

Geopolitical context and nearshoring: Exploring Supply Chain Opportunities in Mexico

Jorge Sicilia

November, 2023

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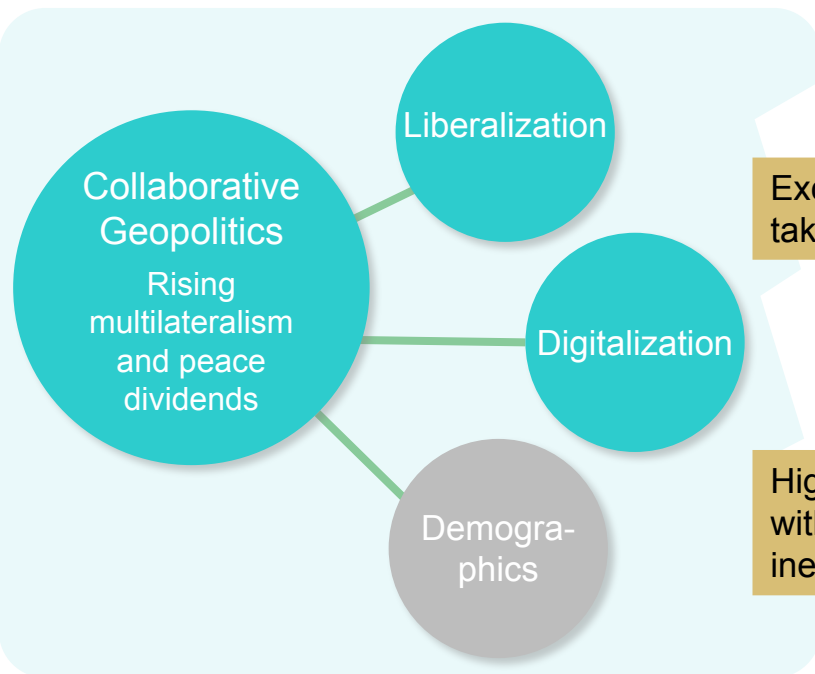
01

Geopolitics: a key economic driver

A complex geopolitical environment that will bring about low growth, disruptions, a host of tensions, and some (mostly) local opportunities

Persistent shocks and failures are threatening decades of Great Moderation

THE GREAT MODERATION AND A VIRTUOUS “END OF HISTORY”



PARADIGM FAILURES

Excessive risk taking

GFC*

Higher within-country inequality

Polarization and Populism



A STORM OF SHOCKS

Covid

War

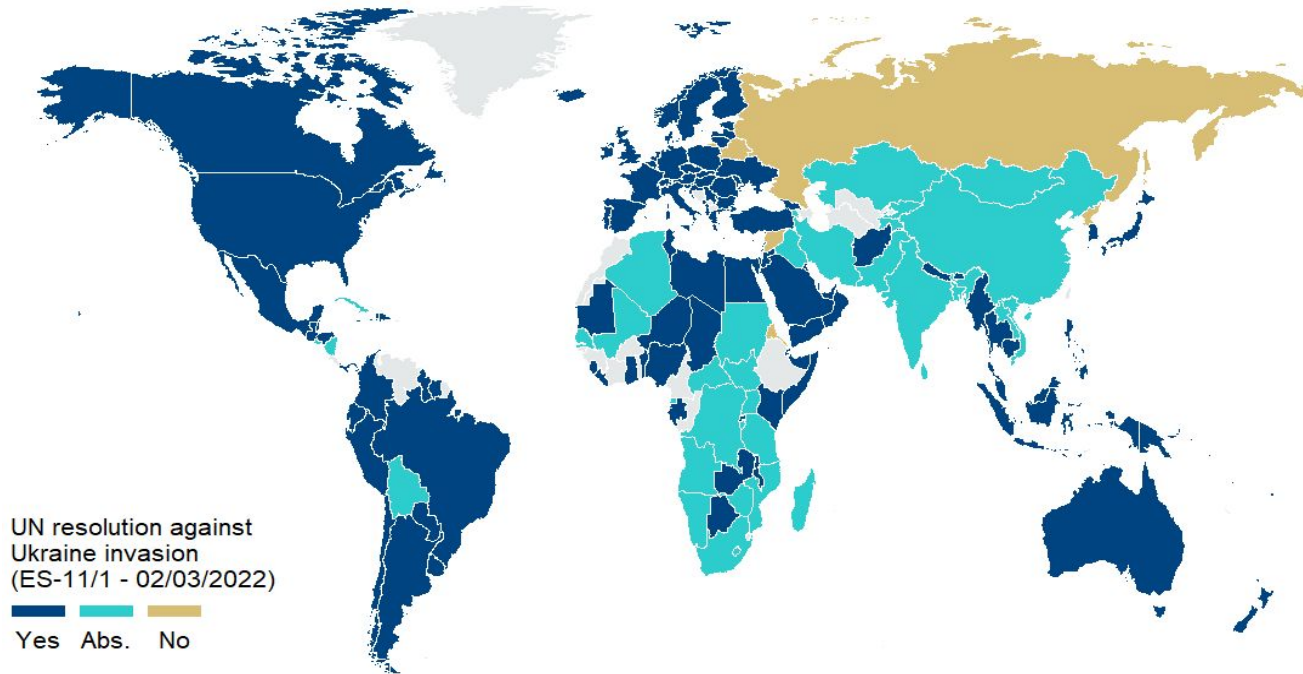
Climate challenge

* Great Financial Crisis and subsequent Secular Stagnation

Multiple conflicts are brewing across several dimensions

| | | Ideological and cultural | Military | Resources (energy, rare earths, water) | Economic / Technological |
|-----------------------|----------------|-----------------------------|----------|--|-----------------------------|
| Israel-Hamas | LOCAL/GLOBAL | ✓ | ✓ | | |
| Taiwan (US-China) | GLOBAL | ✓ | ✓ | ✓ | ✓ |
| Ukraine (Russia-West) | GLOBAL | ✓ | ✓ | ✓ | |
| Iran-West | GLOBAL | ✓ | ✓ | ✓ | ✓ |
| Siria | LOCAL | ✓ | ✓ | | |
| North Korea | LOCAL / GLOBAL | ✓ | ✓ | | |
| EU-China | GLOBAL | ✓ | | ✓ | ✓ |
| Immigration to EU | GLOBAL | ✓ | | ✓ | ✓ |
| Immigration to US | LOCAL | ✓ | | | ✓ |
| Global terrorism | GLOBAL | ✓ | ✓ | | |

The war in Ukraine has uncovered today's ideological fault-lines (some countries “preferring not to take a side”, others doing it reluctantly), ...Israel and Gaza?

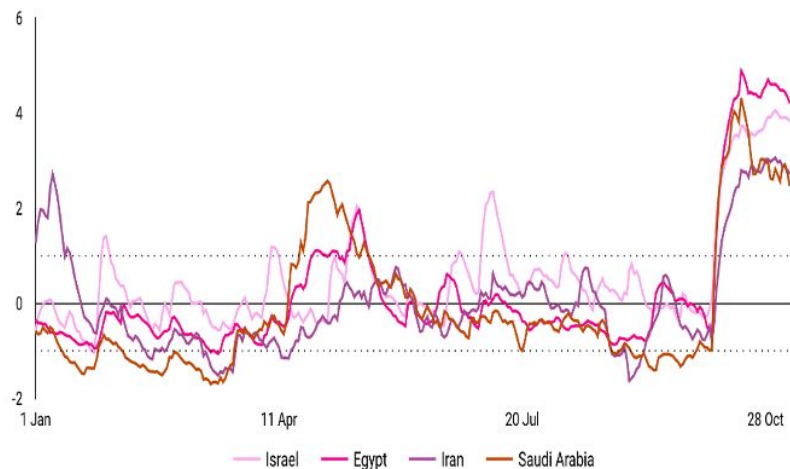


“The world is up to be lured”: a carrot-and-stick new environment in global relations This new geopolitical rivalry is likely to lead dominant countries to lure & push emerging countries (large ones are becoming increasingly assertive) to lure & push them to bring them to their positions (leverages: vote, resources, military)

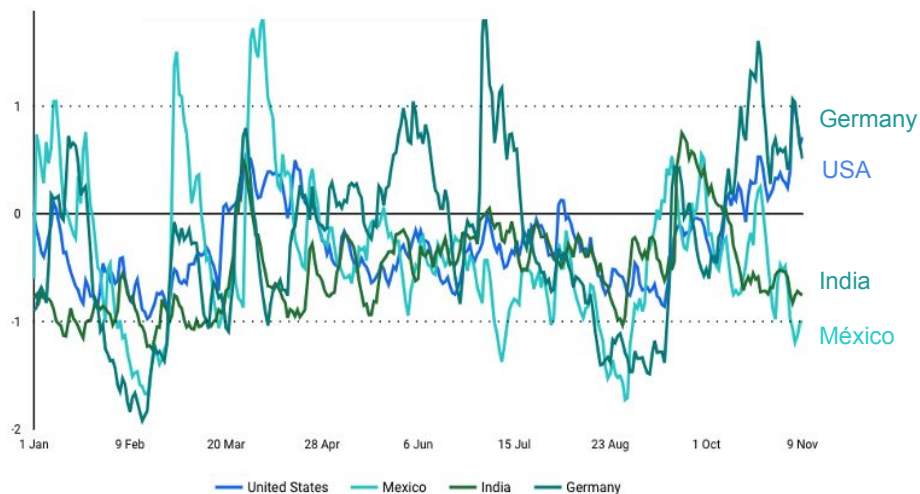
Geopolitical Risk has increased with the Hamas-Israel war with some spillovers to Western Countries

BBVA Research Geopolitics Sentiment (Middle East) and Protest Sentiment (Other countries)

Middle East: Geopolitics Sentiment



Other Countries: Protest Sentiment

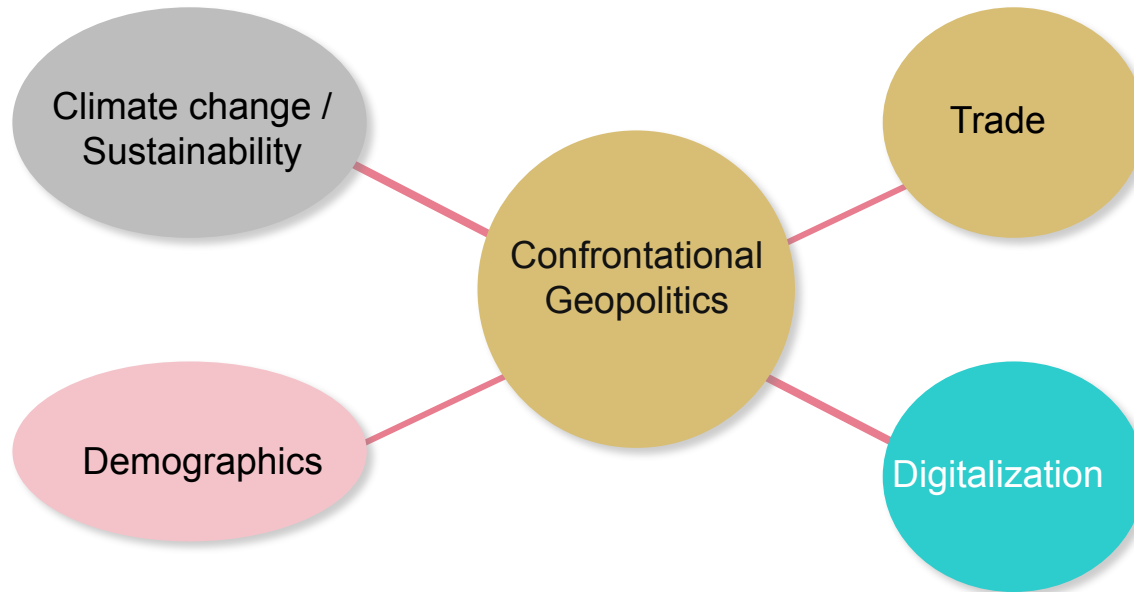


Source: Big Data Analysis Unit (BBVA Research)

The geopolitical sentiment analysis shows extreme levels of risk and some contagion in term of protests to some Western countries. Spain also influenced by Local Protests

The emergence of a new geopolitical environment may brew a more permanent shift of paradigm

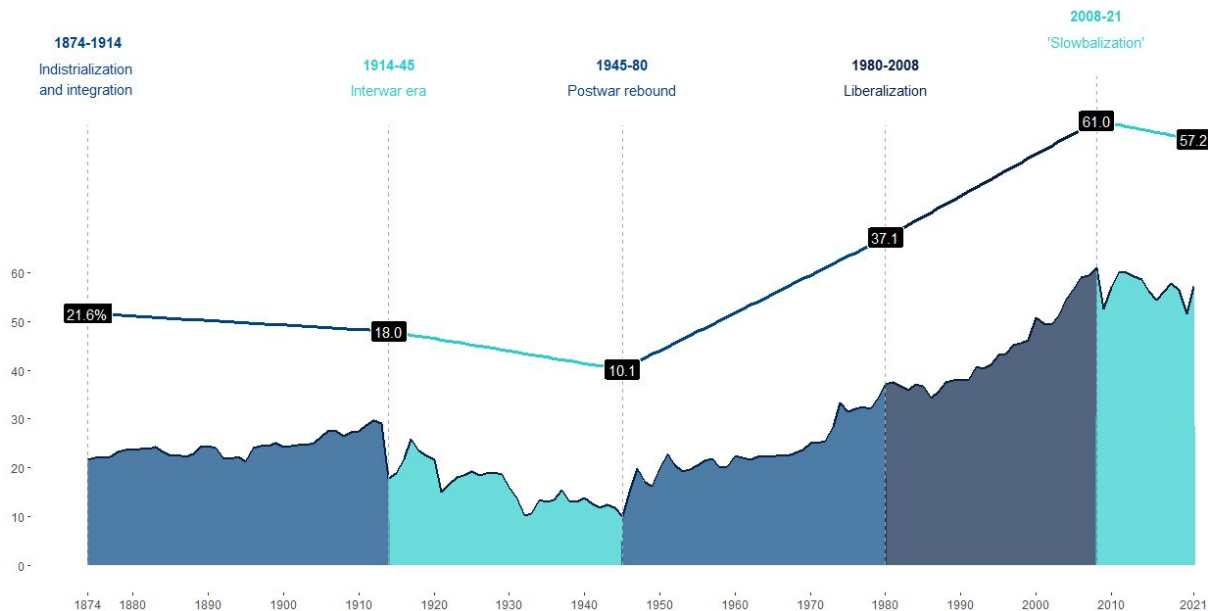
FROM VIRTUOUS TO VICIOUS GEOPOLITICS



Trade goods & services has transited from *hyperglobalization* to *slowbalization*; trade fragmentation is a growing risk

TRADE OPENNESS, 1870-2021

(SUM OF EXPORTS AND IMPORTS OF GOODS AND SERVICES, % GDP)



Source: [PIIE](#), [IMF](#)

Since Covid-19, war in Ukraine, Trade policy guided by:

- “New” **goals**: security and diversification a new axis vs efficiency and globalization
- “New” **rhetoric**: friendshoring, nearshoring, de-risking, strategic autonomy...
- Increasing protectionism /interventionism **measures**



Trade fragmentation to be costly*

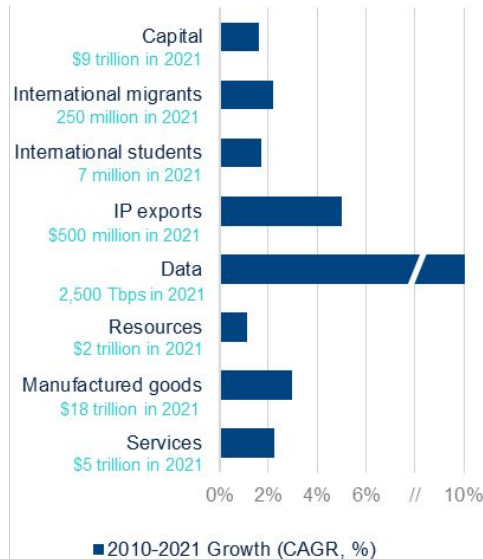
(*) [IMFwp and blog](#), [EBRD](#), [CEPR](#), [UNCTAD](#)

Digitalization poses important challenges: Strengthening cybersecurity, AI

Data across countries doubles every two years, while international coordination remains fractured

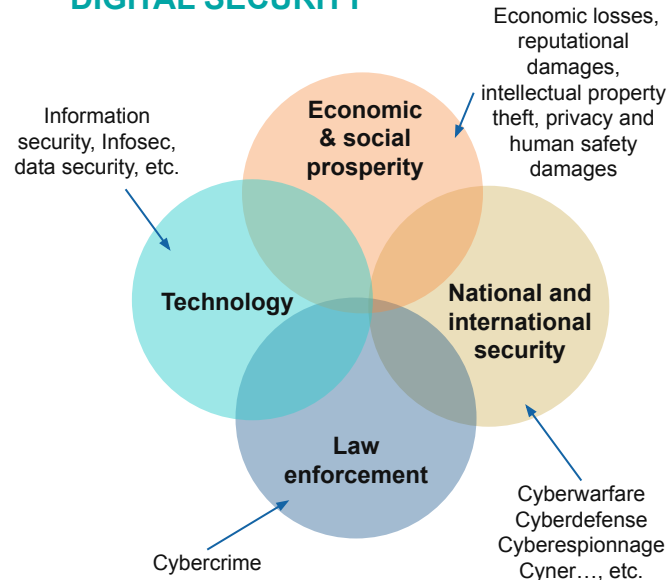
GLOBAL FLOWS

(2021 volumes and 2010-2021 growth rates in CAGR%)



Source: [McKinsey](#)

FOUR PILLARS DEMANDING DIGITAL SECURITY



Source: [OECD](#)

Potentially disruptive threats of AI which policymakers are starting to address.

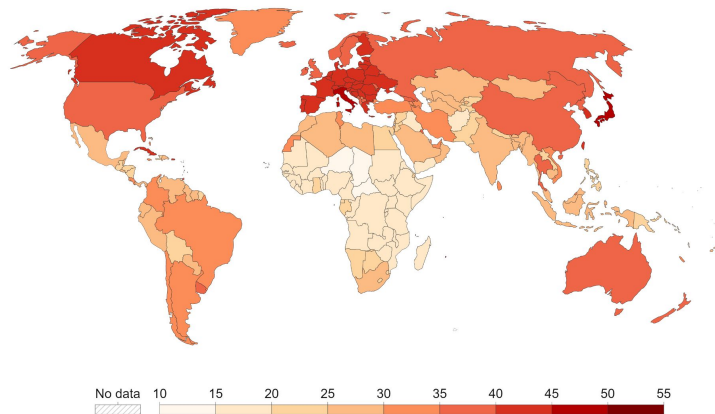
- [Surveillance and privacy](#)
- [Hallucinations and cyber-security](#)
- [Intentional misinformation and reinforcement of biases.](#)
- [Labor replacement without labor enhancing](#)

Demographics: Ageing progressively extends to EM countries, implying that the growth potential of the labour force is lower

MEDIAN AGE OF POPULATION, 2021.

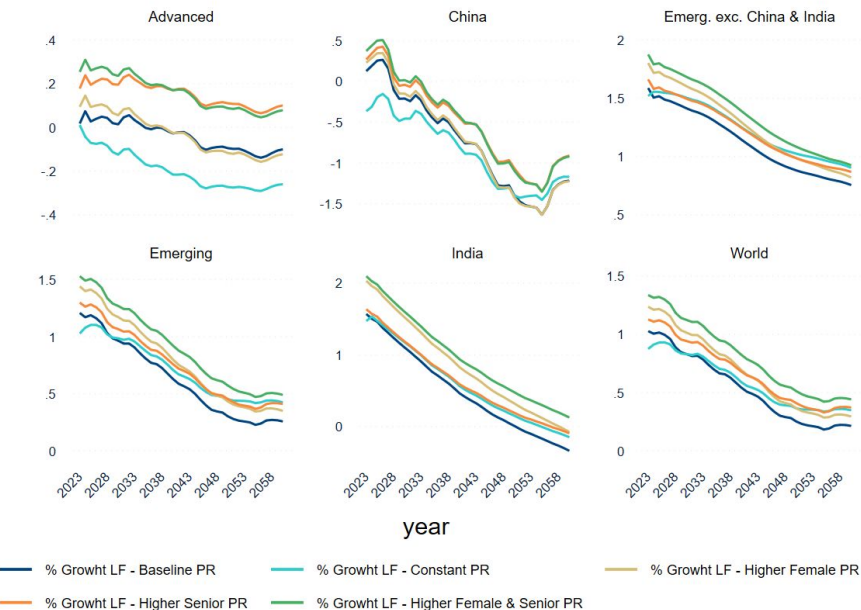
The median age divides the population into two parts of equal size; that is, there are as many people with ages above the median age as there are with ages below.

Our World in Data



Source: United Nations - Population Division (2022) OurWorldInData.org/age-structure • CC BY
 Note: 1950 to 2021 show historical estimates. From 2022 the UN projections (medium variant) are shown.

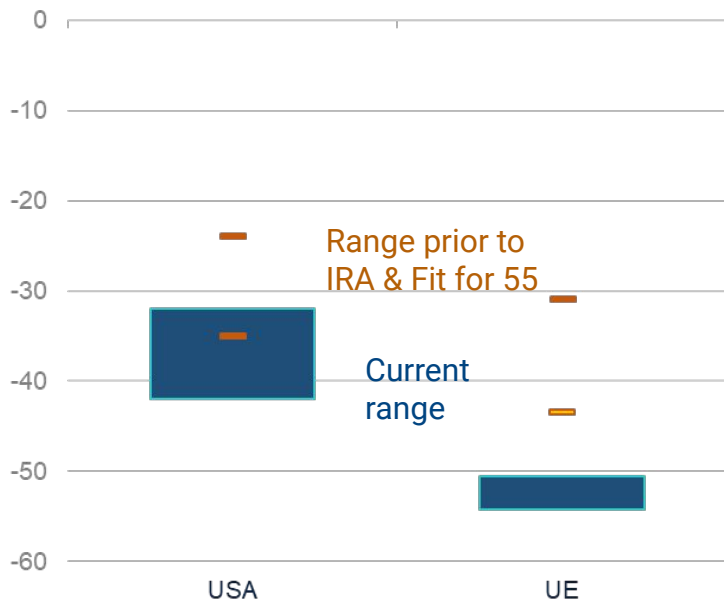
PROJECTIONS OF LABOUR FORCE GROWTH UNDER DIFFERENT SCENARIOS OF PARTICIPATION RATE



Source: BBVA Research own calculations based on UN Population forecasts and ILO

Climate change policies are shaped by geopolitics -US vs. EU-: US relies on subsidies and protectionism rather than carbon pricing

FORECAST OF GHG EMISSIONS REDUCTIONS IN 2030 vs. 2005 (pp)



- Increased ambition of climate policies in the US and the EU. Defining long-term oriented climate plans and objectives reduces uncertainty and foster investment decisions. All in all, emissions expected forecasts have not changed too much
- Climate policies are shaped by Geopolitics: uncoordinated and with higher economic costs, especially if they are protectionist, as US's climate policies are
 - Subsidies race, in the US with IRA, in Europe easing State aid rules (including the possibility of “filling the funding gap”)
 - Who will spend more on climate, the U.S. or Europe? It's uncertain, but in the U.S. there is quicker and certain implementation of fiscal spending, grossly open ended.



Confrontational geopolitics can permanently alter all drivers of growth

Trade deliberalization

- **Friendshoring and nearshoring**
- **Protectionism, subsidies; fiscal and regulatory intervention**
- **Investment in key sectors** (energy, defence, health, high-end technology)

Digitalization

- Governments move to **reshore the up-stream production of digital goods and services**

Ageing/ Labour

- Ageing will have a drastic impact also in many non-developed economies
- Labour shortages will need to be addressed: (i) higher participation; (ii) immigration flows

Climate change

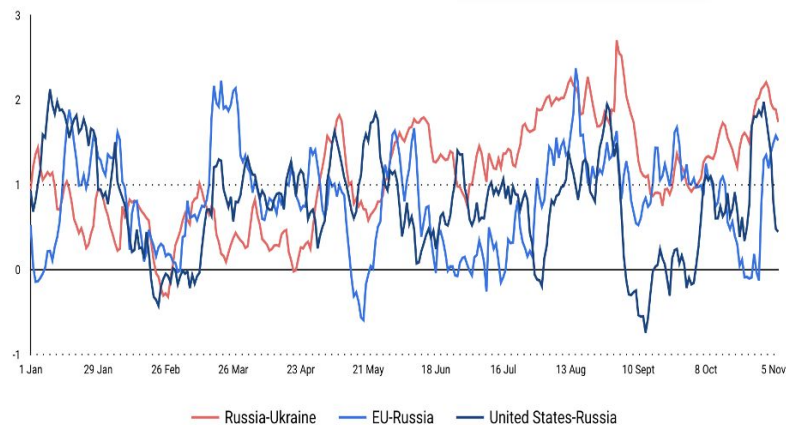
- **Collaboration with China is key** for many players given dominance of **rare earths and renewable energy capital goods**

Bilateral relations with Russia remain tense; there is some relaxation of China's stance against Taiwan and of US-China relations

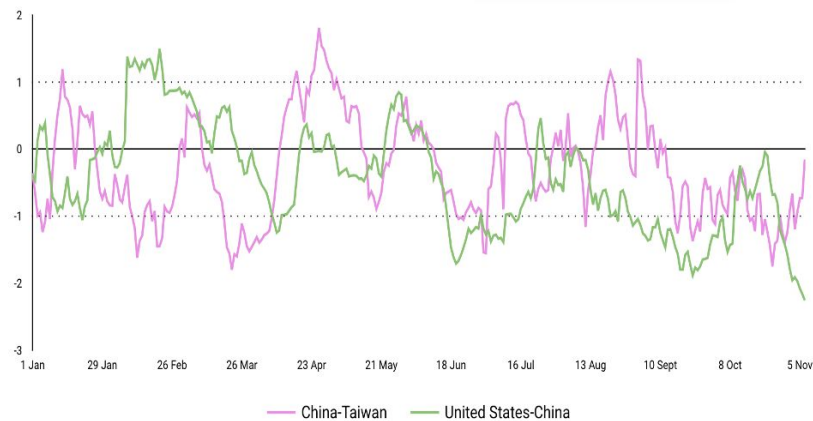
BBVA Research Bilateral Sentiment Index on Russia and China

(28-day weighted moving average, normalized by its own country history. Positive (negative) values indicate greater (lower) uncertainty relative to the mean of period 2019-nowadays)

Bilateral Relations: Russia-Ukraine, EU-Russia & USA-Russia



Bilateral Relations: China-Taiwan & USA-China



Source: Big Data Analysis Unit (BBVA Research)

The Bilateral Sentiment Indexes remain at high risk against Russia but at the same time the bilateral tensions of China against Taiwan have eased and are less correlated with US-China Relations

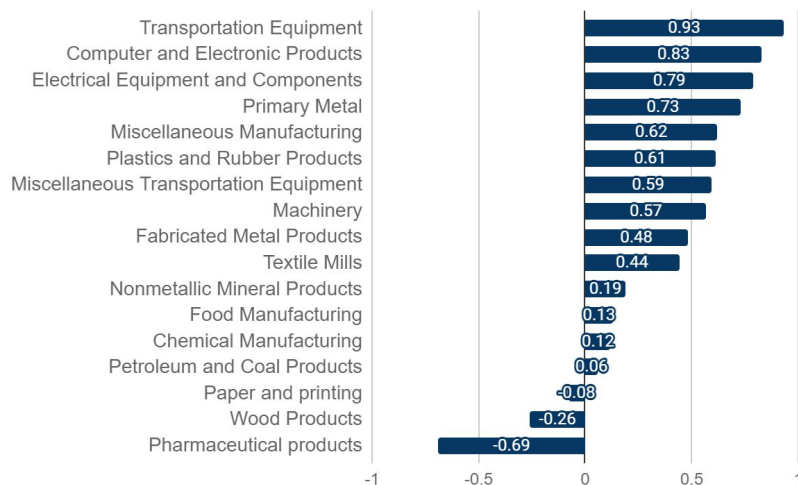
02

GVC & Competitive Advantage of the Mexican Manufacturing

Mexican global manufacturing is ready to compete in international markets and has led the way of Mexico surpassing China as top US trade partner

Mexican manufacturing is globally competitive

REVEALED COMPARATIVE ADVANTAGE (RCA) (NORMALIZED RCA INDEX)



Source: BBVA Research with data from OECD
 RCA compares the weight that a certain sector has in the total exports of an economy, and divides it by the weight that the same sector has in world exports.

MEXICAN GLOBAL MANUFACTURING RCA (NORMALIZED RCA INDEX)

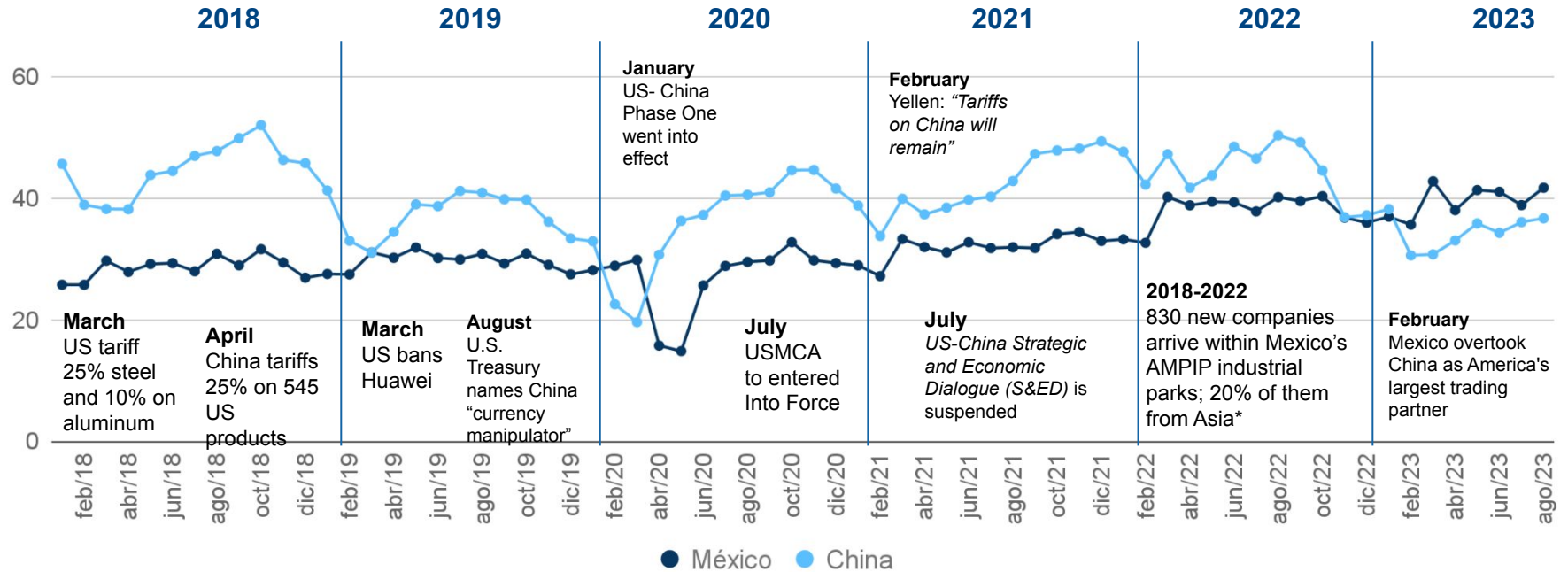
| Sector | Mexico: Global manufacturing | | Top 1 / Top 2 | |
|--|------------------------------|---------|---------------|-----------|
| | RCA | Ranking | RCA | Country |
| Textile Mills | 0.44 | 9 | 0.9 | Cambodia |
| Wood Products | -0.26 | 49 | 0.8 | Latvia |
| Paper and printing | -0.08 | 37 | 0.51 | Finland |
| Petroleum and Coal Products | 0.06 | 20 | 0.64 | Russia |
| Chemical Manufacturing | 0.12 | 14 | 0.52 | Singapore |
| Pharmaceutical products | -0.69 | 57 | 0.88 | Ireland |
| Plastics and Rubber Products | 0.61 | 2 | 0.62 | China |
| Nonmetallic Mineral Products | 0.19 | 6 | 0.5 | China |
| Primary Metal | 0.73 | 1 | 0.6 | Chile |
| Fabricated Metal Products | 0.48 | 2 | 0.49 | Slovenia |
| Computer and Electronic Products | 0.83 | 2 | 0.94 | China |
| Electrical Equipment and Components | 0.79 | 2 | 0.91 | China |
| Machinery | 0.57 | 2 | 0.66 | China |
| Transportation Equipment | 0.93 | 1 | 0.56 | Czech rep |
| Miscellaneous Transportation Equipment | 0.59 | 2 | 0.8 | China |
| Miscellaneous Manufacturing | 0.62 | 3 | 0.77 | China |

Mexican global manufacturing has what it takes, in terms of competitiveness, to seize a share of the U.S. production chain. There are also relative advantages in transportation and logistics services.

Mexico gains ground in the US market against China

U.S. GOODS IMPORTS

(USD\$ BILLIONS, CURRENT PRICES)

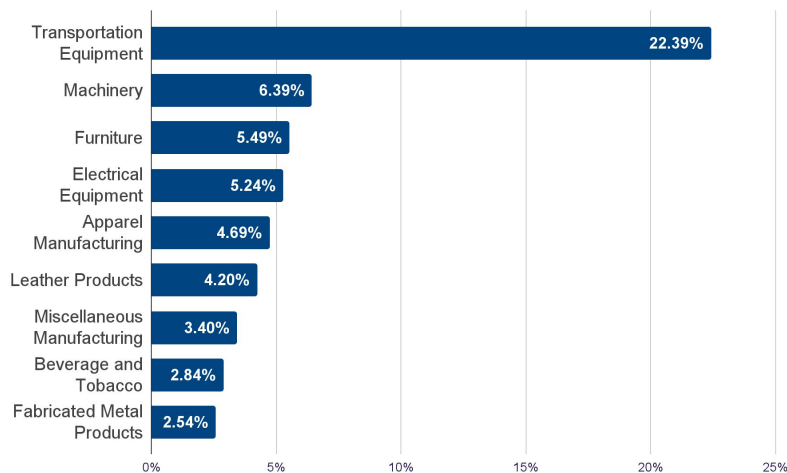


Source: BBVA Research with Census data

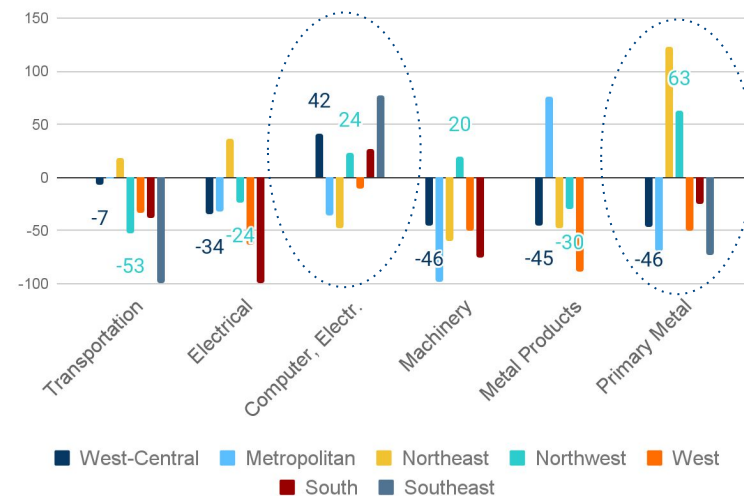
* BBVA Research-AMPIP survey

Manufacturing has lead the way of Mexico surpassing China as top US trade partner

MEXICAN GROWTH COMPARED TO CHINA'S BY SUBSECTOR (JAN 18 - MAY 23 GROWTH %)



AGGREGATE FDI IN MEXICO: HEAVY MANUFACTURING (VAR. % BETWEEN 2018-2022 vs 2013-2017)

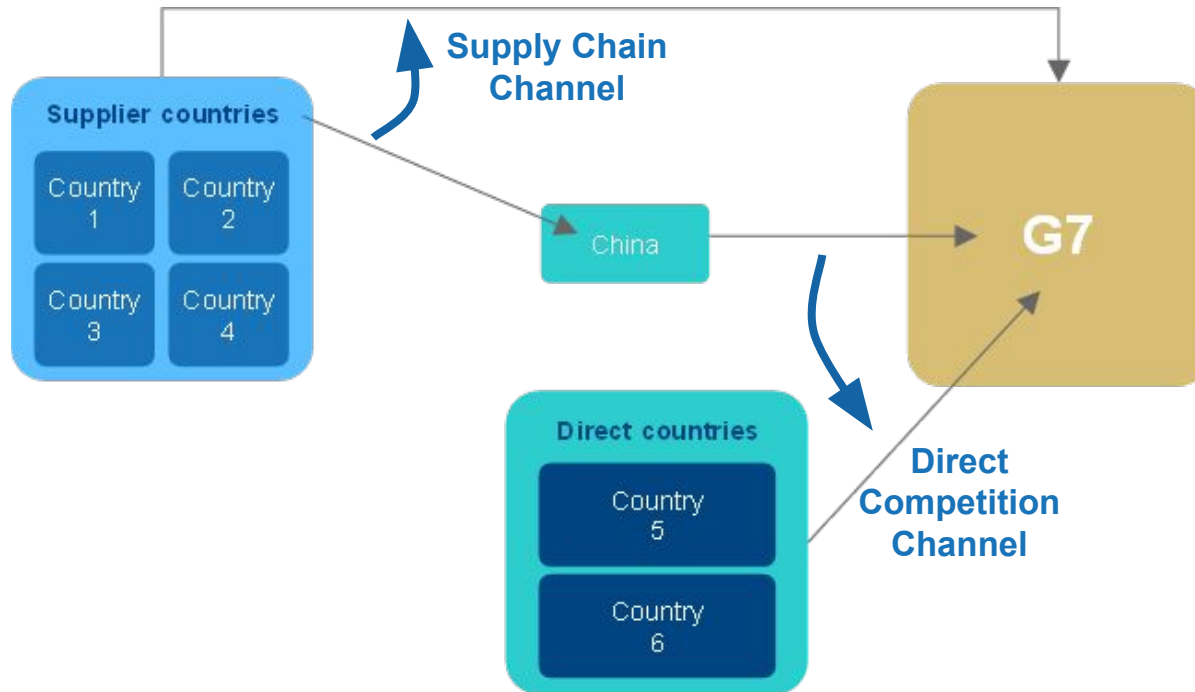


Source: BBVA Research with data from Census.gov and Inegi

The top 10 Mexican sub sectors with the most growth in relation to China are in manufacturing (transportation Equipment leads growing 23.4%): Computer and Electronic manufacturing is the best performing sector in terms of FDI inflow. From a regional perspective, the Northwest and Northeast have the largest FDI inflows.

Two channels to grab market share from China in G7 countries

SUPPLY CHAIN CS DIRECT COMPETITION CHANNELS



Supply Chain Channel: economies that might take advantage of being China's suppliers to supply G7 directly

Direct Competition Channel: economies that that already conducted head-to-head competition with China

Where to relocate under the two channels?

| Where will companies relocate to? | | | | | | | |
|--------------------------------------|----------------|----------------|-------------|--------------------------------|-------------|-------------|-------------|
| Through “Direct Competition Channel” | | | | Through “Supply Chain Channel” | | | |
| Electronic | Machinery | Transport | Chemicals | Electronic | Machinery | Transport | Chemicals |
| Taiwan, ROC | Netherlands | Mexico | Switzerland | S. Korea | S. Korea | S. Korea | S. Korea |
| S. Korea | Mexico | S. Korea | Belgium | Taiwan, ROC | Taiwan, ROC | Taiwan, ROC | Brazil |
| Singapore | S. Korea | Spain | Ireland | Malaysia | Brazil | Brazil | Indonesia |
| Vietnam | Singapore | Belgium | Netherlands | Singapore | Chile | Chile | Taiwan, ROC |
| Malaysia | Taiwan, ROC | Czech Republic | Spain | Thailand | Indonesia | Indonesia | Malaysia |
| Mexico | Thailand | Slovakia | India | Philippines | Singapore | Singapore | Singapore |
| Netherlands | Czech Republic | Thailand | Denmark | Indonesia | Malaysia | Malaysia | India |
| Czech Republic | Poland | Poland | Austria | Chile | India | India | Thailand |

Source: BBVA Research

(*) 2022Q3

Source: BBVA Research based on data from Haver, CEIC, IMF

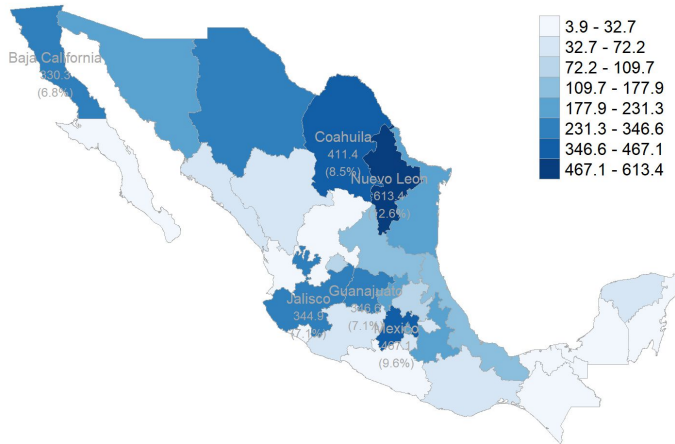
03

Regional investment opportunities

Industrial parks in Mexico with positive outlook to 2025 despite energy constraints. Nearshoring is an opportunity for Mexico to shift their energy policy.

North and west-central states are prepared to capitalize nearshoring

MANUFACTURING GDP 2021 (BILLIONS OF CONSTANT PESOS MXN 2018; SHARE %)



TRANSPORTATION EQUIPMENT (FIRMS DISTRIBUTION)



COMPUTER AND ELECTRONICS (FIRMS DISTRIBUTION)

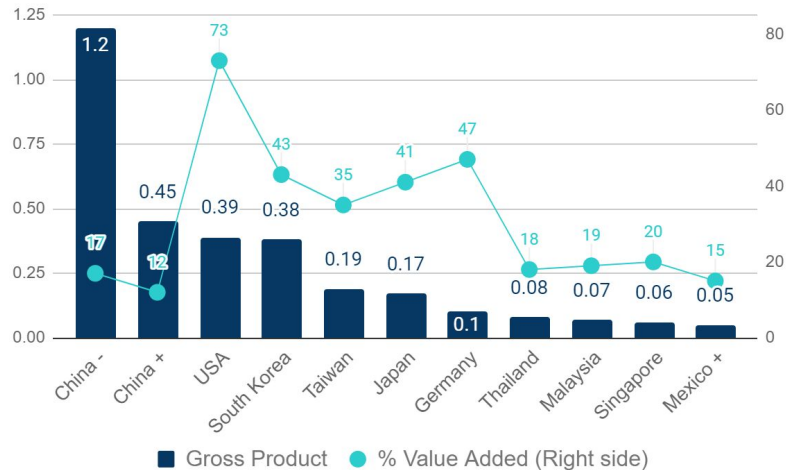


Source: BBVA Research with Inegi data

Northwest states (Baja California, Chihuahua, Coahuila) are located close to the US West Coast and are globally competitive in Computer and Electronics, Machinery and Equipment. The Northeast is close to Texas and the rest of the US East Coast, with potential in Transportation Equipment, Machinery and Equipment, and Basic Metals.

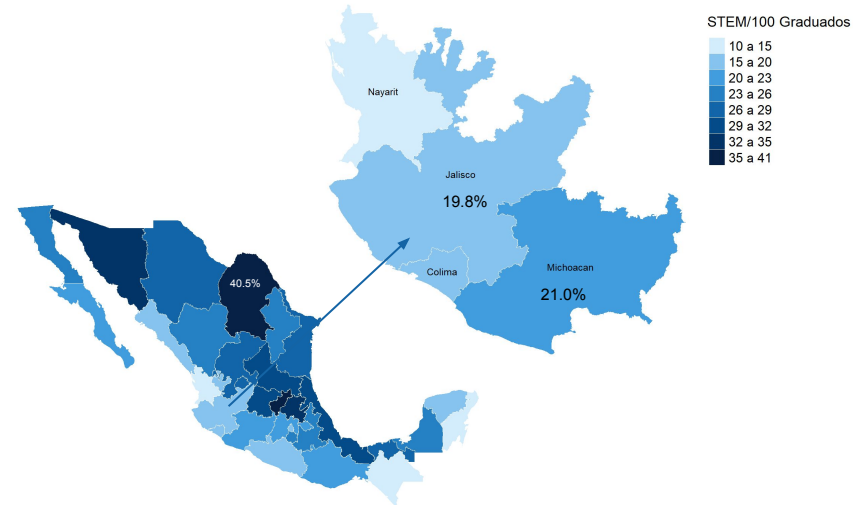
West-central states with technological manufacturing potential

ELECTRONICS PRODUCTION IN 2018 (BILLIONS CONSTANT USD AND SHARE %)



Note: China +: Global Manufacturing, China - : Non-Global, Mexico +: Global Manufacturing

STEM QUALIFIED LABOR SUPPLY (STEM GRADUATES / 100 GRADUATES)



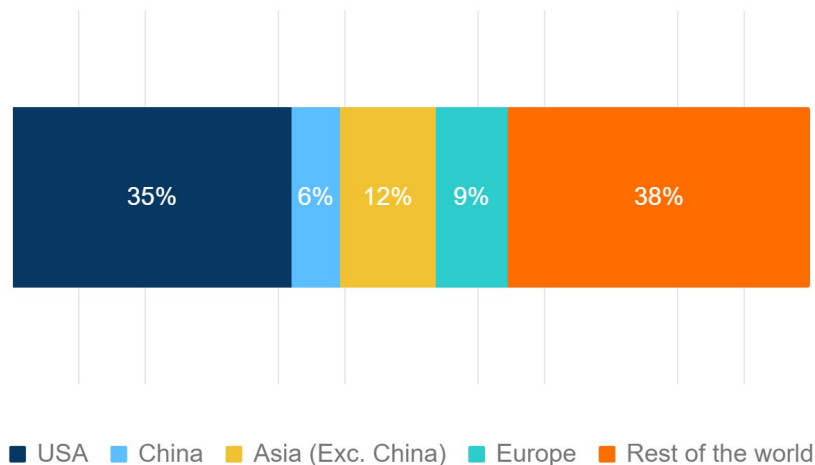
Source: BBVA Research with data from the National Association of Universities and Institutions of Higher Education (Anuiés) STEM: Science, Technology, Engineering, and Mathematics

The reconfiguration of the global microprocessor value chain opens up opportunities for the West-central region. Jalisco's specialization in the export of electronic components, and knowledge hub, make it an ideal candidate for the expansion of high-tech manufacturing. This may boost the demand for qualified labor (STEM graduates)

BBVA Research - AMPIP survey recognizes a positive but moderate pattern of nearshoring effects in terms of attracting firms

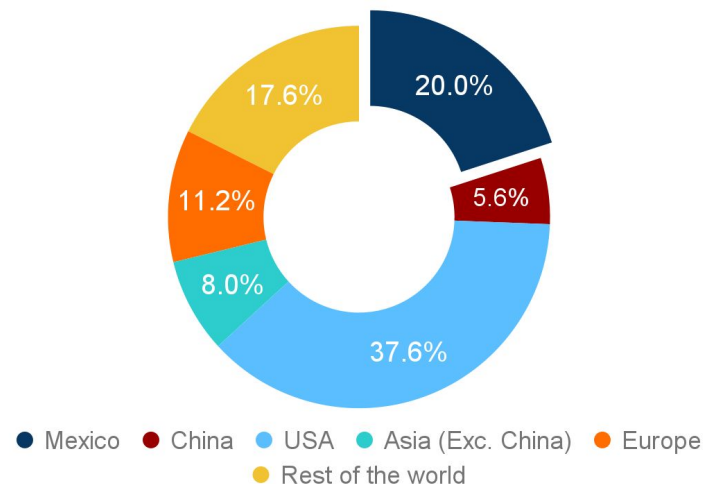
ORIGIN OF ENTRANT FIRMS FROM 2018 TO 2022

(% OF 830 NEW FIRMS)



FIRMS IN AMPIP INDUSTRIAL PARKS BY MARCH 2023

(% OF FIRMS)

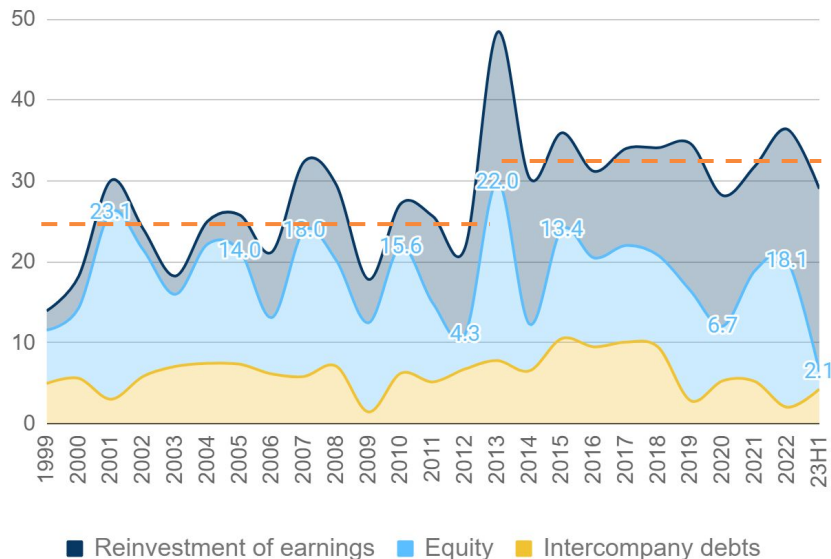


Source: BBVA Research AMPIP survey (Mexican Association of Private Industrial Parks).

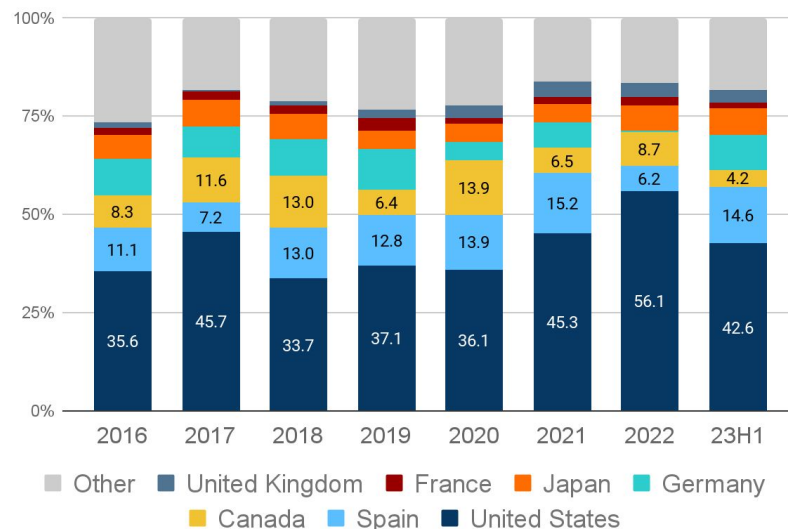
Looking forward to 2025, demand growth of industrial-real-estate is expected: AMPIP members estimate to receive 453 firms within the next two years, 20% of which are Chinese. An average of 227 new companies per year between 2023-2025, this would represent an annual growth of 9.1% over the 2018-2022 period.

From January to June 2023, the main origin countries of FDI in México were US (US\$12.4B), Spain (US\$4.22B), and Germany (US\$2.55B)

FDI IN MEXICO BY TYPE OF INVESTMENT
(BILLIONS USD)



FDI IN MEXICO BY COUNTRY OF ORIGIN
(SHARE % OF TOTAL FDI)



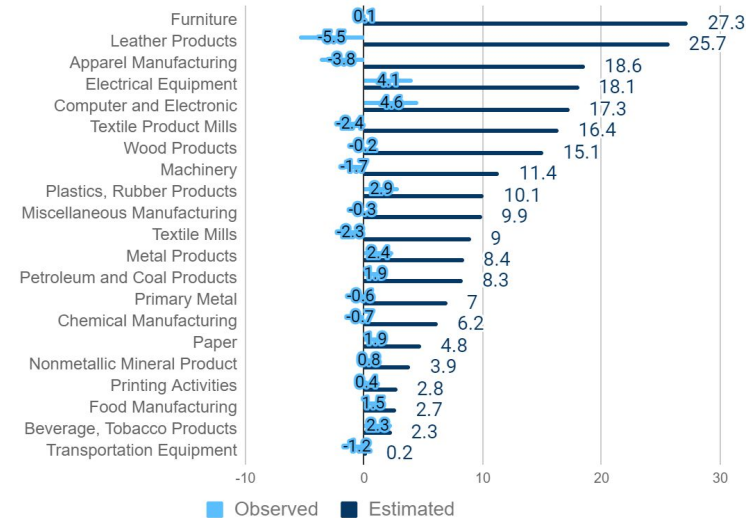
Source: BBVA Research with data from Ministry of Economy, México

Mexico would have grown up to an additional 1.8% per year from 2018 to 2022 if it had captured all the foregone Chinese production

GDP: % ANNUAL CHANGE AVG: 2018 - 2022 (PERCENTAGE POINTS)

| Sector | Observed | Estimated BBVA Research |
|-----------------------------|----------|-------------------------|
| Total GDP | -0.40 | 1.42 |
| Agriculture, Fishing | 0.45 | 1.47 |
| Mining, Oil and Gas | -2.62 | -0.05 |
| Minerals | 0.06 | 3.72 |
| Energy | -1.39 | 1.64 |
| Utilities | -0.27 | 0.80 |
| Manufacturing | 0.69 | 6.96 |
| Wholesale Trade | 1.28 | 2.80 |
| Retail Trade | 0.81 | 1.29 |
| Transportation | 0.67 | 1.23 |

GDP: % ANNUAL CHANGE AVG: 2018 - 2022 (PERCENTAGE POINTS)



Source: BBVA Research with data from Census.gov and Inegi

Had Mexico reacted earlier to the US-China trade war with a strong policy to attract and retain global production, growth in Mexico would have been larger. This simulated scenario represents an upper bound of the forgone potential benefit of nearshoring by assuming all the production that China lost was drawn to Mexico

Mexico is highly attractive for relocating firms due to its strategic location, domestic market, manufacturing potential and commercial integration

ECONOMY

**GDP: 14th place worldwide in 2022
2nd in Latin America**

Mexico among the 15 largest economies in the last 20 years.

FOREIGN INVESTMENT

29 Billion USD

Jan-Jun 2023

Incoming FDI: United States (12.3 B\$ USD), Spain (4.2 B\$ USD), Germany (2.5 B\$ USD).

INTERNATIONAL TRADE

Trade (% of GDP): 89.4%

Main supplier of US imports Jan-Jun 2023

14 FREE TRADE AGREEMENTS 50 COUNTRIES

Mexico is currently the main supplier of the biggest economy

15.5% of the total US imports from in the first half of 2023

USMCA

North America accounts for 15.4% of global commerce (exports + imports)

LABOR MARKET

Economically active population:
60.3% in 2022 vs 59.7% in 2019

Graduate students in 2022: 892,836
+ 19% compared to 2015

STEM: 25% of total grads in 2022

INDUSTRY

9 Mexican manufacturers are among the top 3 based on the revealed comparative advantage index.

MUSTS

Mexico must improve clean energy supply, water access, and logistics (ports, roads, rail, customs)

Geopolitical context and nearshoring: Exploring Supply Chain Opportunities in Mexico

Jorge Sicilia

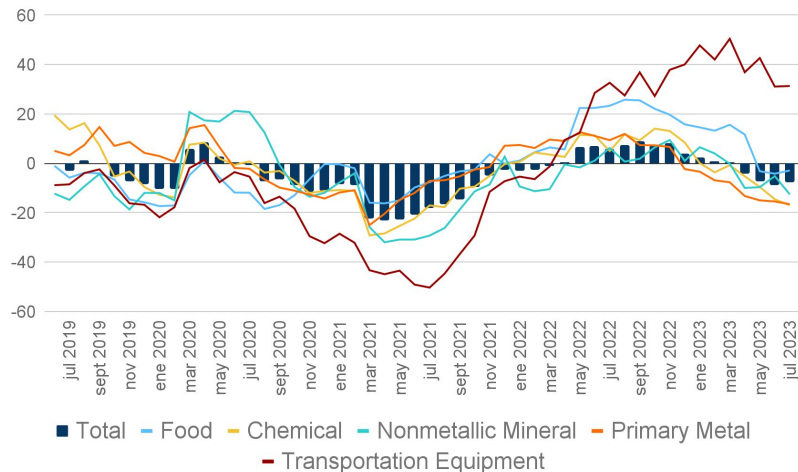
November, 2023

ANNEX 1

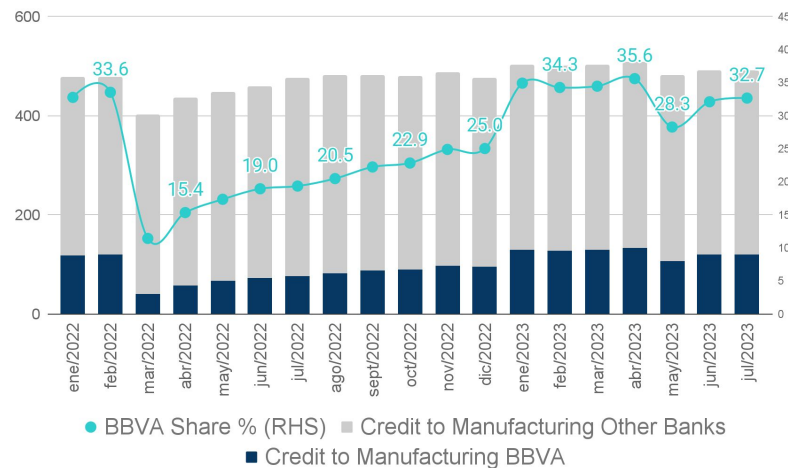
BBVA and manufacturing credit in Mexico

Annex 1: BBVA has significantly increased its share in the Manufacturing credit market, peaking 35.6% at the beginning of 2Q23

CREDIT TO MANUFACTURING & SELECTED SUBSECTORS (ANNUAL % VAR.)



CREDIT TO MANUFACTURING (BILLIONS OF CONSTANT MXN; BBVA SHARE % RHS)

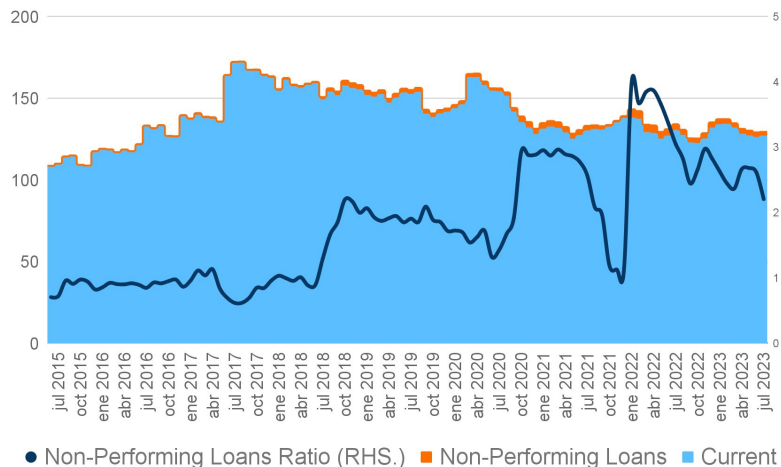


Source: BBVA Research based on Banxico, CNBV

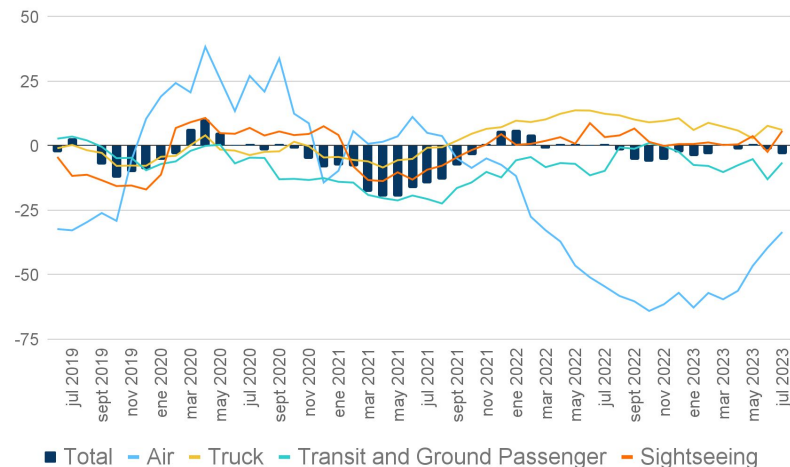
Credit to the Manufacturing sector grew steadily from 2Q22 to 1Q23, averaging an annual variation of 4.9% in real terms. During 2Q23 we observe a slight contraction explained by the drop in credit demand from leading sectors; which represent 60% of the sector. NPL ratio in the Manufacturing sector remains low, an average of 2% during 23H1.

Annex 1: Credit to the Transportation sector slows down with the exception of Truck Transportation and Support Activities

CREDIT TO TRANSPORTATION EQUIPMENT SECTOR
(BILLIONS OF CONSTANT MXN; NPL RATIO % RHS)



CREDIT TO TRANSPORTATION EQUIPMENT BY SUBSECTOR (ANNUAL % VAR.)



Source: BBVA Research based on Banxico dates

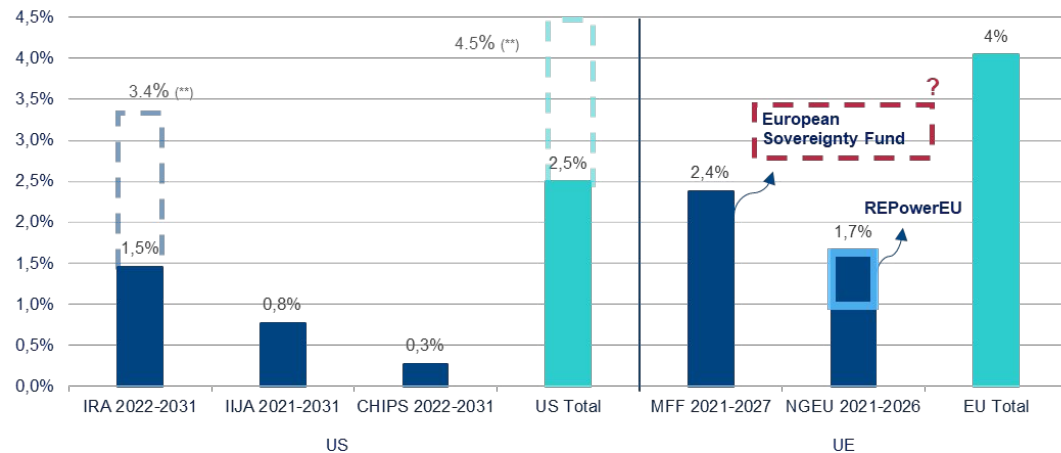
By subsector, Truck Transportation shows positive variations since 21Q3, the rest of the sub sectors remain in negative territory. In particular, the credit to Air Transportation remains in double-digit contraction. Default rate within the sector remain low, closing 2021 at an average of 2.6% (Jan-Jun).

ANNEX 2

US and EU climate policy expenditures

Annex 2: US and EU Climate Policies: Falling Short on Efficient Decarbonization amid Geopolitical Ambitions

CLIMATE POLICIES IN THE US AND THE EU. PUBLIC FUNDING POTENTIALLY AVAILABLE (% GDP at 2018 prices (*))



Source: BBVA Research with data from the European Commission, CBO, Credit Suisse, and IMF.

"US and EU Climate Policies: Falling Short on Efficient Decarbonization amid Geopolitical Ambitions". BBVA Research. March 3, 2023

(*) Total public financing, in local currency at 2018 prices, is divided by local currency GDP in 2018, thus adjusting the amounts for expected inflation. 2018 is the year selected by the European Commission as the reference year, and therefore the US data has been adjusted to be comparable. These figures may differ from those published by other organizations due to methodological differences.

(**) About two-thirds of the funds mobilized by the IRA are not limited, so the 1.5% estimated by the CBO could double according to Credit Suisse's estimates, or even higher as regards [Penn Wharton Budget Model estimations](#) as of April 27, 2023

(***) In the context of the review of the Multiannual Financial Framework 2021-2027, the Commission intends to launch the European Sovereignty Fund before next summer.

- The US and the EU are planning increases of climate public financing, that may end up being even higher in the US given their different instruments and implementation.
- The US's mainly based on tax incentives to attract investments with already committed public spending and clear requirements that give it certainty.
- The EU are still potential projects to be defined and there is a risk that the more immediate funds, those of the member states, may not achieve the desired effects. Europe needs harmonized and effective rules to improve its industrial competitiveness



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