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MEXICO'S COMPETITIVENESS AS A STRATEGIC TRADE PARTNER

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INTRODUCTION

In early 2023, US imports of goods from Mexico surpassed those from China, making Mexico the main origin of goods imported to the US for the first time in modern trade history.¹ Mexico has long been a key US trade partner, with total US-Mexico trade growing 7.8-fold since the North America Free Trade Agreement (NAFTA) was enacted in 1994 (for comparison, US trade with Canada grew only 3.3-fold over the same period).² Recent world events have amplified the importance of the US-Mexico trade partnership. Amid global supply chain problems in the wake of the pandemic, and geopolitical tensions created by strained US-China relations and Russia's attack on Ukraine, the US has sought to strengthen its regional economic ties. This trend, commonly known as nearshoring, is reflected in President Biden's 2023 trade policy agenda, which lists supply chain resilience and strong regional bonds among its top priorities.³

In response to the growing importance of US-Mexico trade, this report provides a primer on Mexico's competitiveness as a US economic partner. By combining findings from the Milken Institute's Global Opportunity Index (GOI) with Mexican state-level data, we provide a unique perspective on Mexico's strengths and weaknesses at the national and sub-national levels.⁴ Our analysis is valuable for investors considering expanding their Mexican footprint, as well as policymakers interested in strengthening US-Mexico relations.

Given its geographic proximity to the US, trade with Mexico results in supply chain advantages, such as reduced operating costs and fewer touchpoints than inbound freight from China.⁵ In addition to its location, Mexico benefits from the strength and breadth of its international trade agreements as well as a large talent pool.⁶ However, the country ranks low (relative to other US trade partners) in key workforce talent metrics that include labor force participation, mean years of schooling, and staff training. Public governance also remains an area of concern.⁷ Other challenges facing Mexico include ongoing disputes over the implementation of the US-Mexico-Canada Agreement (USMCA) and investors' concerns about regulatory changes proposed by the Lopez-Obrador administration.⁸ As more Southeast Asian countries attract major technology producers in the wake of supply chain diversification, Mexico's ability to strengthen its position in these areas may prove crucial to maintaining its competitive edge.⁹

Despite such concerns, Mexico's exports have grown sharply over the past decade while foreign direct investment (FDI) inflows to Mexico have remained at a relatively high level. Manufacturing goods represent 88.8 percent of Mexico's total value of exports, and within the manufacturing sector, most exports are concentrated in two sub-sectors: transportation equipment, and computers and other electronics.¹⁰ While transportation equipment is Mexico's largest manufacturing sub-sector, with over one-third of the country's value of exports, the importance of computers and other electronics has grown over time. As the US prioritizes supply chain resilience in industries that include semiconductors and large-capacity batteries, Mexico's ability to continue to increase its advanced technology production footprint will



determine its capacity to play an essential role in the US' envisioned global industrial restructuring.¹¹

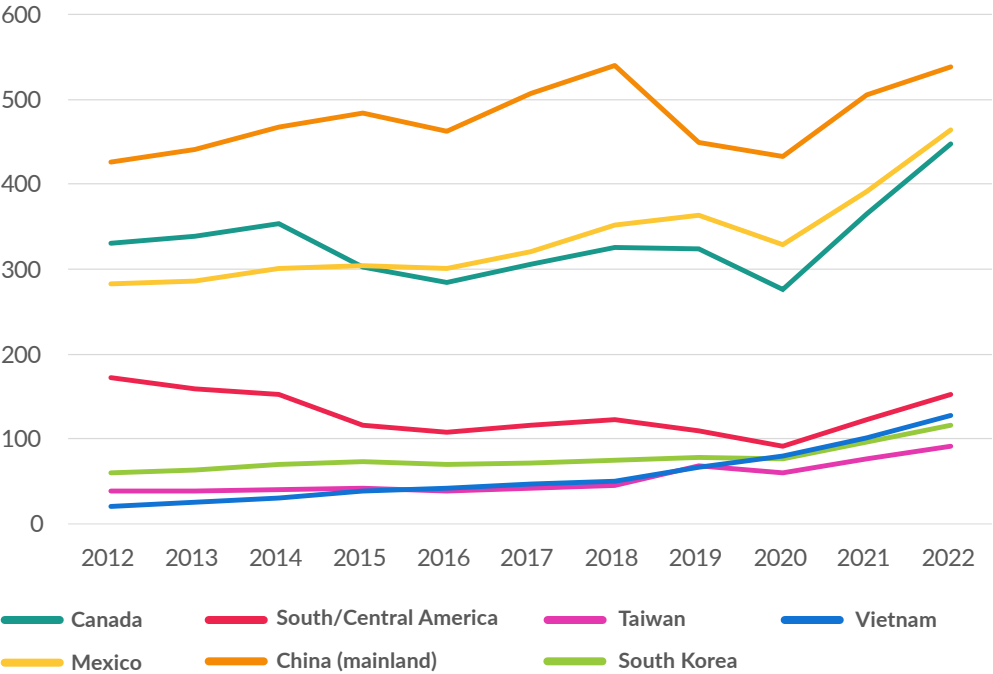
With about 1.6 percent of the world's population and a land area over eight times larger than the United Kingdom, Mexico is a diverse country with important differences across its regions.¹² The gains from rising exports and investment have spread unevenly throughout Mexico, with the north capturing a large share of the benefits, while the south has lagged in its economic performance. In fact, four of Mexico's southern states experienced a decline in real Gross Domestic Product (GDP) between 2013 and 2021. Of its 32 federal entities (i.e., 31 states and the country's capital, Mexico City), 10 produce more than three-fourths of Mexico's exports and a similar geographic concentration holds for the country's FDI inflows. Considerable differences exist even among Mexico's top exporters and investment targets: in 2022, a single state (Chihuahua) produced over a third of Mexico's computers and other electronics exports, and almost a third of FDI inflows to Mexico targeted a single city (the nation's capital). Our report provides an overview of differences in economic development, workforce talent, and public governance across Mexico's regions. Understanding these regional differences will be key for both investors and policymakers as capital continues to flow to the country.

MEXICO AS A GLOBAL PARTNER

In 2022, over a third of US imports of goods originated in just three countries: China, Mexico, and Canada.¹³ Among these, China’s recent contribution to US imports has declined while Mexico’s and Canada’s have grown, with the value of imports of goods from Mexico outpacing those from China in early 2023.

Imports of goods from China reached a peak in 2018, after which they dropped (likely due to the COVID-19 pandemic) in 2019 and 2020. By 2021, imports from China recovered, but did not reach their 2018 level. In contrast, imports from Mexico and Canada bounced back sharply after 2020, surpassing their pre-pandemic levels in 2021, and continuing to grow in 2022. Mexico’s share of US imports of goods has grown over time. The value of imports of goods from Mexico has surpassed that from Canada since 2015 (see Figure 1), and early data from January to May of 2023 reveal that Mexico has become the US’ top source of imports of goods (as well as top trade partner), having surpassed China.¹⁴

Figure 1. US Imports of Goods over Time, by Origin (Key Trade Partners¹⁵) (US\$ bill.)



Source: Milken Institute analysis using data from the US Census Bureau (2023)

Amid other US key trade partners, imports from Vietnam have experienced relatively strong growth: by 2022, US imports of goods from Vietnam increased 2.6-fold compared to 2018. The strong growth of US imports from Vietnam, coupled with high FDI inflows to other Southeast Asian countries such as Singapore and Indonesia, has prompted warnings that Mexico and other Latin American countries may fail to fully capitalize on the current nearshoring trend.¹⁶

Yet, FDI inflows and the value of Mexico's exports continue to grow across areas that include the US' top trade priorities.¹⁷ US imports of Mexican advanced technology products have grown considerably in recent years. After China, Mexico is the US' second largest source of advanced technology product imports. Moreover, US imports of Mexican technology grew by 22 percent between 2021 and 2022, while imports from mainland China dropped slightly.¹⁸ The US government's recent focus on resilience of supply chains in critical areas such as semiconductors highlights the growing importance of regional cooperation between the US and Mexico to secure the stability and continuity of advanced technology imports.¹⁹

Mexico in the Context of US Key Trade Partners

Mexico is the world's 15th-largest economy and the second most populous country among US key trade partners, a group that includes three of the world's 10 largest economies: China, Canada, and South Korea (see Figure 2). The US-Mexico commercial relationship benefits from a history of trade agreements between the two countries and Canada (NAFTA and more recently, the USMCA). The pandemic-driven supply chain disruptions, coupled with Mexico's geographic proximity and friendly democratic regime, have further increased the country's attractiveness as a trade partner.

Figure 2. Economic Indicators of US Key Trade Partners

Country/ Area	Income Group	GDP (US\$ mill.)	GDP Ranking	GDP per Capita	Population
Brazil	Upper-middle income	\$1,608,981	12	\$7,507	214,326,223
Canada	High income	\$1,988,336	9	\$51,988	38,246,108
China²⁰	Upper-middle income	\$17,734,063	2	\$12,556	1,412,360,000
Hong Kong SAR	High income	\$369,176	39	\$49,801	7,413,100
South Korea	High income	\$1,810,956	10	\$34,998	51,744,876
Mexico	Upper-middle income	\$1,272,839	15	\$10,046	126,705,138
United States	High income	\$23,315,081	1	\$70,249	331,893,745
Vietnam	Lower-middle income	\$366,138	40	\$3,756	97,468,029

Notes: Income Group based on World Bank Country and Lending Groups.

Sources: Milken Institute analysis, data from the World Bank (2023)

In addition to the USMCA, Mexico participates in two major trade agreements with the Trans-Pacific region and the European Union.²¹ Mexico's expansive trade zone allows for deep integration of its supply chains with those of its trade partners: about 40 percent of the value of Mexico's exports to the US contain US-made components; in contrast, only 4 percent of imports from China are US-made.²² The breadth and depth of Mexico's trade relationships are reflected in its high score (relative to the US' other key trade partners) on the economic openness sub-category of the Milken Institute's 2023 Global Opportunity Index (GOI).²³ The GOI measures a country's attractiveness to international investors using a combination of 100 factors divided into five categories and 14 subcategories. The economic openness sub-category measures the country's integration into the global financial system. Mexico ranks 44th (out of 124 countries) in this sub-category, above other middle-income US trade partners such as China and Vietnam (which rank 50th and 59th, respectively).

In contrast, Mexico ranks relatively low (82nd and 90th) on workforce talent and public governance (Figure 3). Mexico's low ranking on workforce talent marks a particular contrast to Vietnam, which ranks 21st in this sub-category of the GOI. While Mexico benefits from the large size of its population, its relatively low labor force participation (59.0 percent vs. Vietnam's 74.5 percent of population age 15-plus), hampers its ability to benefit from a low-cost labor potential.²⁴ In 2020, Vietnam saw an influx of production with big tech firms Google, Microsoft, and Apple all moving to Vietnam from China.²⁵ While Mexico has also seen an increase in production at the expense of China,²⁶ its prospects of attracting further investments may depend on Mexico's ability to attract more highly educated workers into its labor market.²⁷

Public governance refers to the effectiveness of a country's administration as it relates to preventing crime, corruption, and ensuring equitable and efficient regulatory, legal, and judicial systems. Mexico performs poorly across the area on this metric compared to other US key trade partners. Public governance issues are generally recognized as a detrimental factor with the potential to hinder Mexico's economic growth.²⁸ A growing focus on fentanyl trafficking and criminal activity in Mexico, coupled with inefficiency of the country's judicial system, present further obstacles to increased US-Mexico commercial collaboration.²⁹

Figure 3. Mexico's Attractiveness Compared to Other US Key Trade Partners

Panel A: Workforce Talent

Country/Region	Education Expenditure	Mean Years School	Staff Training	Labor Force, Ages 15+	Labor Force, Females	Self-Employed
Canada	>.00	>1 SD	>1 SD	<.00	>.00	<-1 SD
China	<-1 SD	<.00	>.00	>.00	>.00	>.00
Mexico	>.00	<.00	<-1 SD	<-1 SD	<-1 SD	<.00
South Korea	>.00	>1 SD	>.00	<.00	<.00	<.00
Vietnam	>.00	<-1 SD	<.00	>1 SD	>1 SD	>1 SD
South/Central America	>.00	<.00	<-1 SD	<.00	<.00	>.00

Panel B: Public Governance

Country/Region	Regulatory Burden	Efficiency in Challenging Regulation	Efficiency in Settling Disputes	Freedom of Press	Judicial Independence	Political Stability
Canada	>.00	>1 SD	>1 SD	>1 SD	>1 SD	>1 SD
China	>1 SD	>1 SD	>.00	<-1 SD	>.00	<.00
Mexico	<-1 SD	<-1 SD	<-1 SD	<.00	<-1 SD	<-1 SD
South Korea	<.00	>.00	>.00	<.00	<.00	>.00
Vietnam	<.00	<.00	<.00	<-1 SD	<.00	<.00
South/Central America	<-1 SD	<-1 SD	<-1 SD	>.00	<.00	<.00

Color Key <-1 SD <.00 >.00 >1 SD

Note: Standard deviations (SD) are calculated relative to the key trade partners included in the table.

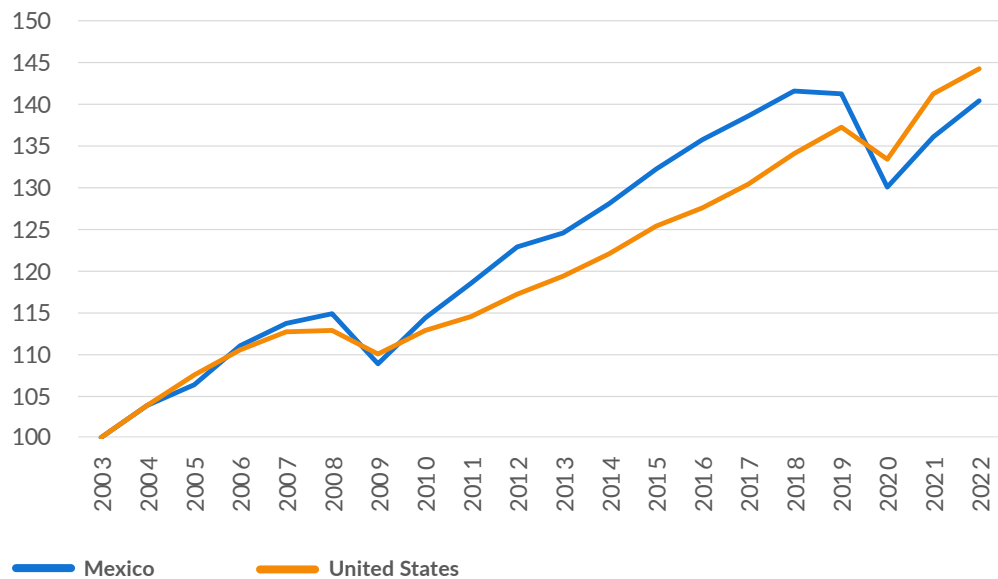
Source: Milken Institute analysis (2023)

INVESTMENT IN MEXICO: THE NATIONAL PERSPECTIVE

Mexico's National Growth

Over the last two decades, Mexico's real growth averaged 1.8 percent per year, trailing the growth of South and Central America, where real GDP increased at an average of 2.6 percent and 4.2 percent per year, respectively.³⁰ With over 80 percent of Mexico's exports flowing to the US, Mexico's economy is highly responsive to US demand for its products.³¹ This is illustrated by the synchronized growth of the two countries (Figure 4).

Figure 4. Real GDP Growth of US and Mexico, 2003–2022 (indexed to 2003=100)



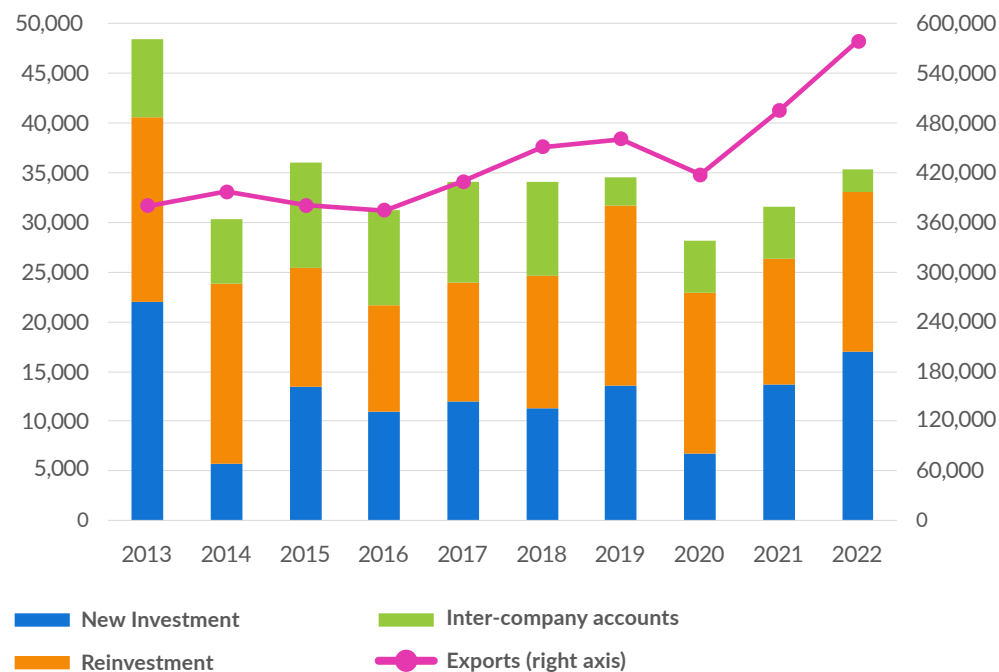
Source: Milken Institute analysis using data from the International Monetary Fund (IMF) (2023)

Since 2003, Mexico has experienced two periods of real economic contraction: during the financial crisis in 2009 and after the onset of COVID-19 in 2020. Of these two, the second had more severe impacts on the Mexican economy. Mexico's recovery after 2009 outpaced that of the US, with real GDP growth that averaged 3.0 percent per year between 2010 and 2018. In contrast, Mexico struggled to regain its growth momentum after 2020. During the pandemic, Mexico underwent a strong economic contraction, with its 2020 real GDP changing by -8.0 percent (as compared to -3.3 percent and -7.3 percent for Brazil and Colombia, respectively).³² Mexico's subsequent recovery has also taken longer, lingering into 2023, while other Latin American countries had recovered since 2021. In this context, Mexico's ability to capitalize on the anticipated expansion of the US-Mexico commercial relationship gains particular importance.

Investment Trends: FDI and Exports

While inflows of FDI to Mexico have been consistently high since the early 2000s (long before global sourcing challenges drove the increased focus on supply-chain resilience), rising interest in nearshoring has the potential to further bolster Mexico's attractiveness in the eyes of foreign investors.³³ FDI inflows to Mexico reached their highest point in 2013 (US\$48.4 billion). Since then, the value of Mexico's FDI has oscillated between \$28.2 billion and \$35.9 billion per year (Figure 5).

Figure 5. Mexico's FDI and Exports, 2013–2022 (US\$ mill.)



Source: Milken Institute analysis using data from Mexico Central Bank (Banxico) and Secretariat of the Economy (2023)

Notably, Mexico was one of the few Latin American countries that did not experience a pronounced drop in FDI inflows during the 2020 crisis prompted by COVID-19.³⁴ By 2022, FDI inflows to Mexico exceeded their pre-pandemic levels (\$35.3 billion compared to \$34.6 billion in 2019, see Figure 5). Looking ahead, Mexico's Secretariat of Economy (SE) announced a 48 percent year-on-year increase in FDI during the first trimester of 2023,³⁵ and more project investments have been announced recently, with Mexico placing ahead of Brazil in 2021 new FDI project announcements by value.³⁶

Trends in Mexico's exports have also been reflective of the nearshoring momentum. Over the past five years, the value of Mexico's exports grew by 28.3 percent (from \$450.7 billion to \$578.2 billion) despite a short-lived drop in 2020 due to the pandemic (Figure 5). Early 2023 data confirm this upward trend: in March of 2023, Mexico's exports reached a record-high monthly value of \$53.6 billion.³⁷

Much of Mexico's current growth in exports corresponds to shipments of goods to the US.³⁸ The US is by far Mexico's largest export recipient, accounting for 80.8 percent of its exports' value (Figure 6a). In May of 2023, the value of non-oil exports from Mexico to the US increased 11.4 percent in annual terms, while sales to the rest of the world fell 3.5 percent.³⁹ The strong and growing commercial relationship between the two countries uniquely positions Mexico to benefit from the US' strong customer demand, but also leaves it highly exposed to the risks of a US recession.

The US is also the largest originator of Mexico's FDI inflows, but Mexico's dependence on the US as a source of investment is more moderate (Figure 6b). Between 2018 and 2022, 39.7 percent of FDI inflows to Mexico originated in the US. Other countries with considerable FDI inflows to Mexico during this period included Spain and Canada, as well as other European countries. Examples of non-US FDI investments in Mexico have included a 2021 acquisition by Hypera SA (Brazil) of Takeda Pharmaceuticals' assets located in Mexico, a 2016 acquisition by Teva Pharmaceutical Industries (Israel) of a Mexican medicine manufacturer, and a 2012 acquisition by Caisse de dépôt et placement du Québec (Canada) of Invekra, a wholesaler and distributor of pharmaceutical products. US companies with notable recent transactions in Mexico include mergers and acquisitions by Sempra Energy, Squared Capital, and Live Nation Entertainment (all in 2021) and an announcement by General Motors of a more than \$1 billion investment in electric vehicle production.⁴⁰

Figure 6. Share of Mexico's FDI and Exports, by Country (average 2018-2022)

Figure 6a. Exports by Recipient Country

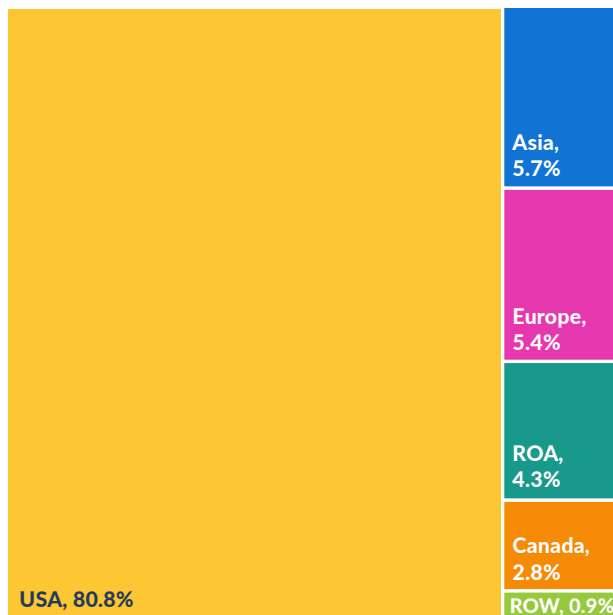
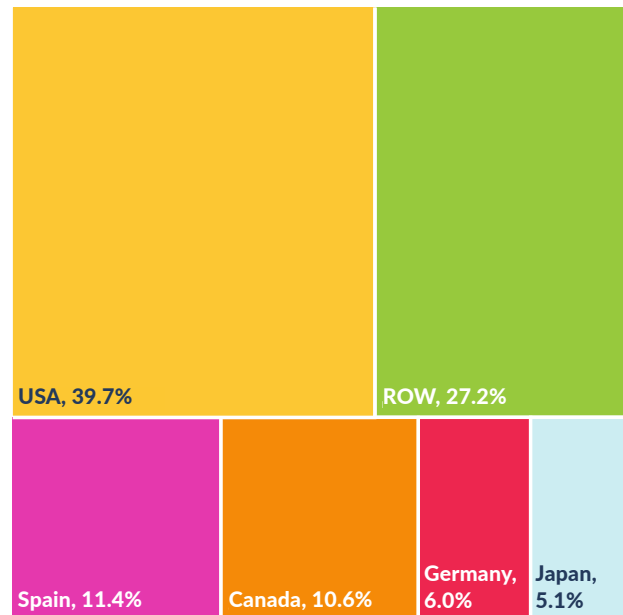


Figure 6b. FDI by Origin Country

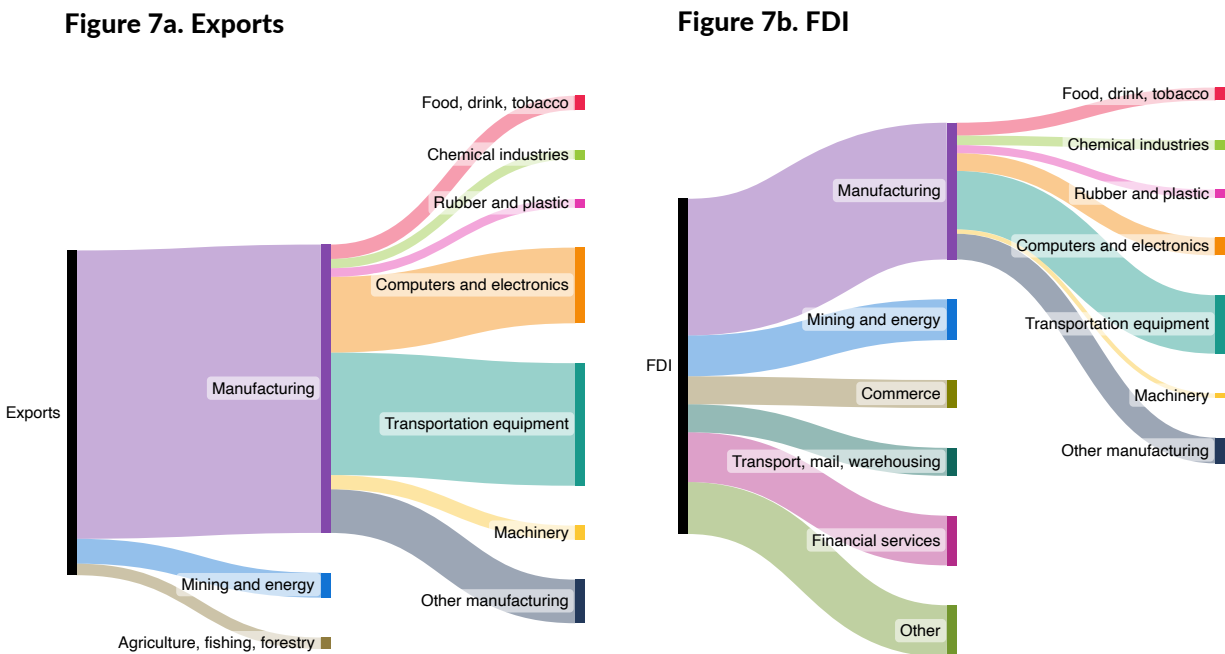


Notes: "ROA" represents Rest of America; "ROW" represents Rest of World
 Source: Milken Institute analysis using data from Banxico, INEGI, and SE (2023)

Just as in the case of the recipient country, Mexico's exports are heavily concentrated in one sector: manufacturing, which represents 88.8 percent of the value of Mexico's exports, with the remainder in mining and energy (7.7 percent of value) and agriculture, fishing, and forestry (3.5 percent of value), and agriculture, fishing, and forestry (3.5 percent of value, see Figure 7a). Exports of oil and gas represent the bulk of the value of mining exports, though the relative importance of petroleum to Mexico's trade has decreased over the past 15 years. Between 2008 and 2012, oil and gas represented 15.1 percent of the value of Mexico's exports; by 2018 to 2023, exports of oil and gas had dropped to 5.6 percent of total exports.

FDI inflows to Mexico are more evenly spread across multiple sectors of the economy, though manufacturing still captured over a third (40.8 percent) of the value of Mexico's FDI inflows between 2018 and 2022 (Figure 7b). Other sectors with considerable foreign investments during this period included financial services (14.8 percent); commerce (8.4 percent); transport, mail, and warehousing (8.3 percent); and mining and energy (12.2 percent). Investment in this last sector has been partly driven by Mexico's 2013 constitutional reform, which allowed foreign investment across Mexico's energy values chain.⁴¹ More recently, however, regulatory unpredictability and the financial health of Mexico's state oil company have contributed to uncertainty among US investors, which may impact further FDI inflows to Mexico's mining and energy sector.⁴²

Figure 7. Mexico's FDI and Exports, by Sector and Sub-sector (Average 2018–2022)

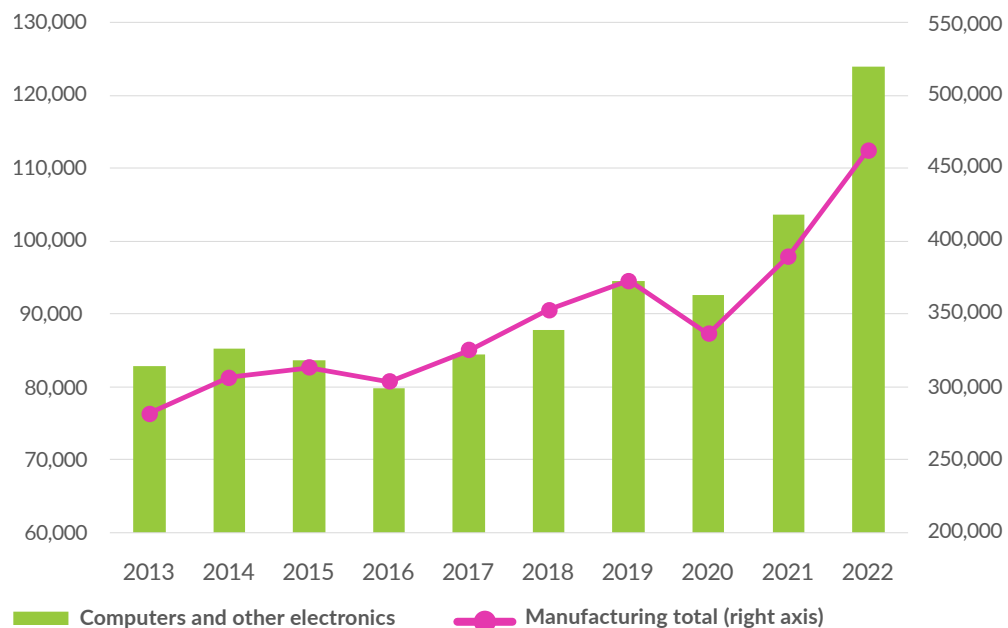


Source: Milken Institute analysis using data from INEGI and SE (2023)

Most of the value of Mexico's manufacturing exports and FDI is concentrated in two sub-sectors: transportation equipment, and computer and other electronics (Figure 7). Of these two, manufacturing of transportation equipment is a larger sub-sector of Mexico's economy, representing 37.7 percent of the total value of exports and 17.4 percent of total FDI inflows between 2018 and 2022. The transportation equipment sub-sector has been Mexico's leading manufacturing sub-sector for over a decade, having first surpassed the value of exports of computers and other electronics in 2011. Since then, the value of exports of Mexico's transportation equipment sub-sector has more than doubled, increasing from \$84.5 billion in 2011 to \$185.2 billion in 2022. The USMCA, which went into effect in July 2020,⁴³ created additional incentives for car manufacturers to produce in Mexico by increasing vehicle rules of origin criteria from 62.5 percent of regional value content (RVC) to 75 percent RVC. Some Asian firms have already responded by increasing their production in Mexico.⁴⁴

Despite losing its leading position in 2011, Mexico's computer and other electronics sub-sector has grown at an accelerated rate in the past five years. Between 2018 and 2022, the value of Mexico's exports of computers and other electronics increased 41.2 percent (from \$87.8 billion in 2018 to \$123.9 billion in 2022), remaining relatively steady even in 2020, when exports of other manufacturing products dropped due to the pandemic (Figure 8). Just as in the case of transport manufacturing, a portion of this new investment has come from Asian countries. Lenovo's computer manufacturing facilities located in Mexico almost doubled in size in 2021, while HP is currently working with suppliers to shift their production to Mexico.⁴⁵

Figure 8. Growth of Mexico's Exports of Computers and Other Electronics (US\$ mill.)



Source: Milken Institute analysis using data from INEGI (2023)

REGIONAL OVERVIEW: PERFORMANCE ACROSS MEXICAN STATES

As discussed in the previous section, the economic turmoil triggered by the pandemic disrupted the national Mexican economy, with effects that persisted until early 2023. Mexico's national patterns, however, conceal diverse regional experiences. In 2020, all but one of Mexico's entities experienced a real drop in GDP, but the duration of the economic contraction differed across Mexico's regions.⁴⁶ Between the first and last quarter of 2020, the south region experienced the biggest drop in its economic activity followed closely by the center, which led in terms of initial COVID-19 propagation.⁴⁷ By the end of 2022, economic activity in north and north-center of Mexico exceeded its pre-pandemic level, while the center and south regions had either recently recovered or continued to lag their pre-pandemic performance.⁴⁸

The pandemic experience mirrors Mexico's long-term regional development. Mexico's south and center regions include some of the nation's most populous states, but due to underdevelopment, their economic potential has not materialized. In 2021, six of Mexico's eight states in the south region had a total GDP below the national median (Figure 9a). In three of the six (Chiapas, Oaxaca, and Guerrero), this was despite having above median-sized population. The economic divide between the north and south of Mexico has deepened over time. Between 2013 and 2021, four states in the south (Veracruz, Tabasco, Campeche, and Chiapas) had a real GDP drop, while four out of the six states in the north region along the US border grew at above-median national pace (Figure 9b).

Figure 9: Regional Distribution of Mexico's Economic Activity

Figure 9a. GDP by State (2021)

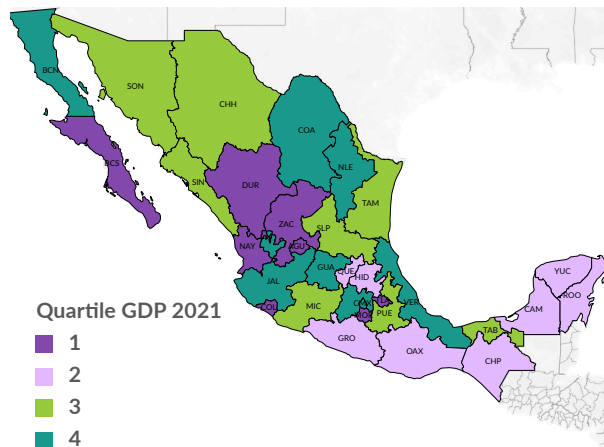
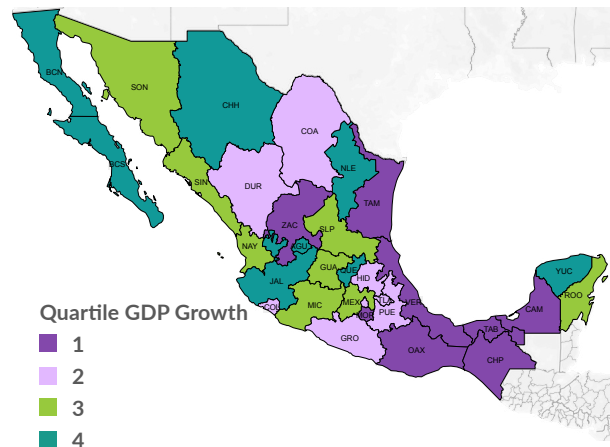


Figure 9b. Real GDP growth (2013-2021)



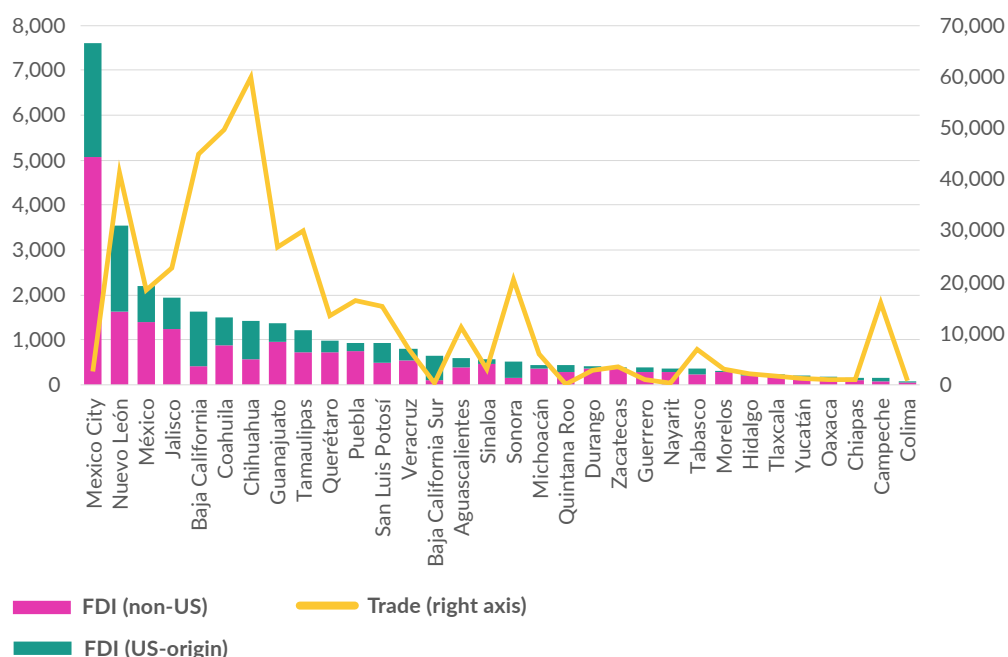
Source: Milken Institute analysis using data from INEGI (2023)

Exports and Foreign Direct Investment

Distribution of Investments and Export Production Across Mexico's Regions

Given the country's regional disparities, it is not surprising that most of Mexico's capital inflows are captured by a few states, all in the north, north-center, and center regions. Between 2018 and 2022, the top 10 states with the highest capital inflows captured 71.4 percent of the country's FDI. A similar concentration occurs on the export production side, with the top 10 exporters producing 76.7 percent of Mexico's exports (Figure 10). Moreover, there is considerable overlap between the two groups, with most of the country's largest exporters also representing its biggest FDI targets. Mexico City is the main outlier to this trend. Between 2018 and 2022, it attracted almost one fourth (23.2 percent) of total FDI inflows but produced only 0.6 percent of the country's exports. This is not surprising, as FDI is assigned based on the location of multinational corporations' headquarters, which tend to be concentrated in a country's capital (in this case, Mexico City).

Figure 10: FDI and Exports by Entity, 2018–2022 (US\$ mill.)



Source: Milken Institute analysis using data from INEGI and SE (2023)

Overall, the regional disparities in FDI inflows are representative of the disparities in economic development, with a strong correlation (0.94) between the entities' FDI and GDP rank.⁴⁹ Campeche is an interesting outlier. The state ranks 31st (second from the bottom) in FDI inflows but is ranked 11th in production of exports. Campeche is one of Mexico's main oil producers, with 65.9 percent of Mexico's oil exports produced in this state between 2018 and 2022. Despite this, the state's economy has struggled over the past decade (see Figure 9 in previous sub-section), which has led the Mexican government to include Campeche in its projects meant to revitalize the south region of the country.⁵⁰

Trends and Composition among Top Exporters and Investment Targets

As described above, there is considerable overlap between Mexico's main exporters and biggest FDI targets. Pooling together the two groups leaves us with a set of 12 Mexican entities that are key to the country's ability to attract foreign capital and compete as a strategic US trade partner.⁵¹ Over the past five years, these top exporting and investment entities represented 80.4 percent of Mexico's exports and 75.9 percent of its FDI inflows.

In the past decade, the value of exports has trended up for all top exporting and investment entities (Figure 11a). Chihuahua, Mexico's main exporter, experienced stable production growth between 2013 and 2022, with its exports increasing 72.6 percent. Guanajuato underwent the fastest growth, with its total exports more than doubling (increasing from 12.2 billion to 31.9 billion) in this period. Nuevo León also managed to almost double its exports (growing by 97.6 percent), despite already

starting from a high level. Among other entities, Coahuila and Puebla displayed above average export growth (86.4 percent and 77.8 percent), while in contrast Mexico City remained at a relatively low level.

Among notable FDI trends, there was a rapid increase in FDI inflows to Mexico City between 2012 and 2013, driven by Anheuser Busch InBev’s acquisition of Grupo Modelo, headquartered in Mexico’s capital (Figure 11b).⁵² Since this jump, Mexico City has maintained its number one position as the country’s main FDI target, reaching peak FDI inflows of \$10.9 billion in 2022. Nuevo León also managed to consistently increase its FDI inflows, moving from fifth to second among top recipient entities by nearly doubling (98.6 percent growth) its FDI inflows between 2013 and 2022. In contrast, Mexico state experienced a noticeable drop in its FDI inflows, moving from second to sixth among the top exporting and investment entities.

Figure 11. Exports and FDI Over Time, Top-Producing/Target Entities (US\$ mill.)

Figure 11a. Exports

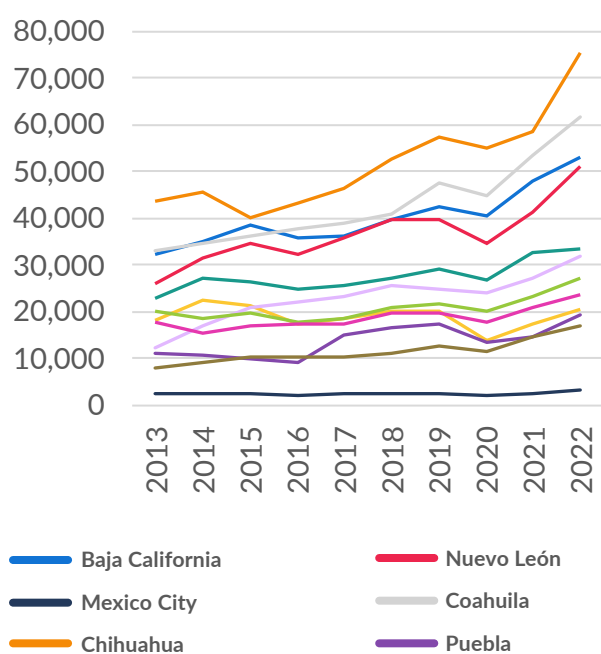
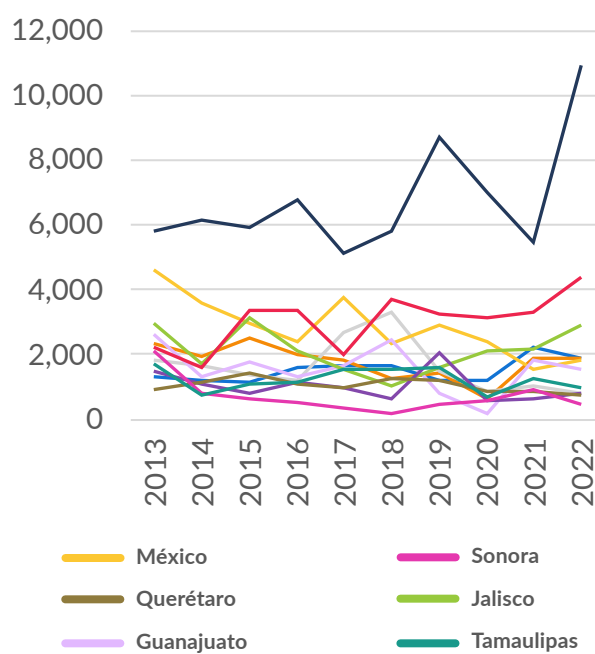


Figure 11b. FDI



Source: Milken Institute analysis using INEGI and SE data (2023)

The sectoral composition of Mexico’s top exporting and investment entities generally mirrors that of the overall country, leaning heavily towards the manufacturing sector. The main exception is Mexico City, where FDI inflows to the financial services sector exceed those to manufacturing (which is not surprising since 65 percent of the country’s financial service providers are concentrated in Mexico’s capital).⁵³ In the remaining top exporting and investment entities, manufacturing is the biggest FDI recipient (attracting more than one third of FDI inflows) and the sector with the highest exports’ value (95.0 percent or more in all but one entities, Sonora, where it is 76.6 percent of exports’ value).

Computers and other electronics, and transportation equipment represent over half of manufacturing exports and more than 30 percent of FDI inflows in all top exporting and investment entities except Mexico City (Figure 12). Almost half (40.6 percent) of the value of Mexico City’s manufacturing exports is in chemical production. This is due to the city’s high concentration of internationally approved pharmaceutical manufacturers, with 50 percent of the country’s Food and Drug Administration (FDA) and/or European Medicines Agency (EMA) approved pharmaceutical sites in the nation’s capital.⁵⁴

Figure 12. FDI and Exports by Manufacturing Sub-sector

Figure 12a. FDI (Average 2017–2021)

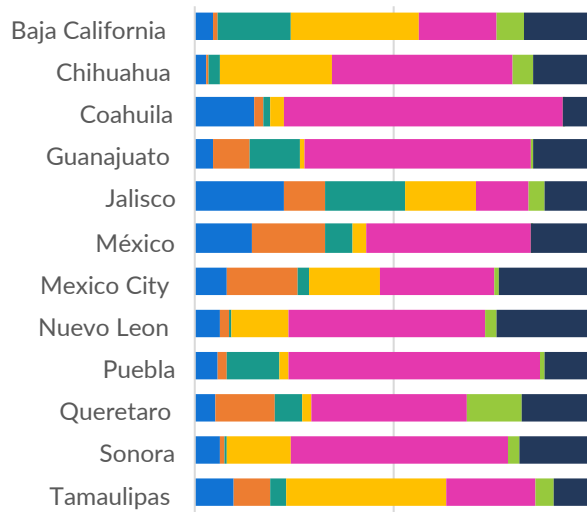
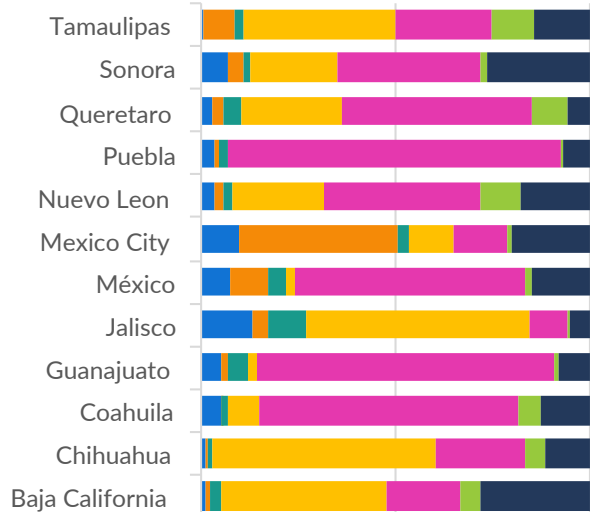


Figure 12b. Exports (Average 2018–2022)



Source: Milken Institute analysis using data from INEGI and SE (2023)

A few states stand out as having a notably high proportion of exports concentrated in one of the two main manufacturing sub-sectors. Puebla, home to Mexico’s largest Volkswagen automobile production facility and one of the largest Volkswagen plants worldwide, is dominated by the transportation equipment sub-sector, which captures 85.6 percent of the state’s value of manufacturing exports.⁵⁵ Other states where transportation equipment represents a large share (over 50.0 percent) of exports are Guanajuato, Coahuila, and Mexico state. Coahuila and Guanajuato are Mexico’s two biggest transportation equipment exporters, producing about one third (32.1 percent) of this sector’s total national exports between 2018 and 2022. Guanajuato is also one of Mexico’s fastest growing transportation equipment exporters, with the export value of this sub-sector in Guanajuato increasing more than 2.5-fold (158.4 percent) over the past decade (Figure 13a). Among other states, Nuevo León and Baja California also more than doubled their transportation equipment exports

between 2013 and 2022, experiencing growth of 120.2 percent and 120.7 percent, respectively. Tesla's recent announcement of its plans to build a vehicle assembly plant in Nuevo León is expected to further increase its transportation exports in the coming years.⁵⁶

The computers and other electronics sub-sector represents over half of manufacturing exports' value in two states: Chihuahua and Jalisco. Chihuahua is by far Mexico's biggest computer and other electronics exporter, and its lead in this sub-sector has grown over time. In 2013, Chihuahua's total computer and other electronics exports' value was 141.5 percent that of Baja California's, Mexico's second biggest computer and other electronics exporter. By 2022, Chihuahua's lead over Baja California had increased to 212.9 percent. Nuevo León has also experienced accelerated growth in its computer and other electronics production. Ranked fourth in 2022, the state has grown the value of its computer and other electronics exports by 81.8 percent (from \$7.1 billion to \$12.9 billion) in the past decade.

Figure 13. Exports 2013–2022, by State (US\$ mill.)

Figure 13a. Transportation

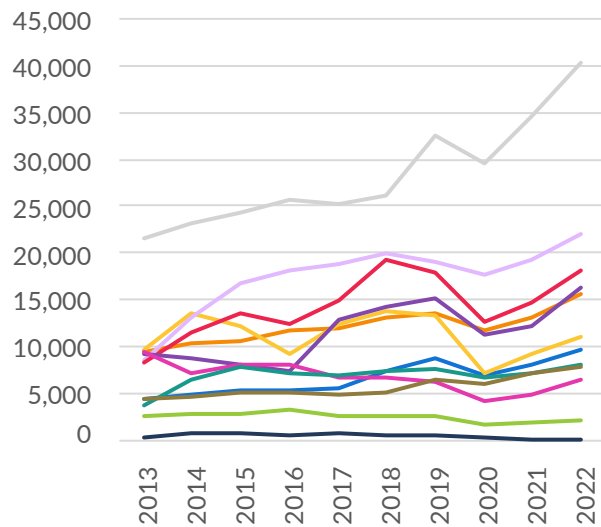
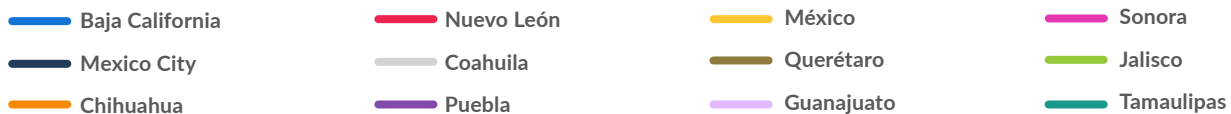
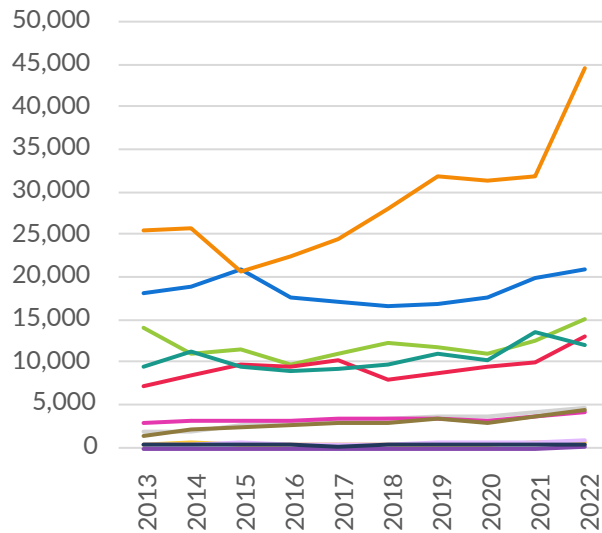


Figure 13b. Computer and Other Electronics



Source: Milken Institute analysis, INEGI and SE data (2023)

Workforce Talent and Public Governance

Regional Distribution of Talent Indicators

Labor force is a required input for the operation of any business, and access to a highly specialized workforce is needed to build a resilient supply chain, particularly for critical high-tech industries like semiconductors.⁵⁷ Overall, Mexico ranks below other US key trade partners on talent indicators such as labor force participation, mean years of schooling, and staff training. Yet, this national perspective conceals important regional differences in talent distribution.

Mexico's low labor force participation is driven by low female participation (Figure 14a), and these gender disparities are intensified by regional inequalities in wages and social norms.⁵⁸ Across Mexican entities, there is a significant correlation between female labor force participation (FLFP) and federal entities' GDP and FDI inflows. However, this is driven solely by a high proportion of working women in the nation's capital, which captures almost a quarter (23.2 percent) of Mexico's FDI and generates 17.3 percent of its GDP.⁵⁹ While FLFP is relatively high in some prosperous states (such as Jalisco or Chihuahua), that is not the case in many of Mexico's top exporting and investment entities (Figure 14b). Nuevo León, as an example, produces 10.1 percent of Mexico's computer and transportation exports yet ranks among the states with lowest FLFP, with only 38.8 percent of women formally employed.⁶⁰ This illustrates a general trend: in Mexico, a large portion of female labor and talent potential remains untapped by formal employers. Whether this is due to informal employment, social norms, or other reasons, it indicates room for growth for businesses that can successfully attract, train, and hire women.

Figure 14. Labor Force Participation

Figure 14a. By Country and Gender (2021)

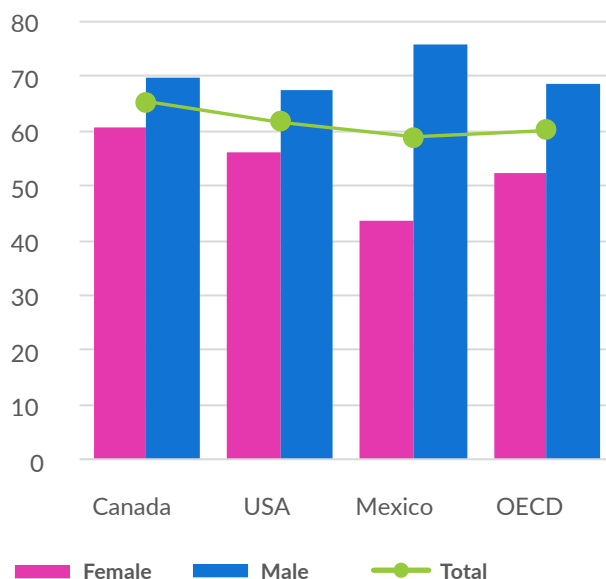
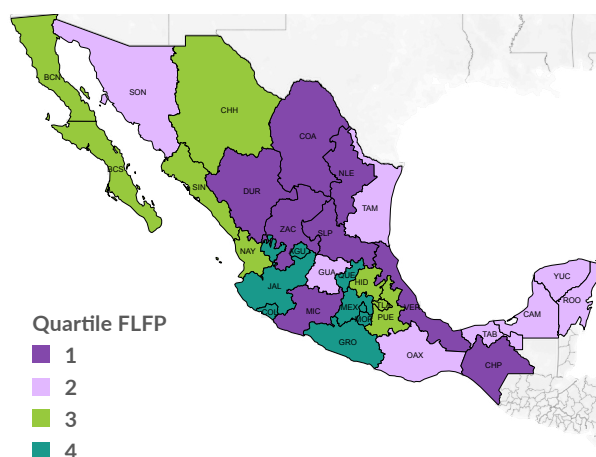


Figure 14b. Distribution of Female Labor Force Participation



Source: Milken Institute analysis, data from INEGI and OECD (2023)

Unlike labor force participation, education measures (such as mean years of schooling and percentage of population with a higher education) have a robust significant correlation with FDI and exports. From a regional perspective, this is due to higher rates of educational attainment in the north than in the less prosperous south of Mexico (Figures 15a and 15b).

Figure 15. Geographic Distribution of Educational Attainment

Figure 15a. Mean Years of Schooling by State

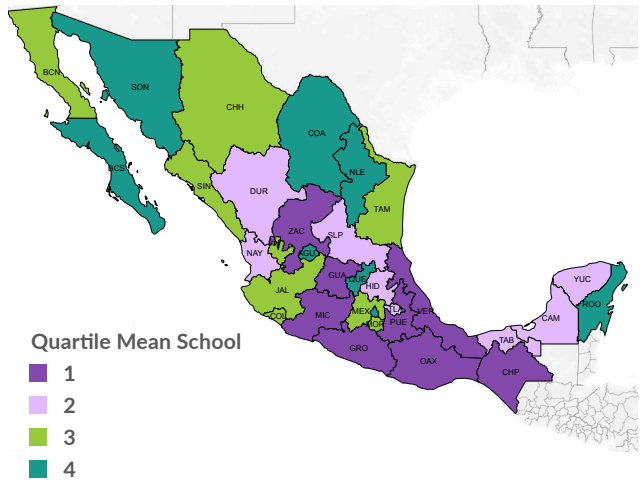
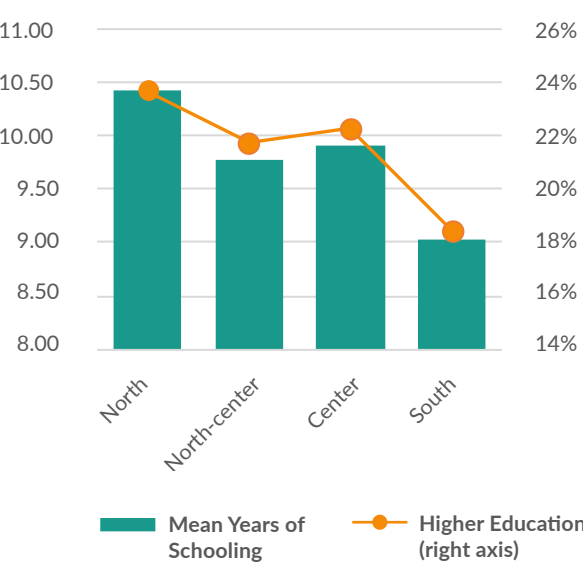


Figure 15b. Educational Metrics by Region



Source: Milken Institute analysis using data from INEGI (2023)

The three states with lowest mean years of schooling and rates of higher education are Chiapas, Oaxaca, and Guerrero, all in the south region of Mexico. Despite relatively high rates of technical education among graduates in these states, their economic development has been hindered by overall low schooling levels.⁶¹ Simultaneously, place-specific determinants (such as the industrial knowledge embedded in economic activities) condition the choices and behaviors of individuals, reinforcing the link between low schooling and lacking economic performance.⁶² Mexico’s government has proposed several infrastructure projects to offset this negative cycle, including the recent Interoceanic Corridor of the Isthmus of Tehuantepec (CIIT) plan that aims to revitalize the south region by building a corridor that connects the Pacific port of Salina Cruz in Oaxaca with the Gulf coast in Veracruz. While such projects have the potential to bring investment and businesses into the south of Mexico, further workforce development will be necessary for residents to benefit from the potential increase in economic activity.

Disparities in Public Governance

Public governance issues are often cited as factors affecting economic growth by businesses in Mexico and by foreign officials. In March 2023, Mexico's central bank (Banxico) surveyed company representatives about the three most important factors that could hinder the economic growth of their localities in the next six months.⁶³ In this survey, 19.4 percent of business representatives listed public governance as one of the top three potential obstacles to growth, second only to concerns over inflation (which have been growing across the world since 2022). From a foreign perspective, the US Department of State in its 2022 Investment Climate Statement on Mexico mentioned "uncertainty about contract enforcement, insecurity, informality, and corruption" as factors hindering sustained Mexican economic growth.⁶⁴

Unlike the relationship between workforce talent and economic development (which is clearly positive with higher talent in the prosperous north and lower educational attainment in the south), the regional association between Mexico's public governance and the economy is more complicated. While fewer businesses in the economically advanced states in the north region list public governance as an obstacle to growth (16.2 percent vs. the national average of 19.4 percent), the overall geographic relationship between governance and economic prosperity is nuanced. The two entities with the highest percentage of economic units (i.e., businesses) affected by crime are Sonora and Mexico City (Figure 16a).⁶⁵ These are both economically successful entities, with above-average GDP growth and high exports (in the case of Sonora) or FDI (in Mexico City). In contrast, states in the south of Mexico such as Yucatán and Chiapas have some of the nation's lowest economic unit victimization rates, but lag in terms of economic development.

These results, however, are subject to data limitations (since they are based on self-reported data and do not account for gravity of the crime) and provide only a partial picture of criminal activity in Mexico.⁶⁶ Indeed, the regional distribution of households affected by crime differs from the distribution of economic unit victimization (see Figures 16a and 16b). The difference in crime victimization patterns between economic units and households reflects the complexity of crime in Mexico.

Figure 16. Crime Victimization among Economic Units and Households

Figure 16a. Economic Unit Victimization

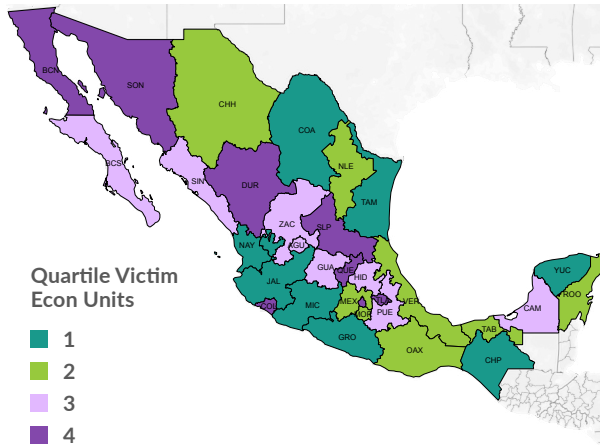
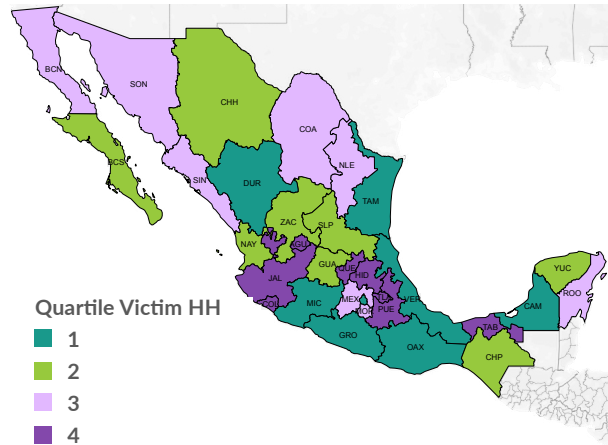


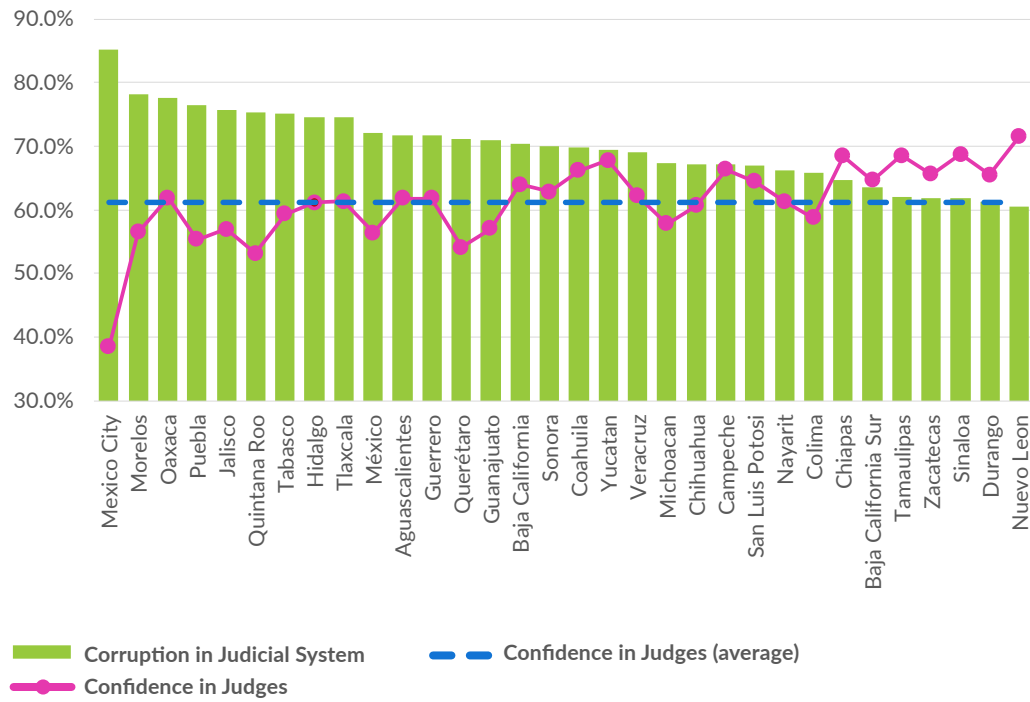
Figure 16b. Household Victimization



Source: Milken Institute analysis using data from INEGI (2023)

In terms of other public governance areas, almost a fourth (4.5 out of 19.4 percent) of the business representatives who worried about governance as hindering growth mentioned concerns over corruption. Overall, in Mexico’s central and southern states (such as Puebla, Oaxaca, and Morelos) people are more likely to perceive corruption as affecting the judicial system (Figure 17) and more business representatives in these regions list governance and corruption among the top three issues hindering growth.⁶⁷ Mexico City, the entity with the second-highest economic unit victimization and home of the Mexican Supreme Court, reports the most perceived corruption and the least confidence in the judicial power: 85.2 percent of Mexico City residents believe that the judicial system is corrupt and only 38.4 percent have confidence in judges. In contrast, Nuevo León has the lowest perception of corruption in the judicial system and the highest confidence in judges.

Figure 17. Public Governance Indicators by Entity



Source: Milken Institute analysis using data from INEGI (2023)

KEY TAKEAWAYS

Mexico continues to expand its role as a US trade partner. At their current growth, imports of goods from Mexico could account for over 20 percent of total goods imported to the US by 2050.⁶⁸ Admittedly, this calculation is based on the bold assumption that Mexico's share of imports maintains its current growth rate. However, it remains true that over the past five years, Mexico has rapidly increased its exports of key trade products such as computers and related components, raising its profile as a strategic US trade partner.

The US underscored the importance of advanced technology products in its 2023 trade agenda, where it defined semiconductors as a priority product area. The development of a North America regional semiconductor ecosystem would offer Mexico an essential opportunity to create jobs and strengthen its economy.⁶⁹ To do so, however, Mexico would have to provide sufficient specialized workforce and improve its public governance structures, two areas where it currently falls behind other US key trade partners. While mean years of schooling and higher education rates are relatively high in Mexico City and some states in the north of the country (such as Nuevo León and Colima), states in the south decrease Mexico's overall educational attainment. In Chiapas (a state in the south of Mexico), for example, the average person has less than eight years of formal education. This pattern is representative of Mexico's regional disparities.

To revitalize the south region, Mexico's government has assured tax incentives for companies setting up businesses in the industrial parks that it plans to develop across Veracruz and Oaxaca (two southern states) as part of its CIIT plan. As of June 2023, this project attracted \$4.5 billion in potential foreign investment.⁷⁰ The extent to which residents of the south region will benefit from the potential increase in capital inflows to the area will depend on the ability of local businesses and authorities to develop workforce talent through long-term investment in training and education. Otherwise, the benefits may go to workers from other regions (and abroad) attracted to the area by foreign investment. In addition, while the CIIT might bring new investment to Mexico, its likelihood to promote exports in key sectors (such as advanced technology) is unclear. Among these uncertainties, the ability of the US and Mexico to fully capitalize on the commercial opportunities of increased regional trade remains to be determined, even as the benefits from these opportunities could prove substantial.

ENDNOTES

1. In 2019, Mexico provided 14.3 percent of US imports of goods while China led at 18.6 percent; by early 2023, Mexico accounted for 15.4 percent of US imports of goods while China had dropped to 13.4 percent. For more information, see “US Trade in Goods by Country,” US Census Bureau, accessed June 13, 2023, <https://www.census.gov/foreign-trade/balance/index.html>. See also: “Top Trading Partners - May 2023,” US Census Bureau, accessed June 13, 2023, <https://www.census.gov/foreign-trade/statistics/highlights/topyr.html>.
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5. Sergio Mario Ostos and Raymund Vazquez, “Advantages of Nearshoring in Mexico - A Cost-Effective Alternative to Asia,” *Cacheaux, Cavazos & Newton Mexico Report*, no. 162 (March 28, 2023). <https://www.ccn-law.com/mexico-report-articles/advantages-of-nearshoring-in-mexico-a-cost-effective-alternative-to-asia>.
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9. Oxford Analytica, “Geopolitical Rifts Benefit South-east Asia Tech Sector,” *Expert Briefings* (2023), <https://www.emerald.com/insight/content/doi/10.1108/OXAN-DB279928/full/html>
10. ‘Transportation equipment’ includes the production of cars, trucks, and railway

equipment as well as engines and other vehicle components. The 'computers and other electronics' category includes production of computing, communication, and measurement equipment, as well as electronic components and accessories.

11. *2023 Trade Policy Agenda and 2022 Annual Report of the President of the United States on the Trade Agreements Program* (Office of the United States Trade Representative, March 2023), [https://ustr.gov/sites/default/files/2023-02/2023%20Trade%20Policy%20Agenda%20and%202022%20Annual%20Report%20FINAL%20\(1\).pdf](https://ustr.gov/sites/default/files/2023-02/2023%20Trade%20Policy%20Agenda%20and%202022%20Annual%20Report%20FINAL%20(1).pdf). See also: David Talbot, *Strengthening US-Mexico Semiconductor Supply Chains: Opportunities and Challenges in the Nearshoring Agenda* (Milken Institute, June 13, 2023), <https://milkeninstitute.org/report/strengthening-us-mexico-semiconductor-supply-chains>.
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14. Based on early, unrevised data, between January and May of 2023 the value of imports of goods from Mexico was \$26.3 billion above those from China (\$194.9 billion compared to \$168.6 billion). See "Top Trading Partners - May 2023," US Census Bureau, accessed July 20, 2023, <https://www.census.gov/foreign-trade/statistics/highlights/topyr.html>. See also: Luis Torres, "Mexico seeks to solidify rank as top US trade partner, push further past China," *Federal Reserve Bank of Dallas*, July 11, 2023, <https://www.dallasfed.org/research/economics/2023/0711>
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17. "Nearshoring boosts foreign direct investment attraction," *MEXICONOW*, February 9, 2023, <https://mexico-now.com/nearshoring-boosts-foreign-direct-investment-attraction/>
18. While advanced technology imports from Taiwan grew in the same year, the value of Mexican technology products imported to the US dwarfed the Taiwanese imports (\$83.8 billion vs. \$44.8 billion). See "FT900: US International Trade in Goods and Services," US Census Bureau, accessed June 29, 2023, https://www.census.gov/foreign-trade/Press-Release/ft900_index.html.

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