Reshoring in the United States: Features and Prospects

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Abstract

The phenomenon of reshoring, which refers to the relocation of production facilities from a parent company to the country of origin, is a well-known business practice. The current geopolitical climate, characterized by heightened trade tensions between the United States and China, as well as the global pandemic, has significantly spurred the widespread use of reshoring in the global economy. This has also led to a surge in research attention on these processes. The objective of this paper is to analyze the trends of reshoring in the United States, based on the examination of a number of indicators, including the AT Kearney Index, to identify the various forms of reshoring activity of companies. As a result of this research, the author reaches the following conclusions: The dynamics of the US reshoring index suggest that the return of industrial production from China to the US has not yet occurred at a significant scale. At the same time, there is a transfer of production from China, but not in the form of classical reshoring "back to the United States," but to Asian countries proximate to China. The diversification of US industrial imports is becoming increasingly evident. While the share of imports from China is falling, the share of imports from alternative Asian countries (Altasia), including Vietnam, Taiwan, India, Malaysia, Thailand, and others, is rising. At the same

time, the value of US industrial imports from Asian countries, including China, is increasing. In addition to the relocation of US manufacturing imports from China to Latin America, there is clear evidence of nearshoring, the transfer of production capacity to countries in the region that are geographically close to the United States. Mexico, in particular, has emerged as a prominent destination for both US and Chinese firms seeking to relocate production. In the context of reshoring, a growing number of companies are adopting a "right reshoring" model, which involves abandoning the search for the lowest-cost locations in favor of "best cost" locations. These locations prioritize sustainability and supply chain reliability in addition to cost. We believe that the trend towards "right reshoring" will intensify in light of the US economic policy in this area, which aims at more active government intervention to support domestic production under the "Made in the USA" label.

Introduction

In the economics and business literature, reshoring is generally understood as the process of bringing back production facilities that were previously relocated as part of offshoring activities to the country of the parent company. This involves the transfer of certain parts of the production process outside the country of the company's origin. The main reason for companies to move their production abroad is to reduce the costs associated with production factors, especially labor [Volgina 2022].

The phenomenon of reshoring has long been a feature of the global economy. However, it has only recently become a noticeable phenomenon, particularly since the end of the 20th century. This has led to numerous studies and intense debate about the extent and direction of reshoring (see, for example, [De Backer et al. 2016; Vecchi 2017]). The United States initiated the process of reindustrialization, or reshoring, by bringing back the production of manufactured goods from overseas. The intensification of trade tensions between the United States and China has served to accelerate the process of reshoring manufacturing from China (see, for example, [Gereffi 2019; Geneva Business News 2018]).

The global pandemic has brought about significant changes in the development of national economies and the functioning of the global economy as a whole, including the areas of international production and trade. The shutdowns in 2020-2021 have led to significant disruptions in the supply chains of many manufacturing sectors. In response to these challenges, many companies have initiated strategies to bring overseas links in their value chains back to the home country of the parent company's headquarters, increasing the level of reshoring activity. This has stimulated a surge of research interest in explaining firms' reshoring activity in different sectors of the economy as a response to value chain disruption. See, for example, Barbieri et al. (2020) and Chen et al. (2022).

In most cases, these publications were descriptive in nature, which generally precluded the possibility of a statistical assessment of reshoring trends across industries and countries over comparable time periods. At the same time, a number of publications

examined not only the content of reshoring in different countries and regions, but also how it should be measured. The conclusions were quite contradictory. On the one hand, there were those who recognized reshoring as a key contemporary trend in the development of international production. On the other hand, there were those who offered more "soft" assessments of reshoring as one of the possible directions of transformation of the post-crisis economy. The majority of publications focused on the analysis of reshoring trends in the United States, as this was the country where the process of reshoring production from China was most extensive.

The purpose of this paper is to assess reshoring trends in the United States by analyzing a number of indicators, primarily the AT Kearney Reshoring Index, and to identify the different forms of reshoring processes.

The structure of the paper is determined by its logical framework. First, in Section 1, we review various methods of assessing reshoring processes, with particular attention to the possibility of conducting comparative studies based on empirical data from different countries and industries. Section 2 is devoted to the analysis of one of the most widely used approaches to measure US reshoring, namely the AT Kearney index. Section 3 examines the processes of diversification of US industrial imports, with a particular focus on the transfer of production capacity from China to other Asian countries. The potential of Mexico to serve as a conduit for US imports is examined in Section 4. Section 5 discusses the new concept of reshoring as perceived by US executives involved in reshoring. The impact of US economic policy on the reshoring process is briefly discussed in Section 6. The main findings of the study are presented in the conclusion.

1. Methods of evaluation of reshoring processes

We propose identifying a number of methods for evaluating reshoring processes, which it seems possible to classify conditionally as follows: methods based on the analysis of "raw" data; methods based on the analysis of partially processed data; methods based on the processing of statistical data (see Table 1 on p. 8).

Table 1. Evaluation methods for reshoring processes

Methods based on the analysis of "raw" data
Case studies on reshoring described in periodic business literature and supplemented with information from websites, company annual reports, etc.
Collection and systematization of reshoring cases. Projects: Uni-CLUB MoRe (European Monitor of Reshoring), Reshoring Institute, Reshoring Initiative (Reshoring Library), etc.
Methods based on analysis of partially processed data
Surveys of company executives on reshoring activities. Sources: surveys conducted by consulting and research companies Boston Consulting Group, PWC, AT Kearney, etc.
Regional reviews of companies' reshoring activity. Eurostat reviews
Country reviews on reshoring activities of national companies: United States, Germany, Scandinavian countries, etc.
Methods based on statistical data processing
Import intensity indicator: based on the input-output approach

The indicator "*share of imports in domestic demand*"
AT Kearney reshoring index for the US

Source: [Volgina 2022. P. 656].

Let us now examine these methodologies in more detail, paying particular attention to issues of comparability of results.

Historically, the first methodology used to assess or, more accurately, identify reshoring processes was the application of case studies, particularly those related to the reshoring decisions of individual companies. Typically, reshoring cases are documented in periodicals such as the Wall Street Journal, Financial Times, The Economist, Time, Bloomberg, Business Week, and others. These cases describe the relocation of all or part of a company's production to its home country or to neighboring countries. By analyzing the cases, it is possible to assess the motives for reshoring, its orientation, the industry to which it belongs, and other relevant factors. A major drawback of this approach is that the results of different cases of particular companies are not comparable and, therefore, no general conclusions can be drawn. Nevertheless, to date, a significant proportion of research on reshoring is still based on case studies (see, for example, [Moradlou and Backhouse 2016]).

In order to overcome the existing limitations of this approach, a number of projects have been initiated with the aim of collecting and, to some extent, systematizing such cases. To illustrate, we will mention a number of relevant projects. The Uni-CLUB MoRe (European Monitor of Reshoring), the Reshoring Institute, and the Reshoring Initiative are three notable examples of such initiatives.

For example, the Uni-CLUB MoRe project was implemented by a consortium of Italian universities (Bologna, Catania, L'Aquila and Udine) in collaboration with the EU Eurofoundation between 2014 and 2018. The aim of the project was not only to collect data on individual cases of reshoring in Europe, but also to organize them in a regularly updated online database (European Reshoring Monitor).

In the United States, a number of institutions are engaged in the collection of reshoring cases. For example, the Reshoring Institute has been engaged for several years in a project to collect such information in the form of case studies, referred to as "reshoring case studies." The Reshoring Initiative project has resulted in the creation of the Reshoring Library, which contains more than 500 reshoring cases. This resource allows researchers to obtain and interpret information on the reshoring of US companies.

Methods for assessing reshoring based on the analysis of partially processed data aim to minimize the limitations of the approach based on the study and systematization of reshoring cases. These methods include surveys of company executives about reshoring that has occurred, as well as reviews of company reshoring activities at the regional and country levels. CEO surveys are typically conducted by large consulting and research firms such as Boston Consulting Group (BCG), PricewaterhouseCoopers, AT Kearney, and others.

In 2013, the BCG survey found that more than half of the executives surveyed were either planning or considering reshoring. The survey results indicated that reshoring is more prevalent in the United States than in most European countries. In Europe, the average percentage of manufacturing companies actively reshoring was about 4% (ranging from 1% in Eastern European countries to 6% in Belgium or France and up to 9% in Sweden and Ireland). According to numerous researchers, it is difficult to make comparisons between these figures due to different time frames (ranging from two to eight years) and the inclusion of companies that are only considering reshoring in the US surveys [Kinkel et al. 2017. P. 35]. As a result, comparisons of reshoring levels across countries should be interpreted with caution.

A study by PricewaterhouseCoopers estimates that reshoring in the United Kingdom could create approximately 100,000 to 200,000 additional jobs over the next millennium and increase the country's gross domestic product (GDP) by approximately £5 billion to £10 billion (equivalent to 0.3% to 0.6% of GDP) [PricewaterhouseCoopers 2014. P. 6].

In 2015, the consulting firm AT Kearney came to a remarkable conclusion: "Despite the many ifs and buts, it is fair to say that reshoring as a trend is officially dead, at least for now. This is not to say that reshoring has stopped altogether, nor are we suggesting that the predicted wave of reshoring will never happen" [AT Kearney 2015. P. 8].

Regional surveys of companies' reshoring activities are a valuable source of information. Eurostat surveys are the most illustrative example. Eurostat has collected data on European companies' reshoring activity on three occasions: in 2007, 2011, and 2017, for 13, 15, and 16 European countries, respectively. All surveys were carried out on a voluntary basis by national statistical institutes. The main findings of these surveys include an analysis of the factors influencing offshoring and reshoring decisions, the role of countries in international reshoring, the sectoral affiliation of companies, and other related topics.

In addition to regional surveys of firms' reshoring activities, country surveys are an important source of information. These surveys focus primarily on the reshoring activities of US companies but also include data from selected European countries, including Germany, France, the United Kingdom, and the Scandinavian countries. The aforementioned US Reshoring Initiative project not only collects information on reshoring cases but also uses these data to estimate the scale of reshoring activity. The 2016 survey results showed that 59% of the reshoring took place in China, with 13% in other Asian countries, 12% in Eastern Europe, 8% in Western Europe, and 5% in Central and South America [Kinkel et al. 2017. P. 15].

The methods for assessing reshoring discussed above, which are based on the analysis of "raw" and partially processed data, lead to conclusions that are approximate and fragmentary. Moreover, these methods are inadequate for quantifying reshoring processes. A number of approaches, which we describe below, offer the possibility of quantifying reshoring on a comparable basis over time. These approaches use indicators such as global import intensity, the share of imports in domestic demand, and the AT Kearney Reshoring Index.

In this context, M. Timmer and his colleagues [Timmer et al. 2016] present a novel indicator of international production fragmentation, namely "global import intensity."

This indicator is designed to help assess the extent of reshoring. This indicator differs from traditional indicators of vertical specialization (the share of foreign value added in exports) in two important ways. First, it measures the "import intensity" of final products, not just exports. Second, it includes imports at all stages of the global value chain (GVC), not just at the final stage of production.

The results obtained using the global import intensity indicator revealed some interesting insights into the reshoring process. It was shown that after a period of accelerated global fragmentation of commodity production between 2000 and 2008, there was a sharp decline in 2009, followed by a gradual recovery until 2011 and a slight decline thereafter. This may indicate a reorientation or restructuring of global and regional value chains. About half of the increase in import intensity between 2000 and 2008 was due to the fragmentation of international production and changes in demand. Since 2011, both fragmentation and demand-shifting effects have turned negative, each reducing the "import intensity" of world GDP by about 0.5 logarithmic points. Consequently, the decline in global GDP imports by about 50% can be attributed to the fragmentation of international production, suggesting the emergence of reshoring trends after 2011 [Kinkel et al. 2017. P. 40].

An OECD publication [Jaax, Miroudot, and van Lieshout 2023] modifies these conclusions to some extent using OECD.ICIO data. The dataset consists of cross-country input-output tables for the period 2016-2020. The use of a measure of the import intensity of production at constant prices allowed us to separate fluctuations in input prices from changes in trade volumes. A fall in commodity prices reduces the value of trade in intermediate inputs, even if the volume of trade remains unchanged. Constant prices correct for these price effects. A decline in the value of trade in intermediate inputs at constant prices indicates that trade volumes have declined. The authors found that there was a slowdown in the fragmentation of production between 2011 and 2019, but that its level in 2019 was still comparable to that in 2011. At the same time, the authors note that there was no discernible global trend toward reshoring (or nearshoring) prior to the pandemic. This is because the decline in imports of intermediate goods could be accompanied by an increase in the number of domestic stages of value chains.

Nevertheless, signs of reshoring were observed in some countries, notably the United States, where import intensity showed a downward trend between 2014 and 2018. This decline can be interpreted as evidence of reshoring. However, it should be noted that changes in the import intensity indicator may also be the result of the simultaneous effects of other factors, in particular the introduction of new restrictive trade and investment measures following the 2008-2009 financial crisis, as well as in the context of trade tensions between the United States and China, the impact of the COVID-19 pandemic on supply chain disruptions, rising wages in emerging economies and a greater ability to source resources domestically, and the spread of digital technologies and advanced robotics. All of these factors may facilitate the further progress of reshoring processes.

An indicator of reshoring could also be the import share of a country's domestic demand, which should decline as reshoring to that country increases. Empirical evidence

based on the input-output approach suggests that the import share of domestic demand has declined in recent years in some countries, including Japan, Germany, and the United Kingdom. This suggests a growing share of domestic production [De Backer et al. 2016; Timmer et al. 2021]. However, imports from the Asian region, excluding Japan and South Korea, continue to show an upward trend in most countries, despite rising labor costs in China. These results must be interpreted with caution, as one of the limitations of this indicator is the assumption that the entire value of imports was added in the exporting country. In today's globalized economy, this assumption may not always be correct. The Import Share of Domestic Demand indicator is used in the calculation of the AT Kearney Reshoring Index, which tracks the reshoring dynamics of US companies.

2. Dynamics of AT Kearney Reshoring Index

One of the most popular methods of analyzing reshoring processes is the reshoring index calculated by the American firm AT Kearney (see, for example, [AT Kearney 2021, 2022, 2023]). AT Kearney's annual reshoring index tracks whether production is returning to the United States from Asian countries, where significant amounts of industrial production have been moved over the past few decades, creating a large number of jobs.

Several indicators are used to calculate the US Reshoring Index. The first is imports of manufactured goods from 14 Asian low-cost countries (LCC)[1] including China, Taiwan, Malaysia, India, Vietnam, Thailand, Indonesia, Singapore, the Philippines, Bangladesh, Pakistan, Hong Kong, Sri Lanka, and Cambodia (1). The second is the gross domestic output of manufactured goods in the United States (2). The Manufacturing Import Ratio (MIR) is then calculated by dividing (1) by (2).

The US reshoring index is the annual change in the MIR expressed in basis points, where a 1% change is equal to 100 basis points [AT Kearney 2023. P. 2]. In this case, a positive number indicates net reshoring (actually a decrease in the share of imports in US industrial production) compared to the previous year, and a negative number indicates net offshoring. Consider the dynamics of the US reshoring index for the period 2008-2022 (see Table 2 on p. 12).

Table 2. US Manufacturing Import Ratio and Reshoring Index

Year	US Manufacturing Import Ratio (MIR) (%)	US Reshoring Index (basis points)
2008	9.19	
2009	9.50	-35
2010	10.46	-96
2011	10.35	11
2012	10.64	-29
2013	10.64	0
2014	11.22	-57

[1] This is AT Kearney's terminology. In our view, this group includes both low-income countries (e.g. Bangladesh) and high-income countries (e.g. Singapore).

Year	US Manufacturing Import Ratio (MIR) (%)	US Reshoring Index (basis points)
2015	12.34	-112
2016	12.47	-13
2017	12.74	-27
2018	13.06	-32
2019	12.08	98
2020	12.95	-87
2021	14.49	-154*
2022	14.10	39**

Source: [ATKearney 2023].

* Example of calculation of the reshoring index for 2021: 12.95% - 14.49% = -1.54%, i.e. a fall of 154 basis points: the reshoring index is - 154.

** Example of calculation of the reshoring index for 2022: 14.49% - 14.10% = 0.39%, i.e. an increase of 39 basis points: the reshoring index equals 39.

How can we interpret the results based on the dynamics of the reshoring index?

First, a massive return of industrial production from Asia to the US has not yet taken place: this is evidenced by the mostly negative values of the reshoring index over the period 2008–2022, except for a slight increase in 2011 and a sharp increase in 2019 and 2022.

The spike in reshoring in 2019 was mainly driven by the escalating trade tensions between China and the US and the corresponding decline in Chinese imports. However, events in the following two years led to negative scores on the AT Kearney Index.

In 2020 and 2021, the negative reshoring index was mainly related to the lingering effects of the COVID-19 pandemic. From a purely mathematical point of view, this result indicates a resumption of mostly stable, above-average growth in the share of manufacturing imports in US domestic production. At the same time, the 2021 Reshoring Index also reflects the positive momentum of domestic manufacturing activity [AT Kearney 2022. P. 2].

The increase in the 2021 Reshoring Index does not yet indicate a strong movement toward reshoring. However, there are encouraging signs that the reshoring trend will strengthen in the future. For example, the increase in the Index was largely driven by the above-average growth in US industrial production relative to imports of manufactured and semi-manufactured goods from LLC countries. At the same time, the value of US imports from LLC countries increased by 11% year-over-year, topping $1 trillion for the first time in history [Kearney 2023. P. 2].

3. Diversification of US imports of manufactured goods: the role of “alternative” Asian countries

Along with the contradictory dynamics of the reshoring index, there are signs of a shift of US manufacturing imports from China to other low-income Asian countries (see Table 3 on p. 14). This trend appears to be highly sustainable.

Table 3. US imports of manufactured goods, 2018-2021

	2018	2019	2020	2021
Total	2,207 billion dollars	2,169 billion dollars	2,072 billion dollars	2,462 billion dollars
China	24.3%	20.5%	20.7%	20.1%
Other LLC countries	12.6%	14.3%	16.2%	17.4%
Europe	22.8%	24.3%	24.8%	23.7%
Canada	9.8%	9.9%	9.11%	9.4%
Mexico	13.8%	14.7%	14.0%	13.9%
Others	16.7%	16.3%	15.2%	15.7%

Source: [ATKearney 2022. P. 4].

Here, we see that China is gradually and very slowly losing its share in US industrial imports (from 24.3% to 20.1% over the period 2018-2021), Chinese imports are being replaced by supplies from other low-cost Asian countries: the share of these countries increased from 12.6% to 17.4%, respectively, over the same period. At the same time, the shares of other industrial suppliers to the US remained virtually unchanged.

Let us take a closer look at which Asian countries are substituting industrial imports into the United States (see Table 4 on p. 14).

Table 4. US imports of manufactured goods from Asian countries, 2018-2022

	2018	2019	2020	2021	2022
Total	816 billion dollars	757 billion dollars	766 billion dollars	919 billion dollars	1,022 billion dollars
China	535 billion dollars	446 billion dollars	430 billion dollars	491 billion dollars	518 billion dollars
China	65.6%	59.0%	56.2%	53.5%	50.7%
Vietnam	5.8%	8.2%	9.8%	10.6%	11.8%
India	6.2%	7.1%	6.3%	7.5%	7.9%
Taiwan	5.3%	6.9%	7.6%	8.1%	8.7%
Malaysia	4.7%	5.2%	5.6%	5.9%	5.1%
Thailand	3.7%	4.2%	4.7%	5.0%	5.5%
Other countries*	8.5%	9.4%	9.7%	9.5%	10.3%

* Other countries: Philippines, Indonesia, Pakistan, Sri Lanka, Bangladesh, Singapore, and Cambodia
Source: [ATKearney 2022. P. 12].

As Table 4 shows, the decline in China's share of US industrial imports has been "made up" mainly by countries such as Vietnam, Taiwan, India, Malaysia, Thailand, and Vietnam. This means that the relative dependence of the US on industrial imports from China is declining, but in value terms this trend is not so obvious. Moreover, in value terms, US industrial imports from China are higher in 2022 than in 2021. Nevertheless, this allows us to talk about the emerging processes of diversification of US industrial imports. There are

many reasons for this phenomenon. Among them are the ongoing trade tensions between the US and China, which are creating elements of uncertainty in economic relations. Supply disruptions due to COVID-19 have further exacerbated the risk of over-reliance on a single source of industrial imports—China's share was nearly 25% in 2018. But the main reason, in our view, is China's rising labor costs: average monthly wages in China rose 263% from 2007 to 2018 [Morrison 2019]. This continues to drive supplier diversification and encourages companies to actively seek alternative, lower-cost sources.

A new term has appeared in the economic and business literature: Alternative Asia countries (Altasia). This group of countries includes 14 countries, mainly India, Bangladesh, Thailand, Cambodia, Singapore, Malaysia, Indonesia, Brunei, Philippines, Taiwan, South Korea, Laos, Vietnam, Japan [The Economist 2023]. They do not correspond to the group of low-cost Asian countries according to the AT Kearney classification. The Altasia countries do not include China, Pakistan, Hong Kong, and Sri Lanka, but they do include Brunei, South Korea, Laos, and Japan.[2] We believe that the term Altasia is preferable from a terminological point of view because it clearly identifies countries that collectively represent an alternative to US industrial imports from China. In addition, the inclusion of countries such as Taiwan, Hong Kong, and Singapore in the low-income group (LLC) raises some doubts.

In the future, the Altasia group of countries may contribute to the creation of supply chains as an alternative to the Chinese supplier system that the US is trying to abandon. At the same time, the Altasia countries are beginning to build their comparative advantages and competencies in a number of sectors.

Among the Asian countries that are favorable locations for US reshoring from China is Vietnam, which competes with Chinese industrial exports to the United States because of its relatively low labor costs (50% lower than in China). However, there are few examples of reshoring from China to Vietnam, perhaps because the scale of Vietnamese industrial production capacity is not comparable to that of China.

Taiwan is one of the world's largest semiconductor manufacturers [Global Value Chain Development Report 2023. P. 144]; it accounts for about 92% of the production of semiconductors or processors in the most advanced technology of less than 10 nanometers.[3] The Cambodian government has identified automotive and electronics as priority sectors and in 2022 announced plans to expand these sectors over the next three years, investing more than $2 billion and creating about 26,000 jobs [AT Kearney 2023. P. 13]. India is also beginning to emerge as a serious competitor to China due to the availability of massive amounts of cheap labor and the widespread use of English in business, not to mention its serious positions in the global software market.

However, despite the evolving processes of building the comparative advantage of a number of countries in an alternative supply chain to China, the process of

[2] Altasia countries: India, Bangladesh, Thailand, Cambodia, Singapore, Malaysia, Indonesia, Brunei, Philippines, Taiwan, South Korea, Laos, Vietnam, Japan. LLC countries (AT Kearney terminology): China, Taiwan, Malaysia, India, Vietnam, Thailand, Indonesia, Singapore, Philippines, Bangladesh, Pakistan, Hong Kong, Sri Lanka, and Cambodia.

[3] Nanometer is a unit of measurement in the International System of Units (SI) equal to one billionth of a meter, i.e., 10^{-9} meters.

reshoring to Altasia faces major challenges. The most important difficulty is that none of these countries, by itself, can replace the Chinese supply system in the United States. However, if these countries are viewed as a collection of manufacturing facilities with well-established logistics supply chains, there is reason to believe that they will be increasingly able to compete with China in the future.

Over the years, US companies have built optimal supply chain systems and supplier ecosystems in Asia that are very, very difficult to restructure, especially in the short term. Reconfiguring a supplier system involves not only creating new supply chain linkages, but also disrupting existing linkages and interactions. This entails significant transformation costs. The most striking example of an established supplier ecosystem is the consumer electronics industry: it is well developed, and moving further away from China is not currently possible [AT Kearney 2022. P. 3]. A similar picture can be observed in the textile and apparel sector.

4. Nearshoring to Mexico?

While some US companies are leaving China for Latin America, others are trying to shift production to Latin American countries close to the US, most notably Mexico. Some experts believe that in the near future Mexico will become an attractive location for US nearshoring, which is commonly understood as the transfer of offshore production not back to the home country, but to geographically close countries.

Let us consider some facts that may be indicative of the developing processes of nearshoring to Mexico.

In its recent reports, AT Kearney points to some signs of economic recovery in Mexico that indicate a renewed interest in industrial production in the country—a growing demand for skilled labor, land and real estate in northern Mexico. The three key industrial cities in question are Tijuana, Monterrey, and Juarez, which tend to be the first choice for companies considering reshoring [AT Kearney 2023. P. 11].

Along with the economic recovery, it is worth noting the dynamics of industrial imports from Mexico to the United States (in value and percentage terms). The growth of industrial imports from Mexico to the United States confirms this emerging nearshoring trend. As the data in Table 3 show, Mexico has captured a substantial share of the US industrial import market in recent years (about 13-14%). This is comparable to the share of Asian LLC countries (17.4% in 2021) and exceeds the share of Canada (9.4%). In terms of value, US industrial imports from Mexico increase from $304.6 billion to $402.1 billion over the 2018-2022 period. This represents an increase of $402.1 billion over four years. The commodity composition of US industrial imports from Mexico is also beginning to change, with an increasing share of automobiles, medical equipment, pharmaceuticals, furniture manufacturing, and construction materials.

An interesting fact should be highlighted here. The growth of US industrial imports from Mexico is not only due to the activities of US companies. Increasingly, Chinese companies themselves are moving their production facilities from China to Mexico to serve their US customers and to protect themselves from further deterioration in US–China relations. In recent years, an increasing number of Chinese manufacturers have

invested in Mexican facilities to supply the US market with manufactured goods, thus attempting to reshoring production from China itself and avoiding US import tariffs wherever possible. The New York Times, for example, published an article entitled "Why Chinese Companies Are Investing Billions in Mexico" [Goodman 2023], which noted that "Alarmed by transportation chaos and geopolitical strife, exporters from China are opening factories in Mexico to maintain sales in the United States." One of the most promising projects is the Hofusan Industrial Park.

The nearshoring trend could be evidenced by the growing volume of foreign direct investment (FDI) from China into Mexico, aimed at creating new operations that have left or are planning to leave China as part of the reshoring strategy. However, statistical data do not yet support this trend. For example, the cumulative volume of Chinese FDI in Mexico increased very little between 2018 and 2021. The total amount increased from $849 million to $1 billion, with a share of 0.18% of total accumulated investment [OECD 2022]. According to AT Kearney, the growth of industrial exports from Mexico to the United States is not yet fully reflected in Mexico's FDI volume, as we are only seeing the first wave of nearshoring, which has largely utilized the existing manufacturing base through third-party contracts for turnkey solutions [AT Kearney 2023. P. 10].

There is every reason to believe that Mexico could become an effective nearshoring location for US and Chinese companies in the near future. The main factors contributing to the relocation of production from China and possibly other Asian countries to Mexico are relatively low labor costs, the availability of labor in the necessary quantities, the ability to ensure the appropriate quality of the manufactured goods, delivery time and logistics costs. This may only be true for some industries, primarily the automotive industry and to some extent the furniture industry. The most important reason for this, in our opinion, is the strong ties (or ecosystem) of Mexican Tier 1 and Tier 2 suppliers with US automakers that have been established over the past 20 years and are a critical component of automotive production in North America.

5. The new concept of reshoring: the right reshoring at the best cost

Data on the dynamics of the AT Kearney US Reshoring Index over the past few years, despite the complexity of its interpretation, show that the US has not recovered manufacturing jobs in any significant way, i.e. reshoring processes have not been active. The shift of production from China has occurred (this is statistically confirmed), but mostly not in the form of classical reshoring "back" to the US, but to Asian countries close to China and Latin American countries close to the US, in particular Mexico, which have the "right" locational advantages both in terms of production costs and the quality of the product produced.

As noted above, surveys of manufacturing executives are one way to assess reshoring trends. Surveys conducted by AT Kearney in March 2023 show that about 96% of US CEOs are considering reshoring their operations, up from 78% in 2022 [AT Kearney 2023. P. 1]. At the same time, there is reason to believe that a new concept is emerging among CEOs. Sometimes it is called "rightshoring," sometimes "best-cost model."

The essence of the new approach is that the motivation for companies to decide where to source industrial products, including intermediate components,

is changing. For decades, a key motivation for offshoring has been the practice of moving production (and thus jobs) to those international locations where it is possible to maximize profits at the lowest cost. The pandemic and growing trade tensions between China and the US have challenged this concept. More and more companies are abandoning the search for the lowest cost location and moving to the search for "best cost," which takes into account not only cost levels but also the sustainability and reliability of supply chains.

The practical implementation of this least-cost-to-best-cost model can take many forms. US manufacturers are seeking nearer supply options, using the concept of nearshoring, which is beginning to work in the case of Mexico and other Latin American countries. There is also a drive to diversify the supply chain to reduce dependence on a single source or location. This is about reducing relative dependence on Chinese supplies, and this trend is already evident (see Table 3, p. 14). Many US companies are considering a "China plus" strategy, continuing to rely on China for most of their industrial import needs and "cultivating" additional trading partners that can reduce the risk of overdependence on a single source [AT Kearney 2021. P. 5].

Full-scale adoption of the new reshoring model will certainly face a number of obstacles that companies will need to overcome.

For example, moving from a low-cost to a best-cost approach requires addressing the issue of labor productivity growth that could offset cost increases, especially if production is moved directly to the United States. Given the relatively high cost of labor, US manufacturing must increase the productivity and efficiency of its workforce to compete effectively with China, Asia, and Mexico.

The pandemic has exacerbated the problem of finding highly skilled workers. Finding or having an adequate pool of highly skilled workers (talent pool) is another important part of the transition to a best cost model. The solution to this problem can and should be tied to the support and development of schools, colleges, and universities that offer training programs (including funding and benefits, job security, etc.) to prepare students to work in high-tech manufacturing [AT Kearney 2022. P. 9].

The solution to the problem of increasing labor productivity while increasing the demand for highly skilled workers is closely linked to the expansion of industrial automation. There are signs that US companies have begun to invest more in automation and robotics, with the automotive industry leading the way [AT Kearney 2022. P. 4]. A study by the American Manufacturing Institute found that "investments in automation and technology are the top priority for manufacturers, outpacing cost-cutting efforts for the second year in a row" [Manufacturing Institute 2020]. Prioritizing such investments has long been recognized as the key to increasing productivity and making domestic manufacturing more competitive with offshore options.

In recent years, automation no longer requires exceptionally large capital investments. For example, the cost of robots continues to fall. According to the Stanford University Artificial Intelligence Index study, the average price of robotic labor has fallen 46.2% over the past five years (2019-2023). Robot density has increased dramatically around the world, including in the US, where there are now 117 robots per 10,000 workers as a result of an 8% compound annual growth rate since 2016. The market for industrial

automation and control systems is expected to grow to approximately $290 billion by 2030, a CAGR of 9.2% [AT Kearney 2023. P. 9].

6. US economic policy as a response to the complexities of reshoring processes

Difficulties in overcoming the obstacles to implementing the right reshoring model have led to an economic policy agenda aimed at increasing US government action to support domestic manufacturing, particularly in areas deemed strategically important to the national interest. This is evidenced by a number of related initiatives, including the Executive Order on American Supply Chains [The White House 2021]; the Inflation Reduction Act [The White House 2022a]; the Chips and Science Act [The White House 2022b]; the Executive Order on US Investment in Certain National Security Technologies and Products in Countries of Concern [The White House 2023].

In February 2021, President J. Biden signed an Executive Order on America's Supply Chains. The Executive Order emphasizes that as supply chains and the industrial base become increasingly vulnerable—whether due to old forces like underinvestment or new forces like climate change and cyberattacks—it is clear that the US Government must work to address these threats to economic resilience and national security.

In addition to making the supply more sustainable, diversified, and secure, the executive order aims to make the US less dependent on foreign sourcing. This will help insulate the US economy from potential shortages of critical imported components, restore manufacturing capacity, increase domestic demand for domestic products, and create good-paying jobs.

Incentivizing domestic manufacturing, along with investments in critical infrastructure and advanced technologies in partnership with world-class, leading US universities, as well as increasing demand for the "Made in America" brand, can help reinforce the trend of reshoring manufacturing to the US.

The Inflation Reduction Act, approved by Congress and signed into law by President Biden in August 2022, combines the goals of reducing domestic inflation, particularly that caused by global energy issues, and combating climate change. The Act provides incentives to increase energy production and reduce national carbon dioxide emissions, which is expected to result in lower energy costs for US consumers. The Act also provides tax incentives for domestic manufacturers of electric vehicles and electric vehicle batteries, which are currently largely imported. Tax credits will be available to domestic manufacturers if they meet the "Made in the USA" criteria. Currently, the content requirement for Made in the USA tax credits is 60%. To incentivize domestic production, this must increase to 65% in 2024 and to 75% thereafter.

The CHIPS and Science Act, signed into law by President Biden in August 2022, is closely tied to the Inflation Reduction Act. The Act is designed to attract investment in domestic semiconductor manufacturing to increase competitiveness and innovation. The US has an ambitious goal to "bring back" the semiconductor manufacturing ecosystem to

the US and mitigate future supply chain disruptions. Historically, the US accounted for 37% of the global semiconductor market, a share that has now fallen to 12%.

In August 2023, the President signed an Executive Order on Addressing United States Investments in Certain National Security Technologies and Products in Countries of Concern. The order authorizes the US Treasury Secretary to prohibit or restrict US investment in foreign companies in three sectors: semiconductors and microelectronics, quantum cryptography, and certain artificial intelligence systems. The measure would apply to private equity, venture capital, joint ventures, and greenfield investments. Technically, the new rules will apply to investments in companies in a number of countries (US adversaries), but in practice will only affect work with the PRC. The announced restrictions will take effect in 2024 at the earliest and will not apply to earlier investments from the US. It is still difficult to talk about the results of such a decree, but the main direction is very clear—to prevent the emergence of new competitors from China in the field of advanced technologies.

These legislative incentives may reinforce the trend toward domestic manufacturing and reshoring in the US semiconductor sector, but US manufacturers will face fierce competition from Asian manufacturers that have built an effective global supply ecosystem in the sector. According to Goldman Sachs Research, it costs 44% more to build a semiconductor plant in the United States than in Taiwan, which is currently the leading location for advanced computer chips [AT Kearney 2023. P. 8].

7. Conclusion

Data on the dynamics of the AT Kearney Reshoring Index over the past few years indicate that reshoring processes have not been active in the US. There has been a shift of production from China, but mainly not in the form of classic reshoring "back" to the US, but reshoring to Asian countries near China.

This has led to a decline in China's share of US industrial imports, which has been compensated mainly by so-called Altasia countries, especially Vietnam, Taiwan, India, Malaysia, Thailand, and a few others. This diversification of US industrial imports does not mean that China is losing its importance. In high-tech industries such as automobiles and electronics, China's position is still very strong and is unlikely to be significantly shaken in the short or even medium term (within 3-5 years).

This is because over the years China has developed optimal supplier ecosystems that are very difficult to restructure, as reconfiguring these systems not only involves creating new production and logistics linkages, but also destroying existing linkages and interactions. This results in significant transformation costs. In addition, none of the Altasia countries individually can replace the Chinese supplier system.

In addition to the reshoring of production from China to neighboring Asian countries, processes of nearshoring to Latin American countries close to the United States, especially Mexico, are also developing. There is every reason to believe that the nearshoring trends will be sustainable, given the fact that these processes involve not only US companies, but also Chinese companies, which are beginning to invest in Mexican companies to supply the US market with manufactured goods, thus attempting to reshoring production from China on their own, as well as circumventing US import

tariffs if possible.

These reshoring trends suggest that companies are gradually developing a new model of "right reshoring" that considers not only low-cost production when locating international production, but also the sustainability and reliability of cross-border supply chains as a whole. The pandemic and growing trade tensions between China and the US have played a significant role. Understanding the trends in international fragmented production, including reshoring and nearshoring trends, is important for economic policy in the US and other countries involved in international production networks.

This study shows that there are no "ideal" indicators or methods for assessing reshoring trends. We believe that further research in this area will develop along several lines. First, a sectoral approach will be increasingly used, as it is clear that reshoring evolves differently in the context of different industries, in particular the high-tech sectors as well as the services sector. Second, additional indicators that could contribute to the understanding of reshoring trends will be increasingly used, such as the ratio of domestic to foreign stages of supply chains in terms of number and value added, the number of foreign affiliates of multinational enterprises, and others. Third, special attention will be paid to country studies, as so-called "global" trends often hide the real processes of international production reorganization.

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