

Industrial Policy: A Missing Link in Mexico's Quest for Export-led Growth

Juan Carlos Moreno-Brid

This article explores the need for Mexican policymakers to add an active industrial policy as a key instrument to assist in the nation's so far failed quest for high and sustained economic growth. Mexico implemented drastic reforms in the mid-1980s to open its markets to foreign competition and to reduce the state's intervention in the economy, but these reforms failed to ensure robust economic growth. The article explores myths and facts of the theory and practice of industrial policy. It identifies what type of industrial policy the new administration, which took office in December 2012, will apparently implement during 2013–2018 and how it may, or may not, help to put Mexico onto a path of high, sustained economic expansion.

Este artículo explora la necesidad para el gobierno de hacer de la política industrial un instrumento clave para ayudar a México en su búsqueda, hasta ahora, fallida de un crecimiento económico alto y sostenido. México aplicó reformas drásticas a mediados de la década de 1980 para abrir sus mercados a la competencia extranjera y reducir la intervención del estado la economía, pero estas medidas no lograron asegurar un crecimiento robusto. El artículo explora mitos y hechos de la teoría y práctica de la política industrial. Identifica qué tipo de política industrial la nueva administración, que inició en diciembre de 2012, parece implementará durante 2013–2018 y cómo esta ayudaría, o no, a que México entre en una senda de expansión económica alta y sostenida.

Key words: economic growth, industrial policy, development, Latin America

Introduction: Is Industrial Policy Part of Mexico's Toolkit for Development?

In the mid-1980s, Mexico embarked on a series of radical macroeconomic reforms aimed at shifting away from its traditional development agenda based on state-led industrialization and import substitution. The rationale behind the reforms was that the elimination of trade protectionism, coupled with the acute reduction of state intervention in the economy would significantly encourage private investment and set the economy onto a path of high and sustained export-led expansion with macroeconomic stability. In a very short time, Mexico unilaterally opened its domestic markets to foreign competition and sharply reduced the scale and scope of public sector intervention in the economy. In this process, it also dismantled most of its industrial policies, cancelled many subsidies, and phased out the sectoral development programs.¹

After nearly three decades, the results of this strategic shift are mixed. On the one hand, the reforms succeeded in bringing down inflation, reducing the fiscal deficit, and expanding non-oil exports. On the other hand, the overall growth performance of the Mexican economy has been a major disappointment. Notwithstanding this about face in Mexico's development agenda, the rate of growth of output—and of employment—has been very low compared to its historical trend and to the growth performance of many other emerging economies in Latin America and in other regions.

Mexico's persistently sluggish economy was a key issue in the platforms of the candidates of the political parties that contented last July in Mexico's Presidential election. Enrique Peña Nieto, the Partido Revolucionario Institucional (PRI) candidate and eventual winner, stressed in his campaign his commitment to launch a new wave of reforms—among them fiscal, labor, and of the energy sector—aimed at ensuring that Mexico's Gross Domestic Product (GDP) would increase at annual rates of 5% or more on a sustained basis.

Details of the key reforms and of the economic strategy that the new government plans are not currently known, but statements by Peña Nieto and top members of his Cabinet during the electoral campaign indicate that his administration sees industrial policy as a legitimate, useful instrument to boost economic growth (Foro México, 2013). In a number of seminars organized by Fundación Colosio—the PRI's think tank—during the 2012 campaign, industrial policy placed high on the agenda for dialogue with economic analysts, academics, and representatives of the private sector. The Fundación's publication of the policy debates during the campaign—"Memoirs of the Encounters for the Future of Mexico"—has a section on the merits of a new industrial policy for Mexico's development. It offers several recommendations. It points to an industrial policy aimed strictly at strengthening clusters and activities in which Mexico already has a comparative advantage, such as in the automotive, electronics, and aeronautical industries. Its conclusions also seem to favor an industrial policy oriented to transform the current productive structure by creating and discovering new activities with dynamic comparative advantage. As argued in the Memoirs, "The new industrial and technological policy must serve to reindustrialize Mexico; to continue strengthening our exports with more valued added but with much more inter-linkages via productive value chains to boost the internal market, to increase the local content of *maquiladora* exports, to develop new sectors and modernize and transform older industries like textiles and shoe manufacturing" (Fundación Colosio, 2013, p. 30).

In addition, in his first major speech after he took office in December 2012, the new president unveiled the *Pacto por México*. This fundamental agreement signed by the heads of three main political parties identified a series of commitments and policy actions aimed at transforming Mexico's economic, social, and political structure and setting as a priority the insertion of the economy onto a path of high growth. In more detail, the *Pacto* explicitly "aims at laying down the foundations of a new political agreement to boost economic growth and create the quality jobs that Mexicans demand" (*Pacto por México*, 2012, p. 2).

In its full text the *Pacto* does not mention industrial policy except in the context of creating industrial poles of development for the poorer region in the south of Mexico. The closest reference to industrial policy in the *Pacto* is a commitment to

“boost innovation, science and technology to meet the goal that Mexico, besides being a major power in manufacturing, is transformed into a knowledge economy” (Pacto por México, 2012, p. 11). This is the only appearance of the word “manufacturing” in the *Pacto*. Its second chapter, “Economic growth, employment and competition,” has as leitmotiv the need to deepen and strengthen market competition as the main tool to build a dynamic economy. The text pays special attention to certain economic sectors, mining, telecommunications, oil and gas, rural activities, and financial services, with virtually no reference to manufacturing.

On January 7, 2013, President Peña Nieto’s inaugural speech at the Foro México 2013—an international forum organized by the Economic Commission for Latin America and the Caribbean (ECLAC), the Inter-American Development Bank, the Organisation for Economic Co-operation and Development, and the World Bank—stated, “We must be sure that the effort of the government through the implementation of an industrial policy will lead the Mexican economy to higher rates of expansion” (Peña Nieto, 2013).

The National Development Plan 2013–2018, which the government unveiled in June 2013, explicitly considers industrial policy as a tool for development. The National Development Plan (2013) argues against the application of an industrial policy that relies on granting subsidies and on major interventions by the state in production or investment. The Plan states that such active policies tend to create unnecessary distortions in competitive markets. It advocates instead for the implementation of a set of policies in which the state’s role in promoting strategic sectors—among which it specifically includes the industrial one—is less intrusive and restricted to removing obstacles and correcting market failures, to orienting production to key sectors and markets, to deregulating, and to coordinating actions between the main actors of the private sector and the public sector’s relevant instances. In this new paradigm, as it is called in the National Development Plan, the government’s activity in the economy is limited to the provision of the whole gamut of public goods required to coordinate the productive sectors and align them in trajectories of strong expansion of productivity and output, but the Plan also stresses the urgent need to create stronger forward and backward linkages between exports and the rest of productive activities to boost Mexico’s economic growth and internal markets.

The *Secretaría de Economía*, the Ministry in charge of its operation at the federal level, gives perhaps the clearest definition of the new administration’s view on industrial policy. On its official Web site it states that

Industrial policy is aimed at resolving market distortions [such as] monopolies or oligopolies, incomplete markets, asymmetric information and coordination of agents. [Its] actions are conducive to collaboration between the private sector and government to develop those sectors that have a greater impact on economic growth . . . [Its] objectives focus on providing information to economic agents; implementing specific actions and instruments for the promotion of human capital and financing, coordinating, targeting and prioritizing joint actions between the private sector and different levels of government (Secretaría de Economía, 2013).

It also lists five guidelines for programs implemented by the Secretariat:

- 1) To strengthen and develop the domestic market with the same robustness as the foreign market, 2) To strengthen nascent industries which have competitive advantages, 3) To enhance innovation, the promotion of human capital and technology exchange among industries, 4) To provide information to agents to resolve market distortions, particularly asymmetric information and coordination of agents, and 5) To coordinate, target and prioritize joint actions between the private sector and different levels of government (Secretaría de Economía, 2013).

This description of the aims of industrial policy is aligned with the view of strengthening Mexico's current competitive advantages, but the second and third guidelines for the secretariat's programs open the possibility of also using industrial policy instruments to go beyond consolidating static comparative advantages and move to creating or discovering new ones by fostering nascent industries and innovation. These two areas of action are fertile ground for the state to use industrial policy to collaborate with the private sector in creating dynamic competitive advantages. Such possibility may run against other declarations by the government in which it seems to be fully convinced to restrict its interventions to strengthen industries with already existing comparative advantages and not to create new ones. Recent administrations had a view of industrial policy that is not significantly different than in practice (see Chiquiar, Fragoso, & Ramos-Francia, 2007; Dussel, 2000, 2003; Hernández Laos, 2005).

This revival of industrial policy in the political discourse on economic policy in Mexico echoes the rehabilitation it has experienced in recent years worldwide. It also leads to important questions that this article aims to address. Is industrial policy a missing link in Mexico's quest for an export-led expansion of real GDP at annual rates above 5%–6%? If so, should the country emphasize the performance of the manufacturing industry? What are the current options or types of industrial policy to promote growth in emerging markets most adequate for Mexico? What type of industrial policy will the current administration put into place in Mexico? What other key policies—besides an obviously necessary fiscal reform—must be implemented in Mexico to complement the industrial policy efforts to achieve high and sustained rates of economic expansion?

The current administration has integrated industrial policy in its discourse as a legitimate and relevant tool for development. It has also recognized the importance of building a domestic market as robust as the foreign one. These are welcome changes after years in which industrial policy was banned in theory from the development toolkit but was applied in a haphazard, "don't ask don't tell" way and neglecting the domestic market. The approach to industrial policy put forward by the new government puts emphasis on two elements. The first is the notion that industrial policy should aim at consolidating Mexico's current competitive advantages in the context of an open economy. The second is the refusal to adopt an industrial policy that implies a significantly stronger state intervention in the market mechanisms that determine production and investment. This version of industrial policy is in line with a standard perspective of the state's intervention in the economy strictly oriented to remove obstacles to the free interaction of market forces (see Esquivel, 2010; Moreno-Brid & Ros, 2009). This view is radically opposed to other approaches put forward by Amsden (2001), Chang (2002), ECLAC (2012), Rodrik (2004, 2008), and Hausmann, Hwang, and Rodrik (2005), who view industrial policy as an indispensable

instrument to promote development by aiding in the “discovery” of new industries that may create and build up the economy’s dynamic competitive advantages.²

The introduction of this article examines the open return of industrial policy in the official discourse of Mexico’s new presidential administration. It evidences that industrial policy is back, apparently with no particular emphasis on the manufacturing sector. Its current version relies more on strengthening the already existing, static comparative advantages of the Mexican economy than on the discovery of new activities or capacities oriented toward the creation or buildup of more dynamic comparative advantages. There may be still some uncertainty given the fact that the new president has been in office for only a few months and the fact that the details of the policy to promote “strategic sectors”—as industrial policy is now being referred to in official circles—are yet to be specified. The next section examines the stylized facts of Mexico’s growth performance over the last three decades and its relationship with the performance of its manufacturing sector. An objective of this section is to illustrate the urgent need to put an industrial policy into place in Mexico with special emphasis on the manufacturing sector. The third section provides a brief, critical analysis of the myths and facts of the merits and criticism of industrial policies, as well as their different orientations in terms of scope, instruments, and degree of state intervention. The section is not intended as an in-depth contribution to the study of the theory and practice of industrial policy in emerging markets. Its purpose is to examine the criticism usually raised about industrial policy, to consider if this criticism is valid, and to identify broadly the range of options currently available to governments interested in using industrial policy as a tool for development. The article closes with comments and conclusions on the challenges, merits, and restrictions of industrial policy in Mexico. The conclusions also identify the complementary key policies that should accompany the implementation of industrial policy to assist it in inserting Mexico onto a high-growth path (see UNCTAD, 2007).

Mexico: Economic Growth and Manufacturing Performance after the Macro Reforms

The macroeconomic reforms that Mexico implemented in the 1980s had two related goals. The first was to stabilize inflation and adjust public finances. The second was to open domestic markets and reduce state intervention in production and investment. The idea was that these reforms would transform Mexico’s productive structure and make exports the main engine of economic expansion (see Aspe, 1993; Krueger, 1998; Lustig, 1998; Moreno-Brid & Ros, 2009). The reforms abated inflation and reduced the fiscal deficit. For the last 15 years, the annual increase in the consumer price index has remained anchored at a one-digit level, in general within the 3%–4% range. The fiscal deficit—excluding investment by *Petróleos Mexicanos* and contingent liabilities due to social security pensions—has remained at less than 2% of GDP for years.

A contraction of public investment and an increasing dependence on oil revenues led to the adjustment of public finances more than the elimination

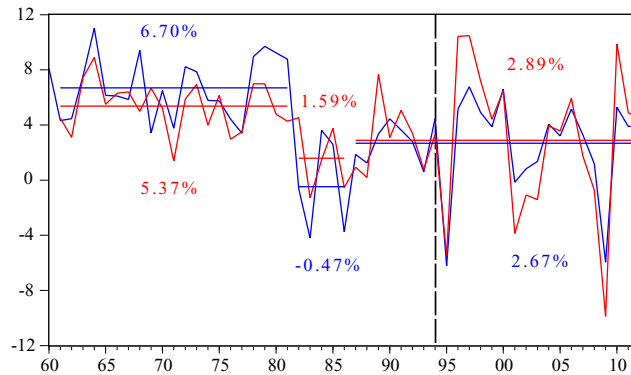


Figure 1. Mexico: Real GDP in the Whole Economy and in Manufacturing (Annual Rates of Growth, in Percentages, 1960–2012)

Note. The lines and numbers in red correspond to manufacturing, and those in blue, to the overall economy.

Source. Own elaboration based on official data from INEGI (2013).

of tax evasion, special fiscal regimes, or collecting more taxes from the wealthy. The tax burden as a proportion of GDP, excluding oil revenues, is less than 12%, one of the lowest in Latin America. Most worrisome, the primary fiscal balance has registered red numbers in recent years and, given the weak tax burden, the capacity to implement a countercyclical fiscal policy is very limited.

An undeniably successful result of Mexico's shift in macroeconomic strategy has been the dynamism of its non-oil exports. Its manufactured exports have surged since the mid-1980s. From representing less than 20% of Mexico's total exports, they now comprise more than 80%. Since the mid-1980s, Mexico's share in the world export market of manufactures has risen sharply. It jumped to the top position of the worldwide ranking from 1994 to 1995 as the implementation of the North American Free Trade Agreement (NAFTA) helped boost exports of Mexican manufactures, especially to the United States (see López-Córdova, 2002). Its performance has been further strengthened in recent years, as Mexico ceased losing ground to China in the U.S. market.³ Mexico has increased in the technological intensity of its basket of exported goods. In 1990, less than one-third of its exports were of medium or high technological intensity; by 2011, this percentage was over 60%, but the production processes of a vast proportion of Mexican exports has very little local content of intermediate inputs and value added. Many export businesses may be seen more as assembling firms than as real manufacturing enterprises.

The unquestionable progress in price stabilization, in the reduction of the public sector deficit, and in building up a dynamic non-oil export sector has not been accompanied by a higher and sustained growth of the Mexican economy. As Figure 1 shows, the Mexican economy and its manufacturing grew at a slower pace during 1987–2012, after the reforms of the mid-1980s, than from 1960 to 1981 (see Kehoe, 2010; Kehoe & Meza, 2012; Moreno-Brid & Ros, 2009).

From 1987 to 2012, the average annual rate of expansion of GDP in real terms was 2.7%. This performance was an improvement relative to 1982–1986, the 5 years severely affected by the international debt crisis, but is less than half the average registered in 1960–1981 (6.7%).

From a demand-side perspective, the slow growth of the Mexican economy after 1986 is related to two interdependent factors. The first is the surge in its import propensity, or technically speaking, the acute rise in the income–elasticity of imports that led to a drastic reduction in the Keynesian income multiplier of investment and exports (see Moreno-Brid, 1999). Its reduction diminished the pull-effect that the surge of exports and the mild recovery of investment had on the rate of expansion of total GDP in the Mexican economy. The second factor is the lack of dynamism of investment—of fixed capital formation—in Mexico after the macroeconomic reforms. Investment as a proportion of GDP collapsed due to the crisis of 1982, but mildly recovered thereafter, although not completely. By 2012 the investment ratio was 22%, still lower than in 1981. It is also three points below the 25% that United Nations Conference on Trade and Development (UNCTAD) and others consider as the minimum coefficient needed to achieve annual rates of economic growth above 5% (ECLAC, 2012). The fact that private investment failed to respond dynamically to the macroeconomic reforms implied that the private sector could not or did not modernize and expand its machinery and equipment rapidly enough. In turn, this problem tended to undermine the overall international competitiveness of Mexico's productive sector and hindered its possibilities to meet the challenges of the increased pressure from its foreign competitors brought about by trade liberalization. If the economy is to grow persistently at annual rates above 5%, it is necessary to boost investment, especially in the tradable sectors and in infrastructure, and to increase the local content of domestic production, in particular of exports, to strengthen Mexico's internal market.⁴ Avoiding the trend to appreciate the real exchange rate would be a contribution in this direction. All of these points are key challenges for the fiscal and monetary authorities in Mexico.

Regarding the composition of output and its relation to economic growth, a key area of relevance for industrial policy, Figure 1 shows that the annual changes in GDP and in its manufacturing industry are closely associated. In 1960–1981, manufacture expanded at an average annual rate of 5.4%, its performance deteriorated in 1982–1986, and since then has grown at an average annual rate of 2.9%. The slowdown of the manufacturing sector is worrisome because it reveals that this sector—notwithstanding its impressive export boom after the macroeconomic reforms—has been losing its capacity to act as an engine of growth in Mexico. To verify this hypothesis, we applied econometric analysis to test Kaldor's First Law, which associates the rate of growth of real GDP in the whole economy to the rate of growth of GDP in manufacturing. The rationale behind it is that, due to the prevalence of increasing returns to scale in manufacturing, it is a main determinant of the growth of output and of productivity in the rest of the economy. In large economies a strong, competitive manufacturing sector is the cornerstone that allows them to enter into virtuous cycles of growth marked by the persistent expansion of output, productivity, and exports in a context of innovation, rising real wages, and stronger domestic markets.⁵

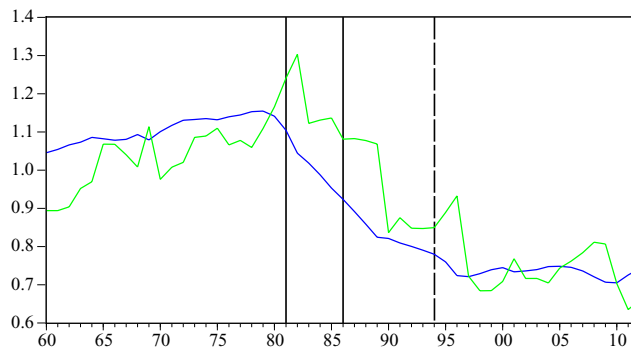


Figure 2. Manufactures Changing Power as an Engine of Growth: Mexico 1960–2012 (GDP Multiplier of Manufactures Relative to the Overall Economy and to the Rest of Nonmanufacturing Sectors)

Note. The line in blue depicts the multiplier of GDP in manufactures relative to total GDP. The green line measures it relative to nonmanufacturing.

Source. Own estimation based on INEGI (2013).

Figure 2 illustrates the changing magnitude of the multiplier effect of the expansion of GDP in manufacturing on the GDP generated by the aggregate of nonmanufacturing activities and on the GDP of the whole Mexican economy in 1960–2012.⁶ We used a log–linear specification and Kalman Filter techniques to estimate the multiplier. When its magnitude is above or below the unity, an increase in the real GDP of manufactures brings about a proportionally higher or lower increase of real GDP of the aggregate of nonmanufacturing activities as a whole and, as a consequence, of the GDP of the Mexican economy.

As Figure 2 shows, from 1960 through the early 1980s, manufacturing was an engine of growth of the Mexican economy, with an estimated multiplier well above one (1.0). Thereafter it began to lose its pulling capacity, and by the end of the 1980s, its estimated magnitude fell below unity. In other words, the expansion of manufacturing GDP was no longer bringing about a more-than-proportionate increase in the GDP of the rest of nonmanufacturing activities and of the GDP of the Mexican economy as a whole. Why did this happen? Why do we find the paradox that our manufacturing industry, at the same time that it became Mexico’s most impressively dynamic exporter, lost its capacity to act as an engine of growth, its capacity to pull the rest of the economy into a platform of high growth? Why do we have a very sluggish performance of manufacturing’s value added—and moreover of the whole economy—in the midst of a boom in its exports of manufactures? The answer to these questions lies in finding explanations for the slowdown of the Mexican economy over the last three decades.

Two main hypotheses have been put forward to understand the asymmetric trajectories of trade and value added in Mexico’s manufacturing sector after the reforms. The first argues that the vastly increased export capacity of the Mexican economy—fundamentally manufactured—detonated by the macro-reforms was accompanied by an even stronger increase in import penetration of Mexico’s domestic market (see Moreno-Brid, 1999). A rise in the overall penetration of imports more than compensated the dynamism of exports. Approximately 33% of

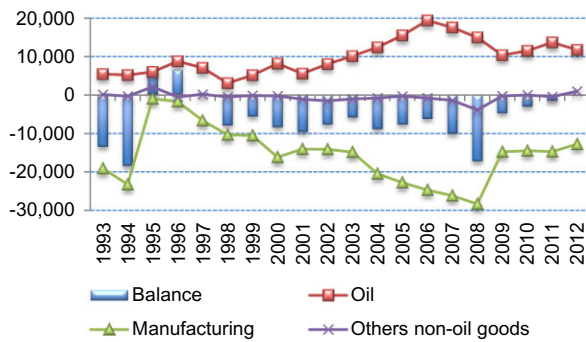


Figure 3. Mexico. Trade Balance by Sectors: Oil, Manufacturing, and Other (Millions of U.S. Dollars, 1980–2012)

Source. Own calculation based on data from Bank of Mexico (2013).

the increase in Mexico's aggregate demand brought about partially by the rise of exports triggered by the macroeconomic reforms of the mid-1980s was translated to an increase in imports to augment the foreign component of aggregate supply. The factor behind this change was a shift in the development strategy that led to the elimination of trade barriers, but the strong momentum of imports suggests that there has been a certain dismantling, a breakup of important backward and forward linkages in Mexico's productive structure, with local firms being displaced by foreign competitors. Behind Mexico's changing export and import trajectories lies the consolidation of a dual structure with a few of its large firms competing successfully in world markets but with scant use of domestic suppliers of inputs and raw materials, and with a vast number of hardly dynamic small, medium, and micro firms excluded from the benefits of surging export demand and oriented to a rather sluggish domestic market (See Domínguez & Brown, 2003; Moreno-Brid & Ros, 2009; Pacheco, 2005; Vidal, 2008).

A second, and to a certain extent complementary, hypothesis is that the expansion of exports—relying more and more on foreign-produced intermediate inputs—provoked the surge of imports and, therefore, the sluggishness of investment explains Mexico's slow growth (see Blecker & Ibarra, 2013). Both interpretations coincide on the view that the tendency of the real exchange rate to appreciate has reduced the Mexican economy's growth potential because it undermines the international price competitiveness of domestic producers and also tends to orient investment to the production of nontradable goods, but they differ on the importance they give to the penetration of imports in the nonexporting sector and the subsequent breakup of the domestic interlinkages.

Figure 3 shows that the magnitude of the trade deficit in manufactures above the trade surplus in oil has essentially determined the evolution of Mexico's trade balance since 1993. Manufactures are the main component of Mexico's trade deficit, despite their outstanding export performance. Such behavior reflects this activity's dual character where the in-bond industry and a few big manufacturing firms generate large trade surpluses whose volume is dwarfed by the imports of manufactured goods from other manufacturing and nonmanufacturing firms in the rest of the economy.

Although not shown in the figure, the magnitude of the trade deficit depends on the level of economic activity. The trade deficit in manufacturing has shown a tendency to increase as a proportion of its GDP even at given rates of growth. This tendency is a matter of concern because it implies that it is likely that if and when the economy enters a phase of fast growth, it runs the risk that the trade deficit in manufacturing will soar excessively as a percentage of its GDP. Experience has shown that when this occurs in Mexico, unsustainable pressure tends to build up on the balance of payments and that if this problem is not corrected, sooner or later it derails the overall growth process.

Another concern regarding the performance of Mexico's manufacturing sector is the evolution of its productivity (see Hallberg, Tan, & Koryukin, 2000; Kuznetsov & Carl, 2008; López-Córdova, 2002; World Bank, 2000). Its labor productivity has been lagging behind that of the U.S. manufacturing industry. In contrast to Mexico's experience during the import substitution era, its gains in labor productivity in recent years have been associated with a reduction in employment in relative and in absolute terms. For a number of years the Mexican manufacturing industry has ceased to absorb surplus labor from the rural and services sectors. Its incapacity to create enough jobs is translated into an expansion of the informal sector, marked by low productivity, low wages, and virtually no social protection (see CONEVAL, 2013; Cordera, 2012; Samaniego, 2008).

The empirical evidence indicates that building a robust, internationally competitive manufacturing sector capable of generating trade surpluses and creating jobs is virtually an indispensable condition for large-sized developing economies to enter a path of high and persistent growth. Mexico is not an exception. Its development agenda must include policies explicitly tailored to improve its manufacturing industry's competitiveness in the domestic and world markets, based on knowledge and innovation-intense activities and significant backward and forward linkages to domestic suppliers.

These points highlight the urgent need to implement policies that lead to a transformation of Mexico's manufacturing industry so that it: (1) continues a dynamic penetration of export markets in America and, most important, in Asia and China, based more and more on knowledge intensive activities and not on low wages; (2) builds more and stronger links to domestic suppliers to augment its local content and strengthen its capacity to pull the rest of the economy into a trajectory of high and robust expansion; and (3) contributes to expand the internal market by satisfactorily meeting the changing demand of domestic consumers and improving employment conditions. This last goal became dramatically important in the aftermath of the 2008–2009 financial crisis and the slowdown that it provoked in world trade. Such weakening of global trade does put in question the viability of export-led growth strategies in medium-sized and large economies and compels them to rely more on the expansion of domestic demand.

The insufficient dynamism of the Mexican economy over the last three decades is blatantly reflected in the evolution of Mexico's real GDP per capita relative to that of the United States, its close partner in trade and foreign direct investment (FDI). Figure 4 shows that the gap has widened since 1982.

In 1982, Mexico's GDP per capita was 23.3% of that of the United States. By 1995, the figure was 16.1%, and today it stands at 16.9% (INEGI, 2013). This gap is similar to the one prevailing in the 1950s, nearly 70 years ago. Brazil has

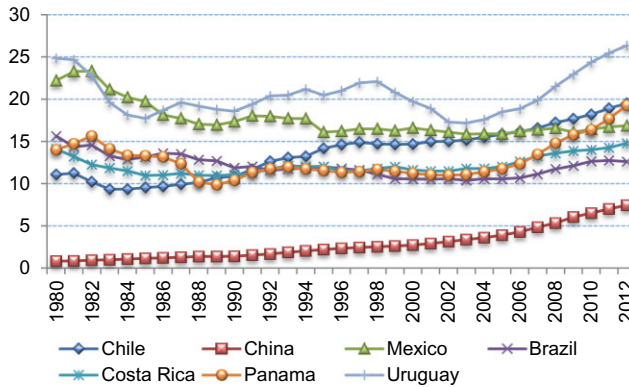


Figure 4. Real GDP per Capita in Selected Countries Relative to the United States (Percentages, from Data in Constant U.S. Dollars of 2000)

Source. Own calculations based on data from World Development Indicators, World Bank (2012).

followed a similarly disappointing long-term growth path, and the gap in its GDP per capita is wider today than 30 years ago. Costa Rica has fared slightly better. Uruguay and Panama show progress in this aspect, thanks to their fast economic expansion over the last 10 years. Acute contrasts are the trajectories of Chile and China, having systematically reduced the difference in their GDP per capita as compared with the United States. Compared with these economies, Mexico's quest to catch up with the United States seems even more disappointing. The reforms have not succeeded in putting the Mexican economy on a high growth export-led path (see Hanson, 2010; Kehoe & Ruhl, 2011; Moreno-Brid & Ros, 2009). Low inflation and small fiscal deficits have become a normal characteristic of the Mexican economy, and its exports of manufactures have boomed, but over the last 30 years the average rate of growth of GDP in Mexico has remained very low. Such little dynamism of its growth trajectory keeps it from narrowing down its income gap with the United States and, even more relevant, has made it more difficult to achieve a faster and more significant reduction of poverty and inequality and a more robust creation of formal jobs.

Industrial Policy: Theory and Practice

Industrial policy has historically provoked visceral reactions among those who support it and those who are against it in Latin America. Just a few decades ago it was virtually banned from the official economic policy discourse, but such animadversion, or strong skepticism, did not stop governments in the region and elsewhere—including in wealthy nations—from continuing to apply industrial policy interventions at local and even federal levels. Today the perception of industrial policy as a curiosity reminiscent of populist regimes could not be more erroneous. In the aftermath of the international financial crisis of 2008–2009 it has a generalized acceptance in the academic and political discourse as well as with policy practitioners. There is still debate of its merits, limitations, challenges, and different practice in a wide number of countries. The European Union, the

United States, the United Kingdom, and other economic powers have launched ambitious programs and policy initiatives to boost their manufacturing sectors. For example, the United Kingdom's Prime Minister, David Cameron, gave a speech last year to high-level staff of the Foreign Office.

We need a more strategic, modern approach to maintain and develop our global comparative advantage and get out there and make the most of it. We need what I call a modern industrial strategy. Not keeping dead industries on life support like the industrial strategy of the 1970s but supporting industries where we have a competitive edge and encouraging the high growth industries of the future. At the heart of a successful modern industrial strategy is the convening power of national government to get behind what works and to position our key sectors so they have the best chance of winning in the global race (*The Telegraph*, 2012).

At that time, the Japanese government also vowed to put important programs and policies in place to foster manufacturing in partnership with the private sector as a reaction to "increasingly aggressive industrial policies of America, Britain, China, France" (*The Economist*, 2010).

Numerous factors explain the generalized open return of industrial policy in the developed world. First, by serving as a tool to protect jobs and to stimulate domestic demand, it helps to reduce the adverse effects of the financial crisis. Another factor that contributes to shift public opinion in favor of industrial policy is the push for cleaner technologies for production and more efficient energy use to compete in the green economy. In addition, the dynamic growth trajectories and penetration of world markets by China, India, and other Southeast Asian nations, where industrial policy has unabashedly been part of the government's economic strategies, have also led to reassess the merits of industrial policy. As a recent review concluded, "The truth is that everyone uses industrial policy—some more successfully and some more openly than others" (Ciuriak & Curtis, 2013).

Before listing its main pros and cons, some clarifications are necessary concerning industrial policy's objectives and its relation to economic growth. By industrial policy we understand the use of government policies specifically targeted to change the productive structure of the economy to further some activities more than others. Another crucial point is that the objective of industrial policy is to promote growth and development in the economy at large and not exclusively in the manufacturing sector or in any individual, specific activity (see Calderón & Sánchez, 2012; Cimoli, Holland, Porcile, Primi, & Vergara, 2009; ECLAC, 2012).

Industrial policy interventions are based on two assumptions. The first is that the market by itself will not bring about the transformation in the economy's productive structure in the direction, magnitude, or speed desired by policymakers. The second presumption is that the rate of growth of an economy is associated to an important extent with the composition of its output and of its exports. What an economy produces and what it exports are among the key determinants of its long-term growth trajectory (see Capdevielle, 2005; Cimoli et al., 2009; Hausmann et al., 2005). Economies that have a highly diversified export structure tend to grow faster and in a more stable way than those whose exports are heavily concentrated in few products and commodities.

There are other characteristics of an economy's productive structure that exert a fundamental influence on its rate of growth. As ECLAC has pointed out, an

economy's productive structure is more conducive to ensure high and sustained growth to the extent that it has these three characteristics: (1) its output and exports are oriented and able to compete in the dynamic segments of global value chains in world markets; (2) its output has an important and increasingly significant presence of activities whose production processes are intensive in innovation and high technology; and (3) its productive structure is marked by a significant degree of interconnectivity, of forward and backward linkages. Economies whose productive structure is marked by these characteristics are more likely to be able to build up dynamic competitive advantages that allow them to enter into virtuous circles of expansion of output, productivity, and net exports, with important and positive effects on real wages and employment (see ECLAC, 2012).

Paying attention to these aspects in the design, implementation, and follow-up of industrial policy is important, but it does not guarantee that it will successfully induce a structural transformation in the economy to boost the long-term rate of expansion of output and productivity, a transformation that market forces acting on their own will not achieve. There are many other factors that condition the effect of industrial policy on economic growth, among them the institutional framework for its application, the reaction of private investment to policy incentives, access to financial resources, the conduction of macroeconomic policy, and the incidence of external shocks in the terms of trade or in key world markets. The historical and sociopolitical context is important. Ignoring the structural characteristics of an economy in the design of its industrial policy is a recipe for complications, and perhaps irrelevance in its actual implementation.

In small economies, given the limited scale of their domestic market, industrial policy should focus on the promotion of services. In large economies, it traditionally puts emphasis on fostering manufacturing. Given that manufacturing is subject to increasing returns to scale, the transfer of resources to it from agriculture and services tends to increase productivity and growth in the whole economy.

These comments have presented our views on key aspects of industrial policy and how certain characteristics of an economy's productive structure exert a significant influence on its rate of growth. In the following section we briefly examine some basic myths and challenges of industrial policy.

Myths and Challenges of Industrial Policy: A Basic Guide

The first myth is that the best industrial policy is no industrial policy. As a slogan, it gained some notoriety in the early 1990s in Mexico. It reflected the then-dominant view that industrial policy should be avoided or eliminated given that it was essentially a source of distortions and inefficiencies in the allocation of resources.

As a general claim on the benefits and costs of industrial policy, and for that matter on government direct intervention in the economy, this sound bite had an ideological root more than a sound analytical or historical basis. At the time of that slogan's appearance in the early 1990s, even Mexico was applying an industrial policy, although with marked differences from the one that previous administrations had applied. The macroeconomic reforms initiated in the mid-1980s

canceled a number of policy initiatives, but some very important programs to foster exports prevailed among them. The in-bond (*maquiladora*) decree was initially put in place to promote scarcely qualified labor-intensive exports in plants close to the U.S. border.

A few, yet significant, programs and policies remained, actively oriented to buildup or consolidate Mexico's big exporters. To meet this goal, industrial policy facilitated the imports of intermediate inputs and raw materials to be reexported. Exports of manufactures especially but not exclusively from in-bond *maquiladoras* boomed, but with little local content. The administrations of Presidents Zedillo, Fox, and Calderón did not cancel this program. Openly or not, these administrations continued to implement policy initiatives and programs to strengthen selected industrial activities, some of them in manufacturing.

On the theoretical side, it is standard knowledge that market imperfections and failures—including the absence of certain markets—justify industrial policy in the sense of direct policy interventions by the government in the allocation of resources to favor some industries or productive activities. Mainstream economics identifies four theoretical arguments that sustain the legitimacy of industrial policy, positive externalities, strategic trade policy, infant industries, and coordination failures.⁷ To these we could also add that in some cases it is the absence of markets that justifies such government policies.

Local positive externalities are present when the supply or availability of certain goods and services generates benefits for society as a whole that go beyond the benefits for the firm that produces them. In these cases, the market alone will not ensure the socially adequate supply of such goods and services. For example, a firm that tries to innovate bears exclusively the costs of innovation in many fields, but the knowledge benefits may be easily accruable to its actual and future competitors; without direct government intervention, the "supply" of innovation will be lower than what its social benefit would imply. Private marginal net benefit is much lower than the social marginal one.

Strategic trade and industrial policies are relevant in industries with increasing returns to scale to gain bigger shares of the market and larger scale of production to improve competitiveness by reducing average production costs. In such industries, direct support by the government is justified on two grounds. Firms gain great benefits from being among the first entrants into new markets, and they enjoy the expansion in the scale of their production. Furthermore, because other countries apply industrial policy to promote the international competitiveness of their firms, it is in the best interest to act in similar ways and implement this type of industrial policies.

The infant—or nascent—industry argument for state intervention is based on the notion that advances in productivity are far from linear but actually have a cumulative quasi exponential gain in the process of "learning-by-doing." The argument is that unless the government intervenes to foster them temporarily, firms in the nascent phases of such industries would be unable to reach more mature stages in which their productivity would have fully exploited the benefits of learning-by-doing. In Mexico today, as in many other countries in Latin America, the infant industry argument does not have much spin as policymakers tend to associate it with the failed experiences of previous decades and the import substitution regime. There have been many failures in the application of

industrial policy, but as Rodrik (2008) concludes, "It is rather difficult to identify instances of non-traditional export successes in Latin America and Asia that did not involve government support at some stage."

Lin (2010), the World Bank's chief economist in 2012, noted, "Developing economies are ridden with market failures, which can not be ignored simply because we fear government failures. And as economic historians have demonstrated, many of today's developed nations owe a substantial amount of their progress to the systematic application of industrial policies to protect their domestic manufacturing under the infant industry rationale."⁸

Coordination failures imply the inability of the market to ensure the simultaneous action of private firms in situations where it would not be profitable for them to act in isolation, for example in investing, but it would be enormously profitable to invest in a coordinated fashion. An example is found in many poor countries where piecemeal investment by individual private firms acting on their own is not profitable enough, and their individual added on outcomes would be insufficient to push the economy away from the trap of slow growth equilibrium, unless the government coordinated it to ensure the benefits of economies of scale and to break certain oligopolistic markets.

A second myth is that industrial policy should be restricted to the application of so-called horizontal policies; it should not consider initiatives that discriminate explicitly and are directly aimed at fostering some industries instead of other activities. A key problem with this idea is that, except for very basic policy initiatives such as red tape removal, virtually all so-called horizontal policies do not exert the same influence on the various firms and industries. Policies aimed at giving support to innovation differently and most favorably affect firms that participate in high-tech, knowledge-based industries over firms whose production processes are intensive in low wages and have a poorly qualified workforce. The same is true for another typically horizontal initiative, the accelerated depreciation of capital investment for tax purposes. Its effects on private firms are far from uniform as the firms are dependent on their capital labor ratios. Other horizontal policies such as exchange rate depreciations or customs facilitations also have heterogeneous effects on different firms according to whether they produce tradable or nontradable goods and services.

An additional myth regarding industrial policy is that it should not be used because vested interests will capture it, resulting in corruption and rent-seeking behavior. One could raise the same caveat to social policies, especially in electoral times, but we seldom hear that governments should refrain from applying social policies and programs. Vested interests can capture any policy, but the solution lies not in abstaining from them but in putting in place monitoring and accounting mechanisms to accompany their efficient and honest applications. It is important that the incentives considered by industrial policies are temporary, transparent, and systematically evaluated according to measurable performance criteria a priori defined.

Another criticism, or myth, is that industrial policy has an original flaw as it involves "picking winners," something governments are simply unable to do effectively and in a better way than the market. Perhaps the best response is from Rodrik (2008), who argues that industrial policies are not about picking winners but about inducing a process of experimenting and discovering in which a

fundamental premise is “letting losers go”; in other words, the issue is to grant temporary stimulus. In this view, the problem with granting incentives or offering protection to nascent or infant industries lies not in making incorrect choices in some of the beneficiaries. The problem lies in maintaining those incentives or benefits for too long. This is a challenge that boils down to industrial policy’s design of incentives to ensure that they are not permanent, opaque, and unaccountable. Although some mistakes will be and have been made, given market failures, flaws, and absences, the overall working of the economy would be better with properly designed policy interventions. Some of the critics that emphasize the state’s inability to “pick winners” as a case against industrial policy simultaneously favor focalized social policies—such as conditioned cash transfers—that are based on the assumption that the state has the ability to pick “losers” at the individual or family level.

On a practical level, the reactions of the government of various developed countries to the international financial crisis—for example, the Obama administration—included the direct, conspicuous, and major intervention of policymakers at the individual firm level of major private manufacturing corporations and financial institutions to temporarily protect them, strengthen their financial positions, and invest in them, all to put them back on track. In some cases this included programs to steer private and public expenditure to buy domestically made products.

In addition, and relevant for the Mexican case, another important myth is that there is very little that industrial policy can do, given the nation’s commitment to comply with international trade agreements, mainly those signed under NAFTA and the World Trade Organization. This is false. There are key restrictions, among them the commitments to refrain from erecting trade barriers, granting direct subsidies to exports, imposing price controls on traded goods or performance requirements—such as on trade balance or local content—on FDI. But these still leave ample space for industrial policy interventions to use financial and fiscal incentives to promote research and development and innovation, to adopt *buy-local* policies in government purchases and contracts, and to use fiscal and financial resources to build up the technical and education capacities of the work force (see Cardero, 2012). Fostering industrial clusters is permitted, as is promoting services and practically everything that helps move faster toward lower carbon emissions and a green economy. The quid is not whether there is space for industrial policy action within the boundaries set by our international commitments. The quid is whether there is the political will and the fiscal cum financial muscle to implement an industrial policy—and for that matter a new agenda for development agenda—that significantly contributes to insert Mexico onto a path of high economic expansion with equality.

There is the issue of whether industrial policy should stick to strengthening existing comparative advantages or also engage in stimulating the creation or buildup of new comparative advantages. Those in the mainstream economics perspective that have accepted the case for industrial policy on practical and theoretical grounds favor the first position and strongly oppose the second. The government policy interventions that they are willing to consider as part of the industrial policy toolkit include an ample gamut that goes from across-the-board measures to facilitate start-ups, to reduce transaction costs, and to strengthen

already existing industries with proven competitive advantages in export or domestic markets. They shy away from interventions that aim at creating new competitive advantages. They may be wrong if the latter endeavor is conceived as an action to be taken, not by the state in isolation, but as a part of a long-term cooperation between the government and the private sector.

The economies that enter a trajectory of robust and long-term development are not those whose competitive advantages remain frozen, but those that are systematically upgrading their competitive advantages in an intense process of creation–destruction, reinventing their capacities to enter successfully into new, technologically sophisticated links in dynamic global value chains in world markets. Most important, significant backward and forward linkages with their domestic markets mark their export sectors. In the case of dynamic large economies, their interactions with the competitive productive sector that tends to the domestic market may lead to a virtuous circle of high economic growth.

Finally, there is the myth that implementing an industrial policy ensures a transformation of the productive structure that will lead to high and sustained economic growth. No such result can be guaranteed. Many other factors, exogenous and endogenous, have a decisive influence on the growth trajectory of an economy. What can be assured is that, without a significant and active industrial policy, the quest for growth of any large-sized economy has much lower possibilities of success and is likely to be “bound in shallows and in miseries” (Shakespeare, 1967).⁹

Conclusions

By its very nature, industrial policy is selective as it explicitly and decisively chooses to foster some activities in its attempt to bring about a structural transformation of the economy that is more conducive to insert it in a platform of high growth, according to policymakers. To the extent that it does so, it interferes with the free-market mechanisms of allocation of resources. It introduces distortions in them. For some purists this is bad enough because they consider virtually all government-induced distortions as unnecessary, negative deviations from the first best scenario or outcome that would result from free market operation. Once it is recognized that some markets simply do not exist and other key markets have major, significant failures and imperfections, the introduction of such distortions by government policy may go a long way to augment material benefits for the society as a whole, beyond what the maximization of private benefits by individual firms in market competition would imply.

Government responsibilities imply that its interventions in the economy must have a longer-term horizon than the private sector on the desirable evolution of investment and the composition of the economic structure. It must have the capacity and commitment to consider key differences in its actions between private and social marginal benefits. At the same time, the government has the possibility of, or even the obligation to, use macroeconomic and other policies to intervene counter-cyclically in the economy to reduce adverse effects of external shocks in its level of production and employment. Industrial policy can play a decisive role to help achieve a long-term trajectory of higher economic growth.

There is consensus that industrial policy should openly foster activities or links in global chains of value added that: (1) are marked by increasing returns to scale and have large positive externalities on the rest of the economy; (2) have high fixed costs to entry, be it in terms of finance, innovation, or others; or (3) are strategic in terms of national interest or because international competitors are actively applying industrial policies to foster their development (see Ciuriak & Curtis, 2013).

The new administration that took office in December 2012 has admitted to the need to implement an industrial policy as part of an agenda to promote faster economic growth. Industrial policy has always been an instrument in Mexico's development toolkit in practice, though with varying orientations and degrees of state direct intervention in the economy. The explicit return of industrial policy in the discourse of its development agenda is welcome. Such return allows for an open discussion and debate on the challenges, merits, limitations, costs, effects, resource requirements, and instruments of alternative versions of what is or should be a modern industrial policy for the Mexican economy today, given the global context that is marking the world economy in the early years of the 21st century.

By admitting the relevance of industrial policy for Mexico today, the government has opened the door to a debate on key aspects of industrial policy: its goals, instruments, orientation, resources involved, scale and scope, and form of coordination between the private and the public sector. Many of these aspects are unknown at the time of writing, but there are a number of welcome changes. One is that the National Development Plan stresses the urgent need to create stronger forward and backward linkages between exports and the rest of the productive activities to boost Mexico's economic growth and internal markets. To the extent that this implies setting as an objective not exclusively the promotion of exports, but also the increase in the value added domestically generated by them, the new industrial policy may provide a missing link in Mexico's unsatisfactory quest for an export-led growth. We salute the Secretariat of the Economy's declaration that programs under it have as an objective to strengthen and develop the domestic market with the same robustness as the foreign market, to strengthen nascent industries which have competitive advantages and to enhance innovation. These objectives of industrial policy are clear and are set as part of an agenda to promote economic growth. However, so far in practice industrial policy has not changed.

The challenges are in the details in the implementation of industrial policy, many of which are still unclear. The commitment to foster nascent activities is a new addition in Mexico's recent economic history of industrial policy. To what extent such stimulus in nascent industries, or infant industries, will concentrate only on those that have already proven competitive advantages is at the center of the debate on the pros and cons of considering also stimulating the build up of new competitive advantages. The scant reference in the *Pacto* to manufacturing and to industrial policy is a question of concern to some analysts.

On what particular instruments will industrial policy rely? How and when will they be implemented and in coordination with what other policies, in the macroeconomic or labor area? In this matter it is recommended that the exchange rate does not enter a long-term trend of real appreciation and that significant financial

resources by the banking sector are made much more accessible to the private sector for investment purposes. The financial reform proposed by the government seems to be moving in the right direction on some aspects such as the revival of development banks, but it is far from clear that it will be sufficient to allocate credit to investment in all the required activities and regions to accompany or support high rates of economic growth. The president's announcement about the creation of a large new fund to finance small and medium businesses and of an Institute of Entrepreneurship is commendable, but the emphasis on small- and medium-sized firms instead of on selected activities or links in global value chains may not necessarily be the best option to support an industrial policy that may induce the structural transformation that the Mexican economy requires to achieve high and sustained rates of expansion.

What are the resources available for industrial policy? Will the incentives it will put into place be temporary, transparent, and result oriented, and have accountability mechanisms? Is there already the political consensus required to effectively maintain industrial policy as a key part of a development agenda for high economic growth and equality in Mexico? Will the major development goals set in the National Development Plan for the transformation of the Mexican economy be achievable through the type of industrial policy that the government is apparently considering? These are important questions whose answers will soon be known.

About the Author

Juan Carlos Moreno-Brid is Deputy Director and Research Coordinator of the Economic Commission for Latin America and the Caribbean (ECLAC), Subregional Headquarters in Mexico.

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Notes

¹For in-depth analysis of Mexico's macroeconomic reforms and trade liberalization from different perspectives, see Aspe (1993), Clavijo and Casar (1994), Ros (1993), F. Sánchez, Fernández, and Pérez (1994), Lustig (1998), Dussel (2000), Villarreal (2005), Moreno-Brid and Ros (2009).

²For recent literature on industrial policies in Mexico, see De Maria y Campos, Domínguez, and Brown (2012), De Maria y Campos (2009), Capdevielle and Dutrenit (2012), Casalet (2013), De Leon and Sandoval (2012), Dussel (2012), Calderón and Sánchez (2012), D. Ibarra (2012), Guerrero de Lizardi (2012), Ruiz Duran (2010), Ruiz Nápoles (2001, 2004, 2006), Capdevielle (2005). For reviews of industrial policy in Latin America, see Melo (2001), Schrank and Kurtz (2005), Moreno-Brid and Paunovic (2008), Peres and Primi (2009), and Devlin and Moguillansky (2012).

³The dynamism of Mexican non-oil exports after the macroeconomic reforms is well documented. See Moreno-Brid and Ros (2009), Moreno-Brid, Rivas, and Santamaría (2005), C. A. Ibarra (2009, 2010), and Gallagher, Moreno-Brid, and Porzecanski (2008).

⁴This means that the improvements in Mexico's competitiveness in the international and domestic markets should increasingly be based not on low wages, but on higher productivity brought about by more investment and more activities based on knowledge-intensive processes that allow for higher value added and improved real wages in a context of expanding formal employment.

⁵For the original formulations, see Kaldor (1966, 1975) and Thirlwall (1983). For empirical tests of Kaldor's Laws in Latin America, see I. Sánchez (2010) and Carton (2008).

⁶Multipliers were estimated by rolling regressions of the real GDP of the whole economy and of the nonmanufacturing activities, as a simple linear function of real GDP of manufacturing, both in logs.

⁷For an extended description, see Ciuriak and Curtis (2013).

⁸For a historical analysis, see Chang (2002) and Peres and Primi (2009).

⁹The full quote is illuminating for the case in point. "There is a tide in the affairs of men which, taken at the flood, leads on to fortune; omitted, all the voyage of their life is bound in shallows and in miseries. On such a full sea are we now afloat, and we must take the current when it serves, or lose our ventures" Shakespeare (1967) Act 4, scene 3, 218–224.

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