

THE REGIONAL MIGRATION STUDY GROUP

# UNDERSTANDING MEXICO'S ECONOMIC UNDERPERFORMANCE

By Gordon H. Hanson



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# UNDERSTANDING MEXICO'S ECONOMIC UNDERPERFORMANCE

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## Executive Summary

In the past three decades, Mexico has aggressively reformed its economy, opening to foreign trade and investment, achieving fiscal discipline, and privatizing state-owned enterprises. Despite these efforts, the country's economic growth has been lackluster, trailing that of many other comparable developing nations.

In part, four lines of argument explain why Mexico has not sustained higher rates of economic growth:

- **Poorly functioning credit market.** Credit provision is central to the process of economic development, allowing for long-term investment that is essential for growth, but Mexico has channeled low levels of private credit to firms or households. Lenders continue to face hurdles in seizing assets from borrowers who default, which hinders credit provision, and the country ranks low in international comparisons of protections for creditors.
- **Perverse incentives to informality.** Overregulation of formal enterprises and the structure of Mexico's social protection programs may be raising the incentives for informality. However, the recent appearance of these trends suggests that they cannot account for Mexico's poor growth performance prior to the late 1990s.
- **Inefficient regulation.** Mexico stands out for having high energy prices (raising production costs and diminishing the country's comparative advantage in industries such as manufacturing), high prices for telecommunications services, and a scarcity of skilled labor, all of which limit competitiveness. In each of these input markets, interest groups work to impede the government from enforcing anti-monopoly regulations and convince policymakers to regulate markets in a way that preserves their earning capacity.
- **International competition, particularly with China.** In the past decade, Mexico has lost comparative advantages relative to China in several key industries, including manufacturing, as a result of rapid productivity growth in China, but also due to slow productivity growth in Mexico and Mexico's failure to graduate into higher value-added manufacturing.

None of these alone is sufficient to explain Mexico's slow growth but together provide a compelling road map for policymakers seeking to expand opportunities within the country. Several key reform areas are needed over the next decade, including:

- improving protections for creditors by giving creditors more scope to seize assets of borrowers in the event of default;
- eliminating artificial incentives for workers to enter the informal sector by eliminating the implicit subsidization of workers in the informal sector by workers in the formal sector through Mexico's dual system of social protection;
- raising the incentive of youth to continue education, expanding opportunities for vocational and technical education, promoting continuing education among working adults, and encouraging collaboration with the country's private sector in assessing and investing in the country's human capital;
- implementing anti-monopoly provisions in Mexican law to make telecommunications more competitive; and
- reforming the energy sector to reduce electricity prices.



## I. Introduction

In 1994, Mexico joined the Organization for Economic Cooperation and Development (OECD); its admission was recognition that the country was on the road to success. After a sovereign default in 1982, which precipitated a currency collapse and sharp contraction in gross domestic product (GDP), the country was forced to confront the need for significant changes to its economy. In response, Mexican policymakers proceeded to aggressively reduce the role of the state in the economy and to embrace global markets. After its default, Mexico stabilized its economy, emerging with an independent central bank and stronger capital markets.<sup>1</sup> The country then liberalized foreign trade and investment — by acceding to the General Agreement on Tariffs and Trade and signing the North American Free Trade Agreement (NAFTA) — and privatized nearly 1,000 state-owned enterprises, including the country's banks, which had been nationalized during the 1982 crisis.<sup>2</sup>

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*Between 1985 and 2008... Mexico managed an annual growth rate in per capita GDP of just 1.1 percent.*

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By 1994, the year NAFTA was enacted, Mexico's transformation seemed complete. The country had lowered inflation, maintained fiscal discipline, reduced its external debt burden, and increased trade as a share of GDP. Economic growth, however, remained lackluster. Consider how Mexico's economic growth in the past two decades compares to growth in other countries with similar population and income (see Figure 1). In Latin America, Mexico has kept pace with Argentina, but not Chile or, more recently, Brazil. Its growth is well below Southeast Asia, and Central and Eastern Europe.<sup>3</sup> Indeed, between 1985 and 2008 (the year the Great Recession began in earnest), Mexico managed an annual growth rate in per capita GDP of just 1.1 percent, lower than all comparison countries except Venezuela (0.8 percent). Given the vigor of its reforms, Mexico seems to have underachieved.<sup>4</sup>

The 1990s, during which time Latin America suffered from macroeconomic instability and Asia was rocked by financial crisis, appeared to belie the promise of market-oriented reform. However, in the 2000s such concerns receded, as the expansion of China, India, and other emerging nations created a surge in global trade and contributed to broad-based income growth.<sup>5</sup> But Mexico missed out during this trade boom: Between 2001 and 2008, while the other countries with similar levels of development managed annual growth rates of 2.3 percent or higher, Mexico was stuck at 1.3 percent. Though the recent global recession brought a severe contraction in world imports in 2008 and 2009, robust trade growth has resumed. Growth has now largely shifted to emerging-market economies, particularly to Asia, while advanced economies continue to struggle. Mexico lies somewhere between these extremes.

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1 Pedro Aspe, *Economic Transformation the Mexican Way* (Cambridge, MA: MIT Press, 1993).

2 Nora Lustig, *Mexico: The Remaking of an Economy* (Washington, DC: Brookings Institution Press, 1998).

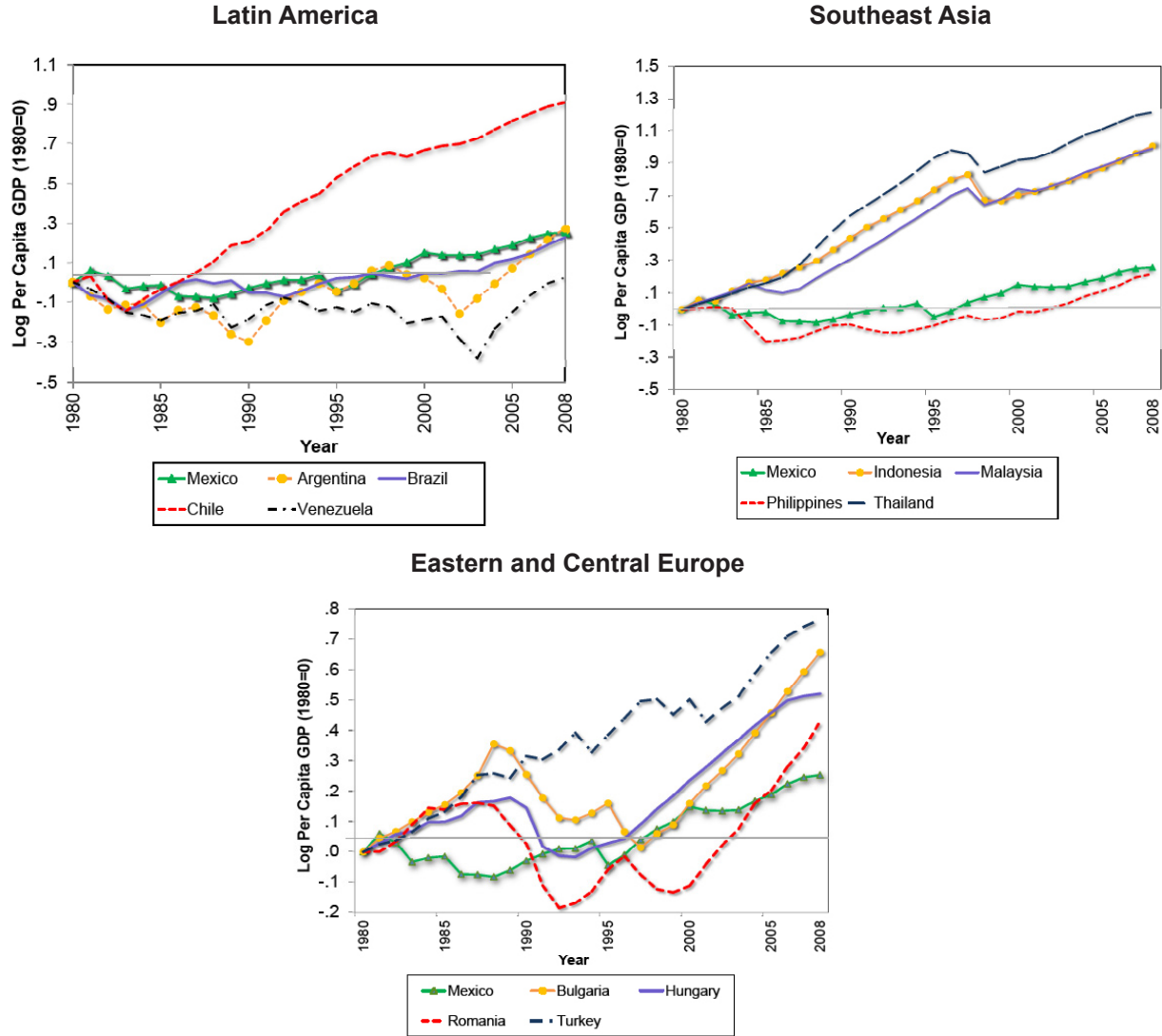
3 Mexico's underperformance relative to Central and Eastern Europe is particularly notable after the mid-1990s, by which time the policy environment in countries moving away from central planning had begun to stabilize (Central and Eastern Europe's post-transition bump in growth is more impressive than Mexico's post-North American Free Trade Agreement [NAFTA] bump).

4 For more on this, see Guillermo Ortiz, "Latin America and the Washington Consensus: Overcoming Reform Fatigue," *Finance and Development* 40, no. 3 (2003): 14-7, [www.imf.org/external/pubs/ft/fandd/2003/09/pdf/ortiz.pdf](http://www.imf.org/external/pubs/ft/fandd/2003/09/pdf/ortiz.pdf).

5 Gordon H. Hanson, "Why Isn't Mexico Rich?" *Journal of Economic Literature* 48, no. 4 (2010): 987-1004, <http://irps.ucsd.edu/assets/001/500763.pdf>.



Figure 1. Economic Growth in Mexico and Select Comparison Countries, 1980-2008



Note: The logarithm of per capita gross domestic product (GDP) is used to illustrate economic growth.

Source: World Bank, "World Development Indicators," <http://data.worldbank.org/data-catalog/world-development-indicators>.

After three decades of sluggishness, the country's growth record looks idiosyncratic, reflecting structural impediments rather than short-term problems, such as real exchange rate overvaluation, which affected the country's performance in the early 1990s.<sup>6</sup> This report examines arguments for why Mexico has not sustained higher rates of economic growth over the past two decades. Recent literature provides a host of possible explanations for Mexico's laggard status.<sup>7</sup> The most prominent focus on how factors internal

6 Rudiger Dornbusch and Alejandro Werner, "Mexico: Stabilization, Reform, and No Growth" (Brookings Papers on Economic Activity, 1 [1994]): 253-315, [www.brookings.edu/~media/Files/Programs/ES/BPEA/1994\\_1\\_bpea\\_papers/1994a\\_bpea\\_dornbusch\\_werner\\_calvo\\_fischer.pdf](http://www.brookings.edu/~media/Files/Programs/ES/BPEA/1994_1_bpea_papers/1994a_bpea_dornbusch_werner_calvo_fischer.pdf).

7 For analysis of the determinants of Mexico's growth performance see: Lustig, Mexico: *The Remaking of an Economy*; Santiago Levy and Michael Walton, eds., "Equity, Competition and Growth in Mexico," in *No Growth without Equity? Inequality, Interests, and Competition in Mexico* (Washington, DC: Palgrave MacMillan, 2009), 1-44; Daniel Chiquiar and Manuel Ramos-Francia, "Competitiveness and Growth of the Mexican Economy" (working paper 2009-11, Banco de Mexico, November 2009), [www.cmicyucatan.org/descargas/archivo\\_descargas/boletin\\_75/competitividad\\_crecimiento\\_economico\\_mexico.pdf](http://www.cmicyucatan.org/descargas/archivo_descargas/boletin_75/competitividad_crecimiento_economico_mexico.pdf); Javier Arias, Oliver Azuara, Pedro Bernal, James J. Heckman, and Cajeme Villarreal, "Policies to Promote Growth and Economic Efficiency in Mexico" (IZA Discussion Paper No. 4740, February 2010), [www.politiquessociales.net/IMG/pdf/dp4740.pdf](http://www.politiquessociales.net/IMG/pdf/dp4740.pdf).



to Mexico — poorly functioning credit markets, perverse incentives for informality, and inefficient regulation — create drags on productivity growth. Another significant external factor is that Mexico is in the unenviable position of exporting goods that China sells, rather than goods that China buys, putting competitive pressure on Mexico's exports. Clearly, none of these mechanisms is unique to Mexico and to explain Mexico's sluggish growth, they must afflict the country in a particularly severe manner. The remainder of this report assesses the relative importance of each of these mechanisms.

## II. Faulty Provision of Credit

The provision of credit is central to the process of economic development, because it allows the long-term investment that is essential for growth. When banks accept deposits from households and make loans to businesses, they perform an essential role as financial intermediaries that allow savings to be transformed into investment. Investment, in turn, allows firms to expand their stock of capital and to create new products and production processes, all of which contribute to higher levels of labor productivity. In turn, higher labor productivity generally means higher incomes and higher living standards. Mexico stands out for channeling low levels of private credit to firms or households, suggesting that financial intermediation in the country is relatively weak.<sup>8</sup> From 2001 to 2008, domestic credit to the private sector as a share of total economic output (as measured by GDP) averaged 18 percent in Mexico, lower than in most other countries with a similar level of development (see Table 1). A growing body of literature cites the weakness of Mexico's credit markets as an important factor behind the country's low productivity growth.

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*Poorly developed financial markets and financial instability  
have plagued Mexico for much of its history.*

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Poorly developed financial markets and financial instability have plagued Mexico for much of its history.<sup>9</sup> One problem has been risk of expropriation: During the past 40 years, the Mexican government has expropriated the assets of private banks twice, first in a de facto nationalization in the mid-1970s and in an explicit bank nationalization in 1982.<sup>10</sup> Another problem has been oversight of bank lending. After Mexico's banks were privatized in 1991, credit provision spiked. In Mexico's haste to privatize its banks, the country failed to create mechanisms to impede abuse of deposit insurance or inside lending to bank directors, notes economic historian Stephen Haber.<sup>11</sup> Consequently, government-insured credit expanded rapidly, financed in part by interbank lending. An increase in nonperforming loans (those in default or close to being in default) and the 1994 peso collapse caused a spate of bank failures, forcing the government to recapitalize the banking system.

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8 Raghuram Rajan and Luigi Zingales, "Financial Dependence and Growth," *American Economic Review* 88, no. 3 (1998): 559-86, [www.isid.ac.in/~tridip/Teaching/DevEco/Readings/07Finance/07Rajan&Zingales-AER1998.pdf](http://www.isid.ac.in/~tridip/Teaching/DevEco/Readings/07Finance/07Rajan&Zingales-AER1998.pdf).

9 Stephen Haber, "Industry Concentration in Capital Markets: A Comparative Study of Brazil, Mexico, and the United States, 1830-1930," *Journal of Economic History* 51, no. 3 (1991): 559-80, [www.innovation.hoover.org/media/File/HaberIndustrialConcentrationAndCapitalMarkets.pdf](http://www.innovation.hoover.org/media/File/HaberIndustrialConcentrationAndCapitalMarkets.pdf).

10 Stephen Haber, "Why Institutions Matter: Banking and Economic Growth in Mexico" (working paper 234, Stanford Center for International Development, Stanford University, November 2004), [www.stanford.edu/group/siepr/cgi-bin/siepr/?q=system/files/shared/pubs/papers/pdf/SCID234.pdf](http://www.stanford.edu/group/siepr/cgi-bin/siepr/?q=system/files/shared/pubs/papers/pdf/SCID234.pdf).

11 Ibid.




**Table 1. Domestic Credit to the Private Sector (Share of GDP), 1991-2000 and 2001-08**

Country	Share of GDP (1991-2000)	Country	Share of GDP (2001-08)
Malaysia	163.44	Malaysia	130.94
Thailand	127.55	Thailand	103.01
Czech Republic	65.72	Hungary	49.22
Brazil	56.42	Czech Republic	39.32
Indonesia	45.73	Brazil	36.89
Philippines	42.09	Philippines	33.58
Colombia	32.72	Poland	32.8
Hungary	27.82	Colombia	27.03
<b>Mexico</b>	<b>25.62</b>	Indonesia	24.24
Poland	21.73	Turkey	21.9
Argentina	20.16	Peru	21.16
Turkey	19.9	Romania	20.95
Peru	19.13	<b>Mexico</b>	<b>17.98</b>
Venezuela	16.93	Venezuela	14.63
Romania	9.33	Argentina	13.79

Notes: Domestic credit to the private sector refers to financial resources such as through loans, purchases of nonequity securities, trade credits, and other accounts receivable.

Source: World Bank, "World Development Indicators."

Since the 1994-95 banking crisis, however, Mexico has modernized accounting standards and bankruptcy provisions, permitted foreign ownership of banks, set reserves according to the riskiness of bank loan portfolios, modified deposit insurance, and sought to prevent insider lending. Problems remain, however. Lenders continue to face hurdles in seizing assets from borrowers who default, which hinders credit provision, and the country ranks low in international comparisons of protections for creditors.<sup>12</sup> Indeed, some studies suggest that Mexico's bankruptcy laws explain the country's poor growth and low productivity compared to other Latin American countries, such as Chile.<sup>13</sup> Despite Mexico's reforms, domestic credit to the private sector actually declined from the 1990s to the 2000s (see Table 1), with its performance relative to other countries failing to improve.

How important are Mexico's credit problems in explaining its growth performance? Based on a survey of 4,000 firms in 54 countries (with data compiled from 1995-99), the fraction of firms reporting severe obstacles in obtaining finance is highest in Mexico.<sup>14</sup> The study also finds that firm sales growth is lower in countries that have greater obstacles in obtaining financing, measured in terms of collateral requirements, bank paperwork, or interest rates. A 2008 economic study suggests that imperfections in Mexico's financial markets impede the flow of credit to profitable undertakings, particularly among small entrepreneurs.<sup>15</sup>

12 The World Bank, *Doing Business 2011* (Washington, DC: World Bank, November 2010),

[www.doingbusiness.org/~media/FDPDKM/Doing%20Business/Documents/Annual-Reports/English/DB11-FullReport.pdf](http://www.doingbusiness.org/~media/FDPDKM/Doing%20Business/Documents/Annual-Reports/English/DB11-FullReport.pdf).

13 Raphael Bergoing, Patrick J. Kehoe, Timothy J. Kehoe, and Raimundo Soto, "A Decade Lost and Found: Mexico and Chile in the 1980s," *Review of Economic Dynamics* 5 (2002): 166-205, [www.econ.umn.edu/~tkehoe/papers/mexico-chile.pdf](http://www.econ.umn.edu/~tkehoe/papers/mexico-chile.pdf).

14 Thorsten Beck, Asli Demirguc-Kunt, and Vojislav Maksimovic "Financial and Legal Constraints to Growth: Does Firm Size Matter?" *Journal of Finance* 60, no. 1 (2005): 137-77, [www.tilburguniversity.edu/webwijs/files/center/beck/publications/obstacles/financiallegal.pdf](http://www.tilburguniversity.edu/webwijs/files/center/beck/publications/obstacles/financiallegal.pdf).

15 David McKenzie and Christopher Woodruff, "Experimental Evidence on Returns to Capital and Access to Finance in Mexico," *World Bank Economic Review* 22, no. 3 (2008): 457-82, [http://siteresources.worldbank.org/DEC/Resources/Experimental\\_Evidence\\_on>Returns\\_to\\_Capital\\_and\\_Access\\_to\\_Finance\\_in-Mexico.pdf](http://siteresources.worldbank.org/DEC/Resources/Experimental_Evidence_on>Returns_to_Capital_and_Access_to_Finance_in-Mexico.pdf).



### III. Social Policy and Informality

The informal sector in Mexico, estimated to account for between one-quarter and one-third of total employment,<sup>16</sup> is often cited as a hindrance to the country's economic development. There are two lines of argument that attempt to explain why firms and workers opt for the informal system: 1) overregulation of formal enterprises, and 2) perverse incentives to informality created by Mexico's social security system.

A common view is that firms remain small to avoid government regulations, meaning that informality keeps firms in existence that would be forced to exit if they had to compete on a level playing field with larger, more efficient formal-sector firms.<sup>17</sup> One consequence of informality is, therefore, the survival of small, unproductive enterprises that are often unable to compete in export markets. There is a large dispersion in productivity across plants in Mexico: In 2008, 31 percent of manufacturing employment was in establishments with fewer than 50 workers and 22 percent was in establishments with fewer than ten workers.<sup>18</sup> Among plants with less than ten employees, almost all (91 percent) had productivity levels below their industry average.<sup>19</sup> Most of these micro-enterprises are informal.

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Some evidence suggests that Mexico could gain substantially if production moved from less productive informal firms to more productive formal firms. Based on data for 1999 and 2004, economists Chang-Tai Hsieh and Ralph Ossa estimate that moving economic activity to more productive plants would double productivity in Mexico's manufacturing sector and nearly quadruple productivity in other industries.<sup>20</sup> Moreover, the same study finds that moving production to firms that pay into Mexico's social security system — one definition of formality — would raise aggregate productivity by 19 percent in manufacturing.<sup>21</sup>

A second view of the relationship between social policy, informality, and productivity is outlined in *Good Intentions, Bad Outcomes*,<sup>22</sup> which argues that Mexico has a dual system of social insurance that inadvertently subsidizes informal workers and firms. One social insurance system governs the formal economy, in which workers and employers are subject to payroll taxes that cover social security benefits, including pensions, health care, disability and life insurance, child care, housing loans, and regulations governing firing and severance pay. A second system of social insurance covers informal workers, including illegally employed salaried workers (i.e., workers who should be, but are not, enrolled in social security), workers paid on commission, the self-employed, and unpaid workers (members of a family business, volunteers, interns, etc.). These individuals have the option of participating in social protection

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16 Organization for Economic Cooperation and Development (OECD), "Declaring Work or Staying Underground: Informal Employment in Seven OECD Countries," *OECD Employment Outlook*, Annex 2.A3 (Paris: OECD, 2008), [www.oecd.org/dataoecd/53/40/40843646.pdf](http://www.oecd.org/dataoecd/53/40/40843646.pdf)

17 Rafael La Porta and Andrei Schleifer, "The Unofficial Economy and Economic Development" (Brookings Papers on Microeconomic Activity 1 [2008]): 275-363, [www.brookings.edu/economics/bpea/~media/Files/Programs/ES/BPEA/2008\\_fall\\_bpea\\_papers/2008\\_fall\\_bpea\\_porta\\_shleifer.pdf](http://www.brookings.edu/economics/bpea/~media/Files/Programs/ES/BPEA/2008_fall_bpea_papers/2008_fall_bpea_porta_shleifer.pdf)

18 Instituto Nacional de Estadística y Geografía (INEGI), Censo Económico 2009.

19 Carmen Pagés, *La Era de Productividad: Cómo transformar las economías desde sus cimientos* (Washington, DC: Inter-American Development Bank, 2010), [www.iadb.org/research/dia/2010/files/DIA\\_2010\\_Spanish.pdf](http://www.iadb.org/research/dia/2010/files/DIA_2010_Spanish.pdf)

20 Chang-Tai Hsieh and Ralph Ossa, "A Global View of Productivity Growth in China" (working paper 16778, National Bureau of Economic Research, February 2011), [www.nber.org/papers/w16778.pdf](http://www.nber.org/papers/w16778.pdf)

21 Ibid.

22 Santiago Levy, *Good Intentions, Bad Outcomes: Social Policy, Informality, and Economic Growth in Mexico* (Washington, DC: Brookings Institution Press, 2008).



programs (e.g., health care, retirement pensions, housing subsidies, child care, and life insurance), subject to a nominal contribution that does not cover the full cost of the benefits and accordingly are subsidized from consumption tax revenues. Informal workers' participation in these social protection programs is voluntary and a la carte; formal workers, whose contributions to social security are mandatory, have no such option.

In theory, the tax on formal sector employment and the subsidy to informal sector employment results in three distortions in the Mexican economy:

- a relatively low marginal productivity of labor in the informal sector and relatively high marginal productivity in the formal sector;
- greater investment in lower-productivity informal firms due to artificially high wages in formal establishments; and
- limited investment in human-capital accumulation since the returns to labor market experience are lower in informal than in formal employment.<sup>23</sup>

The scale of informality in Mexico may result in a lower level of productivity, but does it hinder growth? Research has yet to provide a definitive answer. However, scholars have examined whether the recent expansions of social protection programs available to informal workers reallocated employment toward the informal sector. On aggregate there has been no upward trend in informality: Between 1995 and 2009, the fraction of workers employed outside of the formal social security system in Mexico actually declined, from 66 percent to 62 percent.<sup>24</sup> But more narrowly focused studies — including several analyses of Mexico's large health insurance program available to workers not covered by the formal social security system — show more mixed outcomes. Overall, some early evidence suggests that expanded health insurance for informal workers may increase informal employment.<sup>25</sup>

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*The scale of informality in Mexico may result in a lower level of productivity, but does it hinder growth?*

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Productivity in informal establishments in Mexico is low relative to formal plants and Mexico's social protection programs may be raising the incentive for informality, possibly hindering growth. However, the newness of these programs suggests they cannot account for Mexico's poor growth performance prior to the late 1990s.

23 Arias et al., "Policies to Promote Growth."

24 Ibid.

25 Rodrigo Barros, "Wealthier but Not Much Healthier: Effects of a Health Insurance Program for the Poor in Mexico" (working paper, Stanford University, May 2011), [www.stanford.edu/~rbarros/SPLV.pdf](http://www.stanford.edu/~rbarros/SPLV.pdf); Melissa Knox, *Health Insurance for All: An Evaluation of Mexico's Seguro Popular Program* (Berkeley, CA: University of California Berkeley, November 2008), [www.aeaweb.org/assa/2009/retrieve.php?pdfid=72](http://www.aeaweb.org/assa/2009/retrieve.php?pdfid=72); Laura Juarez, "Are Informal Workers Compensated for the Lack of Fringe Benefits? Free Health Care as an Instrument for Formality" (working paper 804, Centro de Investigacion Economica, Instituto Tecnológico Autónomo de México, 2008), <http://allman.rhon.itam.mx/~ljuarez/formalfeb2011complete.pdf>.



## IV. Too Little Regulation (or Too Much)

The mismanagement of input markets is a third explanation of Mexico's slow growth over the past decade. In particular, Mexico stands out for having high energy prices (especially electricity), high prices for telecommunications services, expensive and spotty Internet services, and a scarcity of skilled labor compared to other countries with similar development. In each of these input markets, specific interest groups are blamed either for impeding the government from enforcing anti-monopoly regulations or for convincing the government to regulate markets in a way that preserves their earning capacity.<sup>26</sup>

### A. Energy

Surprising as it may seem for a country that exports oil, Mexico has relatively high prices for electricity. Since 2000, electricity prices in Mexico have been 1.1 times to 1.7 times greater than in the United States.<sup>27</sup> Among a set of emerging-economy comparison countries, Mexico has the highest rate of energy loss, measured as energy produced but not paid for as a percentage of total energy handled.<sup>28</sup> The proximate causes for Mexico's high costs and low quality in electricity generation include reliance on oil-based production, low labor productivity, and high wages for electricity workers, whose average wages are over three times that for formal-sector workers. Were electricity generation in Mexico to operate with the same labor productivity as in Chile, Mexico would have 62 percent fewer workers in the sector. High electricity prices raise production costs relative to other countries and diminish Mexico's comparative advantage in energy-intensive industries such as manufacturing.

### B. Telecommunications

Compared to a group of developing and developed nations, Mexico has the highest levels of single-firm concentration in fixed and mobile telephone industries (with one firm, Telmex, controlling more than 90 percent in the former and more than 70 percent in the latter), the highest costs of fixed-line business telephone services (two and half times the level in the United States), and the lowest number of broadband Internet subscribers per capita.<sup>29</sup> This remarkable level of industry concentration is in large part attributed to Mexican billionaire Carlos Slim, who acquired the corporation from the government during a rapid privatization in 1990 and, has since sought to protect the company's monopoly power in markets for landline telephone services, mobile telephony, and Internet access.<sup>30</sup> Telmex's dominant market position allows for large profits, but it is unclear whether such an outcome matters for Mexico's growth rate. The argument would have to be that high prices for telecom services depress capital accumulation or innovation. However, a causal link between the price of telecommunications services and economic growth has yet to be established. Such a link is reasonable in theory but has yet to be uncovered in the empirical literature.

### C. Human Capital

Human capital is perhaps the most mismanaged among Mexico's poorly functioning input markets, and also has the best-established effect on economic growth. In 2007, only half of 15- to 19-year-old Mexican youth were enrolled in educational institutions, slightly above enrollment levels for Turkey but 20 percent

<sup>26</sup> Levy and Walton, *Equity, Competition and Growth in Mexico*.

<sup>27</sup> Chiquiar and Ramos-Francia, "Competitiveness and Growth of the Mexican Economy."

<sup>28</sup> The comparison countries are Argentina, Brazil, Chile, China, Hong Kong, Hungary, Indonesia, Korea, Malaysia, Poland, the Philippines, Romania, Singapore, Slovakia, Thailand, and Turkey. Chiquiar and Ramos-Francia, "Competitiveness and Growth of the Mexican Economy."

<sup>29</sup> Data for 2006-08. Chiquiar and Ramos-Francia, "Competitiveness and Growth of the Mexican Economy."

<sup>30</sup> Elizabeth Malkin, "Mexico Takes Aim at a Titan in Telecom," *New York Times*, May 8, 2011, [www.nytimes.com/2011/05/09/business/global/09telecoms.html?pagewanted=all](http://www.nytimes.com/2011/05/09/business/global/09telecoms.html?pagewanted=all).



to 42 percent below Brazil, Chile, Estonia, Hungary, Korea, Portugal, the Slovak Republic, and Slovenia.<sup>31</sup> If Mexico's teachers unions or labor market regulations somehow reduce the incentive to attain education, then Mexico may have lower growth rates, resulting either from a reduced supply of scientists and engineers<sup>32</sup> or from missing out on positive externalities in the accumulation of human capital.<sup>33</sup> These perverse incentives operate through three mechanisms — sometime as a result of policy, others due to market forces.

**Staff compensation.** Close to 90 percent of public education expenditure in Mexico is on compensation of staff, leaving little for infrastructure or technology. Mexico's strong and politically connected teachers unions have been resistant to reforming hiring or compensation practices.

**Educational outcomes.** Mexican students perform poorly in standardized tests relative to students in other nations at roughly similar income levels. Combining scores for math, reading, and science on OECD's Program for International Student Assessment (PISA) — an internationally standardized assessment of students' education — Mexico does worse than all participating developing countries except Brazil, scoring well below Chile, the Czech Republic, Estonia, Hungary, Korea, Poland, Russia, and the Slovak Republic.<sup>34</sup> Some experts argue that what matters for a country's economic development is not the average performance of students but the number of high achievers.<sup>35</sup> Again, Mexico does not compare well: Only 0.3 percent of Mexican students scored as "advanced" on the PISA mathematics test compared to 18 percent in Korea, 9 percent in the Slovak Republic, and 7 percent in the United States.

**Incentives to migrate.** Another factor affecting Mexico's supply of skilled labor is emigration to the United States. Higher emigration puts upward pressure on Mexican wages, reducing the incentive for capital inflows.<sup>36</sup> Since the majority of Mexican migrants enter the United States illegally and tend to work in the informal labor market that rarely requires high education qualifications, they do not perceive significant incentives to continue their education beyond secondary school.<sup>37</sup> Indeed, some evidence suggests that the option of migration serves as a disincentive to secondary school attendance and completion.<sup>38</sup> More recently, a growing number of well-educated Mexicans have sought employment opportunities in the United States and, especially, Canada.

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*Some evidence suggests that the option of migration serves as a disincentive to secondary school attendance and completion.*

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31 Some of these 15- to 19-year-old youth are employed but many are not, creating concerns about drift in young people of working age. Arias et al., *Policies to Promote Growth*.

32 See for example, Charles I. Jones, "R&D Based Models of Economic Growth," *Journal of Political Economy* 103, no. 4 (1995): 759-84, [www.stanford.edu/~chadj/JonesJPE95.pdf](http://www.stanford.edu/~chadj/JonesJPE95.pdf).

33 See for examples, Robert E. Lucas Jr., "On the Mechanics of Economic Development," *Journal of Monetary Economics* 22, no. 1 (1988): 3-42, [www.fordham.edu/economics/mcleod/LucasMechanicsEconomicGrowth.pdf](http://www.fordham.edu/economics/mcleod/LucasMechanicsEconomicGrowth.pdf).

34 Arias et al., *Policies to Promote Growth*.

35 Lant Pritchett and Martina Viarengo, "Producing superstars for the economic Mundial: The Mexican Predicament with quality of education" (working paper POPG 09-01, Program on Education Policy and Governance, John F. Kennedy School of Government, Harvard University, 2008), [www.hks.harvard.edu/fs/lpritch/Education%20-%20docs/ED%20-%20Econ%20Growth,%20impact/Mexico%20Economic%20Mundial.pdf](http://www.hks.harvard.edu/fs/lpritch/Education%20-%20docs/ED%20-%20Econ%20Growth,%20impact/Mexico%20Economic%20Mundial.pdf).

36 Prachi Mishra, "Emigration and Wages in Source Countries: Evidence from Mexico," *Journal of Development Economics* 82, no. 1 (2007): 180-99, [www.econ.yale.edu/conference/neudc03/papers/4c-mishra.pdf](http://www.econ.yale.edu/conference/neudc03/papers/4c-mishra.pdf).

37 Gordon H. Hanson, "Illegal Migration from Mexico to the United States," *Journal of Economic Literature* 44, (2006): 869-924, [www2.econ.iastate.edu/classes/econ521/orazem/Papers/Hanson\\_JEL-2006.pdf](http://www2.econ.iastate.edu/classes/econ521/orazem/Papers/Hanson_JEL-2006.pdf).

38 David McKenzie and Hillel Rapoport, "Can Migration Reduce Educational Attainment? Evidence from Mexico." *Journal of Population Economics* 24 (2011): 1331-358, [www-wds.worldbank.org/servlet/WDSContentServer/WDS/IB/2006/06/22/000016406\\_20060622151515/Rendered/PDF/wps3952.pdf](http://www-wds.worldbank.org/servlet/WDSContentServer/WDS/IB/2006/06/22/000016406_20060622151515/Rendered/PDF/wps3952.pdf).

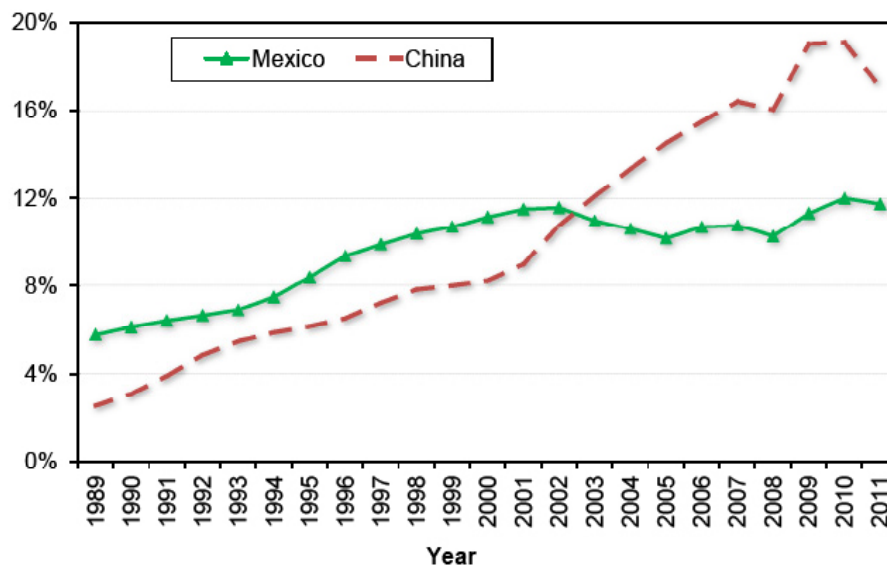
## V. The Perils of Competing with China

Aside from the internal challenges outlined in previous sections, international economic trends help explain Mexico's lackluster economic growth. Seeking to emulate the economic gains of the newly industrialized East Asian countries, Mexico embarked upon a strategy of export-led development during the 1980s. In many respects, this strategy was a success: Exports from Mexico rose dramatically from 12 percent of GDP in 1982 to 28 percent in 2008. Nearly half of the country's manufacturing exports and more than 20 percent of its manufacturing value added (as of 2006) are produced by *maquiladoras*, which import inputs from abroad (primarily the United States), and then export the assembled, processed, or manufactured finished goods.<sup>39</sup>

However, Mexico was not alone in seeking to emulate the successes of the so-called Asian Tigers (Hong Kong, Singapore, South Korea, and Taiwan). Over the past two decades, a long list of countries opened their economies and sought new export markets abroad. None has had as large and profound an impact on the global economy as China. Since the late 1980s, China has been undergoing a transition from a rural economy dominated by state-owned enterprises to an urban and more market-oriented one. China's emergence has contributed to significant shifts in the global economic landscape, improving the prospects of countries that produce the goods and services China demands while generating competition and downward price pressures in countries that export goods similar to its own.

Mexico fits squarely among the set of countries that has not directly benefitted from China's emergence.<sup>40</sup> From 1991 to 2007, China's share of US manufacturing imports rose steadily (see Figure 2), whereas Mexico's share rose through the 1990s and then began to decline. For both countries, there is an inflection point around 2001, the year of China's accession to the World Trade Organization (WTO), which granted the country trade privileges with WTO members such as the United States. After 2001, China's increase in US market share accelerated and Mexico changed from having a rising share to a declining share.

**Figure 2. Share of US Imports of Goods for Mexico and China, 1989 to 2011**



Source: Bureau of the Census, US Department of Commerce.

39 Paul R. Bergin, Robert C. Feenstra, and Gordon H. Hanson. "Offshoring and Volatility: Evidence from Mexico's Maquiladora Industry," *American Economic Review* 99 (2009): 1664-671, <http://irps.ucsd.edu/assets/027/9483.pdf>.

40 By contrast, commodity exporters such as Argentina, Brazil, Chile, Colombia, and Peru have largely benefitted from China's growth.



The challenge of China's export growth for Mexico is that the two countries specialize in similar goods.<sup>41</sup> (Other large Latin American nations tend to export the minerals, agricultural goods, and other commodities that China imports.<sup>42</sup>) But two systemic failures in particular are often cited as reasons why China has continued to benefit from manufacturing exports to the United States while Mexico has not: 1) Mexico's failure to increase productivity at the same rate as China, and 2) Mexico's failure to graduate into higher value-added manufacturing.

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*Mexico's fortunes in the global economy are tied to manufacturing and, as a result, to the rise of China as a global economic actor.*

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**Productivity growth.** In the past decade, Mexico has been losing comparative advantage vis-à-vis China in around 40 percent of its manufacturing exports (including electrical machinery, computers and electronics, furniture, and nonmetallic minerals), while maintaining a comparative advantage in another one-third of its products (including automobiles and auto parts, industrial machinery, and beverages). The sectors in which Mexico has maintained its comparative advantage tend to be ones that are particularly sensitive to transport costs, for which the country's geographic proximity to the United States relative to China matter most. Much of this shift in comparative advantage, it has been argued, is the result of high productivity growth in China. Because Mexico and China produce similar sets of goods, productivity growth in China directly undermines Mexico's export strength. If total factor productivity had remained constant in China between 1993 and 2005, Mexico's national welfare would have been 0.8 percent higher — a larger effect than for any of the other economies considered.<sup>43</sup>

**Graduation into higher-value added manufacturing.** Similar to Mexico, Hong Kong and Taiwan began their industrial development with reliance on export assembly and later graduated into higher-value added manufacturing (e.g., original-equipment manufacture and own-brand production).<sup>44</sup> Mexico has not made such a transition. While the country has progressed from assembling apparel to assembling electronics and auto parts, it remains specialized in the labor-intensive processing of inputs for the US economy. This failure to graduate has left the country's manufacturing sector particularly exposed to competition from China. By the late 1990s, export processing plants in China, which are similar to Mexico's *maquiladoras*, accounted for more than half of the country's manufacturing exports.<sup>45</sup>

For better or worse, Mexico's fortunes in the global economy are tied to manufacturing and, as a result, to the rise of China as a global economic actor. Nevertheless, the downward pressure on the price of Mexico's export goods is unlikely to be permanent. In June 2010, the Chinese government lifted the peg between the yuan and the US dollar, and since then China's exchange rate vis-à-vis the US dollar has appreciated modestly. Research suggests that if product prices increase by about 1 percent, imports from China could fall between 4 percent and 8 percent.<sup>46</sup> When it comes to changes in nominal exchange rates, firms

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41 Economists Daniel Chiquiar and Manuel Ramos-Francia of the Bank of Mexico estimate that Mexico competes most directly with Hungary, Thailand, the Philippines, Korea, Turkey, Poland, and China for export markets. See Chiquiar and Ramos-Francia, "Competitiveness and Growth of the Mexican Economy."

42 Over the period 2000-05, manufacturing accounted for 88 percent of exports from China and 83 percent in Mexico, compared to only 54 percent from Brazil, 34 percent from Colombia, 20 percent from Peru, and 16 percent from Chile.

43 Hsieh and Ossa, "A Global View of Productivity Growth in China."

44 Michael Enright, Edith Scott and David Dodwell, *The Hong Kong Advantage*. (Hong Kong: Oxford University Press, 1997).

45 Robert Feenstra and Gordon Hanson. "Ownership and Control in Outsourcing to China: Estimating the Property Rights Theory of the Firm," *Quarterly Journal of Economics* 120 (2005): 729-62, <http://irps.ucsd.edu/assets/022/8792.pdf>.

46 This analysis is based on price increases due to tariffs rather than changes in the real exchange rate so the comparison is partial at best.



often absorb price increases in the form of lower profit margins. But profit margins in China may already be thin, meaning that most cost increases would be passed on in the form of higher prices for Chinese goods on international markets. Increases in prices that result from temporary exchange rate movements tend to prove lasting. As a result, real appreciation of China's exchange rate would reduce US demand for China's exports, and, because Mexico is a close competitor of China in the US market, could increase demand for Mexican exports.

## VI. Conclusion

Any discussion of growth and development in Mexico ends up resembling a Diego Rivera mural, overstuffed with historical characters that collide in repeated and unexpected ways. In effect, Mexico's underperformance is overdetermined. The faulty provision of credit, persistence of informality, control of key input markets by elites, continued ineffectiveness of public education, and vulnerability to adverse external shocks each may have a role in explaining Mexico's development trajectory over the past three decades. Still, the relative importance of these factors for the country's growth record is unknown.

The breadth and depth of reform in Mexico is astounding, yet the country does not have much to show for it. To improve its economic position, Mexico must decide how best to confront its disappointing growth record. Items worth placing on the country's policy agenda include:

- improving protections for creditors by giving creditors more scope to seize assets of borrowers in the event of default;
- eliminating artificial incentives for workers to enter the informal sector by eliminating the implicit subsidization of workers in the informal sector by workers in the formal sector through Mexico's dual system of social protection;
- raising the incentive of youth to continue education, expanding opportunities for vocational and technical education, promoting continuing education among working adults, and encouraging collaboration with the country's private sector in assessing and investing in the country's human capital;
- implementing anti-monopoly provisions in Mexican law to make telecommunications more competitive;
- and reforming the energy sector to reduce electricity prices.

Each of these items has been mentioned by other observers as deserving attention by the Mexican government, but none is easy to accomplish. Improving protections for creditors may be unpopular politically, as it would benefit a financial sector that is today primarily foreign owned. Eliminating subsidies for informal workers would require significant changes in Mexico's health care system (e.g., providing universal coverage) and payroll tax structure. Any changes to the education system would require standing up to Mexico's politically powerful teachers unions and to university students who tend to be vociferous opponents of reform to higher education. Previous governments have been unsuccessful in regulating Telmex, although the integration of cable, Internet, and mobile services is allowing new actors to emerge and may give the government greater bargaining power. Reforming the energy sector would likely require changes to Mexico's constitution.





Two changes in the international environment may increase the incentive for Mexico's policymakers to embrace further reform. One is that the United States has entered an extended period of deleveraging in which growth in consumption (including demand for imports) is likely to be sluggish. If Mexico wants to find new international opportunities for exporting goods, the country will have to create them by making its industry more competitive. A second change is that the relentless competitive pressure from China may be easing, as domestic events cause wages and prices to rise and the economy to have a modestly more inward focus. Such a shift would create more room in the international marketplace, which Mexico could occupy but only if willing to take on entrenched special interests. Doing so would finally complete the 30-year liberalization process that began with the 1982 debt crisis.

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