manufacturing exports of other developing countries*. National Bureau of Economic Research, Working Paper Series, November 2008
- Hsieh and Klenow (2007): *Relative prices and relative prosperity*, *American Economic Review*, 97(3), 562-585.
- Hsieh, Ch.T. y P. Klenow (2009) "Misallocation and Manufacturing TFP in China and India," *The Quarterly Journal of Economics*, Vol. CXXIV, N.4, pp. 1403-1448.
- Hsieh, Ch.T. y P. Klenow (2010) "Development Accounting" *American Economic Journal: Macroeconomics*, vol. II N.1, pp. 207-223.
- Hsieh, Ch.T. y P. Klenow (2011) "The Life Cycle of Plants in India and Mexico". Mimeo.
- Kehoe, T. J., and K. J. Ruhl (2010): *_Why Have Economic Reforms in Mexico Not Generated Growth?*,_ *Journal of Economic Literature*, 48(4), 1005-1027.
- Keller, W. and C.H. Shiue (2004) *Market Integration and Economic Development: A Long-run Comparison*, NBER Working Papers N. 10300, National Bureau of Economic Research, Inc.

- Klenow, P., and A. Rodríguez-Clare (1997): *The Neoclassical Revival in Growth Economics: Has It Gone Too Far?*, in NBER Macroeconomics Annual 1997, Volume 12, NBER Chapters, pp. 73-114. National Bureau of Economic Research, Inc.
- Klenow, P. and A. Rodríguez-Clare (2005) "Externalities and Growth." In *Handbook of Economic Growth*, edited by Phillipe Aghion and Steven Durlauf. Amsterdam: Elsevier.
- Kongsamut, P., S. Rebelo, and D. Xie (2001): *Beyond Balanced Growth*, *Review of Economic Studies*, 68(4), 869-82.
- Kuznets, S. (1966): *Modern economic growth: Rate, structure, and spread*. Yale University Press New Haven.
- Leal-Ordonez, J. (2010): *Informal Sector, Productivity, and Tax Collection*. Documento de Trabajo Economía, CIDE, DTE 491.
- Levy, S. (2008) *Good Intentions Bad Outcomes: Social Policy, Informality and Economic Growth in Mexico*. Washington D.C.: Brookings Institution.
- Lopez-Córdova J. (2004): *Nafta and manufacturing productivity in México*. *Economía*, Vol. 4, no. 1, pp. 55-98.
- López de Silanes, F. (1997) *Determinants of Privatization Prices*, *Quarterly Journal of Economics*, 112(4).
- Melitz, M. (2004): *The impact of trade on intra-industry reallocations and aggregate industry productivity*. *Econometrica*, vol.71, no.6, pp. 1695-1725.
- Moscoso-Boedo, H. J., and P. N. D'Erasmus (2009): *Financial Structure, Informality and Development*, *Virginia Economics Online Papers 374*, University of Virginia, Department of Economics.
- Ordover J y R.D. Willig "An Economic Definition of Predation: Pricing and Product Innovation," with R.D. *Yale Law Journal*, vol. 91, November 1981, pp. 8-53.
- Pack, Howard & Saggi, Kamal, 2006: *The case for industrial policy : a critical survey*. Policy Research Working Paper Series 3839, The World Bank.
- Rachel, N., and C. Pissarides (2007): *Structural Change in a Multi-Sector Model of Growth*, *American Economic Review*, 97(1), 429-443
- Restuccia, D. & Richard Rogerson, 2008. **"Policy Distortions and Aggregate Productivity with Heterogeneous Plants,"** *Review of Economic Dynamics*, Elsevier for the Society for Economic Dynamics, vol. 11(4), pages 707-720, October.
- Rodrik, D. (2008): *Normalizing Industrial Policy*. Commission on Growth and Development. Working Paper No. 3.

Rodrick, D. (2008) "The Real Exchange Rate and Economic Growth" *Brookings Papers on Economic Activity*, Fall pp. 365-412.

SENER: Estudio sobre las Tarifas Eléctricas (2008) at
http://www.sisi.org.mx/jspsi/documentos/2008/seguimiento/00018/0001800037908_065.pdf

Woodford, M. (2008) Comments on "The Real Exchange Rate and Economic Growth" *Brookings Papers on Economic Activity*, Fall pp. 420-437.

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