Università
Ca'Foscari
Venezia

Master's Degree
programme in

Global Development and
Entrepreneurship

Final Thesis

The Determinants and Impact of Foreign Direct Investments. An analysis of Hungary's FDI inflow.

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Academic Year
2021 / 2022

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INTRODUCTION

Multinational corporations play a vital role in the global economy; they are responsible for almost one-third of global production and around one-fourth of global employment (OECD, 2018). Foreign Direct Investments (FDI) occur when a multinational enterprise from one country invests in another nation's assets or take an ownership stake in its companies. Multinational firms' presence and activities in the country hosting them have a multiplicity of effects of the economic, social, political, cultural and environmental types. Countries indeed compete to attract these kinds of investments: since they are generally accompanied by the transfer of valuable technologies, skills, and financial resources, contributing, therefore, to national wealth. According to the OECD, FDI inflows are a pivotal driver of international economic integration. In point of fact, when addressed with the appropriate policy framework, they allow financial stability, stimulate economic growth and improve the general well-being of societies (OECD, 2008).

The objective of this work is to provide an exhaustive and consistent analysis of the FDI phenomenon, with a particular focus on the national situation of Hungary. In particular, in the first chapter, after analysing the tight connection between multinational firms and FDI, we will identify the main determinants of FDI location. This is useful to pinpoint the reasons why some countries receive bulkier amounts of FDIs while others have difficulty attracting them. In addition, it also suggests what may be the most appropriate policies a government should adopt and encourage in order to continue its development path. Then, we will review the most recent global trends in FDI regarding the entry methodologies (whether greenfield investment or mergers & acquisitions deal), the countries of origin, as well as the destination economies. Subsequently, we will extensively describe the expected effects of FDI inflows in host countries. The impact of FDIs in the host economy is a complex and intricate net of interconnected effects, where we will distinguish them between direct and indirect. We will then illustrate the expected effects on competition, the labour market and education that an inflow of FDIs may generate.

In 2022, I had the opportunity to do an internship experience in a consulting company named ITL Group, located in Budapest, Hungary. The firm provides all the services and support foreign investors need in order to implement their projects in the country.

Therefore, I have chosen to investigate further the FDI dynamics of this particular nation, Hungary. Indeed, the second chapter presents a comprehensive investigation into Hungary's inward FDI flows. First, we will gain a general perspective of the country under consideration, and thus we will look at Hungary's main macroeconomic indicators. Then, we will highlight the determinants that attract or discourage the inflow of FDI into the Hungarian economy. From a public policy point of view, this should be useful to understand which elements most appeal to foreign investors and what areas instead present more risks and leave thus room for improvement. Successively, we will retrace Hungary's FDI inflow dynamics over the years. In doing this, we will also seek to understand the factors behind the evolution of the trend. In addition, we will study the major partner countries of Hungary, namely, where most of the FDI arriving in the country hails from. Eventually, we will enrich the inquiry by analysing the sectorial nature of FDI allocated in Hungary, that is, what domestic sectors attract most of the investment flux and how this has changed over the years.

Lastly, the third chapter of the thesis will concern the examination of the impact of FDI inflows in Hungary. The outcome of this reasoning will help us to interpret Hungary's development path and whether and in what measure the inflow of FDI contributed to it. In doing so, we will first seek to understand whether the FDI inflows have succeeded in supporting national economic growth. We will study the relationship between the FDI trend and the Hungarian GDP dynamics. Secondly, we will inspect Hungary's progress of export and import figures, as well as how varied its trade openness over the years. We will examine also the best-performing sectors and most exported products. This will help us to understand how the presence of foreign-owned affiliates in the country, directly and indirectly, affected Hungary's export and import performances. Then, we will complete the impact analysis by confronting the FDI variations with the progression of Hungary's Economic Complexity Index. The concept was first developed by Hausmann and Hidalgo in the article "The building blocks of economic complexity", published in 2009. The Economic Complexity Index (ECI) consists of a comprehensive measure of the productive capabilities of national economic systems. Economic complexity depends upon the factors of diversification and ubiquity. These concepts, that will be explicitly defined in the chapter, refer to the variety of products exported by a country and the number of countries exporting those products. For sake of precision, we will present the ranking of countries based on their complexity computed by two different sources: The Observatory of Economic Complexity and The Atlas of Economic Complexity, and we

will find out which position Hungary holds according to the two organizations. Economic complexity is, on one hand, a key determinant in the attraction of FDI, indeed, the presence of competencies and know-how draw the attention of multinational enterprises. On the other hand, inflows of FDI may, in turn, increase the economic complexity of the host country. Moreover, economic complexity, is positively correlated with GDP per capita, while negatively correlated with the Gini index. Therefore, discovering the connection between foreign direct investments and ECI is paramount to understanding whether Hungary's inward FDI contributed and will contribute to national economic growth. Finally, we will review the main incentives the Hungarian Government provide for attracting FDI. They work by reducing the risk or increasing the return on the investment. The various incentives available, as we will see, have different aid intensities and can be regional or non-regional support measures, or also deriving from EU funds. The analysis of their functioning is key since, despite their disputed effectiveness, scholars agree that incentives can be crucial in the localization choice between similarly attractive nations or areas.

CHAPTER 1

FOREIGN DIRECT INVESTMENTS: DETERMINANTS AND EFFECTS

1.1 Multinational enterprises and FDI

Multinational enterprises (MNE) are among the major actors of globalized economies. According to the OECD, almost one-third of global production is done by MNEs. MNEs also account for half of the global exports, around one-third of world GDP and about one-fourth of employment (OECD, 2018). In 2020, 135.450 multinational enterprise groups were operating in the EU-EFTA, employing over 42 million people. In Europe, around one in five people worked for a transnational group of companies (Eurostat). Worldwide employment by U.S. multinational enterprises (MNEs) in 2019 accounted for 43.9 million workers (US BEA).

The concept of the modern multinational, or transnational, company (MNE or TNC) may be retraced back to the decades following the Second World War (WWII). However, its very first conception is rooted further back in time. The Medici Bank, indeed, during the fifteenth century Florence, can be considered an example of a primordial transborder company. Latterly, during the seventeenth and eighteenth centuries, the East India Company, the Hudson Bay Company and the Royal African Company may be recognized as the forerunners of the modern notion of Multinational Enterprise. These organizations were, however, endorsed by governments and appointed to perform trading operations with the colonies. These facts make them different from modern TNCs. Steven Hymer considered the father of International Business, reflects on the lack of organizational ability of these early organizations, he sees the early joint stock companies settled from the mid-nineteenth century onwards as the real antecedents of modern multinational enterprises. In this regard, he writes:

«But neither these firms, nor the large mining and plantation enterprises in the production sector, were the forerunners of the multinational corporations. They were like dinosaurs, large in bulk, but small in brain, feeding on the lush vegetation of the new worlds (the planters and miners in America were literally Tyrannosaurus rex). The activities of these

international merchants, planters and miners laid the groundwork for the Industrial Revolution by concentrating capital in the metropolitan centre, but the driving force came from the small scale capitalist enterprises in manufacturing … It is in the small workshops, organized by the newly emerging capitalist class, that the forerunners of the modern corporation are to be found. The strength of this new form of business enterprise lay in its power and ability to reap the benefits of cooperation and division of labour. » (Hymer, 1971: 115–16).

Despite the above-stated outstanding results, MNEs have always gathered contrasting sentiments. Sometimes they are considered great carriers of wealth, knowledge, and business opportunities, while other times, they are labelled as dangerous threats to the local wealth and identity. This ambiguous perception of MNE might mostly stem from the emotional attitude of the public toward entities with no specific national identity rather than forming an accurate economic analysis.

According to G.B. Navaretti, multinational firms are those companies that hold a significant shareholding (generally 50% or more) in another company operating in a foreign country. These businesses are relatively large and have market power and bargaining power in the political arena, especially in smaller developing countries. They are global players that can circumvent national regulations and policies more easily than national firms. They are very mobile, able to transfer activities between their plants at relatively low costs and therefore cancel the benefits deriving from their presence as quickly as they generate them. They engage in the mass production of standardized products, jeopardizing the variety of domestic products.

However, these same characteristics of MNEs also explain why different countries compete hard to attract them. They indeed often bring in valuable technologies, skills, and financial resources. They quickly take advantage of new economic opportunities, thus contributing to national wealth. They are bound by international standards and market competition and often offer better working conditions and product quality than domestic companies. Worth noting that MNEs aren't just large companies like Microsoft or Coca-Cola. Many small and medium-sized enterprises with limited power in the national and international markets have one or more foreign subsidiaries. Investing abroad and thus becoming an MNE is an accessible strategy followed by many types of companies.

The country where the MNE is legally registered is considered the home country, that is, also where the main headquarters are located. Host countries are, on the contrary, the foreign countries where the parent company invests and owns affiliates or subsidiaries.

MNEs are indeed a key component of modern economies, and there is no empirical evidence that their actions generally have fewer positive effects on the economies of origin and destination than the actions of domestic firms.

The activities of MNEs can be measured with company data, such as the number of employees and the turnover. These data are unfortunately not widely available, often, there are many gaps in the datasets, and they are not standardized across different nations. For these reasons, researchers frequently have to employ data on foreign direct investment (FDI) flows instead. Data about FDI indeed can be found in the balance of payments statistics and are available for various years, by sector of activity and for several nations of origin or destination.

Foreign investments can be direct foreign investments (FDI) or non-direct foreign investments (portfolio investments). The latter occurs when companies, financial institutions or individuals buy stakes in companies on a foreign stock exchange. A direct foreign investment, on the contrary, according to the OECD, reflects the objective of establishing a lasting interest by a resident enterprise in one economy (direct investor) in an enterprise (direct investment enterprise) that is resident in an economy other than that of the direct investor. The lasting interest consists in the existence of a long-term relationship between the direct investor and the direct investment enterprise and a significant degree of influence on the management of the enterprise (OECD). The direct or indirect ownership of at least 10% of the ordinary shares (voting power) of a firm resident in one country by an investor resident in another economy makes such a long-term relationship evident.

FDIs differ from portfolio investments, which can be easily divested and do not have a significant influence on the management of the company. Hence, to create, acquire or expand a foreign subsidiary, multinational companies carry out FDIs. The total direct capital owned by non-residents in a particular country each year constitutes the stock of FDI.

Production in a foreign country can be performed in two ways. Through a greenfield investment, namely when companies invest in new physical plants and production assets.

Alternatively, companies can develop through mergers and acquisitions (M&A), that is, by purchasing existing assets in a foreign country or by merging with a foreign company. There are some important differences between these two cases, but they both have in common the fact that the company's production activities become more dispersed in a territorial sense.

FDI statistics include direct investment positions (equity and debt), direct investment income flows (distributed earnings, reinvested earnings, interest income), and direct investment financial flows (equity and debt).

One critical distinction has to be made between horizontal and vertical foreign direct investments. These two kinds of FDI differ in terms of the purpose MNEs plan to pursue.

Horizontal FDI occurs when foreign subsidiaries produce exactly the same goods produced by the parent company (in the case of single-product firms) or specific varieties of the same product (in the case of multi-product firms). This kind of FDI flows mainly takes place between developed countries and explains the expansion of intra-industrial trade. In the case of horizontal FDI, the choice to produce abroad can be linked above all to the possibility of reducing the costs of accessing the foreign market (market-seeking), or of better adapting production to the tastes and preferences of local demand, exploiting thus the proximity of production to the markets of consumption. However, the duplication of certain activities implies the giving up of some plant-level economies of scale.

Vertical FDI occurs when certain stages of production are transferred to subsidiaries operating abroad. They involve fragmentation of the production process, rather than carrying out an integrated production in the country of origin. They are favoured by the different cost factors of production (capital and labour) in the various countries and by the different intensities of the same factors in the various production phases. Conversely, they are hindered by high commercial costs. This cost-saving strategy aims thus to acquire additional market share. A possible drawback of this scenario consists of a loss of technical efficiency deriving from a renouncement of integration economies. This includes the costs of packaging and transport, costs related to the time taken for shipping, import duties on goods that cross national borders, and a whole series of inconveniences related to the management of geographically separate activities.

In summary, the main costs of horizontal FDI are the loss of economies of scale at the plant level and those of vertical FDI from the renunciation of integration economies.

Table 1: Costs and Benefits of Horizontal and Vertical FDIs

	HORIZONTAL FDI	VERTICAL FDI
COSTS	• Loss of plant-level economies of scale	• Loss of integration economies • Higher commercial costs
BENEFITS	• Access to the foreign market • Strategic advantages	• Lower costs of factors of production • Possibility to gain higher market share

1.2 Determinants of FDI localization

MNEs' operations are dispersed in a non-homogenous scheme across various locations according to an everchanging distribution pattern. As previously explained, countries compete to attract multinational firms' investments since they bring in valuable resources such as technologies, skills, and financial capital. Then why do some countries attract more foreign direct investments than others? The answer to this question will also help to have a better understanding of how some developing countries have been able to grow more rapidly thanks to their successful integration into the world economy, while others appear to have been marginalized.

According to the empirical analysis, gravitational models can explain a large part of FDI flows between countries (Ekholm 1998; Shatz 2003). These models indeed highlight the relationship between bilateral FDI flows and some specific characteristics of the two countries, such as economic size (GDP, population), geographical distance, and a set of other factors capturing proximity/similarity (common language, common currency, colonial ties, legal system) and institutional characteristics (literacy, religion). Therefore, a large share of FDIs takes place between neighbouring countries offering large markets. Examples of such a kind of investment are intra-EU FDIs, US investments in Mexico and Canada, EU investments in Central and Eastern Europe, and Japanese investments in other Asian countries. The gravity relationship provides a helpful benchmark, but it is also essential to identify the specific determinants of FDI.

In general, we can identify two main reasons why MNEs perform a certain FDI: to directly serve a market through a controlled affiliate (horizontal FDI) or to take advantage of low-cost factors in specific stages of the production process (vertical FDI). Both circumstances imply a trade-off. The reduction in commercial costs through horizontal FDIs entails giving up economies of scale, as production is distributed among different plants. The exploitation of international price differences in factors of production through vertical FDI involves costs originating from the geographical production disintegration. In this case, the elements that have to be considered in the trade-off can be specific to the company or sector (for example, the importance of economies of scale); or also related to specific country characteristics (for example, market size or factor prices). It is, indeed, the interaction between the characteristics of the company and the country that is of crucial importance.

Table 2: Determinants of FDIs: theoretical predictions.

DETERMINANTI	PREDIZIONE PER TIPO DI INVESTIMENTO	
	ORIZZONTALE	VERTICALE
DETERMINANTI RELATIVE ALLE CARATTERISTICHE DELLE IMPRESE O DEI SETTORI		
Economie di scala a livello di impresa	+	+
Economie di scala a livello di impianto	−	?
Costi del commercio internazionale specifici del prodotto	+	−
Costi connessi alla disintegrazione di fasi della produzione	−	−
Differenze nell'intensità dei fattori tra fasi della produzione	?	+
DETERMINANTI RELATIVE ALLE CARATTERISTICHE DEI PAESI		
Costi commercio internazionale (distanza, barriere commerciali, ecc.)	+	−
Dimensioni del mercato	+	?
Differenziali nei costi dei fattori	?	+

Source: Navaretti, B.G. and Venables A.J. (2006), Le Multinazionali nell'economia mondiale, Il Mulino, Bologna.

The ability to successfully attract FDIs and the incentives of the MNEs to establish in a country rather than in a different one is the result of a multitude of interconnected factors and, thus, moderately hard to disentangle.

Overall, according to the classification made by Dunning (1981), we can distinguish between determinants that have to do with the countries' characteristics (country-specific), determinants related to specific characteristics of the company (firm-specific) or of the sector (sector-specific).

Country-specific determinants are the relative cost of factors of production as well as the tariff structure and tax and legal system of the foreign country. As for industry-specific determinants, they include the relative use of factors (capital intensity, skilled labour, R&D and usage of natural resources), economies of scale, product mobility and size of the sector. These determinants will affect the volume of foreign production through their effect on the relative cost of production. Firm-specific characteristics are all those attributes that differentiate companies within a given sector. They may then consider patented products, product differentiation and accumulated know-how on the supply side.

Let's now analyse the following particular determinants distinguishing them between economic and political determinants.

a) Economic determinants

The size of the host country's market plays an essential role in the decisional process of MNEs. This variable should be particularly crucial for companies considering a horizontal FDI, thus seeking to serve a foreign market. Indeed, a country that offers a considerably large market in terms of size presents the opportunity to better take advantage of economies of scale and thus reduce the fixed costs per unit of product. The market size may be decisive also for vertical FDIs as larger countries can provide greater opportunities to benefit from external economies of scale and spillover effects. This is valid especially for high-tech industries and for those which are relatively labour intensive.

Another localization factor related to the host country's market is its growth rate. A high rate of economic growth indeed represents a proxy of the potential development of a nation. Therefore, we can derive that those countries with higher expected growth rates will tend to attract higher levels of FDI.

Companies may also decide to locate their investments in certain countries due to agglomeration effects. They indeed try to reap the benefits deriving from the geographical concentration of economic activities. Three reasons explain the emergence of such agglomeration effects:

- the existence of knowledge spillovers between businesses;

- the greater availability of specialized production factors;

- the presence of opportunities deriving from "upstream" and "downstream" links with supplier and client companies.

If these three conditions hold, the firms can increase their efficiency by locating close to other businesses, creating industrial agglomerations. By virtue of these effects, the spatial concentration of economic activities causes investments located in the area to have a higher rate of return (Reganati, 2002). According to other researchers (DeCoster and Strange, 1993; Head, Ries and Swenson, 2000), when companies are uncertain about where to invest, they may find it rational to imitate each other's investment decisions.

A further potential factor in the localization of FDI is represented by the stock of public infrastructures (roads, highways, ports and telecommunications networks) present in the country. It has been shown (Aschauer, 1989) that a greater endowment of infrastructures increases the productivity of investments and reduces production costs. It was pointed out that the weight that investors assign to the endowment of infrastructure depends on the specific characteristics of the sectors in which they invest. In particular, firms wishing to export most of their production may be less interested in infrastructure than firms aspiring to serve the local market.

Again, also the geographical distance between the different parts of a company's activities is relevant for investment decisions. Producing in a foreign country is a way to circumvent the commercial costs of international trade that must be incurred to supply distant markets. But the geographical distance of a market also increases the cost of supplying production units with imported inputs and can create communication and management issues. Generally, we can infer that while a horizontal type FDI oriented to the local market will tend to increase as the distance between the domestic and foreign markets increases, a vertical export-oriented FDI may be discouraged by the presence of high transport costs.

One of the most crucial factors affecting the FDIs localization decisions is the prices of factors. In determining FDI flows, the most important cost of production is the one of labour. Labour costs are expected to have a positive effect on FDIs, especially those of the vertical type, whose main motivation is that of seeking greater production efficiency. However, we have to consider that while the availability of low-cost inputs, such as labour, can work to attract foreign investors, this may not be sufficient in the case workers are unskilled and unreliable and the local market is small. Therefore, MNEs do not simply

consider the actual average wages that a certain geographic location presents; they also take into account local workers' productivity. From this perspective, the appropriate index MNEs examine is the unit labour cost (ULC), which indicates the average cost of labour per unit of output produced.

b) Political determinants

The impact of a country's international openness on FDI flows depends on the type of foreign investment the MNE is planning to implement. In the case of horizontal FDI, oriented thus to the local market, a reduction of trade barriers and, therefore, greater international openness may endanger FDI inward flows. This is because foreign international firms serving the local market with on-site production may find it cheaper to export their products to the destination country. However, it should be noted also that further measures of general liberalization, may lead to an improvement in the business climate and long-term economic growth expectations for the country. Conversely, in the case of vertical FDIs, where there is an exchange of intermediate and finished products from and towards the host country, a more open trade regime can be expected to increase the trade volume.

Multinational companies aim to maximize their global profit, therefore, it follows that lower tax rates should encourage FDI flows directed towards a given country. However, nominal corporate tax rates do not provide the whole picture. Location decisions are based on the combination of taxation and public goods provisions in host countries (Tiebout, 1956). Taxes paid by MNEs, indeed, do not depend solely on statutory rates, rather are also determined by particular aspects of the fiscal system of the host country and by the possibility that MNEs transfer profits between subsidiaries through transfer pricing. Despite this, empirical studies (Hines, 1999) suggest an elasticity of -0.6 of FDI with respect to taxes. MNEs are sensitive to the different tax measures of host countries, since higher tax rates reduce after-tax returns, thus reducing incentives to commit investment funds (Gordon and Hines, 2002). Other researchers (Devereux e Griffith, 1998) enriched the reasoning underlying that fiscal differentials mostly affect the location choice of the investment, rather than the decision of whether to implement it. A synthetic index often used to indicate the actual joint effect of the tax system on the companies operating in a country is the effective tax rate. In particular, the effective average tax rate (EATR) indicates the average rate at which the MNE's pre-tax profits are taxed. In other words, it

reveals how the country's fiscal system affects the overall profitability resulting from the location of a project in that country. The effective marginal tax rate (EMTR) instead measures the tax rate of marginal income. Therefore, for an MNE that has to decide where to locate its investment, the relevant index is the EATR. However, when deciding on the level of investment in a given location, the EMTR is also critical. As clearly emerge from this discussion, decisions of MNEs upon investment projects are rarely affected by single economic policy measures, it is instead the national overall conditions that characterize the economic context of a country that has a considerable influence. For this reason, in order to attract MNEs, many countries define public policies providing generous incentives such as direct subsidies or tax discounts, thus reducing the fixed and operating costs of setting up a subsidiary. It is worth noting, however, that the incentives given to groups of sectors selected in advance can lead to pressure from other sectors to receive similar benefits. Over time, the proliferation of such incentive systems can lead to a tax system so complex as to determine tax avoidance and evasion phenomena. Therefore, if, on the one hand, properly designed incentives could attract FDIs, on the other hand, the administrative and institutional weakness and the complexity of the incentive structure could create risks of distorting effects and limit the effectiveness of these tools.

Lastly, an efficient legal system and favourable business and investment climate reduce the additional costs MNEs have to support to operate in a foreign country and therefore have a positive impact on all types of FDI. The costs considered include factors such as:

- regulatory, bureaucratic and legal obstacles;

- the rules relating to property rights;

- the enforceability of contracts;

- the labour market regulations;

- conduct and content requirements local minimum.

For example, a legal system with adequate intellectual property (IP) protection can reassure companies in the use of independent foreign suppliers, while in the absence of such a sufficient level of protection the company could decide to keep the business within it. In general, it can be said that the greater the weight of the bureaucracy and the more restrictive the conduct requirements, the less attractive will be the host country for all types of FDIs.

In summary, we can predict where MNEs would locate their abroad operations in case of horizontal and vertical FDI. Concerning horizontal FDIs, MNEs will tend to select locations with good access to large markets able to allow the company to cover fixed costs at the plant level. Therefore, they will be attracted by countries with large high-income populations, geographically close and with low-cost access to large markets. Conversely, vertical FDIs will be implemented in countries with a lower cost of factors. The costs of international trade are particularly important for vertical FDIs as products have to cross national borders several times in different stages of the production process. Locations with low labour costs, good transport and commercial connections with the nation where the mother company's other activities are located will therefore be favoured. What has just been stated explains the presence of such activities in Mexico and Eastern Europe.

1.3 FDI global trends

As shown in Figure 1, global foreign direct investment flows in 2021 were $1.58 trillion, 64 per cent more than the 2020 level (first year of the COVID-19 pandemic) which was less than $1 trillion. FDI showed relevant momentum mainly due to the booming merger and acquisition (M&A) markets and rapid growth in international project finance caused by loose financing conditions and considerable infrastructure stimulus packages. Nevertheless, the global investment climate changed dramatically in 2022 due to the outbreak of the war in Ukraine, which hit while the world was still recovering from the pandemic. The war causes consequences well beyond its direct victims, causing a "triple F" crisis: food, fuel and finance. Inflation in fuel and primary commodities is worsening public and private finances.

As a result, the increased investor uncertainty and risk aversion may put considerable downward pressure on the global FDI flows in 2022. Again, the war in Ukraine with its alarmin direct and indirect consequences is not the sole factor cooling FDI prospects for 2022, indeed, the flareup of the COVID-19 pandemic in China, causing new local lockdowns and restrictions, may disrupt global value chains (GVCs), further jeopardizing new greenfield investment in GVC-intensive industries.

Figure 1: FDI inflows, global and by economic grouping, 2008-2021 (Billions of dollars and per cent)
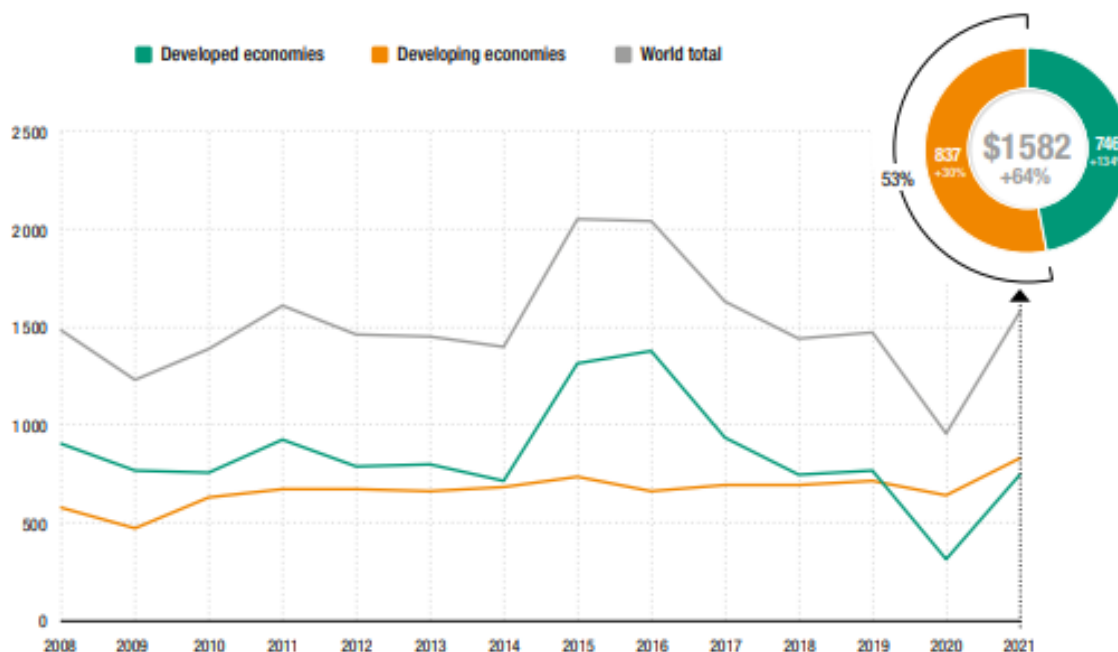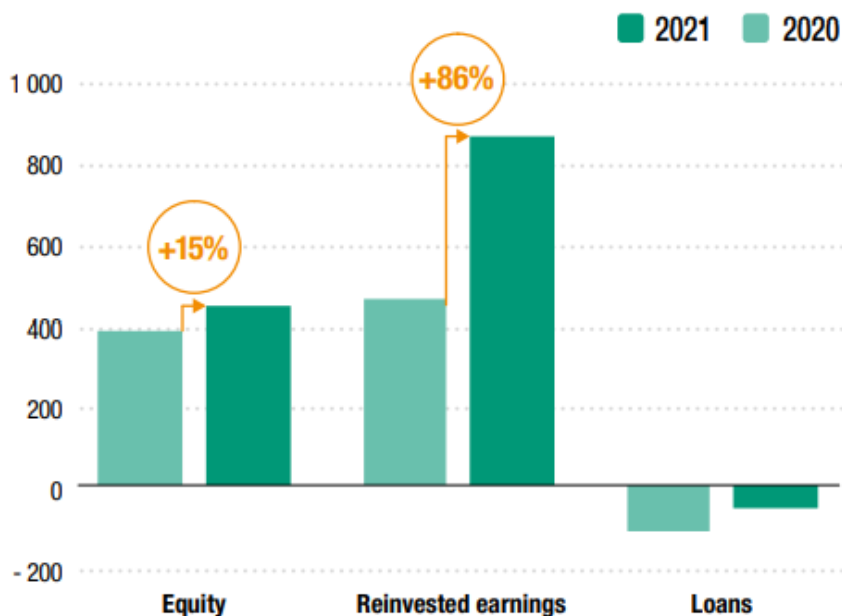

Source: UNCTAD (2022), *World Investment Report 2022*.

For the above-explained reasons, according to UNCTAD projections, the 2021 growth trend is unlikely to persist. In 2022 global FDI flows will likely decrease or, at best, remain stable. Indeed, data about new project activity is already showing signs of increased risk aversion among investors: preliminary data for Q1 2022 show greenfield project numbers down 21 per cent and international project finance deals down 4 per cent (UNCTAD).

As visible in Figure 1, the significant FDI upswing of 2021 brought growth in all regions. It was the developed countries, however, the ones showing a steeper positive trajectory, accounting for almost three-quarters of the global increase and reaching $746 billion, more than double the 2020 level. As shown in Figure 2, the boost was mainly due to M&A transactions and high levels of retained earnings of multinational enterprises (MNEs). Those, in turn, led to sizeable intra-firm financial flows and major FDI fluctuations in large investment hubs (UNCTAD).

Figure 2: Global FDI inflows, by components, 2020 and 2021 (Billions of dollars and per cent)

Source: UNCTAD (2022), *World Investment Report 2022*.

The high levels of retained earnings in 2021 were the result of MNEs' profits. Indeed, the profitability of the largest 5,000 MNEs doubled to more than 8 per cent of sales. Profits were high especially in developed countries, because of the release of pent-up demand, low financing costs and significant government support.

Figure 3: Profitability and profit levels of MNEs, 2010-2021 (Billions of dollars and per cent).
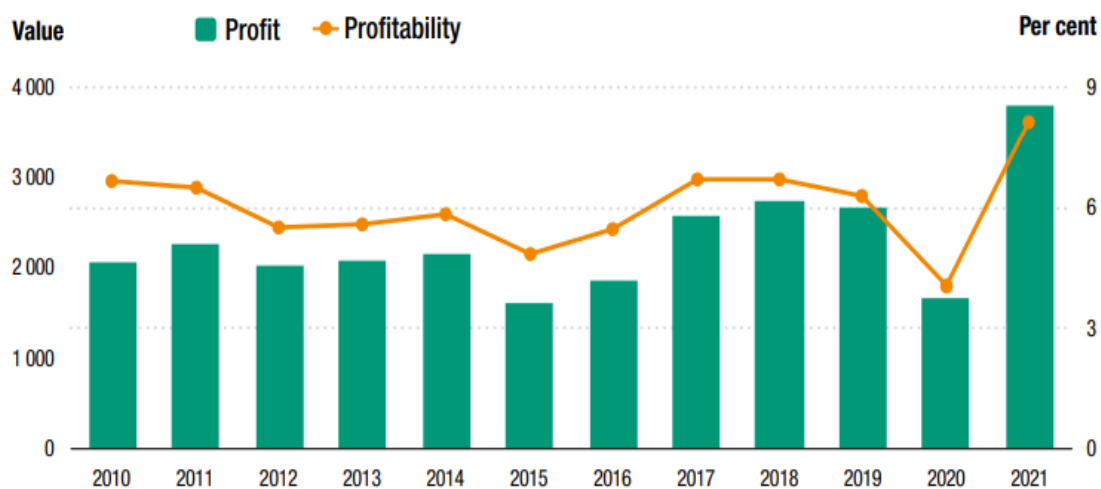
Source: UNCTAD (2022), *World Investment Report 2022*.

After the dramatic downturn provoked by the 2020 COVID-19 pandemic crisis, FDI inflows recovered remarkably in 2021 in all regions. In specific, FDI flows directed to developed economies increased by 134 per cent, accounting for most of the global growth. This upswing in the developed areas of the world is the consequence of the stimulus packages, resulting in huge earnings for MNEs, and reflects the more volatile nature of FDI flows in developed markets because of the larger financial component (UNCTAD).

Figure 4: FDI inflows in developed economies, 2020-2021 (Billions of dollars)
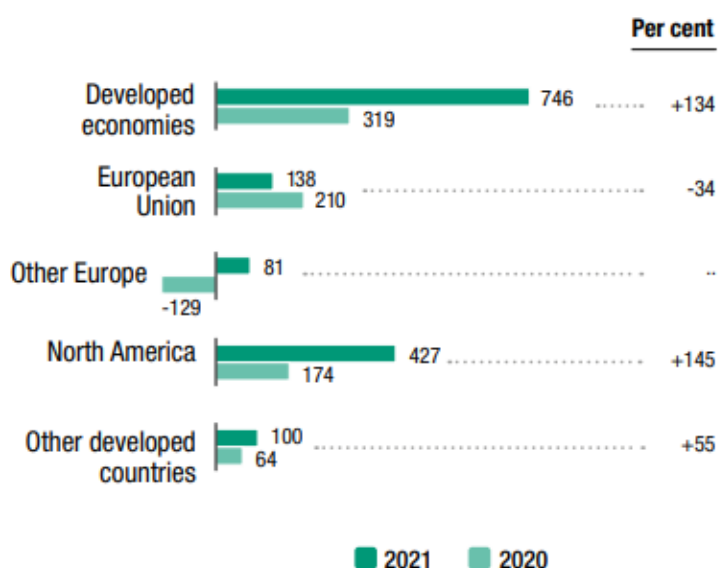
Source: UNCTAD (2022), *World Investment Report 2022*.

As you can observe in Figure 4., while in 2020, the main direction of these flows was the European Union, in 2021, it shifted to North America. Indeed, as you can notice in Figure 5., both for 2020 and 2021, the primary host country for global FDIs is the United States of America, followed by China. The first EU nation is Germany, whose FDI inflows severely decreased in 2021.

Figure 5: FDI inflows, top 20 host economies, 2020 and 2021 (Billions of dollars)
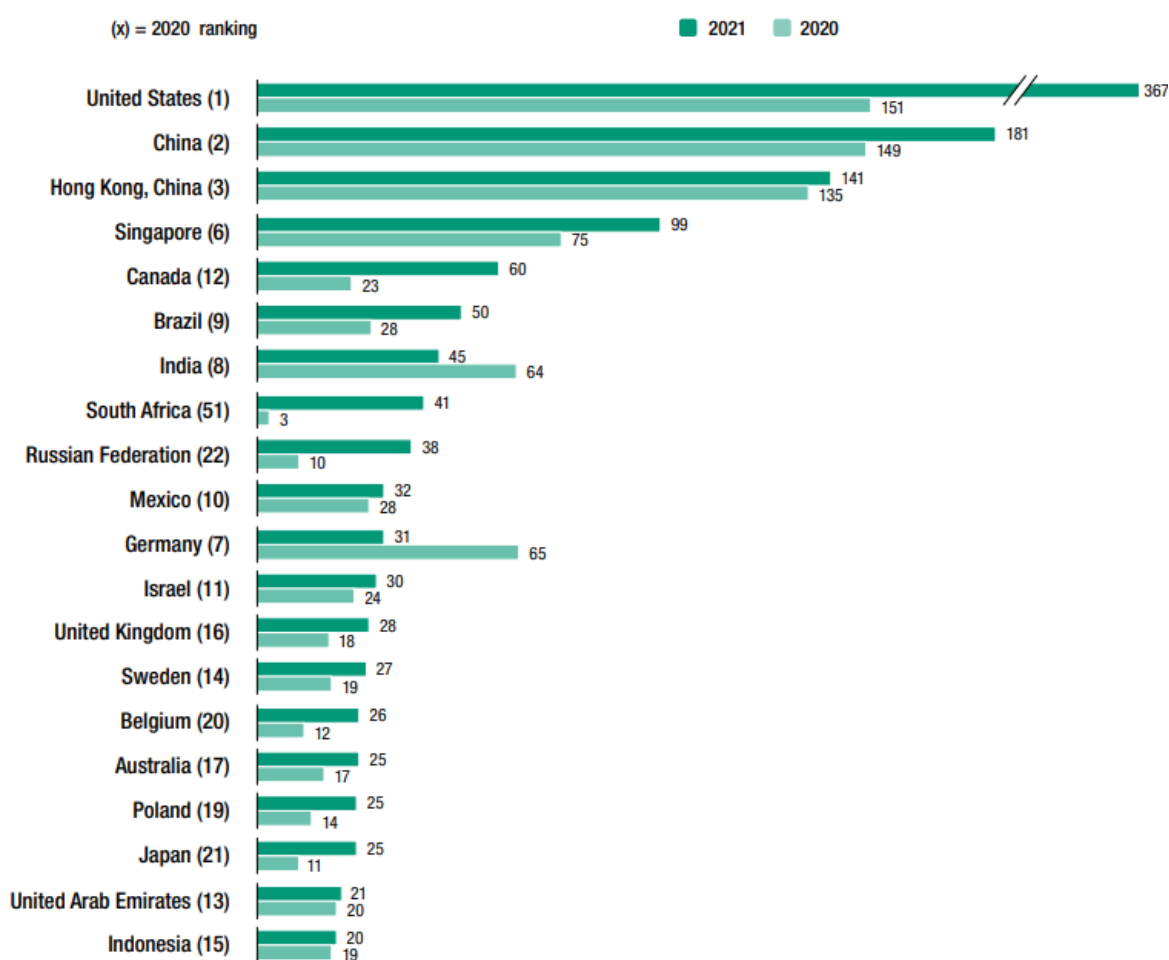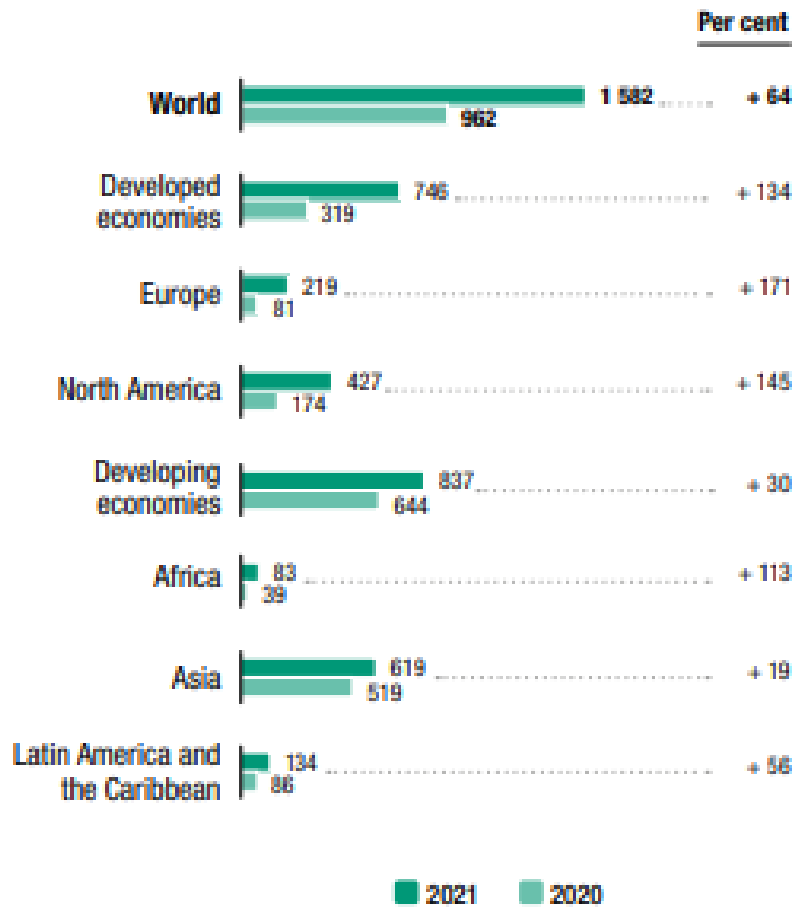

Source: UNCTAD (2022), *World Investment Report 2022*.

FDI flows to developing economies increased by 30% to $837 billion in 2021, the highest level ever recorded. The rise was primarily due to a strong growth in Asia, a partial recovery in Latin America and the Caribbean, and an upswing in Africa. FDI inflows to developing Asian economies increased by 19 per cent reaching $619 billion. Flows to Latin America and the Caribbean increased by 56 per cent. Flows to Africa more than doubled, but most of the increase was due to a single corporate transaction, without which they would have increased moderately.

As previously said, the share of global flows destinated to the developed countries rebounded to pre-pandemic levels, settling at about half of the total, compared to just one-third in 2020. For what concerns structurally weak economies instead, they continued to attract only a small share of global FDI, at 2.5 per cent of the total.

A complete overall recap can be seen in Figure 6 below.

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Figure 6: FDI inflows by region, 2020-2021 (Billions of dollars and per cent)

Per cent

Region	2021	2020	Per cent
World	1 582	962	+ 64
Developed economies	746	319	+ 134
Europe	219	81	+ 171
North America	427	174	+ 145
Developing economies	837	644	+ 30
Africa	83	39	+ 113
Asia	619	519	+ 19
Latin America and the Caribbean	134	86	+ 56

■ 2021 ■ 2020

Source: UNCTAD (2022), *World Investment Report 2022..*

1.4 Host countries effects of FDI

Many see MNEs' investments as a source of benefits, as they result in inflows of capital and technology and create new employment opportunities. Others argue that the activities of MNEs threaten economic stability and weaken local businesses and government.

Among the possible reasons why FDI may be beneficial, we can claim that FDIs can make great usage of unemployed or underemployed resources that are present in of the host economies. This is an important reason, especially in developing or transition economies, but perhaps less so in more industrialized countries. Another consideration is that these investments may be large enough to have aggregate effects on the economy as a whole, for example by influencing the growth rate.

The identification of a net effect on the economy and the host country's local firms, deriving from the presence and activities of MNEs, is an objective of primary importance, especially for governments (and not only in developing countries) which, on the basis of this response, must evaluate how much effort and resources should be dedicated to the attraction and integration of foreign MNEs in their socio-economic fabric.

Host-country effects can substantially take two different forms, depending on whether they directly or indirectly affect businesses and other domestic players.

The direct effects simply are, in the case of a greenfield-type initiative, related to the net transfer of capital to the host country, the creation from scratch of production capacity and therefore of jobs, the transfer of organizational practices and superior managerial skills (Barba Navaretti and Venables, 2004). If the initiative is of the merger and acquisition type (M&A), that is when the MNE acquires a domestic company already operating on the market, the direct impact is more complex to define but is still limited within the boundaries of the target company.

On the contrary, the indirect effects concern whether the superior technologies used by MNEs can overflow (the term used in the literature is "spillover"), also covering other companies and local players. The concept that summarizes these effects is that of externality, a notion that refers to the benefits created by the foreign presence, and which are not appropriate either by the MNE or by the actors directly involved in it (e.g. workers, suppliers, etc.), but from other companies and actors that populate the sector and or the local context on which the foreign initiative rests on (Piscitello, 2006).

From a macroeconomic point of view, we have to note that there are various channels though which FDIs can affect the host country's economic performances and thus its growth. FDIs indeed represents in the first place an external source of financing which, in the presence of a scarcity of local savings, can boost the country's capital accumulation. Furthermore, compared to other types of capital operations (loans or portfolio investments), FDIs are less volatile which allows them to have a more lasting impact on the economic development of the host country.

As previously said, FDI, however, not only represent a movement of capital, but also involve the transfer, in the host country, of a complex set of activities (technology, skills, information, knowledge, etc.) that move through different channels, to local companies; resulting in productivity increases and performance improvements. For these reasons, in

the literature (Baldwin, Braconier and Forslid, 1999) other types of microeconomic effects that FDIs can have on the economic growth of a given country have been identified. Firstly, FDIs, being a channel for the acquisition and dissemination of knowledge, can be an important source of positive externalities (technological spillovers, creation of human capital) for the benefit of local companies in the host country. Secondly, FDI can be a stimulus for competition and the structure of the national market and, through this path, act as a catalyst for the realization of industrial restructuring processes.

The effects of FDI on the host (recipient) country are transmitted in different ways which can be classified into three groups: effects on the market for products, effects on the factor market and spillover effects. Their importance depends on the form of investment - vertical or horizontal - and on the characteristics of the countries.

Market for Products and Spillovers Effects

The actualization of a foreign direct investment implies a variation on the goods bought and sold by a company in the destination and origin country. An example can be represented by a horizontal FDI, which purpose is to replace exports with local production. How will this impact local consumers and businesses? The on-site production allows the company to reduce its operating costs, becoming more competitive and more capable of acquiring a larger share the market compared to when it exported.

We have to consider that on average, MNEs, as demonstrated by the literature, proved to be more productive than local businesses (Navaretti, 2004). This outperformance can be traced to the fact that these MNEs differ from domestic companies for a number of more or less observable characteristics, ranging from size, technology, management style and so on. From an economic policy point of view, it then makes even more sense to strive to attract foreign MNEs, since it is a way to acquire baskets of resources that are not available locally and which allow to increase the average efficiency of the national production system.

Furthermore, MNEs can affect the efficiency of the product market in target economies through their indirect effects on the local economic system and in particular on national companies.

We can assume, for example, that local firms producing products similar to MNEs will most likely be forced to reduce sales. However, FDIs can make the market even more competitive, eroding the monopolistic power of local businesses. Moreover, the investment could increase the productivity of local firms both because the increased competitive pressure induces firms to reduce internal inefficiencies, and because the presence of more efficient and technologically advanced firms generates externalities such as direct spillovers of knowledge or learning effects. For example, the presence of foreign companies could allow local companies to learn about new technologies, new management methods and new market opportunities.

Consumers will instead have an advantage if the increase in competition and the increase in the average efficiency of the production system translates into a lowering of prices, or in an increase in the variety and quality of products on the market. Alternatively, and this is more likely when a MNE enters the market by merging or acquiring (M&A) an existing supplier, the effects can also be anti-competitive and harmful to consumers

We can say then that MNEs and local enterprises interact in several different ways. They can direct trade between each other, as for the supply of inputs or technologies. They can compete both in the goods and in the factors markets, resulting in a reallocation of profits and market shares. Finally, there can be non-market interactions, namely externalities between the two sets of companies. All these interactions can affect the efficiency of national companies. Let's now consider four types of channels that have effects on efficiency: market transactions, technological externalities, pecuniary externalities and pro-competitive effects.

- Market transactions: MNEs often transfer tangible or intangible capital assets, as for example technology, machinery, specific skills to domestic companies through regular market transactions. These transfers may take shape of license agreements relating to use of a specific technology or to the production of a particular good, or they can be part of a training program related to the provision of particular inputs, assembly or marketing activities. These assets improve the efficiency of domestic firms and are generally transferred in return of a monetary premium.

- Technical externalities: they occur when the FDIs involve costs or benefits that are not transmitted directly through the markets. In this case assets are transferred outside of a normal commercial transaction, taking the form of externalities that

do not generate any direct benefit to the MNEs. Technical externalities include technology transfer, market knowledge and the acquisition of professional skills. Technical externalities can occur for a variety of reasons: as the consequence of networking between managers of MNEs and local companies' colleagues; or simply as unforeseen consequences of transactions governed by specific contracts. Think for example to a local firm that performing an assembling operation, learns learn much more about the components and technology used than MNE intends.

- Pecuniary externalities: MNEs can affect national economies because they generate network and aggregation effects. This means that the presence of MNEs and their demand for goods and factors of production can generate investments in activities characterized by economies of scale. An example is the realization of public goods, such as infrastructures, universities, hospitals. Such public investments are not efficient unless there is a sufficiently large final demand for the goods and services they produce.

Furthermore, pecuniary externalities can emerge when both national companies and MNEs use components produced in the local market. Complementarities can then be created between the MNE and local enterprises, as the multinational's demand strengthens the local production of factors, generating qualitative improvements and possibly reductions in prices (if production for the MNE allows to exploit economies of scale and lower the average cost of production) thus benefiting other local companies that use those components. These upstream productive interconnection effects have led to the entry into the market of local companies as well as to improvements in quality, productivity and variety of products. The growth of suppliers of intermediate productive goods has in turn generated a 'forward linkage' effect towards the producers of final goods, attracting a greater number of multinationals and companies with national capital. A second set of upstream productive interconnection effects can follow, and so on.

- Pro-competitive effects: MNEs' presence may also increase the level of competition in the host market. In the case, indeed, of a not perfectly competitive market, MNEs can induce local firms to reduce their margins as to get more competitive. This process however is not straight-forward, since it relies also on the technology and cost structure upon which the firms operate. In case there are economies of scale indeed, the reduction on market shares of local firms could

drive up the average costs reducing their competitiveness. It may occur as we have seen then that the entry of a MNE pushes less efficient local businesses out of the market.

In some cases, negative pro-competitive effects may more than offset the positive technological or monetary externality. Aitken and Harrison (1999) give us a simple and useful short-term static representation of this phenomenon. Consider a market with imperfect competition and fixed production costs. Local businesses operate with a decreasing average cost function AC_0 in the graph below. In absence of MNEs, the local firm k produces Q^k_0 at an average cost AC^k_0. Then the MNE, which is more efficient than k, enters the market. Since its average costs are lower, it will produce more than the local company reducing its market share (crowding out effect). At the same time, the benefits of the increased efficiency of MNE are transferred to k in the form of externality. The result is that the average cost function of k shifts downward and becomes AC_1. The consequence of these two combined effects is that k will produce less ($Q_1^k < Q_0^k$) at a higher average cost ($AC_1^k > AC_0^k$), although there have been some positive externalities.

Figure 7: Externalities and crowding out, Aitken e Harrison (1999)
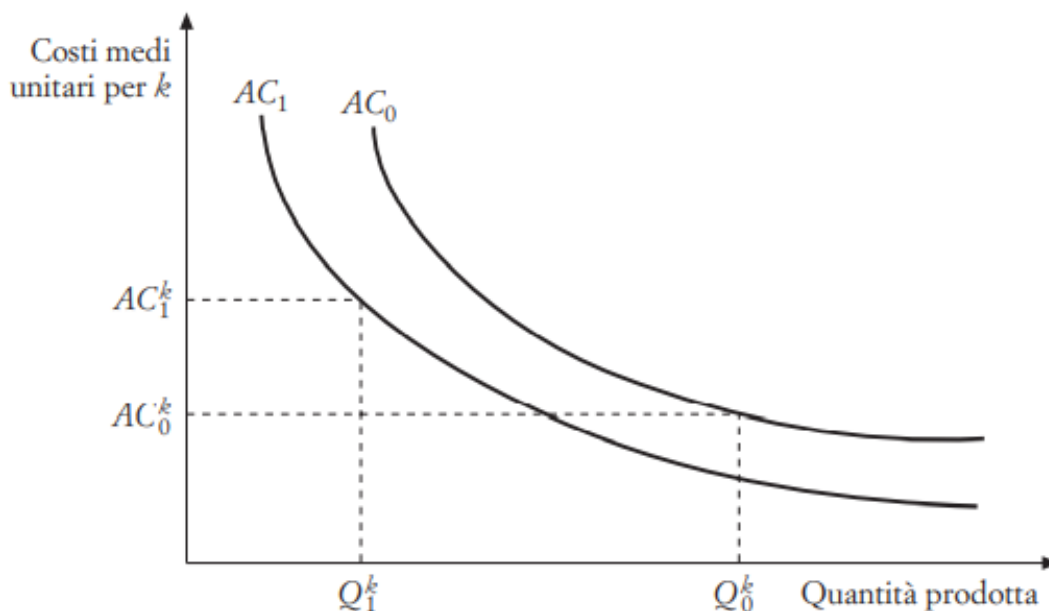
Source: Navaretti, B.G. and Venables A.J. (2006), Le Multinazionali nell'economia mondiale, Il Mulino, Bologna.

The empirical evidence regarding this model does not always give consistent answers. But we can say that generally, in developing countries the "crowding out" effect seems to prevail, while in developed countries, on the other hand, the spillovers effect seems to predominate. Thus, we can infer that, the wider the technological gap and the wider the income gap, the easier it is for multinationals to replace the local firms' operations. While if the technological gap is more limited there are greater opportunities for interaction.

In particular, a FDI causes crowding in effect on national investments if it stimulates new investments that would not be made in its absence; on the other hand, FDI determines a crowding out effect if it discourages investment opportunities of national producers.

Another relevant factor influencing spillovers is the type of interaction between the two different types of businesses. Some studies, especially in developing countries, pointed out the importance of vertical links between companies, especially when domestic companies provide inputs to the foreign branches of MNEs. Multinationals indeed support local businesses in different ways: they provide the technical assistance in order to improve the quality of the products, they help them in the choice and purchase of raw materials, they provide training courses for managers, technicians and other workers of the company.

As previously stated, the effects of the entrance of a MNE in the domestic market can induce several different effects that are hard to interpret. We may observe indeed a reduction in local firms' profit margins and deduct that a pro-competitive effect occurred. While this reduction on margin may be the result of a positive process, with a decrease in final prices and more efficient local firms, it can also mean an efficiency reduction in industries with strong economies of scale.

Factor Market Effects

Effects on the factor market can occur on both the capital and the labour market. Although MNEs can find part of the financial resources on local capital markets, their presence generally leads to an inflow of net capital from abroad. As, previously anticipated, indeed, in case of lack of savings in the destination country, FDIs from MNEs can finance the local capital accumulation. Furthermore, due to their lower volatility compared to portfolio investments, then they can a have a longer positive impact on the host economy.

This is especially due to the fact that, while other kinds of investments (e.g. portfolio investments) are caused by speculative considerations based on interest rate differentials and exchange rate expectations, FDI flows are the result of more thoughtful decisions taken over a long-term time horizon and concerning the structural characteristics of the host countries. Therefore, the propensity to disinvest these kinds of investments, even in adverse circumstances (when perceived as short-term), will be lower compared to portfolio investments. Furthermore, the risk of herd-alike behaviours is less likely to occur for FDIs than it is for other kinds of capital investments. This because FDIs are considered not only as financial flows but are also a set of firm-specific resources that cannot easily leave the country at the first signal of crisis.

Inwards FDIs are as a matter of fact an important source of external resources for the host country's economy. For example, during the 1990s, FDIs became the main component of flows to developing countries: their share increased from 28 percent in 1991 to 56 percent in 1998 (Reganati 2002). Regarding developing countries, some researchers (Hausmann e Fernandez-Arias, 2000; Albuquerque, 2000) observed that a high share of inwards FDIs on the total inwards capital movements of a given country is not a positive sign. On the contrary it may be a signal of weakness of that country's economy. The observed indeed that economies that registered the largest shares of FDIs in total inflows are the riskiest ones (in terms of credit ratings on public debt or other country risk indicators) and also those where the quality of the institutions is lower. This is explained by the fact that FDIs are more likely to be directed towards countries whose economies are absent or inefficient, in these cases in fact MNEs would prefer to directly operate in the host country rather than utilize local financial markets. The implications in terms of public policy are that host countries, rather than striving to expand the share of FDIs in total flows, they should focus on improving the investment climate and on creating more efficient and functioning markets.

The impact of foreign direct investments on the labour market may be considered as the most important one. Several questions indeed arise: will the presence of a MNE cause a net increase in the employment rate or just a replacement of some jobs by others? Also, regarding the professional composition of the labour demand, how will the presence of an MNE change it? Will the demand of skilled labour increase in the host country? A prediction of the theory is that, in the extreme case, vertical FDIs will continue until the level of factor prices is the same in all countries. This should be done through upward

pressure on wages (especially for unskilled labour) in developing countries, accompanied by downward pressure on wages for unskilled work in advanced countries, in relation to job relocation. However, the effects on wages are complex. They indeed depend on the relative intensity of the qualifications required by the activities carried out by MNEs and the relative abundance of skilled labour in the countries in which they operate.

We are now going to focus on three main effects. Firstly, the remuneration for work: do MNEs pay more or less than national companies for the same job qualifications? The second effect regards the demand for skilled labour: on average, do MNEs demand greater competencies than local companies and therefore foster the formation of human capital through education and training? Finally, the effect on the volatility of employment. Are the jobs created by MNES in the countries of destination stable? Or are they more insecure due to the footloose trait of MNEs?

Among researchers, there is an overall consensus that MNEs use superior technology, resulting in greater productivity and, therefore, higher wages. Indeed, numerous empirical studies demonstrated that, both in developing and industrialized countries, MNEs generally pay higher salaries for equal qualifications. The empirical evidence that MNEs pay higher wages than local companies is consistent with different theoretical arguments both related to the behaviour of the host countries' governments and MNEs themselves. From the point of view of policymakers, indeed, especially in developing countries, laws and regulations in the destination countries sometimes discriminate between the MNES and local firms, implicitly or explicitly imposing a different wage treatment. This is to retain in the country a larger share of the surplus generated by MNEs activities. From the point of view of the multinational company, reputation plays a relevant part. MNEs indeed find it meaningful to offer favourable treatment to their local workers. This can enhance relations in the broad sense of the company in the host country, improving also its reputation in the markets. Consider how disruptive to some MNEs have been the scandals that they directly or indirectly used child labour or otherwise offered working conditions that were not adequate to Western standards. Another reason that justifies the higher wages is that often MNEs have to maintain the same working standards across all the countries where they operate. Generally, in fact, especially at the level of managers and executives, there is a lot of mobility between the different locations of an MNE. Furthermore, MNEs undergo an information asymmetry problem. How can they find the hidden best workers? While the local firms have a deepened knowledge of the domestic

labour offer, the sole technique that MNEs can avail themselves of is to offer higher salaries. Lastly, MNEs encounter the problem of reducing the turnover of workers and of dissipating their knowledge on the local market. Workers' mobility is indeed among the main channels of dissemination between companies of technological know-how, contacts with customers and managerial procedures. Thus, for MNEs, particularly those operating in technology-intensive industries, it is preferable to pay higher salaries and avoid having their employees look for a job elsewhere.

Whether MNEs request more qualified workers than local companies is an extremely relevant question. Firstly, if MNEs ask for skilled workers, their presence in a country increases the incentive for investment in human capital training and, therefore, for education and professional training. Obvious positive impacts on the technological development of the country will then follow. Secondly, the characteristics of the labour demanded by MNEs may also have significant distributional effects. Suppose a country receives a considerable amount of FDIs relatively to the size of its economy, which increases the demand for skilled workers. Then their salaries would tend to increase compared to those of unskilled workers. According to the theory, in the case of vertical FDIs, which aim to reduce the cost of factors, there should be an allocation of the production phases that use a factor relatively intensively in countries where the factor is relatively abundant. This process should generate demand for factors of production at the international level similar to that proposed by the international trade model of Heckscher and Ohlin. That is, in each country the demand for relatively abundant factors is expected to increase and that for relatively scarce factors to decrease. According to the Stolper and Samuelson theorem, it follows an increase in the relative remuneration of the abundant factors (unskilled labour in the South and skilled labour in the North) and, consequently, international convergence of the relative prices of the factors. However, it has been noted that Stolper and Samuelson's theorem tends not to occur. The reason is that the relationship between the presence of MNEs and the demand for skills is not unique. The outcome depends on the relationship between the relative factorial endowments of the country of destination and the factorial intensity of the various activities of the multinational enterprise.

Lastly, MNEs are usually conceived as more footloose than local firms and their investments are viewed often labelled as less stable and long-lasting than local firms. Employment in MNEs is, in other words, perceived as more volatile, and the jobs created

easier to be successively eliminated. But why should MNEs offer less stable working positions than domestic businesses? Two are the mechanisms that are worth considering. Firstly, relating to a bigger picture, is that the two groups of companies have a different exposure to price and technology shocks that can have a negative effect on employment. Secondly, MNEs and national firms may respond differently to the same price and technology shock. While the former effect implies a (downward if the shock is negative) movement of the labour demand, the latter effect translates into a different elasticity of the labour demand (and thus a different slope of the curve). Let's now analyse the two different impacts separately.

Do MNEs present a different exposure to exogenous shocks than national companies? Since MNEs operate in multiple markets, they are certainly more likely to be hit by some shock. Nonetheless, we have to specify whether these shocks are correlated between different countries, that is, whether a shock that hits a particular country has a similar impact on the other related nations. In this case, then, obviously the risk of exposure to shock increases for MNE. While in the circumstances a shock is strictly linked to a sole country, then the exposure to MNES is lower as operating in multiple markets allows for the diversification of risks.

Concerning instead the different reactions to shocks by the two groups of businesses, we have to examine four diverse factors. The first is whether there is a complementary or substitutable relationship between employment in the host country and in other countries where the company operates. For example, if there is indeed substitutability, then an increase in wages in one country, suppose China, has greater effects for MNEs than for domestic firms, as Chinese work can be replaced with work in other plants where wages did not rise. Conversely, if there is complementarity, the shock is limited by the fact that Chinese labour is only a component of the total costs of a MNE, even though the increase in costs in China is connected to activities in other countries. The second factor is that having fewer interests than a local company in the host country, MNEs suffer less political and social pressures and have greater bargaining power when negotiating with local authorities or trade unions. This strength position sometimes allows them to obtain better hiring and firing conditions. The third aspect we have to consider regards to the fact that the demand for labour derives from the demand for final goods produced by the company. Consequently, the elasticity of labour demand is a function of the elasticity of the demand for final goods. International economic integration generates tighter competition in the

market for goods, translating into a stronger elasticity of demand. At the industry level, as previously described, the presence of MNEs can raise competition in the goods market, increasing the average elasticity of demand for all companies operating in that market. In the case instead markets are not perfectly competitive and MNEs possess a bigger share of the market than the local companies, then their demand curve would appear more rigid compared to domestic firms. This effect would be even stronger when the MNE can draw for strength on intangible assets, such as known brands or exclusive technologies, all elements that reduce elasticity. The last factor we consider relates to the reasoning that MNEs may utilize a different input mix than local companies, having direct consequences on the labour demand. We can say, for example, that often the activities of MNEs are more high-skill intensive. Thus, since the demand for skilled labour is generally more rigid than that for unskilled labour (Hamermesh, 1993), the average demand for labour in MNEs will be more rigid than for domestic firms. In the same fashion, MNEs' operations are more capital-intensive. Then, if the share of labour on the total production costs is consequently lower, the elasticity of the labour demand will also be lower.

Empirical results do not support the prediction that MNEs are more footloose than local companies. However, it has been demonstrated that while MNEs have a more immediate reaction to demand shocks compared to domestic firms, they more rarely modify their demand for labour (long-run elasticity of labour demand relative to wage changes is lower for MNEs than for local firms). In other words, this means that the actual number of workers who are hired or fired as a consequence of a change in in wages or in the demand for goods is smaller. This result can be explained by the fact that workers of MNEs are, on average, more skilled, and in empirical studies controlling the skill composition of the workforce at the firm level is difficult. Another hypothesis is that since multinational corporations are more competitive, they are able to better protect themselves from adverse shocks, capitalizing instead on favourable shocks. Indeed, even if it is reasonable to argue that, other things being equal, MNEs have more flexible operating structures than local firms, it is clear that, beyond a certain threshold, fixed set-up costs prevent mobility between countries.

In conclusion, most empirical studies report the positive effects of the activities of MNEs, both in advanced and developing countries. In any case, multinational companies and local governments have a contractual relationship, where power relationships come into play. Especially in backward contexts, it would be naive to think of the relationship

between national economies and foreign investors as an idyllic one. The more balanced the relative balance of power and the smaller the gap between host economies and multinationals, the more likely it is to create positive synergies. From this point of view, it is clear that in very backward countries, the problem is more complex. However, in general terms, multinationals are, and remain, a fundamental element of the international development process.

CHAPTER 2

ANALYSIS OF FDI IN HUNGARY

2.1 Why Hungary?

In some countries, as in the case of Hungary, Foreign Direct Investments significantly contributed to the process of economic development. Nations indeed compete in order to attract them because they are accompanied by extremely valuable resources such as technologies, skills, and financial capital. However, as said in the previous chapter, some states are able to capture more foreign direct investments than others. MNEs pursuing Foreign Direct Investments may be motivated by strategies of cost-efficiency (vertical FDI) or market-seeking (horizontal FDI). In other words, the implementation of direct investments in the destination country may be spurred by the willingness to take advantage of low-cost factors in specific stages of the production process or to directly serve a foreign market through a controlled affiliate. As described in the first chapter, this operation can be carried out in two different ways: by means of a greenfield investment or through mergers and acquisitions (M&A). The former occurs when MNEs invest in the construction of new physical plants and production assets; the latter, instead, takes place when MNEs purchase existing assets in a foreign country or by merging with a foreign company. The economic procedures and operations needed to realize these investment projects may be considerably complex. For this reason, sometimes, in order to have the necessary support, investors may turn to specific consulting companies that work as facilitators in these kinds of transactions.

From February to May 2022, I had the opportunity to do an internship in the marketing division of ITL Group Kft., an international consulting company based in Budapest, Hungary. ITL Group presents itself as "your gateway to Hungary", a one-stop shop where foreign investors can find a 360 ° business consultancy in order to operate a conscious and informed investment. The firm, established in 1995, offers services ranging from consulting, accounting, legal and tax advisor to real estate and marketing. Everything, in short, that a foreign investor might need in order to carry out safely and correctly a direct investment.

For this reason, in this chapter, we will focus on the analysis of the data regarding inward foreign direct investments in Hungary. After a quick macroeconomic overview of the main economic indicators, we will evaluate the reasons why multinational enterprises decide to implement their investments in the Hungarian territory, as well as which could be the risks and weaknesses of investment in Hungary. Then we will analyse the historical measurements until the most recent data, also inspecting their geographical origin and sectorial nature.

2.2 Macroeconomic overview of Hungary

The Hungarian population is of 9,709,886[1] over an area of 93,023 square kilometres. The Hungarian economy is a high-income economy[2], ranked as the 14th most complex economy in the world (Italy is the 19th)[3]. Hungary is a member of most international organizations, namely: OECD, UN, WTO, NATO, IMF, and the EC, and it is member state of the EU since 2004. The official currency is the Hungarian Forint. The Hungarian economy is the 54th biggest in the world in terms of real GDP, while the 50th in the world in terms of GDP per capita (20.34 thousand billion of US dollars)[4].

Table 3: Main data of Hungary.

HUNGARY	
Population	9,709,886
Area	93,023 km^2
Capital	Budapest
Government	Unitary parliamentary republic
Language	Hungarian
Currency	Hungarian Forint (HUF)

The pandemic hampered the country's strong economic growth performance of the years 2016 -2019, which included considerable increases in employment and real incomes, as

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[1] World Bank Open Data, 2021.
[2] Hamadeh, N., Van Rompaey C., Metreau, E. and Eapen, S.G. (2022), *New World Bank country classifications by income level: 2022-2023*, World Bank.
[3] The Observatory of Economic Complexity, *Country Rankings.*
[4] International Monetary Fund, IMF, 2020.

well as the lowest unemployment rate in thirty years. After recording an average annual growth of 3.8% in the period 2013-2019, followed by a decline in GDP of 5.1 percentage points in 2020, the Hungarian GDP in 2021, equal to about 153 billion euros at current prices, has recorded a growth over the year of 7.1%, higher than that envisaged in the 2021-2025 Convergence Program (4.3%). Indeed, the measures adopted by the government were effective and allowed the country to resume the growth path prior to the pandemic. Data published by the Hungarian Central Statistical Office regarding Q1 and Q2 of 2022 indicated an increase of respectively 8.2% and 6.5% compared to the same period of the previous year. A similar positive change was found in the foreign exchange of goods. Compared to 2020, the increase on an annual basis in the volume of exports and imports was equal to 7.8% and 8.3%. With regard to the structure of GDP, the data available for the year 2020 indicate that services represent 66.9% of gross value added, the manufacturing, energy and construction sector 29.1%, while the share relating to the primary sector is 4%.

Figure 8: GDP Hungary, 2018 – 2022.
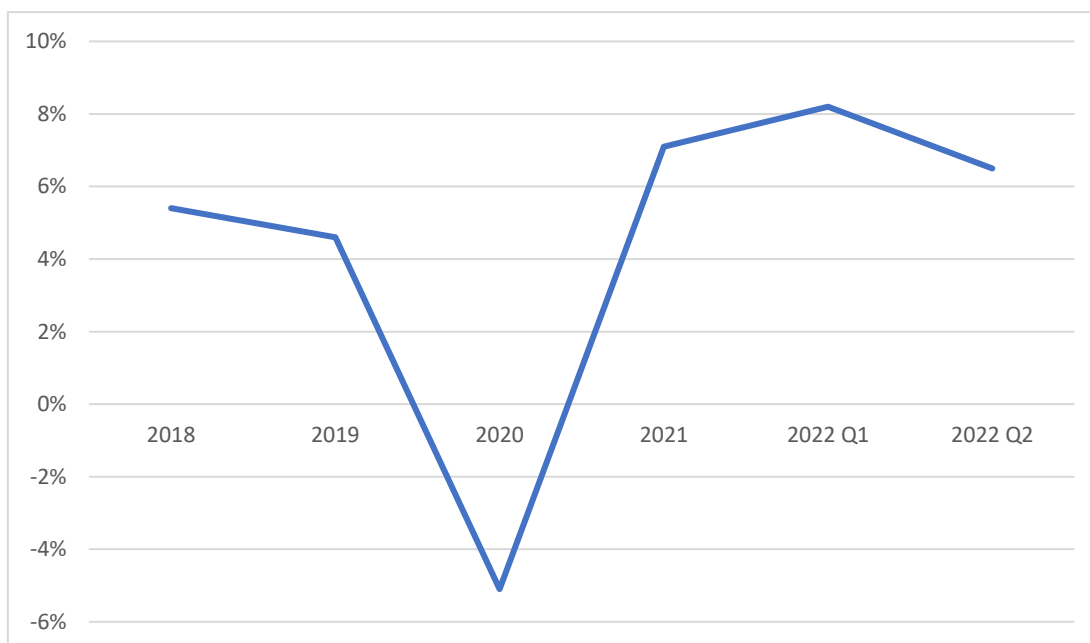
Source: Hungarian Central Statistical Office.

In 2021, in Hungary, inflation was 5.1%, approximately two percentage points higher than the evidence recorded in 2020. At the European level instead, it was nearly half, namely 2.59%, during the same year. Measurements of September 2022, provided by the Hungarian Central Statistical Office, detect an increase in the general consumer price index of 20.1% versus the EU value of 9.93% provided by Eurostat. This massive uprise

is driven by the worsening of the boost in the prices of energy and food goods and by the progressive aggravating of geopolitical tensions, which generated outflows of capital abroad and direct effects on currency depreciation.

Figure 9: Inflation in Hungary and EU average (on same period of previous year), 2018 – 2022.
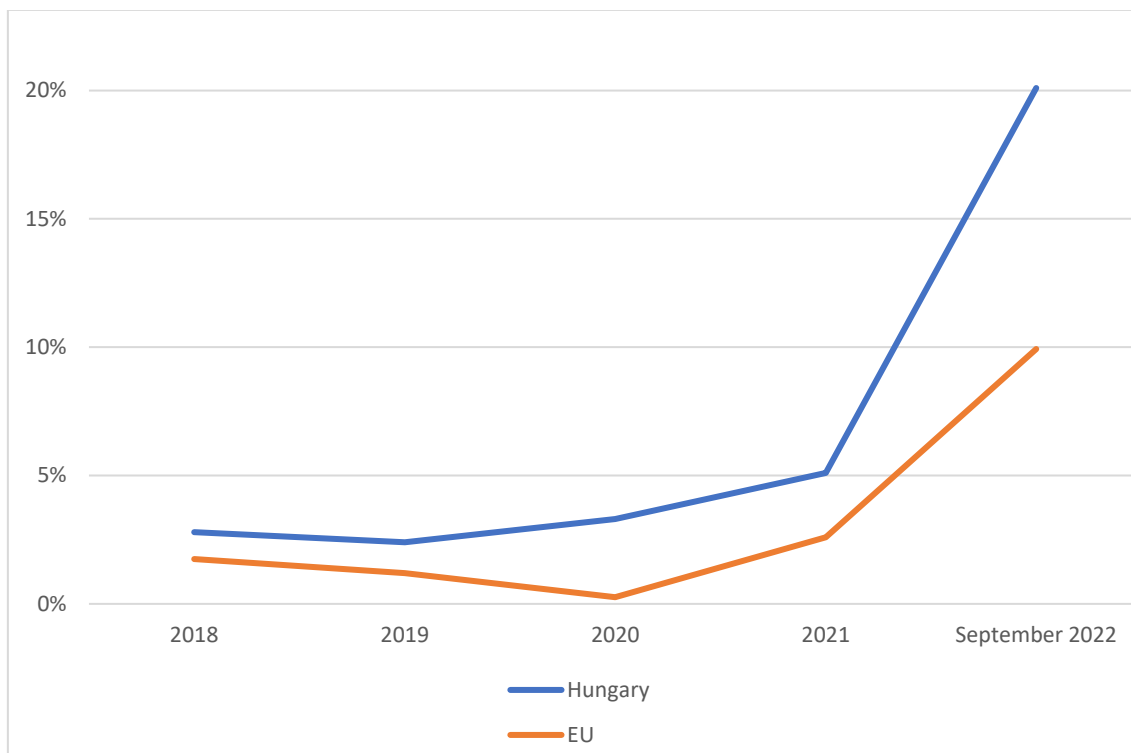
Source: Hungarian Central Statistical Office, Eurostat.

At the end of 2021, the unemployment rate stood at 4.1%, a slight decrease of 0.2% compared to the share recorded in 2020. The data collected for September 2022 recorded an improvement in the index up to 3.8%, which is also the value forecasted for 2022 as a whole. The employment rate recorded in 2021, equal to 73.1%, shows an increase over the year of 1.2%, while the latest data of September 2022 observe a further amelioration of the indicator at 74.6%. At the European level, the situation is quite more critical since the unemployment rate fluctuates around 7%, while the employment rate is about 72%.

Figure 10 : Unemployment rate in Hungary, 2018 – 2022.
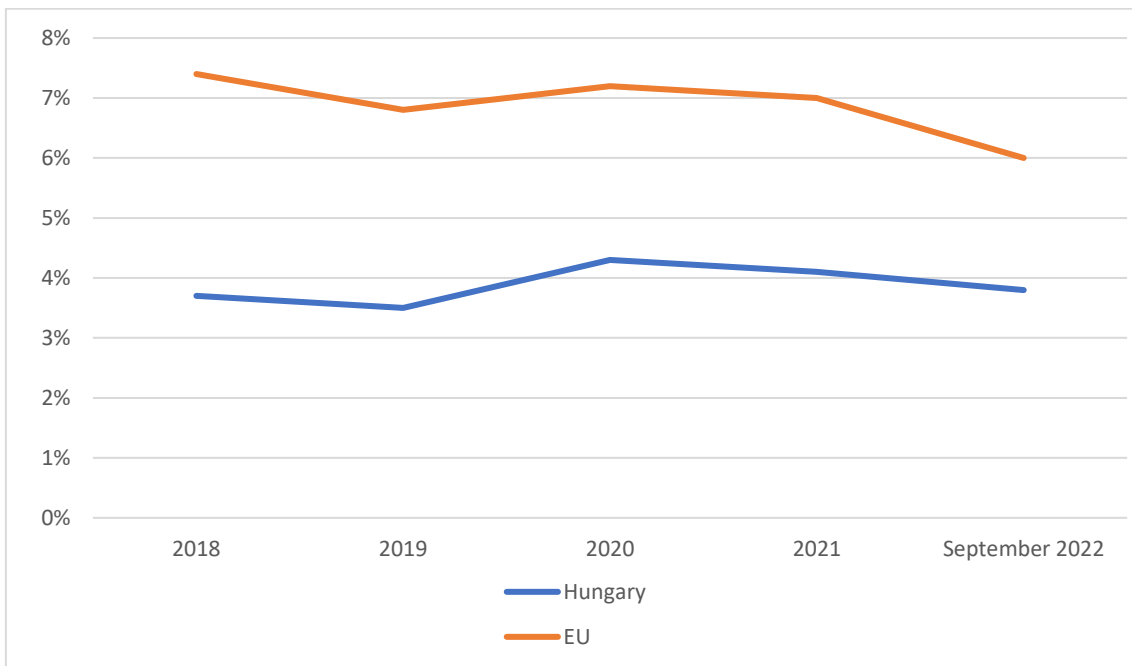
Source: Hungarian Central Statistical Office.

As regards the cost of labour, in 2021, the average gross monthly salary was HUF 438,800. Compared to 2020, the increase detected by the Hungarian Central Statistical Office, including premiums, was 8.7%. The current forecasts of the Hungarian National Bank indicate for 2022 a growth in the average gross salary between 10.8% and 12.2%. Latest releases from the Hungarian Central Statistical Office report that, for June 2022, full-time employees' gross average earnings were HUF 503,500 (approximately € 1250), and average net earnings with tax benefits reached HUF 347,200 (approximately € 865)[5]. Therefore, average gross earnings grew by around 15% with respect to the previous year.

Hungary has an export-oriented market economy with a strong prominence in foreign trade. It has a high degree of openness to international trade and a great ability to attract foreign investment. In addition to the traditional sectors of the automotive, electronics and food industries, the country seeks to encourage investments in other sectors as well, including renewable energy, medical and biomedical technologies, the pharmaceutical industry and information and communication technologies. According to the Central Statistics Office (KSH) data for 2021, Hungarian exports totalled 119.3 billion euros, while imports reached 117.4 billion euros. Exports to EU countries accounted for 77% of

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[5] Exchange rate of 19/09/2022: (€1=HUF401.28).

total exports in 2021, while exports to non-EU European countries equal 13% of total European exports. Imports from EU countries counted up to 76% of total imports, with Asian countries accounting for 16%. During the reference period, the main partner countries were Germany (26.8% of total Hungarian export value), Italy (5.9%), Romania (5.3%), Slovakia (5.2%), and Austria (4.5%). In terms of imports, 23.8% of total Hungarian imports are attributable to Germany, followed by China (7%), Austria (6.1%), Slovakia (5.9%), and Poland (5.7%).

As per the economic policy, the main objectives of the Hungarian Convergence Program 2022-2026 concern the maintenance of growth prospects, financial stability and the sustainability of public finances in the medium term. Regarding the taxation system, the fiscal policy priorities include further reductions in taxation on labour income and social security contributions to be borne by businesses and the boost of employment support measures.

2.3 Why to invest in Hungary? Benefits and risks

The reasons why a multinational firm decides to implement a foreign direct investment in a particular country or geographical area rather than elsewhere are several, and they change over time. The main determinant in the localization choice is the kind of FDI the MNE is planning to carry out. In the case of horizontal FDIs, indeed, MNEs will tend to prefer locations offering access to large markets. Selected sites would then be countries with large high-income populations, geographically close and low-cost access to wide markets. While in the case of vertical FDIs, they will be destined for countries with a lower cost of factors, good transport network and commercial connections with the nation of the mother-company. In addition to this general framework, many other features of a country or area are taken into consideration in these kinds of investment strategies. Indeed, besides country-specific, also sector and firm-specific determinants are investigated and are crucial to the analysis. The determination of the FDI localization is the result of a complex decisional process by the company's management, where the benefits and drawbacks of investing in a specific geographical position are evaluated. In this section, we will analyse the benefits and risks that can be associated with the implementation of foreign direct investments in Hungary.

As explained in the previous chapter, geographical position is one of the most relevant factors in the choice of where to direct foreign direct investments. The geographical location is crucial, especially in the case of a vertical FDI, since it determines the commercial costs related to the transportation of products across national borders during the various stages of the production process. Therefore, a closer position may, in this case, be preferred. Moreover, a specific geographical location of the affiliate may be chosen due to its strategic position in terms of market opportunities. Indeed, many MNEs select Hungary as the destination for their FDI expressly due to the country's strategic location. Hungary's central location in Europe acts as a gateway to the European Union and other central and eastern European markets. Hungary signed the Schengen Convention in 2003, which entered into force in 2007. It indeed allows the free movement of people and goods within the Schengen area. Additionally, the geographical position makes Hungary a strategic country also from a logistical perspective. The territory is crossed by four pan-European corridors. Hungary offers a road network of 1,100 km, a railway network extended throughout the country and six airports that ensure international connections. A further reason why MNEs find it advantageous to invest in Hungary is the high quality of its infrastructure. It has been demonstrated (Aschauer, 1989) that a greater endowment of public infrastructures boosts investment productivity and lowers production costs. This is particularly true for MNEs whose foreign affiliates have been created in order to serve a local or neighbouring market (horizontal FDI). In the case of Hungary, the country offers an efficient and widespread public infrastructure. The transport network includes a highway network covering the entire country and a railway service that provides easy access to Western and Eastern European countries from the heart of the continent. In 2020, the Hungarian railway system ranked 6th regarding railway line density in Europe[6] (UN Economic Commission for Europe). Six international airports can be found in the country. The biggest is the Ferenc Liszt International Airport of Budapest, which is the second largest airport in the new EU member states and has been awarded, in 2021, as the best airport in the Eastern European region for the eighth time in a row[7]. For the just explained reasons, therefore, Hungary's central location in Europe and well-developed infrastructure have made it an attractive destination for foreign direct investments.

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[6] Kilometres of lines operated per 1000 sq. km^2.
[7] Skytrax: *World Airport Awards 2022*.

Besides physical and transport infrastructure, an important role in the growth prospects of the business and the country as a whole is the digital infrastructure. Digitalization is thus crucial to adapt to an ever-changing business landscape and the ability to innovate using digital networks and infrastructures is a primary source of competitive advantage. The 2022 DESI report (Digital Economy and Society Index), which represents the tool through which the European Commission has been monitoring the digital progress of the Member States since 2014, stated that Hungary performed well on broadband connectivity. Moreover, it maintained its lead in the adoption of at least 1Gbps broadband, with 22% of households subscribing in 2021, compared to 7.6% in the EU. In addition, the country outperforms the EU average in terms of overall fixed broadband take-up, 5G spectrum, and fixed very high-capacity network coverage (VHCN). This is also significant in light of the Europe's Digital Decade target of providing 100% gigabit network coverage to all households by 2030.

Human capital is another factor positively influencing the attractiveness of Hungary for MNEs. The population has an overall good average cultural level, with a literacy rate of almost 100%[8]. As visible in Figure 11 below, the labour pool structure referring to 2021 highlights the presence of most professionals in the service sector, followed by manufacturing. As displayed by Figure 12, workforce in Hungary is well-educated and skilled. In 2021, students in tertiary education mainly specialized in business & administration, social sciences & law, engineering, manufacturing & construction and mathematics.

Figure 11: Labour pool structure of Hungary, 2021.
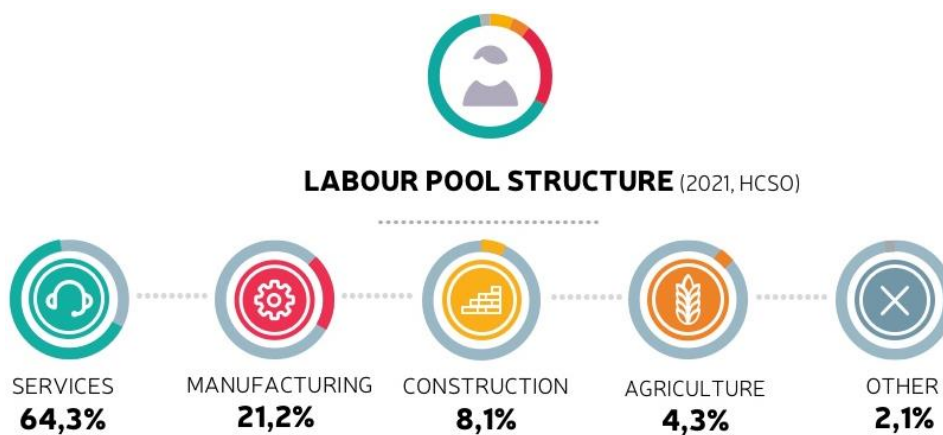
Source: Hungarian Investment Promotion Agency, Hungarian Central Statistical Office.

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[8] Unesco Institute for Statistics.

Figure 12: Students in Tertiary Education in Hungary, 2020.

STUDENTS IN TERTIARY EDUCATION

OTHER **1.9%**

SERVICES **5.6%**

TEACHER TRAINING & EDUCATION **11.5%**

HEALTH & WELFARE **11.5%**

ARTS & HUMANITIES **8.2%**

AGRICULTURE **3.5%**

STUDENTS IN TERTIARY EDUCATION BUSINESS & ADMINISTRATION **18.0%**

ENGINEERING, MANUFACTURING & CONSTRUCTION **13.5%**

SOCIAL SCIENCES & LAW **15.1%**

MATHEMATICS, COMPUTING & NATURAL SCIENCES **11.3%**
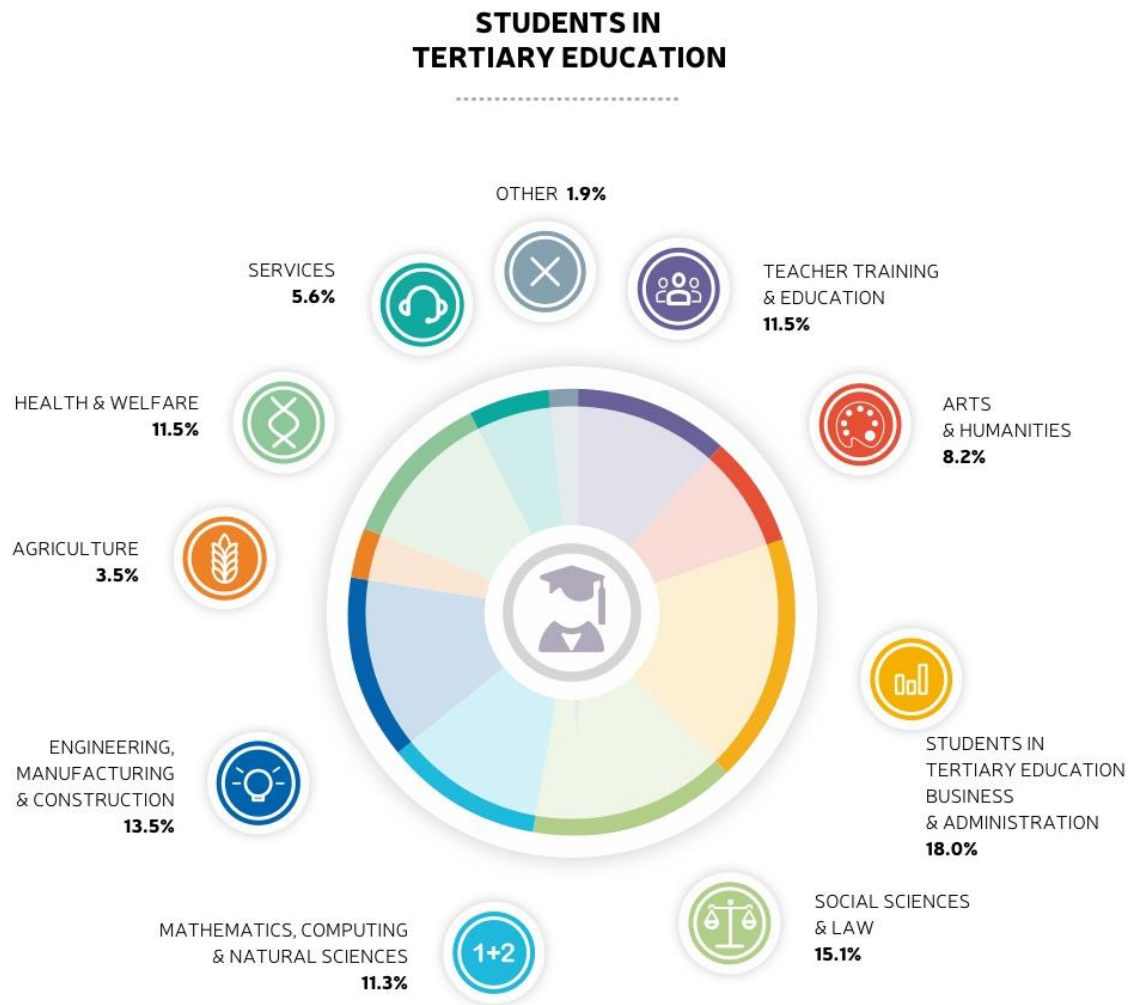
(Source: HCSO, 2020)

Source: Hungarian Investment Promotion Agency, Hungarian Central Statistical Office.

In 2020, as depicted in Figure 13 below, Hungary had 23.5 STEM graduates per 1.000 inhabitants aged 20-29 years. This data was the sixth higher in the EU, preceding counties like Germany and Poland, and it was greater than the EU average of 21.0 graduates.

Figure 13: Tertiary education graduates in science, mathematics, computing, engineering, manufacturing and construction (STEM), 2020.
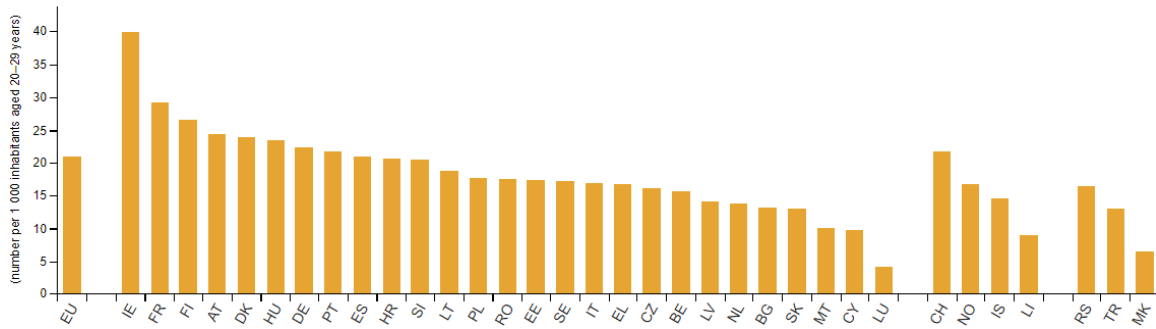
Source: Eurostat.

As explained in the first chapter, MNEs implementing foreign direct investments, especially of the vertical type, seek to minimize the cost of factors of production, of which the cost of labour is the most substantial. However, it is crucial to keep in mind that international labour cost differentials may be counterbalanced by differences in the productivity of the same factors. During the localization decision-making process, MNEs, indeed, do not simply compare the different wage levels of various potential destinations, rather they try to evaluate the unit labour costs (ULC) of different locations. In other words, transnational corporations, that are willing to establish a subsidiary abroad, take into consideration the average cost of labour per unit of output produced rather than the sole salary expenses. Productivity differences between countries are, however, hard to calculate with common international standards. In this regard, given its highly skilled and specialized workforce, we may assume that Hungary offers great labour productivity. Hungary, therefore, presents the combined advantage of a skilled workforce available at a relatively inferior price. The numerous manufacturing production plants (vertical FDI), especially in the automotive industry, are effective evidence of the above statement. As reported by the Hungarian Central Statistical Office (KSH), the average gross monthly salary for the year 2021 was HUF 438,800, approximately €1,090. Since most of vertical FDI in Hungary, especially in the automotive, electrical and chemical sectors, focus on labour intensive activities, it is more insightful to consider the average salary in the manufacturing sector for the same year, which is HUF 478,372 (€1,190[9]). Therefore, thanks to the relatively low unit cost of labour, the country can optimally integrate itself

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[9] Exchange rate of 19/09/2022: (€1=HUF401.28).

into the European production chain and thus may be considered an efficient production workshop.

The fiscal system is another critical reason why a number of MNEs decide to carry out direct investments in Hungary. As explained in the first chapter of this work, location decisions are the result of a precise evaluation of countries' taxation system as well as their provision of public goods, such as infrastructure (Tiebout, 1956). MNEs seek to expand their profits and thus are sensitive to the various tax measures that compose the national fiscal system. Hungary together with other EU countries (e.g. Cyprus and Ireland), adopted an innovative tax system with the objective of attracting foreign investors. In January 2017, the Hungarian Government introduced the corporate income flat tax at 9%, replacing the previous progressive taxation system. The 9% rate is the lowest corporate income tax rate in the European Union. By focusing on highly advantageous taxation of income, in recent years, the country has managed to stimulate economic growth even if it has been repeatedly recalled by the European Commission, which is pursuing the implementation of a Global Minimum Corporate Tax at a 15% rate. In December 2022, Hungary decided to remove its veto on the introduction of the Global Minimum Corporate Tax; this was done with the objective of unblocking part of funds destined for Hungary from the EU Cohesion Policy 2021-2027 and the EU Recovery Fund. Therefore, EU member countries will have to implement the new directive by 31 December 2023. The directive will apply to multinational enterprise groups and large-scale national groups in the EU with combined financial revenues exceeding €750 million a year. The 15% CIT (Corporate Income Tax) will apply to any large group, national or international, which has its parent company or a subsidiary in an EU member state. Personal income tax instead is set at a single flat tax of 15%. Hungary's Value-Added Tax (VAT), however, is the highest in Europe at 27%, although there are reduced VAT rates at 18% for food and 5% for basic necessities and newspapers. As already described in Chapter 1, however, the most useful index in order to highlight the actual fiscal pressure of a given national tax system is the effective tax rate. More precisely, the effective average tax rate (EATR) is the one with the greatest influence during the FDI location decision. Hungary displayed in 2021 an EATR of 10.2%, the lowest among OECD countries, globally preceded by the sole Bulgaria and Andorra and equal to the one of Liechtenstein. Moreover, according to the 2022 International Tax Competitiveness Index (ITCI) provided by the Tax Foundation (Figure 14 below), Hungary exhibits the seventh

most competitive fiscal system among OECD countries. The ITCI seeks to capture the consistency of national tax systems to the two most pivotal aspects of fiscal policy: competitiveness and neutrality. The index measures the extent to which the 37 OECD member countries promote the competitivity through the means of low tax burdens on business investments and how the tax legislation impacts the economic system as a whole. The International Tax Competitiveness Index considers more than 40 variables measuring not only the actual level of tax rates, but also taking into consideration how taxes are structured. This result is remarkable and underlines how the Hungarian tax system provides advantageous conditions for the implementation of FDI.

Figure 14: International Tax Competitiveness Index, European OECD countries ranking, 2022.

European OECD Country Rankings on the 2022 *International Tax Competitiveness Index*

Source: 2022 *International Tax Competitiveness Index*,
https://taxfoundation.org/publications/international-tax-competitiveness-index/.

Country Rankings on the 2022 *International Tax Competitiveness Index*

Better   Worse

TAX FOUNDATION   @TaxFoundation
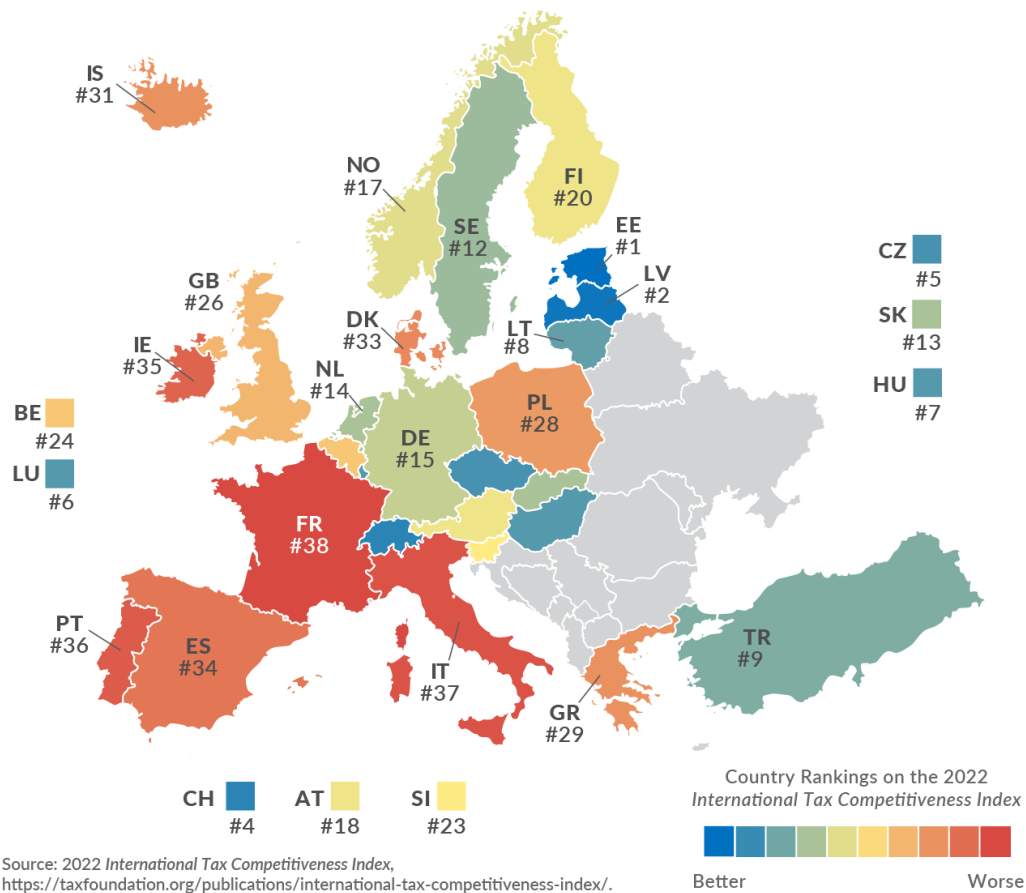
Source: Tax Foundation (2022), *International Tax Competitiveness Index 2022*, Center for Global Tax Policy.

According to OECD research, corporate taxes are the most harmful kind of tax to economic growth; personal income and consumption taxes, on the contrary, are less damaging[10]. This is because corporate taxes have a smaller negative impact on the economic decisions of individuals and firms and, therefore, on general economic growth. Corporate taxes indeed discourage the activities that mostly contribute to growth, namely investment in capital and productivity improvements[11].

In addition to this attractive corporate fiscal system, the government implemented public policies providing generous incentives to investors coming to or expanding in Hungary. The main kinds of investment incentives are cash subsidies, tax incentives, low-interest loans and land available for free or at reduced prices. Such kinds of incentives and support measures are relevant in reducing the fixed and operating costs of setting up a subsidiary. Furthermore, to promote inward FDIs, greater predictability and consistency in the application of corporate income taxes would encourage more investment, which in turn might improve growth performance. In fact, stable and predictable tax systems that are efficiently and transparently run are attractive to multinational corporations.

In order to evaluate the impact of regulation and restrictions on FDI, the Organisation for Economic Cooperation and Development (OECD) developed the FDI Regulatory Restrictiveness Index (FDI Index). This index measures the statutory restrictions on foreign direct investment in 22 economic sectors across 69 countries, including all OECD and G20 members. It works as a tool for benchmarking countries, measuring reforms and assessing their impact. The indicator goes from 0, indicating the lowest level of restriction, to 1, which stands for maximum restriction degree. The FDI Index gauges the restrictiveness of national FDI laws by looking at the four main types of restrictions on foreign direct investments: (i) Foreign equity limitations; (ii) Screening or approval mechanisms; (iii) Restrictions on the employment of foreigners as key personnel e.g. managers, directors, experts; (iv) Operational restrictions, e.g. restrictions on branching and capital repatriation or land ownership. The index does fully reflect the investment climate of a country. However, FDI regulations have a significant role in determining a nation's allure to international investors. Moreover, unlike, for example, a country's

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[10] Johansson, A., Heady, C., Arnold J., Brys, B. and Vartia L. (2008), *Taxation and Economic Growth*, OECD Economics Department Working Papers ,No. 620, OECD Publishing, Paris.
[11] OECD (2010), *Tax Policy Reform and Economic Growth*, OECD Tax Policy Studies, No. 20, OECD Publishing, Paris.

geographical position, FDI rules are under government control and can therefore be modified and adjusted. According to OECD researchers, countries presenting fewer restrictions tend to receive a more considerable amount of FDI relative to the size of their economy. Restrictions indeed tend to hinder a country's attractiveness for FDI, revealing an economic cost that must be weighed against any potential benefits from discriminatory foreign investor regulations. According to 2020 data, Hungary presented an FDI Regulatory Restrictiveness Index of 0.03, which is better than the OECD average of 0.06. As visible from Figure 15, Hungary progressively reduced its restrictive regulations over time, passing from an FDI Index of 0.15 recorded in 1997 to the most recent measurement of 0.03 in 2020.

Figure 15: Total FDI Index: Hungary and OECD average, 1997 – 2020.
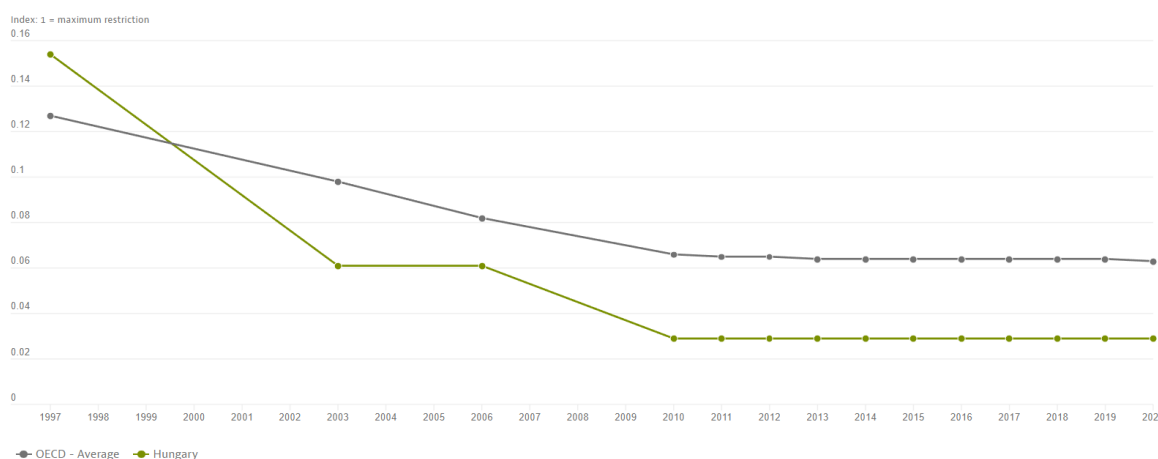
Source: The OECD Going Digital Toolkit, based on the OECD FDI Regulatory Restrictiveness Index Database.

As previously said, investors actively planning to implement a foreign direct investment include several factors in their analysis. The international consulting and financial services company Blacktower managed to bring together the determinants they consider the most relevant in deciding where to locate a new company. Using diverse statistical databases, they analysed 31 countries across Europe as the best places to invest in new business, based on the following variables: percentage of the population with university degrees, average net salary, corporate tax rate, cost of living, and cost of office renting per square metre. The result is the ranking in the Table 4 below. Interestingly, the best performing countries in the raking are located in Eastern Europe. Lithuania stands out as the best place for new business entrepreneurs. In particular, it displays a low rate of corporate tax, namely 15%, and low office renting expenses. Hungary, preceded by

Cyprus and Bulgaria, ranked 4th, performing remarkably in the categories of corporate tax rate, set at 9%, office renting costs and cost of living. According to this table, by increasing its ratio of the population with university degrees, Hungary could be an even more suitable location for new business ventures.

In general, investors may consider the overall economic growth rate as a proxy for the potential development of a country. Hungary is a medium-sized country whose economy has experienced considerable growth in recent years, excluding the 2020 pandemic downturn. The Hungarian GDP in 2021, equal to about 153 billion euros at current prices, has recorded growth over the year of 7.1%. According to the Hungarian Central Statistical Office, Hungarian GDP in Q1 and Q2 of 2022 will increase respectively by 8.2% and 6.5% compared to the same period of the previous year. Indeed, despite some slowdowns, Hungary continues to be one of the fastest growing EU economies, with a developed financial system and a clear legal and regulatory framework. The medium-term development prospects are good and could improve by reducing the disparities in the growth of economic potential present in some regions.

Table 4 : Top European countries for new business entrepreneurs, 2022.

Rank	Country	Degree Prevalence (%)	Average Net Salary (€)	Corporate Tax Rate (%)	Cost of Living (€)	Annual Office Renting Cost Square Metre (€)
1	Lithuania	38.7	1,059	15	567.79	204
2	Cyprus	40.2	1,658	12.5	712.25	156
3	Bulgaria	25.6	665	10	486.92	240
4	Hungary	23.6	950	9	486.49	162
5	Estonia	37.1	1,214	20	661.08	228
6	Latvia	33.2	1,050	20	599.41	216
7	Poland	28.9	1,002	19	515.22	294
8	Slovenia	31.5	1,363	19	655.07	180
9	Romania	16.2	785	16	463.1	228
10	Croatia	22	974	18	585.85	207
11	Slovakia	23.9	919	21	566.8	204
12	Portugal	25.4	1,110	21	533.65	288
13	Greece	28.5	1,116	24	640.16	252
14	Ireland	42.8	3,041	12.5	853.97	673
15	Spain	36	2,039	25	619.47	408
16	Finland	39.8	2,509	20	812.57	444
17	Czech Republic	21.1	1,250	19	603.35	288
18	Belgium	37.6	2,442	25	813.53	315
19	Netherlands	36.6	2,152	25	908.98	221
20	Malta	28.1	1,021	35	733.45	175
21	Luxembourg	40.9	3,573	24.9	960.98	427
22	Austria	31.3	3,104	25	840.73	312
23	Sweden	38.3	2,770	20.6	838.62	1022
24	Denmark	33.7	3,914	22	937.2	275
25	Italy	17.9	1,752	24	757.29	360
26	UK	40.6	2,454	19	786.61	1513
27	Norway	38.8	3,795	22	1,134.4	562
28	France	35.3	2,791	26.5	849.99	890
29	Iceland	36.8	3,221	20	1,102.01	858
30	Germany	27.2	2,952	30	802.35	540
31	Switzerland	39.3	4,902	14.9	1,415.75	688

Source: Blacktower Financial Management Group.

Beyond the advantages and benefits just analysed, investing in Hungary may also present some risks and drawbacks that a reasonable investor has to take into account.

First of all, investors should consider the political risk. Indeed, the Government led by the political party Fidesz and its leader Victor Orbán has repeatedly been accused by the international political arena of pursuing the dismantling of democratic institutions, taking over the media and violating the rights of minorities. The recent intensification of tension between the Government of Hungary and the European Union undoubtedly plays a role

in discouraging further foreign investments. The Government indeed has been deemed of supporting initiatives aimed at increasing the majority control over the country's economic power centres. In September 2022, the European Commission announced the proposal to withhold European regional funds destined for Hungary for a total equal to €7.5 billion. The amount corresponds to 65% of the regional fund allocated to Hungary until 2027 under the Cohesion Policy 2021-2027[12]. This amount represents almost 20% of all EU funding that is foreseen to be granted to Hungary over the next seven years. Therefore, the other 80% of resources are not concerned. Subsequently, EU members decided to reduce the withheld funds to 55%, corresponding to €6.3 billion. On this occasion, the Commission accused Hungary of having embarked on an undemocratic drift, displaying a high level of corruption, and mismanaging European funds. In other words, Hungary is blamed for having breached EU core values. Additionally, during the Covid epidemic, EU nations jointly established a Recovery Fund. Hungary had to receive €5.8 billion in funding, but only if it implements measures to strengthen judicial independence and fight corruption. These requirements are similar to those required to unblock the regional funds. As described earlier in this chapter, successively, in December 2022, Hungary approved certain EU decisions that until then it had strategically vetoed. Concerned measures regarded the Ukraine support package and the introduction Global Minimum Corporate Tax of 15%.

EU funds directed to Hungary are planned to be allocated to projects focusing on increasing national competitiveness in both economic and social terms. The major six ambitious goals are: to improve the productivity and innovation potential of Hungarian SMEs to become relevant actors in international economic competition; to raise the employment rate and enhance productivity and employment conditions; to invest in infrastructure so that to increase competitiveness; to boost cross-border cooperation with neighbouring regions; to give innovation, research and development a pivotal role; and finally to enable a more extensive use of renewable energy, encouraging the green transition to low-carbon industry, leading to a circular economy to fight climate change.

The above-mentioned political tensions may however discourage foreign investors, and sanctions and cuts on European funds may endanger the availability of resources necessary for the planned objectives and for subsidies and incentives supporting foreign

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[12] The EU Cohesion Policy support the European Union's economic, social, and territorial cohesion. It aims at the Union's priorities, particularly the green and digital transition.

investments. EU fundings indeed are a large driver of Hungarian GDP growth, and therefore many of the projects described rely on the EU green light.

Additionally, the high increase in inflation that has been passed on to wages, and the upward pressure on financing costs caused by the rise in interest rates alongside the volatility of the local currency exchange rate, could reduce the prospects for growth. Furthermore, Hungary, compared to other European countries, has a higher risk related to energy security due to its greater dependence on imports of energy from Russia, difficulties in diversifying supplies in the short term and its energy-intensive economy. With the intention of stemming these problems, the government has established as main objectives to enhance the security of the energy supply, transform the energy sector to become environmentally friendly and stimulate innovation opportunities of economic development importance. A further goal is that most of Hungary's electricity is produced from two sources: nuclear and renewable (primarily solar power plants). Thanks to this combination of sources, according to programmes, by 2030, 90% of Hungary's electricity production will be carbon-free. By 2040, Hungary's electricity imports will fall from the current average of over 30% to below 20%.

Human capital is among the most influential factors in the localization of an investment. Recently, more than a few MNEs based in Hungary have identified shortages of qualified labour, specifically technicians and engineers, as the largest obstacle to investment in Hungary. It appears indeed that the overall considerable percentage of students in those studying fields does not entirely satisfy the labour demand of multinational companies.

As highlighted by the 2022 DESI report (Digital Economy and Society Index), which reviews the major digital indicators of EU countries, Hungary, ranked 22nd out of the 27 EU Member States. More specifically, in the Human Capital indicator, the country ranks 23rd, indeed only 49% of individuals have basic digital skills, below the EU average of 54%. Graduates that studied ICT (Information Communications Technology) are 3.1% of the total (EU average: 3.9%), and ICT specialists still represent a relatively low share of the workforce (3.9% versus 4.5% in the EU). To cope with this issue, Hungary promoted the Hungarian National Social Inclusion Strategy 2030, which sets several digital objectives. More specifically, it aims to improve the digital literacy of students, parents and teachers; further develop the digital infrastructure in disadvantaged regions; reduce online risks and improving the IT infrastructure in schools to effectively address

early school leaving. In addition, the National Digitalisation Strategy provides the strategic policy framework for 2021-2030, clarifying and complementing the measures contained in other strategic documents. The strategy is structured around four main pillars: digital infrastructure, digital skills, digital economy, and digital state. These strategic initiatives aim to upgrade the digital skills of citizens, the workforce, and IT professionals, with the broad ambitious goal of being among the ten leading EU economies in terms of digitalisation by 2030. Obviously, EU funding will play a fundamental role in implementing the planned measures. Therefore, it is highly critical to carefully observe how the tense situation between the Government and the European Union will evolve. At a global level, according to the 2022 Global Innovation Index (GII), which measures the performances of 132 economies' innovation ecosystems and tracks the most recent global innovation trends, Hungary ranked 34th out of the 132 considered economies. The index, which contains 80 total indicators determining the level of countries' innovation policies, judged Hungarian performance in line with its level of development. The Hungarian Central Statistical Office reports that the R&D expenditure in relation to GDP for the year 2021 is 1.64%. As indicated in Figure 16 below, the indicator shows a positive trend over the years. It increased from 1.13% in 2010 to the latest value of 1.64% in 2021. It is worth noting, however, that the value valid for Hungary is still lower than the EU average of 2.32% registered in 2020.

Figure 16: Hugary R&D expenditure as a percentage of GDP, 1995 – 2020.
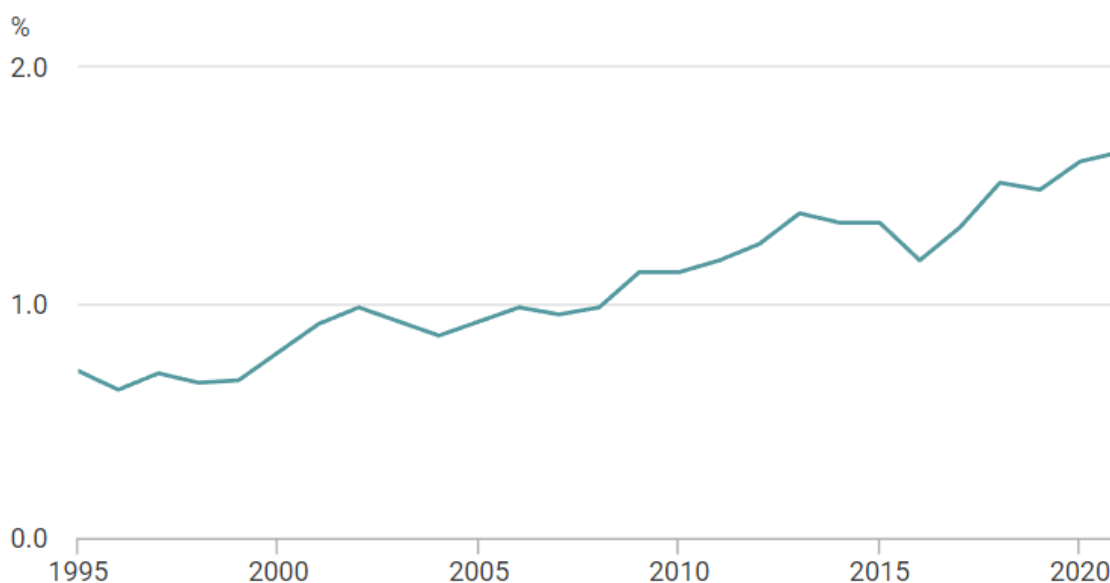
Source: Hungarian Central Statistical Office.

Furthermore, the percentage of innovation-active enterprises over the total number of enterprises located in Hungary exhibits a positive tendency (25.6% in 2014 and 32.7% in 2020). However, also in this case, the data is nonetheless lower than the EU average.

It is finally interesting to note that, as gravitational models (Ekholm 1998; Shatz 2003) suggest, besides physical distance, the cultural distance between states (Bandelj 2002) plays a relevant role in attracting or discouraging FDI flows as well. Countries sharing the same languages are more likely to engage in economic exchanges (Linnemann 1966). These commonalities indeed reduce the transaction costs of economic investments. More specifically, according to some scholars (Kim, Liu et al. 2015), language barriers between entrepreneurs and labourers in FDI-sending and FDI-receiving countries can cause friction at two stages of economic transactions: (i) search and contracting and (ii) management and operations. First, foreign investors will look for potential firms and opportunities in the host country. Successively, they will need to secure a contract that embodies the negotiated terms of a transaction. In this phase, language differences may lead domestic entrepreneurs to communicate ineffectively with their foreign counterparts, preventing the parties from finding mutually beneficial opportunities. Secondly, once the contract is effective, the mother firm has to supervise and manage the daily operations of the affiliate. Investing MNEs usually move their managers from their home countries to supervise local workers, therefore, language barriers between managers and employees may hamper smooth activities. The parties can overcome these frictions in several ways, for example, by adopting a third-party language, like English, or hiring a translator. Nonetheless, the language barriers may persist and cause misunderstanding, impeding the regular course of operations. From the point of view of governments seeking to attract FDIs, a strategic policy to attract foreign investment would be to include or improve the teaching of a specific foreign language in schools. This would also work as a signal to potential FDI-sender states that the FDI-receiving country intends to provide favourable investment conditions, first by reducing the language-barrier transaction costs. Lower transaction costs will then increase the likelihood and the amount of investment. In the case of Hungary, the U.S. Foreign Service Institute, responsible for the language training of American diplomats, classified the Hungarian language as "exceptionally difficult for native English speakers." Despite the evident struggle that learning the Magyar language presents, the Hungarian population, according to the 2021 Education First (EF) English Proficiency ranking, demonstrates high proficiency in speaking the English language,

ranking 17th (out of 112 countries analysed). However, it should be noted that Hungary is preceded by nations such as Croatia, Serbia, Romania and Poland, leaving thus space for public policies aiming to increase the population's English proficiency with the final aim of attracting more FDI.

As one might observe now, the reasons in favour and against the implementation of a foreign direct investment in Hungary are several and strictly intertwined. What has just been presented is a general overview of the main country-specific characteristics of Hungary. The decision upon the localization of an investment, however, always takes into account also sector and firm-specific determinants, such as the company's relative use of factors or its product differentiation. Nonetheless, a dissection as such still supports investors in their reasoning, providing the country's potentialities and possible threats, and might therefore be considered. For this purpose, below, you can find a SWOT analysis, which gathers together the major elements described in the section above, divided between Strengths, Weaknesses, Opportunities and Threats.

Table 5: SWOT analysis Hungary

STRENGHTS	WEAKNESSES
• Geographical location	• Lack of qualified labour
• Efficient infrastructure network	• Lack of digital skills
• Educated and skilled workforce	• Diffused corruption and cronyism
• Low unit labour cost	
• Competitive national tax system (plus incentives and subsidies)	
OPPORTUNITIES	THREATS
• Growing economy (GDP)	• Political tensions with the EU
• Ambitious development programs (energy and digital sectors)	• EU Minimum Corporate Tax
• Increase university degree prevalence	• Inflation and volatility of local currency
	• Language gap

2.4 Analysis of Hungary FDI data

During the period between the second half of the nineteenth century and World War I, Central and Eastern Europe countries (CEE) were relevant targets of FDIs, accounting for a significant share of the global inward FDI stock. Subsequently, and also after World War II, inward flows to this region declined. During the socialist era, indeed, FDI flows shunned Central and Eastern European countries. Following the fall of the Berlin Wall and the liberation of the country from Soviet rule, Hungary entered into a severe recession. Between 1991 and 1993, unemployment and inflation rates reached double digits, while GDP fell by 20% between 1989 and 1992 (Hungarian Central Statistical Office). Among the several reasons behind this acute crisis, a major role was played by the sudden disappearance of the established export markets in the rest of the Eastern bloc, especially Russia (Kornai, 1994). Since then, Hungary had no other option but to demolish its trade barriers, so as to attract into the country as many foreign direct investments as possible. It is, therefore, only after 1989, that this part of Europe returned to being an important destination for FDI (Barath et al., 2001). Between 1990 and 2003, the percentage of inward FDI directed toward this region rose dramatically, from 0.2% to 3.2% of the global total (UNCTAD). Hungary's economy, while modest from a global standpoint, is one of the largest in Central and Eastern Europe, and it was among the first to recreate its market economy after socialism. The Hungarian economy, nevertheless, was more open than those of other socialist countries even before 1989. The internationalization process had already begun in the 1970s, and by the end of the 1980s, an FDI-conducive regulatory framework had been established. As a matter of fact, there already were foreign investments in Hungary during the socialist era, even if of a negligible amount. Thanks to its openness, Hungary was most certainly the most attractive investment destination among Central and East European nations in the early 1990s. In other words, the ability of Central and East European transition economies to draw in international investment during the first half of the 1990s was greatly influenced by the Hungarian economy. It, indeed, underwent a severe transformation after the collapse of Comecon (Council for Mutual Economic Assistance) around 1990. From then onwards, Hungary implemented a series of liberalizations, as well as a process of privatisation of some state-owned enterprises (SOEs). Hungary's successful privatisation measures, alongside other reforms, allowed the country to establish a market economy, favouring the arrival of foreign capital and undertaking an export-led growth path. Since

the beginning of the process, FDI inflows were considered a critical element in Hungary's transition, acting as the primary engine of capital accumulation, economic growth, and industrial restructuring. In the first half of the 1990s, the country received large amounts of FDI, superior to those destined for other transition economies. MNEs investing in the Hungarian national economy's "crown jewels" brought equally valuable resources, namely capital, technology and entrepreneurship culture. However, by the second half of the 1990s, Poland and the Czech Republic had significantly surpassed Hungary in attracting FDI inflows. (Figure 18). Hungary, therefore, shifted to be the third-most attractive country in the CEE region for foreign investors (Horvath, 1996). Despite losing regional leadership, the second wave of FDI in the late 1990s expanded Hungarian FDI stock, bringing to Hungary green-field investments that significantly contributed to the modernization of the Hungarian economy by delivering new capital and technology and creating jobs (Figure 20).

Figure 17: FDI inward flows, Hungary, 1990- 2021, million of USD.
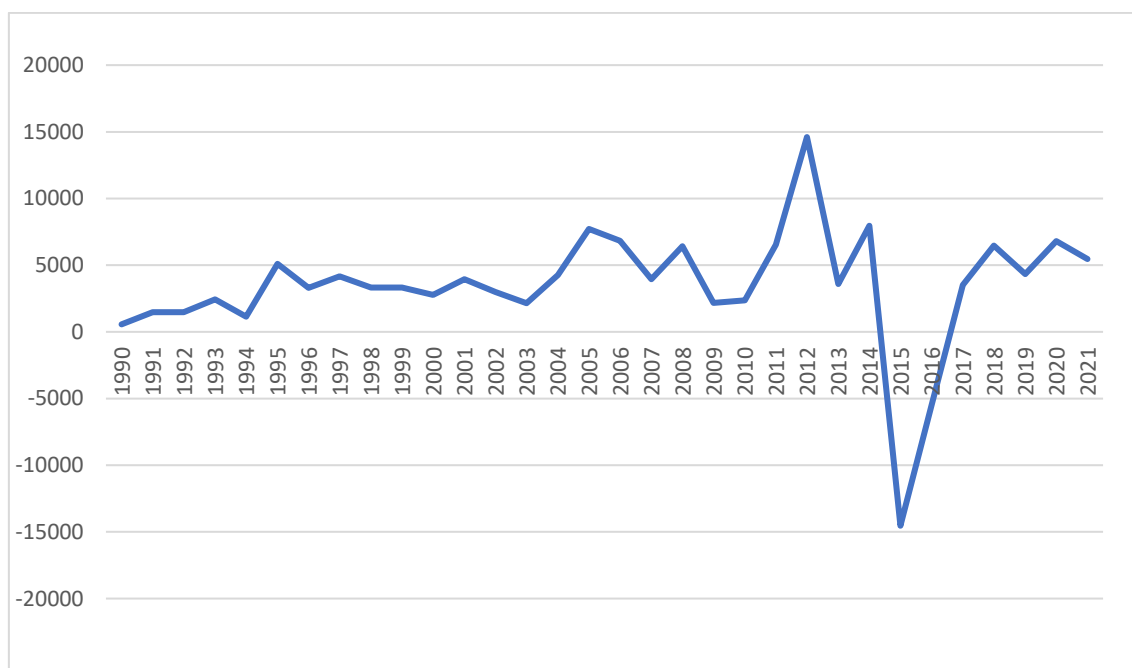
Source: UNCTAD statistics data centre.

Figure 18: FDI inward flows: Hungary, Czech Republic, Poland, 1990 – 2021, million of USD.
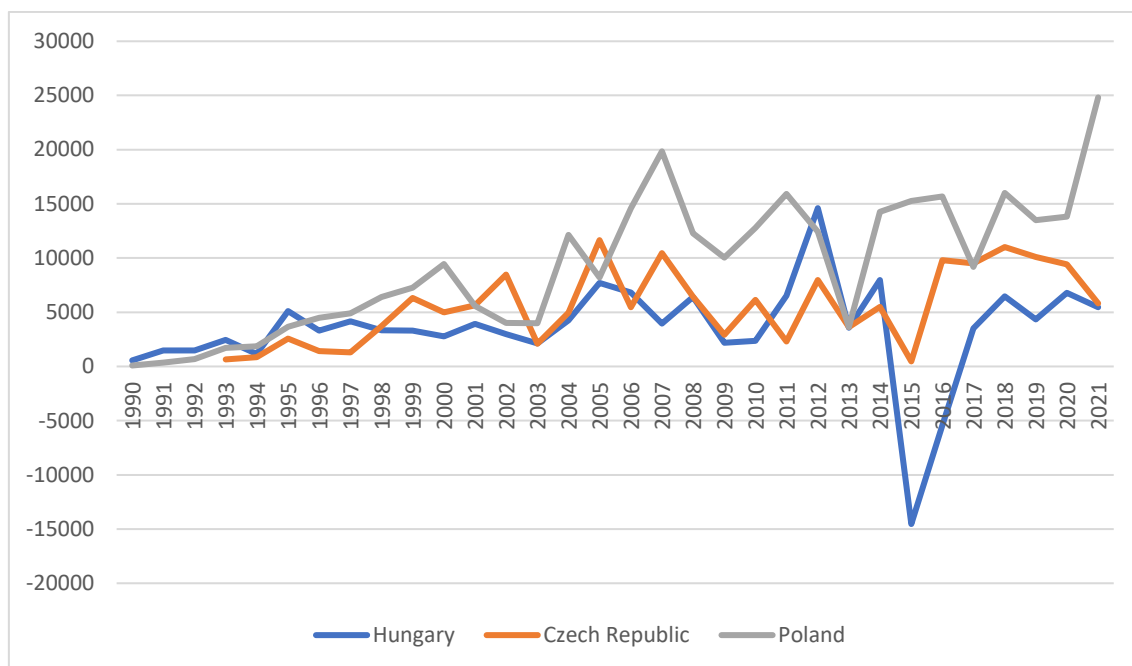
Source: UNCTAD statistics data centre.

The two figures just presented display, especially in specific years like 2012 and 2015, wide fluctuations, which, in reality, are often the result of mere capital in transit transactions. In 2011, for example, as a press release of the Hungarian National Bank[13] stated, capital in transit accounted for around 83% of total inward flows. Capital in transit refers to the circumstances when local Hungarian firms receive financing or a loan from another affiliate or a multinational enterprise and then transfer the sum to another foreign member of the same group of companies at very short notice (MNB, 2011). These transactions are not meant to finance development projects; therefore, they distort the FDI statistics. Figure 19 below, which instead utilizes data provided by the Hungarian National Bank (MNB), shows the FDI flows in Hungary excluding the capital in transit. It thus presents a more revealing picture of the trend of FDI flows in Hungary over time. Even not including capital in transit transactions, the amounts of inward FDI flows vary from year to year. Fluctuations on flows in fact were particularly strong in the early years of the economic transition.

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[13] Magyar Nemzeti Bank (2011), Press release: *Hungary's balance of payments: 2011 Q4*.

Figure 19: FDI flows in Hungary excluding Capital in Transit, 1995-2021, million of euro.
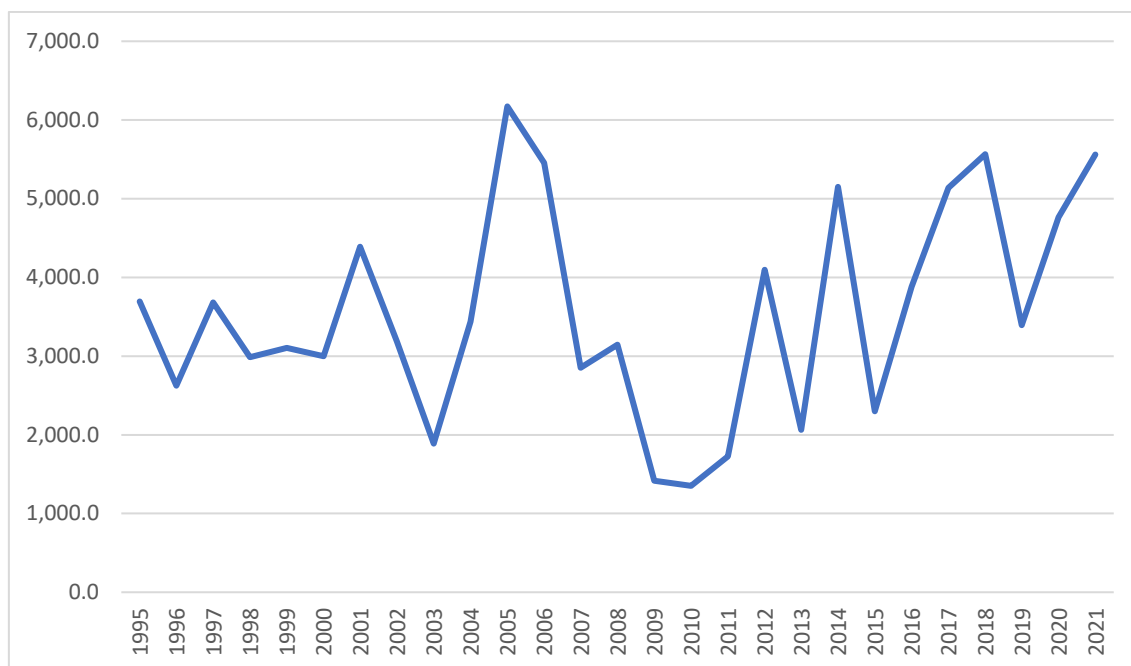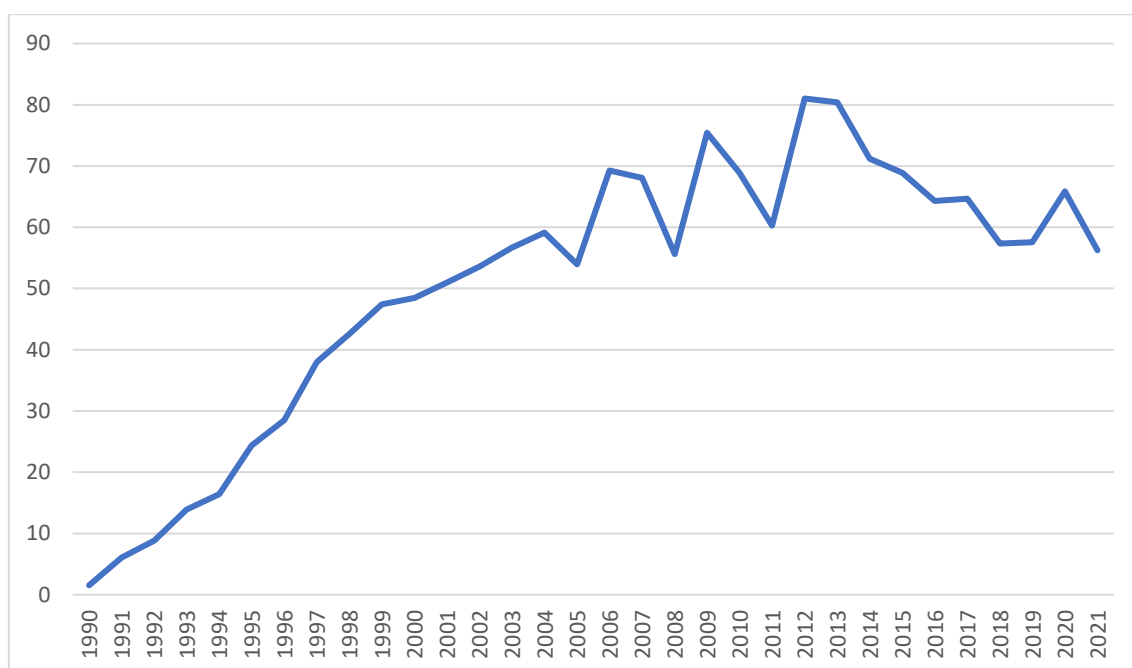

Source: UNCTAD statistics data centre.

During the large-scale privatization, the country's ability to attract FDI largely depended upon the object of privatization. As a matter of fact, in 1993 and 1995, we can observe two spikes in Figure 19, corresponding to $3.6 and $2.4 billion inward FDI flows, and it is when the biggest public utility companies were privatized. In particular, in 1993, the telecommunication service provider company MATÁV, now Magyar Telekom, was privatized, while in 1995, the public gas and electricity distribution companies and power plants underwent the same process. During the period from 1991 to 1997, Hungary obtained €4.6 billion with the privation of its state-owned companies (MNB, 2007). However, the annual FDI inflow decreased in volatility in the second part of the 1990s as the privatization process drew to an end. During the first years of the new millennium, the amount of capital invested started to decline, in part because of the events of September 11, 2001, and partly due to changes in the world economy. According to UNCTAD FDI stock statistics, until the end of 2003, more than $48 billion were invested in Hungary, accounting for around 56% of the domestic GDP (Figure 20). Regionally, only Russia and Poland exhibited more significant amounts, which, however, are much larger and more populated nations. As far as FDI stock in relation to domestic GDP is concerned, in 2003, Hungary was preceded by the sole Slovakia, which, however, had

less than half of Hungarian FDI stock. Poland always maintained a lower percentage of FDI stock over GDP than Hungary, while the Czech Republic overcame Hungary only around 2016 (Figure 21). Regarding per capita, Hungary's position is even more prominent. In 2003, the amount of per capita FDI inward stock was $4,767 (UNCTAD), ensuring Hungary's top position among its regional competitors.

Starting from 2004, the FDI flow trend reversed, as investments directed to Hungary surged again. In 2004, Hungary, together with other 9 countries (so-called "A10" countries), entered the EU. Hungary was the first country in Central and Eastern Europe to apply for membership in the European Union in 1994 and was finally admitted in May 2004. FDI inward flow peaked again in 2005, when more than $6 billion were invested in Hungary (Figure 19). In the same year, one of the largest privatization deals of modern Hungarian history took place: 75% of the shares of Budapest Airport were acquired by the British BAA International Ltd, for a total of €1.8 billion[14].

Figure 20: FDI Stock, Hungary, 1990-2021, percentage of GDP.

Source: UNCTAD statistics data centre.

The 2008 Global financial crisis put the Hungarian economy in the worst crisis since the beginning of the 1990s. The economy entered into recession in 2009, with real GDP

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[14] BBC News (2005), *BAA seals Budapest airport deal*, BBC News.

decreasing by more than 6% compared to the previous year. FDI and trade contracted too, especially in 2009 and 2010, when FDI flows fell, fluctuating around $2 billion, while about $1.5 if we exclude capital in transit transactions. Nevertheless, in 2010, thanks to some interlinking factors and circumstances, Hungary achieved a positive trade balance after two decades of deficits (KSH). The main reasons behind this upturn are the drop in international energy prices, especially crude oil, and the relevant fall in the country's import figures to its exports. Finally, and also closely related to the second reason, in 2009, Audi implemented a car production facility in Győr, a Hungarian city on the Austrian border.

Figure 21: FDI stock, 1990-2021, percentage of GDP.
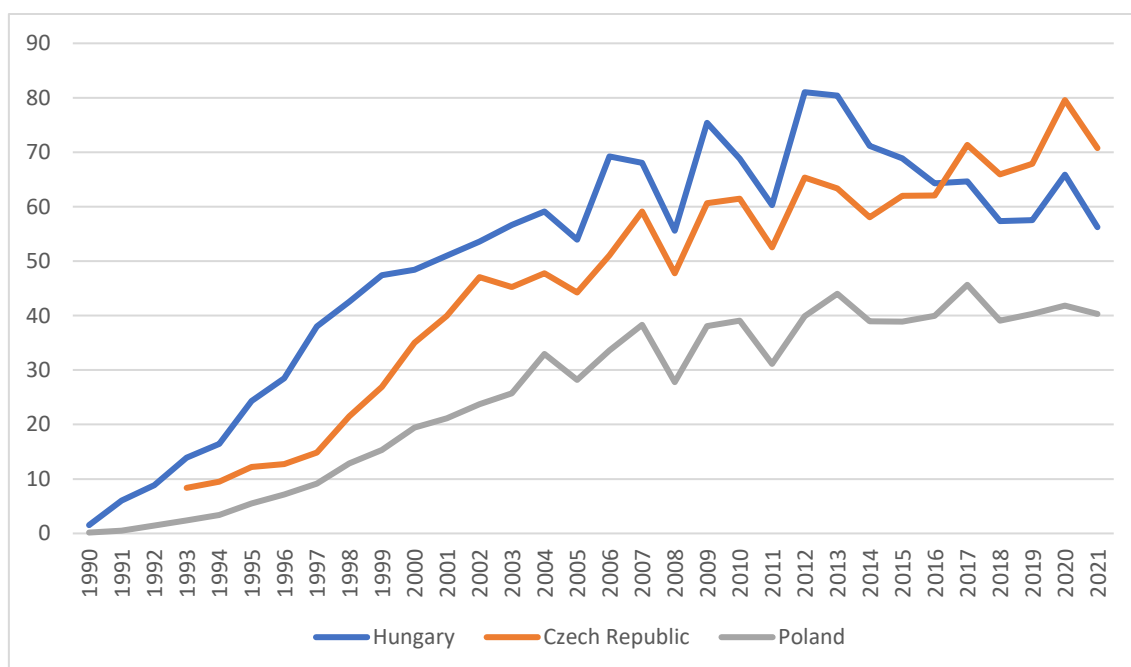
Source: UNCTAD statistics data centre.

In 2011 and 2012, as visible in Figure 18, Hungary received considerable volumes of FDI, outperforming countries such as Poland and the Czech Republic. However, as a press release of the Hungarian National Bank states: this is mainly caused by large capital in transit flow in the fourth quarter of 2011. Figure 22 below, besides the normally measured flows, depicts the trend excluding capital in transit amounts. As we can see, the trends approximately coincide, apart from some values, especially those valid for 2011 as well as for 2015.

Figure 22: FDI flows in Hungary, 1995 – 2021, million of euro.
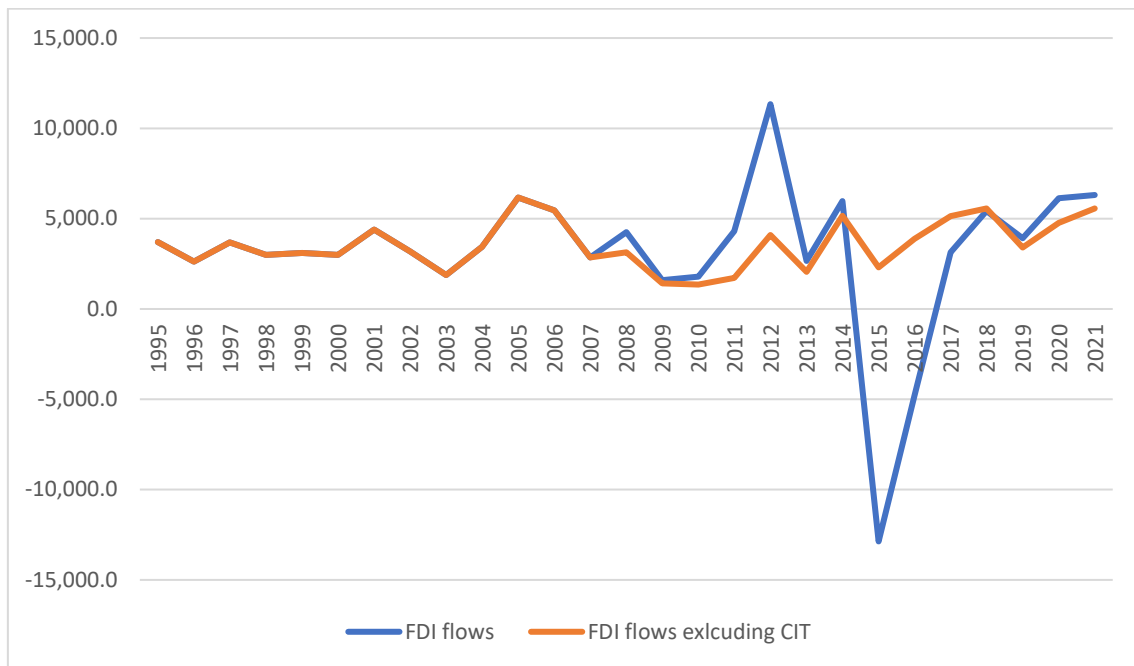
Source: Magyar Nemzeti Bank Statistics.

In 2015, discounting the massive share of capital in transit transactions, 11 Central and Eastern European countries of the EU experienced a decrease in their inflows of FDI. Hungary indeed saw its investments decline from more than $5 billion to around $2 billion. According to the 2016 World Investment Report published by UNCTAD, in 2015, Hungary witnessed numerous divestments in infrastructure businesses. Furthermore, the relatively higher levels of inflows reported in 2013 and 2014 were the result of one-off factors such as the recapitalization of foreign-owned banks that had sustained losses (UNCTAD). During the following year, inflows to Hungary as well as to other Central and East European member countries of the EU stabilized, bouncing back from the 2015 contraction. However, according to the 2017 UNCTAD World Investment Report, the number of divestments occurring in Central and Eastern Europe exhibits an increasing trend. The scale of these divestments affects their actual impact on FDI flows, although, as we can see in Figure 23 below, the upward slope since 2011 is evident.

Figure 23: Divestment deals in Central and Eastern Europe and the Baltics, 2005-2016 (indexed, 2005 = 100).
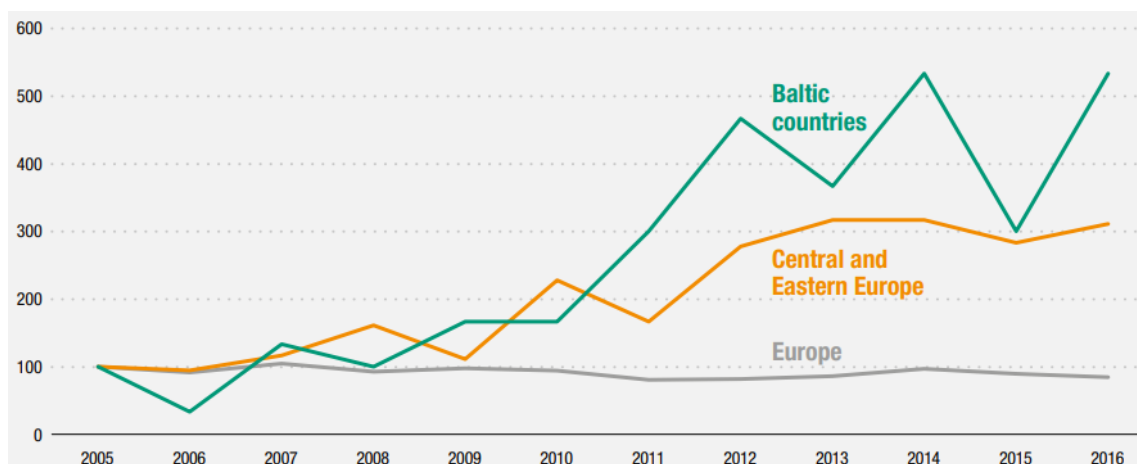
Source: UNCTAD (2017), *World Investment Report 2017*.

The drivers of this trend may be traced back to domestic government policies. The governments of Hungary and Poland are pursuing measures to strengthen domestic ownership in the banking industry, which in practice entails State-owned enterprises. The Hungarian Government demanded that 60% or more of its banking sector be brought under domestic control. In 2014, it acquired MKB Bank from BayernLB (Germany) for $74 million[15]. In Poland, similar policies, sometimes called "re-polonization", have been implemented, and state-owned enterprises played a role in divestments also in the Czech Republic. In 2017 and even more in 2018, FDI inflows in Hungary increased, reaching more than $5 billion. However, in 2018, most FDI was financed by retained profits; and not from newly transferred equity. This tendency is particularly prominent in Hungary, but it is apparent also in the Czech Republic, Croatia, Lithuania, Poland and Romania. These countries have a long history of FDI inflows; therefore, most invested capital tends to come from established investors rather than new partners. Moreover, in 2018, Hungary recorded sizeable net equity divestment, reflecting government acquisitions of foreign capital in telecommunications and banking industries. Furthermore, in the same year, several countries strengthened or introduced new investment restrictions and regulations, following national security-related concerns of host countries, especially regarding foreign ownership in strategic industries, critical infrastructure, and other sensitive business assets (WIR 2019). In this regard, Hungary implemented new regulatory

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[15] Than, K. (2014), *Hungary's Orban sees two-thirds of banks in domestic hands*, Reuters News Agency, 14/11/2014.

measures, introducing an FDI screening mechanism related to national security in politically sensitive sectors such as defence, dual-use products, cryptography, utilities, the financial industry, electronic communication, and public communication systems. The diffusion of these additional screening measures in developed countries may be attributed to the higher openness of these economies to FDI, particularly in strategic economic sectors and infrastructure. Therefore, FDI screening may act as a safety valve to control the entry of foreign investment in critical situations. Additionally, the 24 countries that have been identified as using these procedures serve as the primary worldwide hubs for foreign investment in these delicate industries and activities, making them more susceptible to unauthorized foreign acquisitions. After reporting an impressive amount of FDI in 2018, Hungary experienced a dip in FDI inflows in 2019. The Hungarian FDI stock at the end of the year was slightly more than 94$ billion, regionally preceded by Russia, Poland, the Czech Republic and also Romania. Regarding FDI as a percentage of GDP, Hungary with 57.54%, is positioned 4th in the Eastern Europe region. Slovakia (57.56%), Czech Republic (67.86%) and Bulgaria (75.08%) registered higher values. In order to protect essential domestic industries during the pandemic, several countries have implemented new regulations on FDI screening or reinforced existing ones. In May 2020, Hungary responded to the challenges presented by the outbreak of COVID-19, by introducing a new temporary foreign direct investment screening mechanism. The Governmental Decree no. 227/2020, applying to both EU and non-EU, established a notification obligation on foreign investors as a precondition to their planned investment in firms operating in specific strategic sectors, such as defence, healthcare, as well as non-medical industries. MNEs intending to pursue an FDI in certain industries have thus to file a prior notification towards the Ministry of Innovation and Technology and to obtain an acknowledgement of such notification by the Ministry (WIR 2021). The scope of this measure is to protect the domestic strategic companies impacted by the pandemic. This policy measure which had to be effective until the 31st of December 2020, has been extended until the 30th of June 2021. The trend towards increased regulations and screening procedures accelerated during 2020 and the first quarter of 2021, bringing the total number of countries conducting FDI screening for national security to 34 (WIR 2021).

In 2021 Hungary saw a surge in the number of announced projects by 58%, placing the country in the 15th position among the biggest FDI target in Europe according to the EY

European Investment Monitor 2022. FDI destined for Hungary accounting for 2021 amounted to more than $6.3 billion. The year 2021 also marked the implementation of what had been FDI's biggest project up until then. The South Korean company SK Innovation launched a greenfield FDI worth €1.9 billion. The plant is in Ivàncsa and will produce batteries. Then, according to the Hungarian Promotion Agency, out of the 96 FDI large projects, eight investments surpassed the value of €100 million. The record, however, did not last long since, in August 2022, the China-based Contemporary Amperex Technology Co., Limited (CATL) announced a colossal FDI project. The MNE indeed will invest EUR 7.34 billion to build a 100 GWh battery plant in Debrecen, creating over 9,000 new jobs. The plant will supply OEMs located in the proximities such as Volkswagen, Stellantis, BMW, and Mercedes-Benz[16]. These two mentioned investments, among minor others, strengthened Hungary's role as one of the world's top battery producers and its role in the e-mobility transition in Europe.

At the same time, however, the long-term consequences of the 2022 Russia-Ukraine conflict are still to be discovered, but the impact of the international investment climate is already becoming definite. In the short run, the fact that Hungary, as well as several other Central and Eastern European nations, are close, or even border, with Russia and Ukraine, could negatively affect the area's attractiveness to FDI projects. On the other hand, as companies and investors leave Russia, other neighbouring countries (for example, Hungary) may take advantage of their geographic location as well as of the added legitimacy and security that comes with being a member of the EU and NATO, to be the destination of companies' relocation. While from a global standpoint, Russia and Ukraine play negligible roles in the FDI landscape, Hungary, over the past decade, has developed close relationships with the Russian Government with a policy program called "Eastern Opening", which also comprehends China, Turkey, and various Central Asian countries. The two nations, however, are not main business partners for each other but in the energy sector. Russia, in fact, besides being the major exporter of gas supplies to Hungary, is involved in the construction of two new reactors at the Paks nuclear power plant located in central-southern Hungary. The deal, signed in 2014, will not be affected by the conflict in Ukraine since the Russian nuclear industry has not been targeted by EU sanctions. Hungary awarded the project to the Russian company Rosatom, without announcing a public tender. The project, financed by a €10 billion loan from Russia, has

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[16] CATL website, *CATL announces its second European battery plant in Hungary*, 12/08/2022.

been seen as a sign of tight relationships between Budapest and Moscow[17]. Hungary's FDI coming from the Russian Federation are only a minor amount. According to figures from the National Bank of Hungary (MNB), the FDI stock in Hungary deriving from Russia in 2019 accounted for around €1 billion, or 1.3% of the total stock. Hungary, indeed, concerning the policy response to the Russian initiative, aligned with the EU and NATO decisions in a radical change of policy approach. Nonetheless, during a convention of the Hungarian governing party in September 2022, Prime Minister Orban explicitly called for the withdrawal of EU sanctions on Russia, blaming them to be more detrimental to the European economy rather than to the Russian one[18]. Actual impacts on global FDI are still to be accurately identified, the next World Investment Report by UNCTAD, which will be published in June 2023, will clarify the situation and address the major issues. What is certain is that the security and humanitarian crises, the macroeconomic shocks brought on by the conflict, the increases in energy and food prices, and the increasing investor uncertainty will all impact global FDI in 2022 and beyond.

As explained at the beginning of this section, after the transition to a market economy, Hungary became one of the main destinations for FDI in the region. Hungary's major historical investor is Germany, followed by Austria, the United States of America and the Netherlands. Besides these main partners, also France, Italy, the United Kingdom and Japan played relevant roles. However, as we can see in the Figure 24 below, since the outset, Germany established itself as the heaviest investor in the Hungarian economy. Hungary and Germany have historically had close and stable commercial ties. According to Hungarian Central Statistical Office, German MNEs were responsible for 41% of FDI inflowing in Hungary in 1998, while the Netherlands accounted for around 14%. Since 1998, the stock of German FDI in Hungary has more than doubled, reaching €13 billion in 2005. Austrian companies were particularly active in the first half of 1990, then their share stabilized at around 11%. As a matter of fact, Austria provided 9% of Hungary's FDI stock in 1998. Due to their geographical proximity and historical traditions, Austrian MNEs are traditionally relevant economic partners of Hungarian firms. In 2005, Austrian FDI capital stock in Hungary exceeded 5.2 billion euros in value.

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[17] <u>Than</u>, K. (2022), *Hungary licenses two new reactors at Paks nuclear plant*, Reuters News Agency, 26/08/2022.

[18] Zoltan, S. (2022), *Orban Calls for End of EU Sanctions on Russia, Nemzet Reports*, Bloomberg Television, 22/09/2022.

Figure 24: FDI stock of Hungary, 1998.
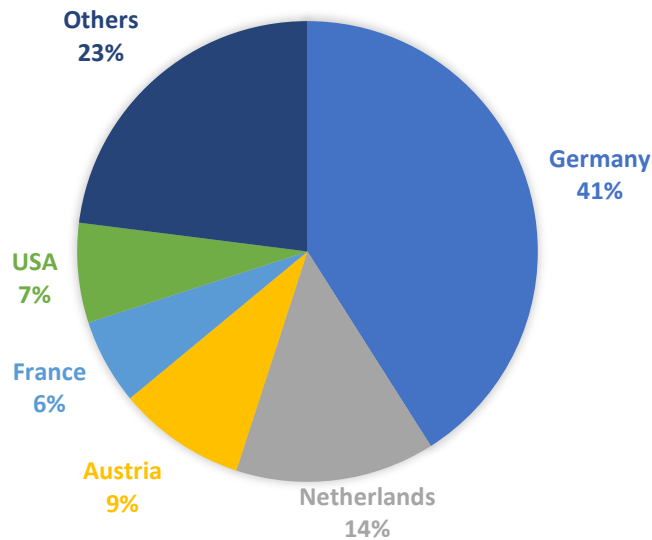
Source: Magyar Nemzeti Bank Statistics.

During the years following 1998, no huge shifts occurred, German shares gradually decreased, reaching around 27% of Hungarian FDI stock in 2005, remaining, however, the main investor in Hungary. Amounts invested by American MNEs continuously declined between 1993 and 2003. After 2001, the Dutch conversely significantly raised the value of their investments, reaching even more than 19% of Hungary's FDI stock in 2003.
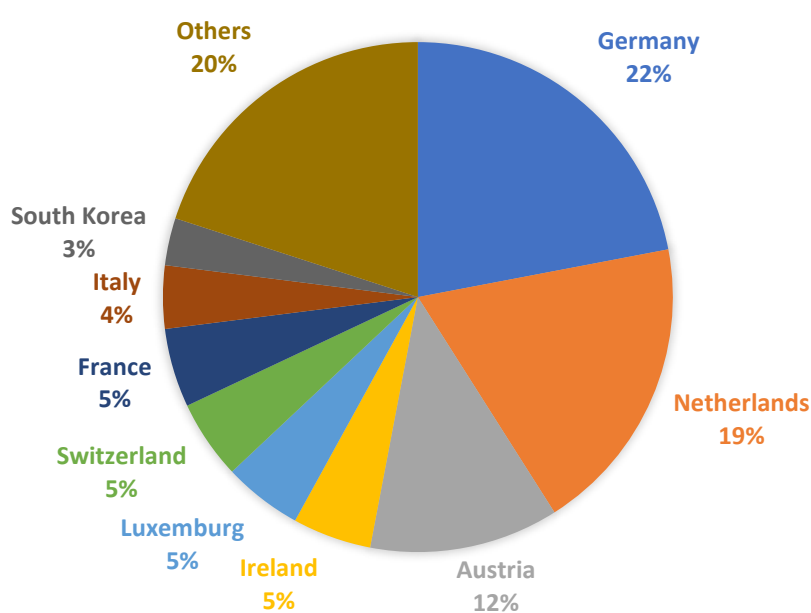
Figure 25: FDI stock of Hungary, 2012.
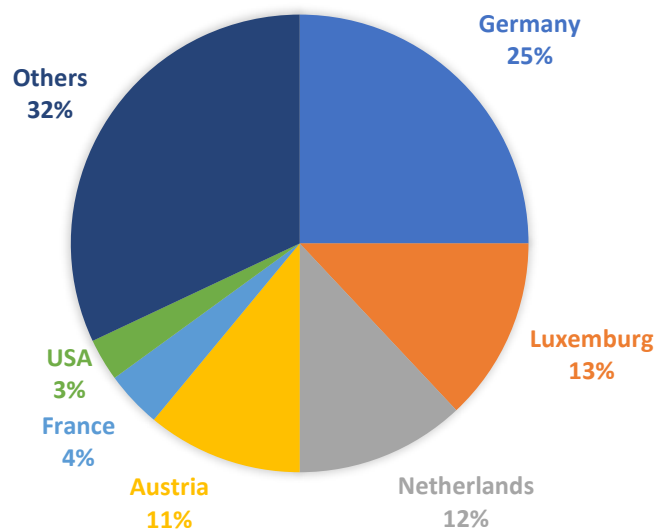
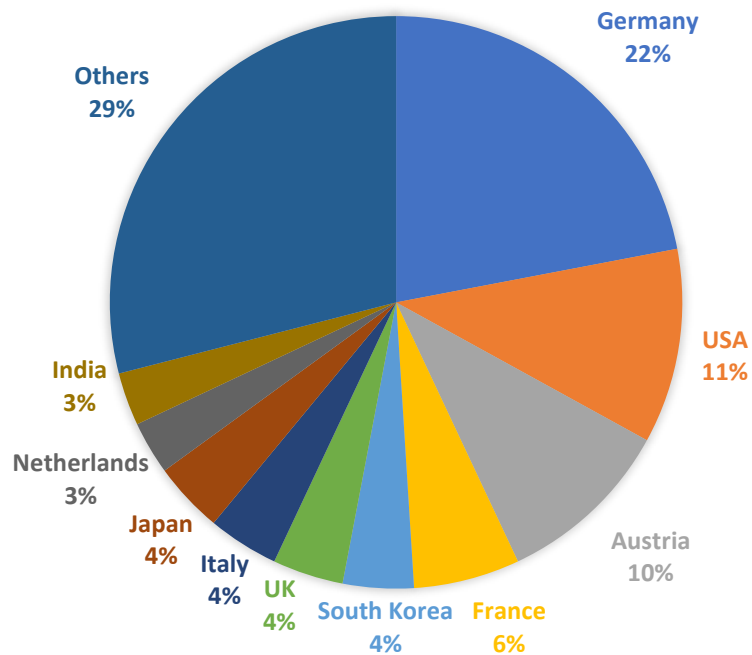*Source*: Magyar Nemzeti Bank Statistics.

As visible in Figure 25 above, Germany maintained its top position, accounting for around 25% of Hungarian FDI stock in 2012. Then, Luxemburg, Netherlands and Austria resulted as main investors, with respectively 13%, 12% and 11% of total stock. The share accounting for US investments resulted reduced to 3%, slightly below the French proportion at 4%. Curiously, we can observe that Luxemburg accounted for a considerable share of Hungary's FDI stock in 2012, namely 13%, while in 2005, its contribution was merely around 3.5%. As a matter of fact, since 2014, the Hungarian National Bank (MNB) started publishing figures regarding the FDI stock of the country distinguishing between the country of origin of the immediate investor and the one of the "ultimate controlling parent" (UCP). Utilizing the origin country of the immediate investor, we can find only the last country where the investment came from, while the UCP filter provides the source country of the ultimate "real" investor. In other words, in the case, for instance, an affiliate of a German-owned company in the Netherlands executes an investment in Hungary, in the data considering the UCP, it would be classified as German investment, instead according to the immediate investor principle, it would be a Dutch investment. This is a valuable tool for excluding countries that are mostly chosen by foreign investors only for tax benefits rather than for commercial goals. In order to highlight the sometimes-striking differences, below, is presented the comparison between the two classifying techniques of FDI for the year 2018.

Figure 26: FDI stock of Hungary, immediate investor, 2018.

Source: Magyar Nemzeti Bank Statistics.

Figure 27: FDI stock of Hungary, U.C.P., 2018

Source: Magyar Nemzeti Bank Statistics.

As we can see, while Germany did not incur any change, maintaining its leadership position, other nations saw their share shrinking or increasing considerably. Austria, instead, while remaining among Hungary's major partners saw its contribution diminished to 10%. The Netherlands severely reduced their share of stock to around 3%. Switzerland, Luxemburg and Ireland shrank respectively to 2.8%, 1.7% and 0.6%. The percentage accounting for Italy remained stable around 4%. This analysis is helpful to provide a more insightful comprehension of the FDI flows dynamics between countries, and thus to better understand which are the reasons that attract certain investors to Hungary. In this case, nations like Luxemburg, the Netherlands, and Ireland may serve only as stepping-stones for MNEs of third countries to enter the region. So, where are these ultimate controlling multinationals effectively based? Despite most of those investment shares are fragmented among various countries, some nations stand out as relevant investors. The USA, as observable in the latter figure, while representing a minuscule percentage under the immediate investor analysis, it gained a central role, accounting for around 11% of the total utilizing the UCP rule. France incremented its share from around 4% to 6%. Minor, but interesting changes occurred also regarding other countries, the United Kingdom passed from around 1% to more than 4%. Asia, as whole continent increased its share

from less than 5% to more than 17%. In particular, Japan and India increased from negligible percentages to around 3% each. South Korea grew from 3% to more than 4% and China increased from very small shares to slightly less than 3%. From the analysis using the UCP method, we can again infer that Germany undoubtedly established itself as the primary investor in the Hungarian economy. The USA are the country that most utilizes other nations as an intermediate step towards the Hungarian region. Indeed, the USA, even if in a decreasing trend, are a paramount investor in the Hungarian territory. Austrian MNEs can be considered the third major investors. Then other European countries, like France, Italy and the Netherlands, regularly select Hungary as profitable destination for their direct investments. The United Kingdom is a valuable investor for Hungary too. Finally, in the most recent years, Asian countries are carrying out a considerable amount of FDI in Hungary, gaining a relevant role in the nation's top investors. According to the Hungarian National Bank, Asian countries are responsible for around 22% of Hungarian 2020 FDI stock controlled with the UCP criterion. The electronics sector attracted most of these investments, but also manufacturing sector attracted several sizeable investments, particularly from South Korea. As described earlier in this chapter, the trend is continuing since, in 2021, the South-Korean battery producer company SK Innovation implemented a greenfield FDI worth €1.9 billion; and in 2022, the Chinese MNE CATL announced an investment of € 7.34 billion to build a 100 GWh battery plant in Debrecen.

Data regarding Hungary's sectoral destination of inward FDI are available since 1998. The sectoral composition of FDI coming to Hungary justifies the conclusions just drawn regarding the partner countries. Indeed, since 1990, foreign investors' primary focus has been the manufacturing sector, with Germany obviously playing the most prominent role. Successively, around 1995, there has been a significant change in the most intensive business activities of Hungarian FDI stock. Starting in 1995, in fact, services took on increased significance.

Figure 28: Sectoral composition of Hungary's FDI Stock, 1998 – 2005.
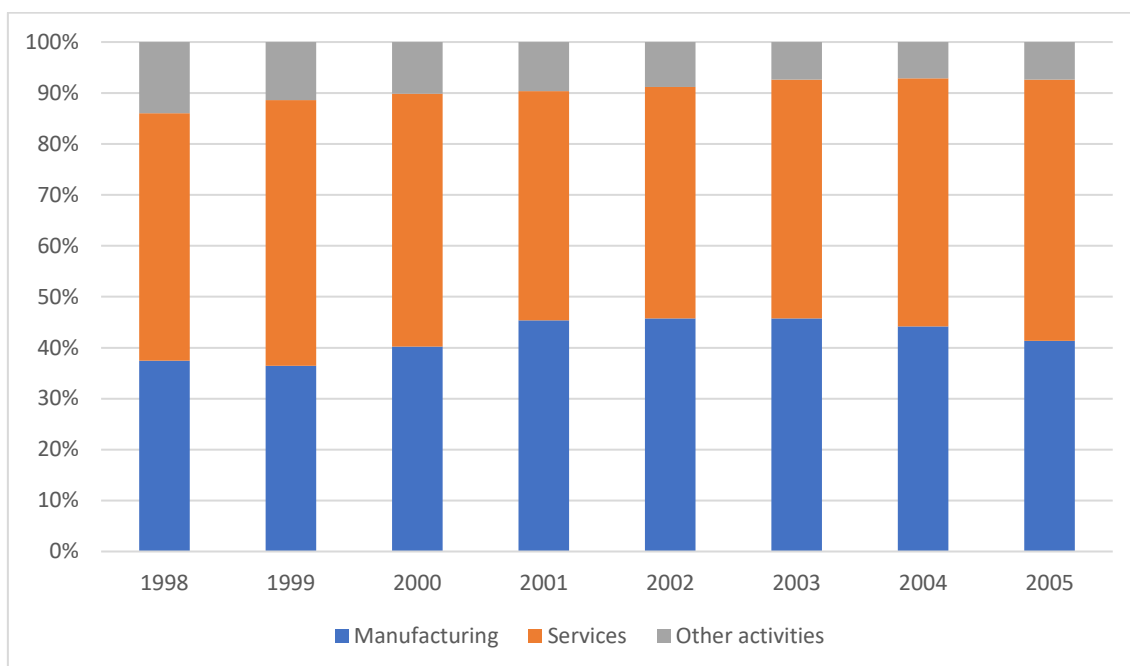
Source: Magyar Nemzeti Bank Statistics.

The share attributed to manufacturing, which accounted for around 40% during the period from 1998 to 2005, gradually decreased its significance to around one-quarter of total stock in 2009. Services, on the contrary, progressively increased until peaking at 80% of total FDI stock in 2015, while manufacturing was at its lowest level at around 10%. Among the main reasons behind this shift, there is the fact that first that the privatisation of SOEs started with manufacturing and then proceeded with public services. Successively, Hungary was able to attract FDI that contributed to the modernization of its economy by delivering capital, know-how and technology and creating jobs. In the years following 2000, service activities became more intensive thanks to the rising shares of businesses like "wholesale, retail trade and repair" (partly due to the entry of big supermarket chains), "real estate, computer and business services" (partly due to offshoring and offshore outsourcing of business services to Hungary), financial intermediation services as well as transport and storage services. Within manufacturing, some particular industries are dominated by foreign players, for example, the production of transport equipment, which includes the manufacture of motor vehicles, trailers and semi-trailers, and the production of electrical as well as chemical products. Some manufacturing branches have been almost created from scratch by foreign MNEs. The automotive industry did not exist before 1990, when the first Suzuki plant for car assembly lines was built, while now it is the most important branch in manufacturing in

terms of contribution to export, GDP and employment. Thanks to the numerous FDI, especially in the automotive industry, the manufacturing sector then progressively increased its share in Hungary's FDI stock. In 2017, as a matter of fact, it accounted for nearly 43%, while services decreased to almost 48% of Hungarian FDI stock. According to the Hungarian Investment Promotion Agency (HIPA), the value of the Hungarian automotive manufacturing sector surged by 165% between 2010 and 2019, mostly thanks to the expansion projects of German-owned multinational companies.

Figure 29: Sectoral composition of Hungary FDI Stock, 2008 – 2020.
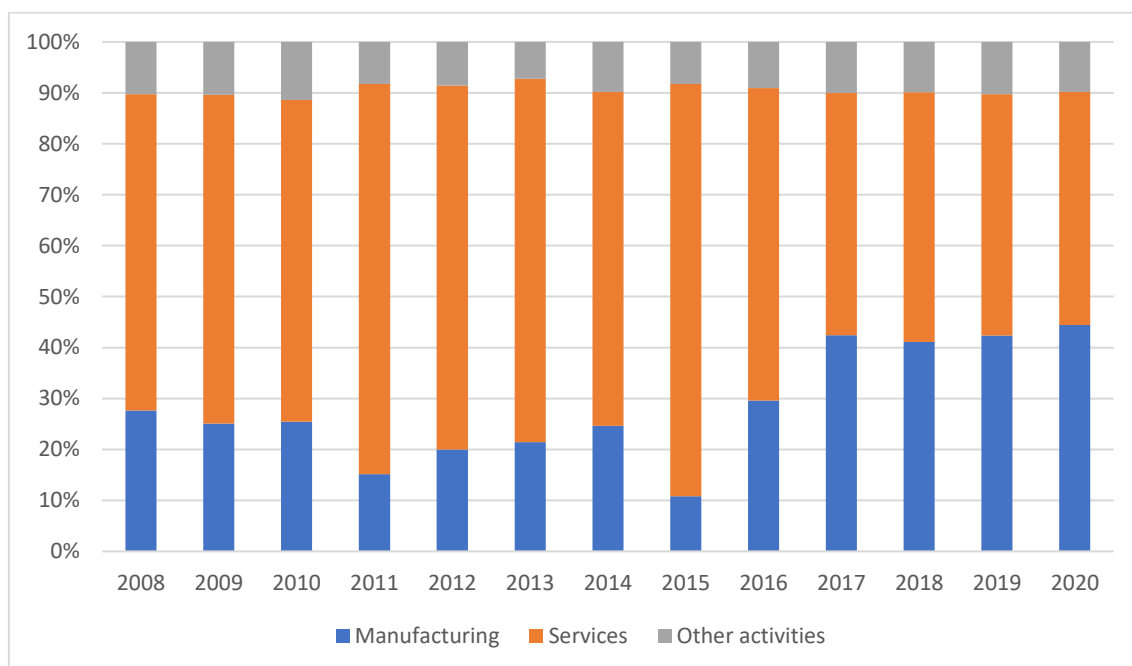
Source: Magyar Nemzeti Bank Statistics.

The current nation's flourishing automotive sector was created during the previous three decades with the help of investments from a string of German firms, including Daimler (Mercedes), Audi, BMW, and Opel, as well as the main tier-one suppliers like Bosch and Continental. Audi alone has deployed about €11.5 billion in investments in its Hungarian facilities since 1993[19]. Nearly all German automotive and engine business giants have indeed invested considerably in the Hungarian territory. In addition, Asian automotive and components MNEs, like Suzuki (Japan), Bridgestone (Japan) and Hankook Tire (South Korea) invested in facilities located in Hungary.

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[19]Than, K. and Szakacs, G. (2020), *Hungary ready to help Audi run local plant at full capacity: Orban*, Reuters News Agency, 15/06/2020.

CHAPTER 3

IMPACT OF FOREIGN DIRECT INVESTMENTS IN HUNGARY

3.1 Analysis of the effects of FDI in Hungary

National governments, as well as regional institutions around the globe, compete to attract valuable Foreign Direct Investments. As we have seen, considerable amounts of money are spent in order to incentivize the influx of such investments. In fact, favourable government policies that, in the case of Hungary, may include cash subsidies, tax incentives, low-interest loans, and land available for free or at reduced prices are among the things most entice multinational corporations. Some reporters, contrarily, do not look as favourable that a relevant quota of the domestic economy is controlled by and dependent on foreign capital. Indeed, as described in the previous chapter, more and more countries, including Hungary, are introducing screening mechanisms for FDI in specific vulnerable economic sectors. Understanding the effects of FDI flows in the host country is a challenging but pivotal issue. As reported in the first chapter of this work, most empirical studies conclude that MNEs' activities have overall net positive effects in host countries (Navaretti, Venables, 2004). Theoretical, as well as empirical analysis, showed various ways through which FDI affect host economies. FDI may, indeed, take advantage of unemployed resources available in the destination country, thus revealing extremely beneficial, especially for developing and transition economies. FDI, in addition, can stimulate the domestic demand for intermediate products, generating new business opportunities for local companies and entrepreneurs. Furthermore, the presence of MNEs can result in the spread and dissemination of technology and knowledge spillover. Moreover, FDI inflows may be advantageous enough to influence national aggregate accounts like the country's growth rate, directly and indirectly contributing to the GDP. Therefore, if FDI have a beneficial impact on destination economies, we may infer that, on an aggregate level, countries receiving the greatest inflows of investment, relative to their size, should have a better economic performance. One way to test this is to use cross-country regressions, namely a comparison of several countries, to relate FDI inflows to national income growth rates; and specifically to inspect whether countries receiving the

most FDI flows are the ones that grow faster. However, empirical results in this sense are somewhat controversial and inconclusive. Despite this, other studies demonstrated that FDIs have a positive impact when the host countries are sufficiently advanced and have an economy that is able to correctly interact with foreign MNEs. Blomstrom, Lipsey and Zejan (1994), analysing a sample of developing countries, argued that the final effect is positive only for those host economies displaying the highest level of revenue. Other scholars (Borensztein, De Gregorio and Lee, 1998) claimed that FDIs are a crucial way to transfer technology to emerging economies, but whether this results in positive effects on growth depend on the average level of education of the host country's human capital (threshold varies from 0.76 to one year of post-primary education). Further studies then found that relevant factors influencing the overall impact of FDI in destination economies are related to the development of local financial markets or to the country's level of openness to export (Alfaro, Chanda, Kalemli-Ozcan and Sayek, 2004). All these different articles report different conclusions, attributing the final effect of FDI on host countries to distinct characteristics. Hungary, however, exhibits the various listed features. In fact, according to World Bank Classification, Hungary has a high-income economy; its literacy rate is almost 100%, and in 2020 it had the sixth highest percentage of STEM graduates per 1.000 inhabitants in the EU. Finally, Hungary has an export-oriented market economy with a strong prominence in foreign trade. The results reported by the above-mentioned works, however, are contested by other studies (Carkovic e Levine, 2002) that take into account the causality relation between growth and FDI flows, namely, are FDIs attracted by the fastest growing countries or is growth driven by FDI? This study claimed that there is no evidence that FDIs affect economic growth. Again, as we can see, the results from various works are mixed and do not provide a clear and systematic image of how FDIs affect the host economies. It is evident, however, that for the country under consideration, Hungary, FDIs have a massive impact on growth. The weight that foreign-controlled affiliates have on the economic growth of Hungary is testified by inward FATS statistical data. FATS stands for foreign affiliates statistics and indicates the data regarding the activities of foreign affiliates: namely companies located in one country that are owned or controlled by MNEs resident in another country (EUROSTAT). Inwards FATS therefore describe the economic impact that FDIs have in the host economy, providing data regarding job creation, value added, turnover, gross investments, etc. GDP indeed can be computed summing up private consumption, gross private investments, government expenditure and net export. The following tables report data provided by the

Hungarian Central Statistical Office regarding the gross investments in tangible goods made by foreign-controlled affiliates. As we can deduct, foreign-controlled affiliates are responsible for a relevant share and relative values of investments. During the period from 2008 to 2020, foreign-controlled firms in Hungary contributed an average of 46% of gross investment in tangible assets to the Hungarian economy (Table 6). In particular, most recently, as visible in Table 6, in 2020, 43% of investments came from foreign-controlled companies. Analysing the last two columns of Table 6, it is curious to note that the share belonging to companies with headquarters outside the EU is constantly increasing, reaching 52% in 2020. As we can see in Table 7, in absolute terms, these investments made by foreign companies located in Hungary more than doubled from 2008 to 2020, exceeding 8.5 billion in 2020.

Table 6: Share of gross investments in tangible goods of foreign-controlled affiliates

Year	Total investments done by active enterprises in Hungary	of which done by foreign-controlled affiliates	Intra-EU controlled	Extra-EU controlled
2008	100%	49.60%	76.20%	23.80%
2009	100%	48.30%	76.50%	23.50%
2010	100%	49.00%	76.00%	24.00%
2011	100%	55.40%	73.37%	26.63%
2012	100%	55.20%	72.10%	27.90%
2013	100%	46.20%	66.90%	33.10%
2014	100%	40.60%	66.90%	33.10%
2015	100%	39.40%	68.90%	31.10%
2016	100%	48.30%	61.30%	38.70%
2017	100%	44.70%	62.40%	37.60%
2018	100%	43.50%	62.60%	37.40%
2019	100%	40.30%	57.30%	42.70%
2020	100%	43.70%	47.70%	52.30%

Source: Hungarian Central Statistical Office.

Table 7: Value of gross investments in tangible goods of foreign-controlled affiliates (millions €[20])

Year	Total investments done by active enterprises in Hungary	of which done by foreign-controlled affiliates	Intra-EU controlled	Extra-EU controlled
2008	8,157	4,046	3,081	965
2009	7,691	3,712	2,840	872
2010	7,506	3,679	2,797	882
2011	7,789	4,318	3,181	1,137
2012	7,922	4,376	3,155	1,221
2013	8,344	3,859	2,581	1,278
2014	10,745	4,362	2,920	1,442
2015	11,630	4,582	3,156	1,426
2016	11,899	5,744	3,519	2,225
2017	14,127	6,313	3,940	2,374
2018	17,359	7,555	4,726	2,828
2019	19,625	7,909	4,535	3,374
2020	19,582	8,556	4,080	4,476

Source: Hungarian Central Statistical Office.

According to data made available by the Hungarian Central Statistical Office (KSH), the sector in which there is the largest foreign component in investment is manufacturing, where, in 2020, 72% of investments were made by foreign-controlled companies. While this share remained stable around 70%, the percentages that make it up underwent a shift in the recent years. Gross investments in the manufacturing sector made by affiliates of MNEs ultimately based in extra-EU countries passed from about 34% in 2008 to 60% in 2020.

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[20]Exchange rate of 19/09/2022: (€1=HUF401.28).

Figure 30: Share of gross investments in tangible goods in the manufacturing sector, 2020.
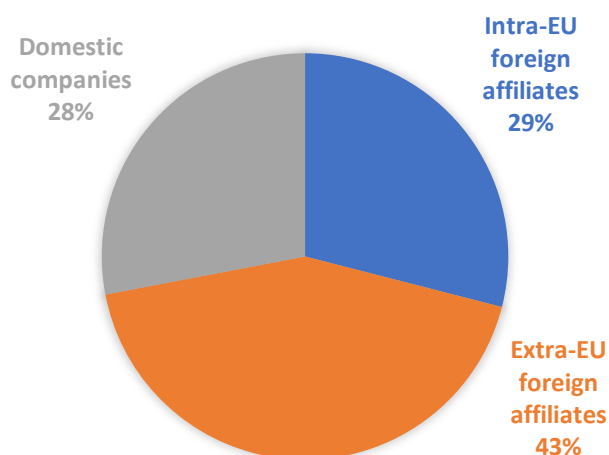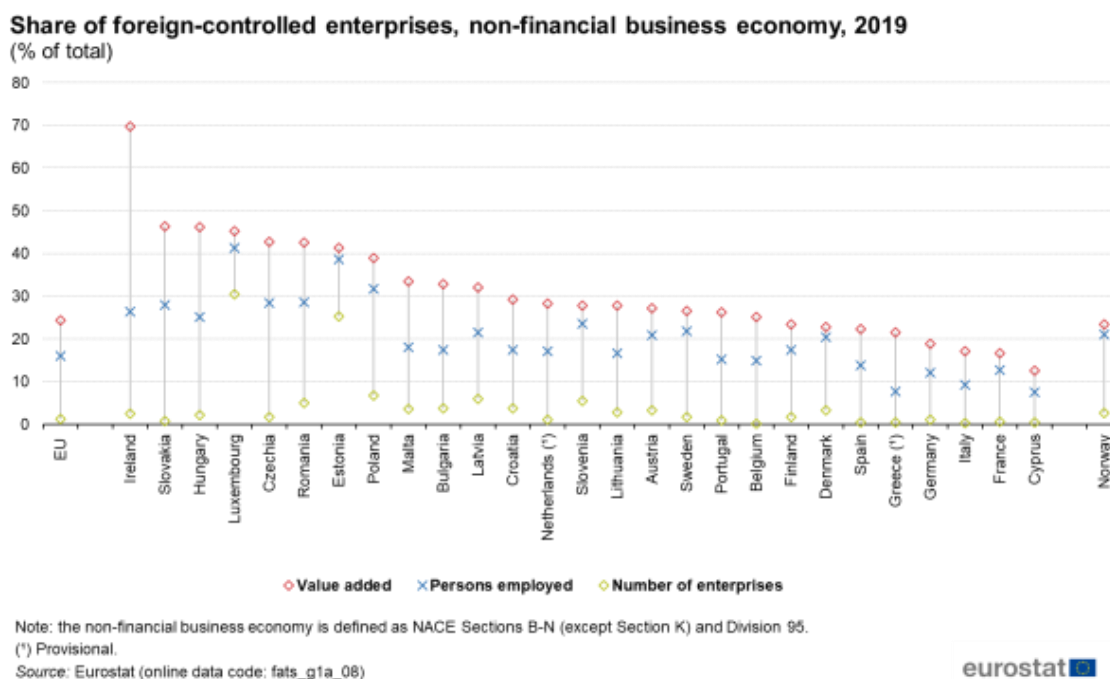

Source: Hungarian Central Statistical Office.

The impact that FDIs have on the Hungarian economy is also noticeable examining the data regarding the employment and the valued added accounting to foreign-controlled affiliates of transnational corporations. As shown in Figure 31, foreign-controlled subsidiaries contributed significantly more to Hungarian and overall European economic performance, in terms of employment and, particularly, value-added, than the actual number of enterprises. The reason can be that in most cases foreign-controlled companies are bigger than nationally-controlled firms. In 2019, foreign-controlled subsidiaries located in Hungary employed around one quarter of the non-financial business economy workforce, compared to an EU average of 16%. In particular, in 2020, foreign-controlled subsidiaries employed half of the workers working in the manufacturing sector. The prevalent division is undoubtedly the automotive one, but also other economic branches such as retail trade, wholesale trade and the manufacturing of computer, electronic and optical products, employed a considerable number of workers. These data signal that MNEs through FDIs are strongly involved in job creation, contributing to the GDP formation. In 2019 and in 2020 as well, the share of total value added generated by the foreign-controlled affiliates in Hungary is considerably high, namely nearly 50%, while the EU average is around 24%. The value added is given by the value of a firm's production subtracting the value of the intermediate goods it has purchased. For the economy as a whole then, the sum of all value added will necessarily equal the market value of all final goods and services produced and thus the nation's GDP. This again testifies the massive weight that FDIs have in the Hungarian economy. The countries that

regarding all these data stand out as the main origin countries of the MNEs controlling their Hungarian affiliates unsurprisingly are Germany, Austria and United States of America.

Figure 31: Share of foreign-controlled enterprises, non-financial business economy, 2019.

Share of foreign-controlled enterprises, non-financial business economy, 2019
(% of total)

◇ Value added   ✕ Persons employed   ◇ Number of enterprises

Note: the non-financial business economy is defined as NACE Sections B-N (except Section K) and Division 95.
(*) Provisional.
Source: Eurostat (online data code: fats_g1a_08)

eurostat

Source: Eurostat.

Hungary is an export-oriented market economy with a strong tendency to foreign trade. During the early 1990s, thanks to its openness to international trade, the country established itself as a reliable trade partner in Eastern Europe. As detailly described in the previous chapter of this work, after the collapse of Comecon (Council for Mutual Economic Assistance) around 1990, Hungary underwent a severe transformation. It implemented a series of liberalizations and privatised some of its state-owned enterprises (SOEs). From then onwards, Hungary successfully initiated an export-led growth path. It has been a WTO member since January 1995; and a GATT member since September 1973. Hungary then became a member of the European Union on May 2004, while in 2003, it signed the Schengen Convention, which entered into force in 2007, allowing the free movement of people and goods within the Schengen area. According to the Organisation for Economic Co-operation and Development (OECD), the trade openness of a country can be indicated by the trade-to-GDP ratio[21]. This index is computed as the

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[21] OECD (2011), *Trade openness*, OECD Science, Technology and Industry Scoreboard 2011, OECD Publishing, Paris.

sum of a certain country's exports and imports as a share of that country's GDP. It represents the extent to which the nation is accessible to foreign investors for international trade and its involvement in global flows of goods and capital. Hungary's trade-to-GDP ratio for the year 2021 was 163%, while the EU average was 98%. As we can see in Figure 32 below, Hungary, starting in 1990, initiated a process of economic integration. Its trade-to-GDP ratio increased from a value lower than 60% in 1990 to more than 160% in 2021.

Figure 32: Trade-to-GDP ratio: Hungary and European Union.
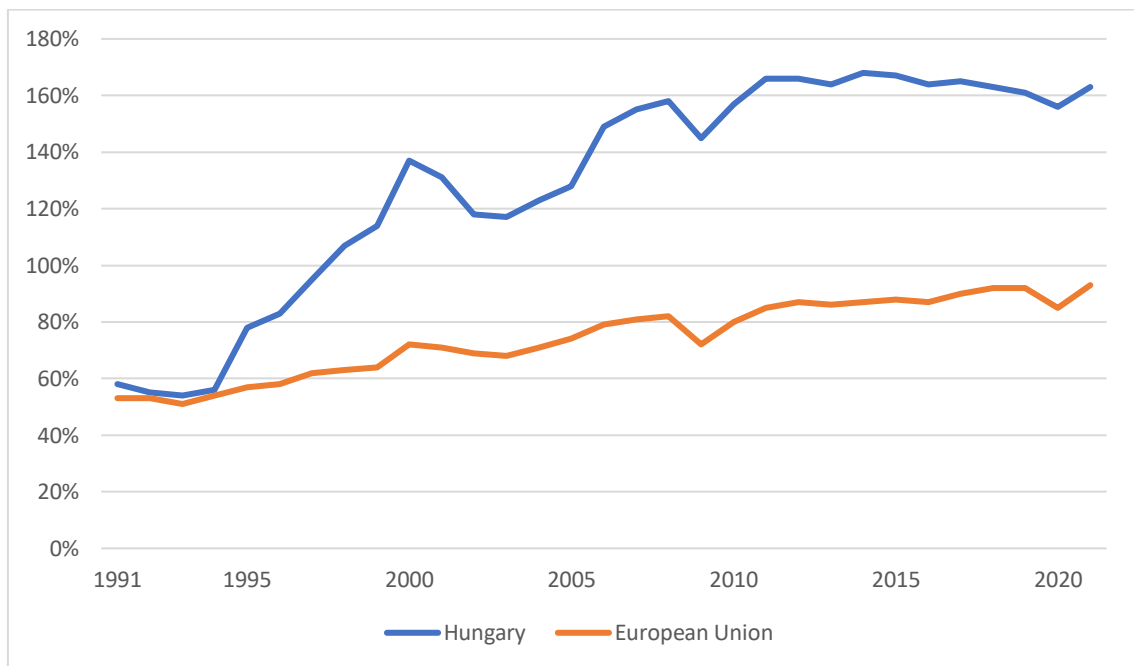
Source: The World Bank Open Data.

As a consequence, the inflows of foreign direct investment in the Hungarian territory had additional effects on the structure of Hungarian international trade. The volumes and composition of national imports and exports indeed adapted to the needs of the new business fabric. Affiliate companies of foreign multinational enterprises may import intermediate goods or raw materials from the origin country or from third nations. From an export point of view instead, a substantial inflow of FDI, especially of the vertical type, should affect the volume and composition of the country's exports. In the case of export-oriented affiliates, we should indeed notice higher figures regarding the export in the industries in which most foreign-controlled affiliates are operating. In this part, we will investigate how Hungary's export volume and composition varied during the years; and whether we can make some assumptions about the relationship between FDI and

exports. This analysis is crucial since exports have been considered the driver of economic growth. Net export, namely the difference between the export and import of a country, is a key measure of a nation's financial health and is an essential part of GDP computation.

The view most observers adopted is that FDI promotes host-country exports by the following means:

- increasing domestic capital for exports

- supporting the transfer of technology and new products to export

- facilitating access to new and larger foreign markets

- providing technical and managerial training to local workers.

Literature indeed depicts FDI as a facilitator of technical knowledge and productivity-enhancing techniques to developing nations (e.g., Hoekman and Javorcik 2006, Moran 2011).

Contrariwise, others argue that FDIs may result in the negative outcomes listed below:

- Decrease domestic savings and investments.

- Transfer of low-level or inappropriate technology relative to host-country's factors of production.

- Target the sole host county's domestic market rather than promoting exports

- Hinder or impede the growth of local firms that might become exporters

- Do not contribute to the development of the host-country's dynamic comparative advantages by focusing only on the exploitation of local raw materials and cheap labour.

Those who are critical of the positive effect of FDI on the host-country economy indeed argue that MNEs exploit cheap labour costs and liberal regulatory regimes, widening the income gap between the origin and host countries. This view, however, has been proved inaccurate by Ted Moran (2011) who demonstrated that most manufacturing FDI occurs in advanced industrial sectors, requiring medium-skilled operations, such as automotive, industrial machinery, electronics and electrical products, chemicals and others. This

predominance of FDI in skill-intensive industries technological catch-up and fosters export growth in medium-skilled sectors.

Theoretically, FDI effects on the host-country exports result from the additional capital, technology, and managerial know-how that multinational enterprises bring with them, as well as access to global, regional, and particularly home-country markets (UNCTAD, 2002). As we can see in the Figure 33 below, these elements along with Hungary's assets improved the national export accounts, passing from around 73 billion euros in 2005 to more than doubling in 2021, reaching 148 billion euros. Besides exports, as visible from the same figure, also imports followed the same positive trend. This rise in exports was accompanied by relevant FDI inflows resulting in around 100 billion euros of FDI stock accumulated until 2021, accounting for slightly less than 60% of the Hungarian GDP. In 2020, intra-EU trade accounted for 78% of Hungarian exports, of which Germany is responsible for 28%, while Romania, Slovakia, Austria, and Italy all around 5%. Regarding Extra-EU, 3% of Hungary's export were directed towards the United States, and 3% to the United Kingdom. Regarding imports, the great majority, namely 71%, come from EU Member States (Germany 24%, Austria 6% and Poland and the Netherlands 5%), while extra-EU relevant percentages are China accounting for 9% and the Republic of Korea 4%.

Figure 33: Import and Export Hungary, 2005-202, millions of USD.
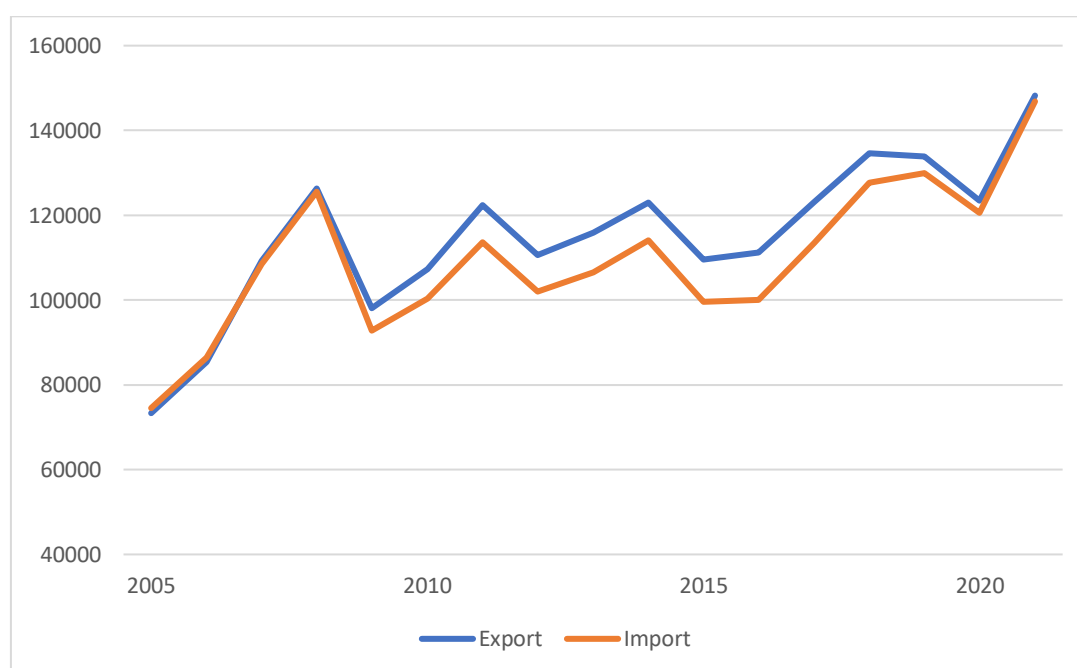
Source: UNCTAD statistics data centre.

As visible in Figure 33 above, alongside exports, also imports followed the same trend over the years. Foreign affiliates' sales and local procurement could substitute for imports from the origin (investing) country, delivering positive effects on domestic production, employment and overall on the national current account. On the other hand, if an inflow of FDI results in an increase in the import of inputs, this could weaken the host country's current account. As noted in the previous chapter of this work, Germany is the major historical investor of Hungary, and, as a matter of fact, it is responsible for the 28% of 2021 Hungary's exports and around 24% of imports. Indeed, the large FDI inflow from Germany-based MNEs did not produce a substitution effect, rather it supported Hungary's exports. Several economists concluded that destination economies will benefit from positive long-term spillover effects in terms of technology, job training and management practices which will increase competitiveness (OECD, 1999). Hungary as visible in the Figure 34 below is a net exporter, which means that in 2021, its exports were greater than its imports. Since 2007 indeed the exports of Hungary have been greater than their imports.

Figure 34: Balance of Trade of Hungary, 2005-2021, millions of USD.
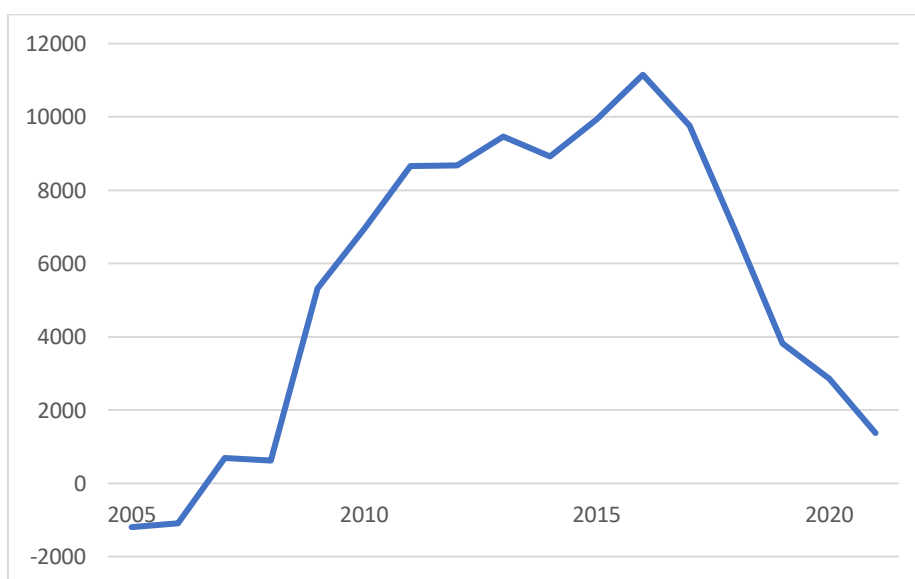
Source: UNCTAD statistics data centre.

FDI facilitates exports by providing access to new and larger markets. The presence of foreign-affiliates grants privileged entry not only to MNEs' international production systems but also to their intra-firm markets and access at arm's length to MNEs' clients on global, regional and home-country markets. In addition, the integration into a wider market involves also MNE's suppliers and other domestic firms. Export-oriented foreign-

controlled affiliates provide training to local workers and improve their technical and managerial abilities, benefiting Hungarian exports. This is especially true when these companies invest in advanced technological industries.

As a result, the positive impact of FDI on Hungary's exports can be divided into direct and indirect effects. The exports made by foreign affiliates themselves are included in the direct effects. The indirect consequences of FDI are the effects on local businesses' exporting activity (Blomstrom et al., 2000; UNCTAD, 2002). For instance, indirect effects may occur when domestic companies are able to increase their exports by observing and learning from the export activities of foreign-controlled affiliates, and by taking advantage of the transport, communications and financial services infrastructures that MNEs develop to support their activities. Another indirect effect may result in increased competitiveness of domestic firms generated by the diffusion of new technological knowledge into the host country. Furthermore, the enhanced competition in the Hungarian market arose from the entrance of MNEs' affiliates forces local firms to adopt more efficient methods, increasing their productivity and international competitiveness. A further positive spillover is associated with the connections between foreign affiliates and domestic companies. If export-oriented foreign-controlled affiliates increase their purchase of inputs from local suppliers, Hungary's national export increases (UNCTAD, 2001 and 2002).

Alongside the actual export's volumes, also its composition should undergo some variations. The sectors with the most inflows of FDI should display greater performances regarding export. Moreover, we could notice also a rise in imports related to raw materials or intermediate goods necessary for the production of foreign-oriented MNEs' subsidiaries. This is especially true for vertical export-oriented FDI, rather than for horizontal FDI which instead are intended to serve the local market substituting imports. The following figure depicts the most exported products of Hungary in 2020.

As we can observe, cars were the most exported product, accounting for $11.5 billion, corresponding to around 9.7% of total exports. However, the whole transport sector accounted for slightly more than 20% of total exported goods. The Hungarian prosperous automotive sector developed thanks to the FDI of various German MNEs such as Daimler (Mercedes), Audi, BMW, and Opel, as well as the suppliers like Bosch and Continental. According to the Hungarian National Bank, the FDI stock accumulated until 2008 related

to the manufacturing of vehicles and other transport equipment was around 4,600 million euros, while in 2020; it expanded to more than 9,100 million euros. It is evident, therefore, that these investments indeed significantly contributed to Hungary's exports. In 2001, the transport sector accounted for $1.67 billion, which is 5% of total exports, around $10 billion less than the same data recorded in 2020. According to the Hungarian Central Statistical Office (KSH), in 2017, around 90% of the automotive industry's output was exported. As visible in Figure 36, for 2020, the main destination of Hungary's exports was Germany, which purchased around 37% of total Hungary cars exported. Vehicles produced in the various production facilities controlled by German MNEs in Hungary are therefore exported to the FDI's origin country in order to be sold locally or exported again. In 2020, the EU as a whole was responsible for more than 80% of total cars internationally traded by Hungary and, besides Germany, the greatest partners were Belgium, Spain and Italy.

Figure 35: Exports of Hungary, 2020, percentage of total exports.
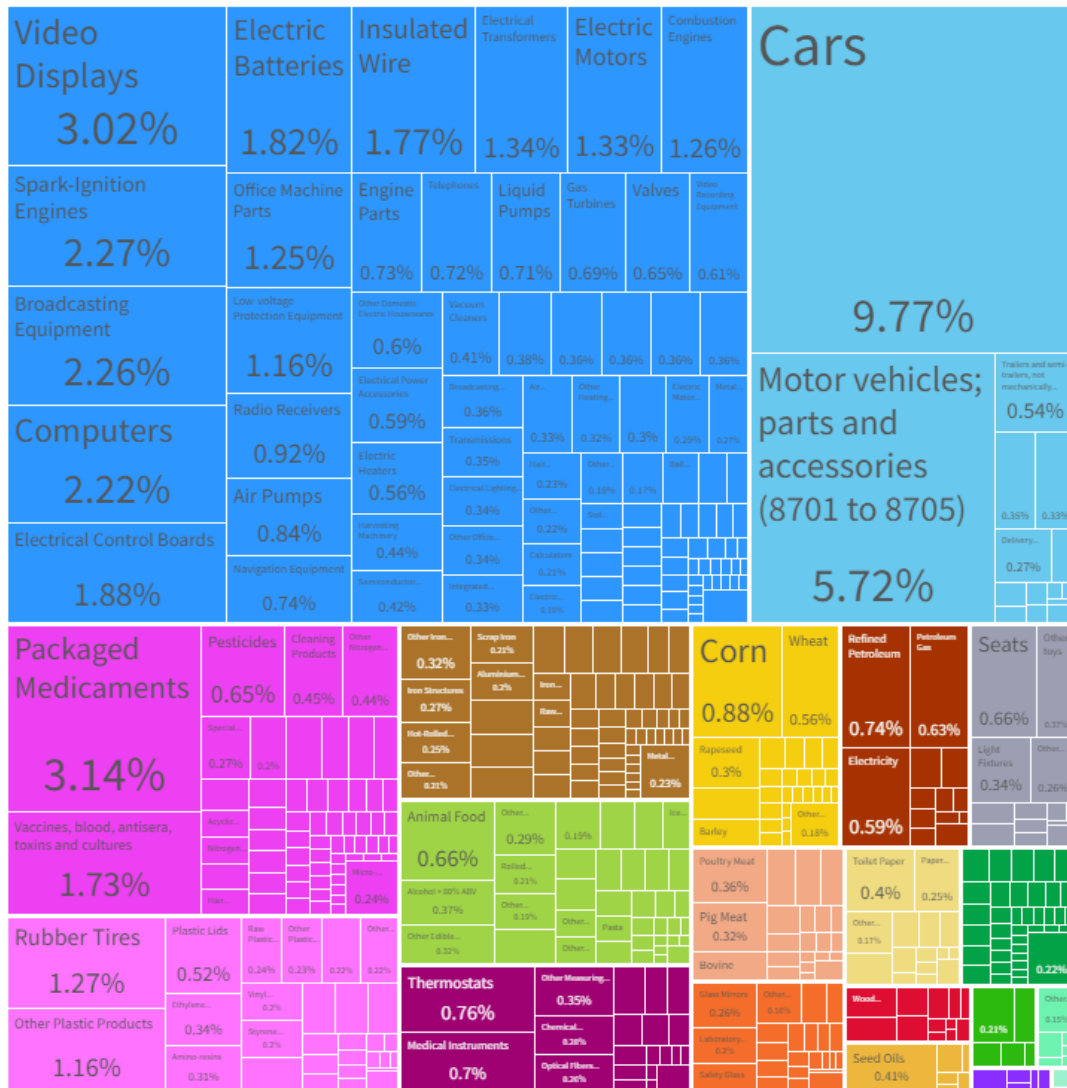
Source: The Observatory of Economic Complexity (OEC).

The sector responsible for most exports was, however, machinery, reaching nearly 40% of total exports in 2020. In this case, the most exported products were video displays, spark-ignition engines, broadcast equipment and computers. This products category includes machinery and equipment, computer, electronics and optical products, and electrical equipment (NACE Rev2 codes 26, 27 and 28). FDI stock accumulated within these industries until 2008 accounted for around 3.3 billion euros, with electronics goods attracting the most investments. As of 2020, the amount of FDI accrued increased substantially to nearly 9 billion euros, with electronics and optical goods accounting for half of the stock. According to the Hungarian Investment Promotion Agency, Hungary's electronics industry has an export ratio of around 92%. International big players dominate these industries. For example, the American MNE General Electric established its in

Hungary with four manufacturing sites, three R&D centres and an operations centre, employing nearly 4000 workers. In 1999, the Alpine division of the Japan-based Alps Electric Co. was established in Biatorbágy, producing audio equipment, navigation device displays and other vehicle components. Among others, some machinery and electronics MNEs present in Hungary are Bosch, Samsung, Siemens, Lenovo and Rosenberger.

Figure 36: Hungary's export destinations, 2020, percentage of total exports
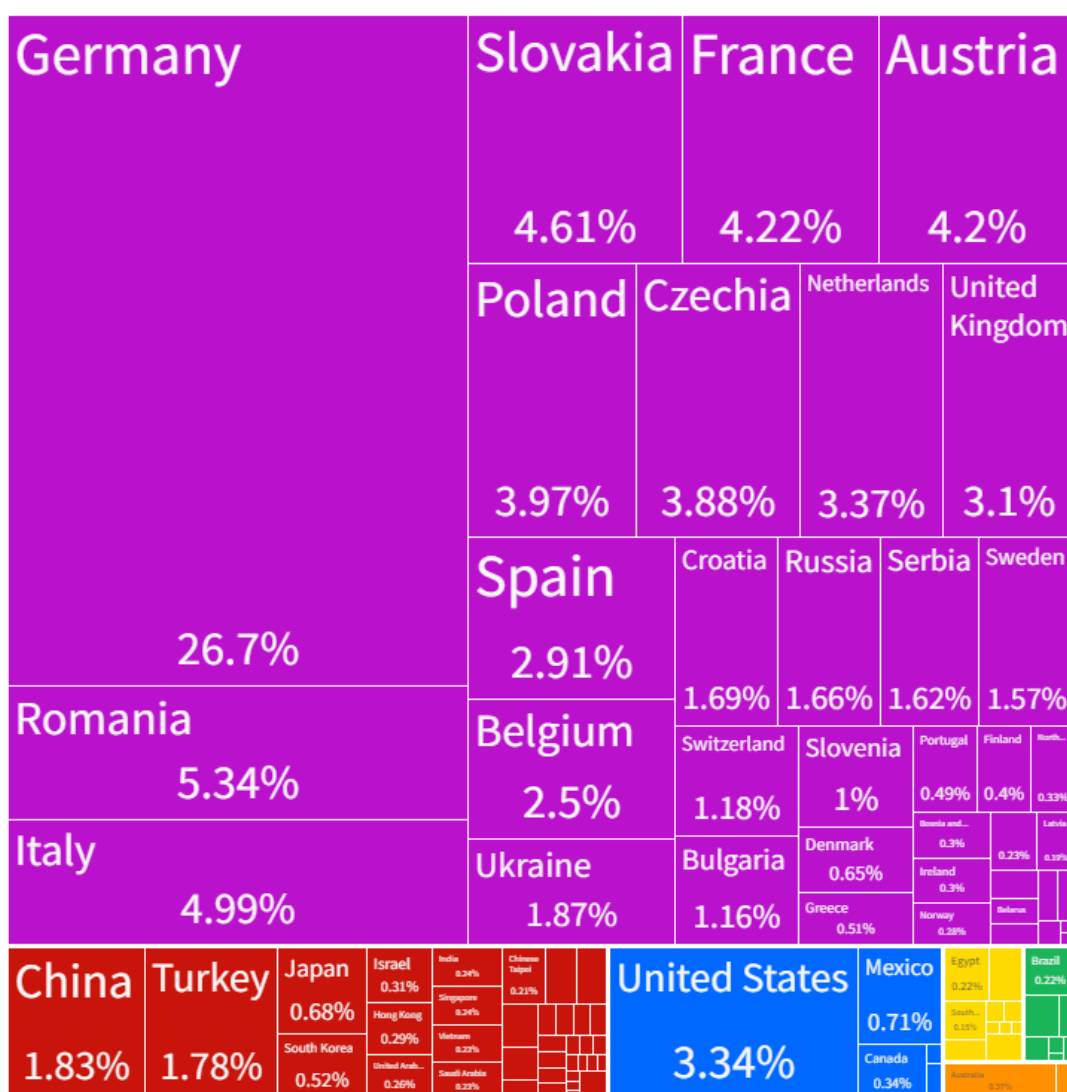
Source: The Observatory of Economic Complexity (OEC).

The third best-performing group of products in 2020 is chemicals, which accounted for $12 billion, corresponding to around 10% of total exports. The chemical , as well as pharmaceutical industries, have a long history in Hungary and are still fundamental to the Hungarian economy. They are involved in several research and development programs and employ a well-trained workforce. FDI stock in these industries accounted for around

1.6 billion euros in 2008, and then more and more MNEs decided to expand their production in Hungary; in 2020, more than 7.6 billion euros of FDI have been directed towards the chemical and pharmaceutical Hungarian sectors (Hungarian National Bank). Sales of chemical products nearly doubled during the period 2009-2020, outpacing the EU chemical industry average. This growth is export-driven but is also supported by demand from the automotive, electronics and construction industries. In 2020, 67.2% of chemicals produced in Hungary were exported and mainly sold to EU countries. The export ratio grew substantially in 2020 compared to the value of 63.6% in 2019[22].

The plastics and rubber sector were the fourth leading industry in Hungary's exports in 2020. It was worth 7 billion euros, corresponding to slightly less than 6% of total Hungarian exported goods. This particular industry underwent considerable growth during the last two decades. In 2000, the plastics and rubber industry exports accounted for 1.3 billion euros, around 4% of exports. Since then, the sector developed until reaching 7 billion worth in 2020. Inflows of FDI significantly contributed to this expansion. Indeed, rubber tires are the best-performing item for this category of exported goods, and Hungary hosts production plants of some of the main tyre production multinational enterprises worldwide. The German-based Continental has been present in Hungary since 1991, then, during the years, it progressively expanded its investments in the country. The Japanese MNE Bridgestone built a production facility in Tatabánya, near Budapest. Hankook (South Korea) established its production facility in 2006 in Rácalmás, a city in central Hungary. These MNEs export most of the products but also supply tyres directly to OEMs (Original Equipment Manufactures) based in Hungary and internationally. According to the Hungarian National Bank, the foreign direct investment stock destined for the plastics and rubber sector accounted for 751.5 million euros in 2008, then it progressively expanded and reached 3,249 million euros in 2020.

Lastly, we will analyse how Hungary's Economic Complexity Index has varied over the years, investigating whether and in which way the inflow of FDI influenced its progression. The Economic Complexity Index (ECI) is a comprehensive measure of the productive capabilities of vast economic systems, usually countries. The ECI reflects the average complexity of a country's production, which in turn depends on the following factors: diversification and ubiquity. Diversification is measured as the number of

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[22] European Chemical Industry Council, (CEFIC) *Landscape of the European chemical industry*, Hungary, Brussels, Belgium.

products exported by a nation, and it depends on the amount of embedded knowledge it possesses. Products requiring a considerable amount of knowledge are likely to be produced only in specific locations. Moreover, a country is more likely to develop a new product if there are other industries which are close to that product in a dimension called proximity. Proximity can be defined as the probability that a country exports one product, given that it exports another. Hausmann and Hidalgo described the product space as the set of relationships among industries given by mutual proximity. Ubiquity, instead, is measured as the number of countries producing a given product. The more complex a product is, the less ubiquitous it is. Therefore, a vast diversification of competencies allows less ubiquitous productions, which in turn expands the stock of initial competencies, resulting in a self-feeding economic complexity. National governments, as well as international organizations, have to support the countries' economic complexity since it is among the main causes of the differences in the level of development across countries (Hidalgo and Hausmann, 2009). Economic complexity indeed is positively correlated with GDP per capita, while is negatively correlated with the Gini index.

Economic complexity is also a key determinant in the attraction of FDI. MNEs, indeed, are more likely to establish where there are competencies and know-how. However, inward FDI can, in turn, improve the economic complexity of the host country. More specifically, FDI have indirect and direct effects on the ECI of the recipient economy. One direct way in which foreign multinational corporations can improve the economic complexity of the host country is by producing more technology- and knowledge-intensive goods and services that are not already produced in the nation (Romer, 1992). The more FDI a country is able to attract, the more diversified and ubiquitous the domestic production is. Foreign-controlled affiliates can instead indirectly affect the host country's economic complexity through the knowledge spillovers that can take place between foreign MNEs and local companies. These knowledge spillovers may result from different kinds of interaction. First, they may originate from the transfer of technology from the home-country MNEs and their foreign subsidiaries, which will result in greater efficiency, increasing the likelihood of introducing new types of products of innovative production processes. Second, positive externalities may derive from imitation or demonstration effects, where domestic companies take advantage of the reduced average cost of R&D generated from the innovative projects conducted by foreign-controlled firms. Thirdly, knowledge spillovers may stem from the adoption of higher production

standards by the local suppliers that are taking part in the multinational corporation value chain. Lastly, a further way knowledge may be transferred is through labour mobility. The mobility of talented professionals becomes a crucial method for transferring experience and know-how from one organization to another, particularly when knowledge is tacit and uncodified. The flow of skilled workers from MNEs to local companies, results in a transfer of knowledge and managerial expertise to the host country, increasing its capacity to innovate and thus the country's economic complexity.

The Economic Complexity Index consists of a ranking of countries based on how complex and diversified their export basket is. Nations that exhibit a wide range of specialized capabilities and complex productive know-how are able to produce, and thus export, a great diversity of sophisticated goods. A country's export degree of complexity strongly predicts its current income levels. Moreover, when the exports complexity of a nation exceeds the expectations based on its income level, the country is expected to grow more rapidly in the future. In other words, ECI provides a helpful indicator of economic development[23]. Therefore, investigating the interaction between ECI and FDI inflows is crucial in order to understand whether inward FDI contributes to economic growth.

The ECI was first developed by Cesar A. Hidalgo and Ricardo Hausmann in the book published in 2022 titled: "The Atlas of Economic Complexity: Mapping Paths to Prosperity". In their book, they included references to two data visualization tools helpful for analysing the evolution of the ranking. They were Harvard's "The Atlas of Economic Complexity" and MIT's "Observatory of Economic Complexity". They have slight differences in the code and the cleaning data method used.

As you can observe, in Figure 37 below, according to the Atlas of Economic Complexity, in 2000, Hungary's Economic Complexity Index ranked 23rd out of the 133 countries analysed. Starting with an ECI of 1.05 then, it improved its index, reaching the value of 1.54 in 2020, corresponding to the 9th position. 2000 to 2010 is the decade that marks the most substantial progress: Hungary moved from the 23rd to 10th place. During those years, a considerable amount of FDI flows arrived in Hungary, peaking in 2005 with more than €6 billion directed to the Hungarian economy. Hungary's FDI stock computed as a

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[23] The Atlas of Economic Complexity, *Glossary*, Harvard Growth Lab, Center for International Development at Harvard University.

percentage of GDP passed from around 48% in 2000 to more than 68% in 2010. Worth remembering also that in 2004, Hungary entered the European Union.

Figure 37: Economic Complexity Index, Hungary, 2000-2020.
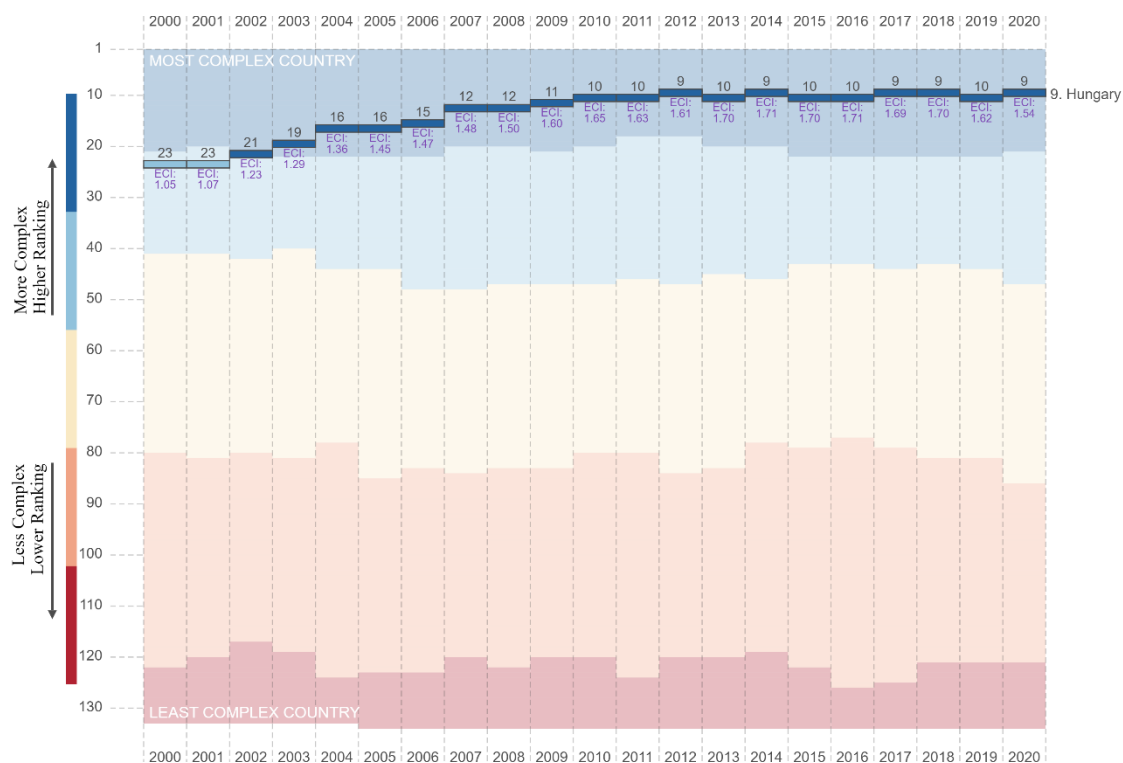
Source: The Atlas of Economic Complexity, *Country and Product Complexity Rankings*, Harvard Growth Lab, Center for International Development at Harvard University.

Despite the methodological differences, also the Observatory of Economic Complexity acknowledged Hungary's progress. In 2000, it reported a complexity index for Hungary equal to 0.71, corresponding to the 24th place out of the 129 countries included in the analysis. Then the country slowly proceeded to improve its index and the relative position in the ranking. In 2010, indeed, Hungary positioned itself 17th with an ECI value of 1.30. Then, since 2014, Hungary ranked 14th according to the Observatory.

Table 8: Ranking Economic Complexity Index (ECI), 2020.

RANKING	COUNTRY	Economic Complexity Index
1	Japan	2.27
2	Switzerland	2.14
3	Germany	1.96
4	South Korea	1.95
5	Singapore	1.87
6	Czech Republic	1.78
7	Austria	1.70
8	Sweden	1.59
9	Hungary	1.54
10	United Kingdom	1.54

Source: The Atlas of Economic Complexity, *Country and Product Complexity Rankings*, Harvard Growth Lab, Center for International Development at Harvard University.

The latest published ranking by the Atlas of Economic Complexity reported Hungary a value equal to 1.54, earning the 9th place. Instead, according to the Observatory of Economic Complexity, Hungary obtained an index of 1.40, placing the country in the 14th position. Despite the differences between the results obtained by the two tools, Hungary is among the most economically complex countries in the world. As visible in Table 8 and 9, Japan and Switzerland are the most complex economies globally, according to both rankings. Table 9 according to the Observatory, instead, Hungary is preceded by the USA, Finland, Slovenia and the United Kingdom, which in the ranking of the Atlas of EC have lower values than Hungary.

Table 9: Ranking of Economic Complexity Index (ECI), 2020.

RANKING	COUNTRY	Economic Complexity Index
1	Japan	2.19
2	Switzerland	1.99
3	Chinese Taipei	1.97
4	Germany	1.88
5	South Korea	1.88
6	Singapore	1.84
7	Sweden	1.59
8	Czech Republic	1.57
9	United States	1.56
10	Austria	1.52
11	Finland	1.47
12	Slovenia	1.46
13	United Kingdom	1.42
14	Hungary	1.40
15	France	1.34

Source: The Observatory of Economic Complexity (OEC).

According to the analysis carried out by the Atlas of Economic Complexity, the Hungarian economy is more complex than expected for its income level. As previously explained, countries displaying an export basket more complex than expected from their income level grow more rapidly. Growth thus can be driven by diversifying the competencies useful to produce a wider and more complex range of products and services.

As observed earlier in this chapter, the largest share of Hungary's exports are Electronics and Machinery, which are high-complexity products. The Atlas of Economic Complexity reports that Hungary introduced 19 new products since 2005, contributing to $262 in income per capita in 2020. Indeed, Hungary, while having diversified into a sufficient number of products, did not contribute to substantial income growth. According to the Atlas, therefore, in order to continue its growth, Hungary has to take advantage of its know-how to exploit more diversifying opportunities, promoting innovation and inventing new products.

Researchers (Antonietti and Franco, 2020) found that a large FDI inward stock positively influences the country's economic complexity. However, the effect is more impactful when FDIs are implemented through greenfield projects and when the host country displays an above-average income level per capita, tertiary education, tertiarization and financial development. Most of the FDI directed towards the Hungarian economy are indeed greenfield investments. Projects where the MNEs finance the construction of new physical plants, facilities, and the necessary production assets. MNEs in the automotive industry, for example, invested in the construction of production facilities, such as Audi, Suzuki, Daimler-Benz and Bosch. But also electronics multinationals such as Nokia, Huawei, Samsung and Philips. In addition, Hungary is working to attract FDI in the battery production and e-mobility sectors. As described in the previous chapter, the Chinese big player Contemporary Amperex Technology Co., Limited (CATL) announced that will invest EUR 7.34 billion to build a 100 GWh battery plant in Debrecen. The location is strategic since it is close to facilities of important customers such as BMW, Volkswagen, Stellantis and Mercedes-Benz.

3.2 FDI incentives in Hungary

As deeply examined in Chapter 2 of this work, several variables influence the localization decision of foreign direct investments. For example, the economic and political stability, the geographical position and the endowment of factors of production. Besides these determinants, there are often also government incentives intended to attract FDI; by decreasing the risk and increasing the return on the underlying investment. The actual effectiveness of these measures has been extensively debated in the empirical literature, leading to inconclusive results. Despite this, most scholars agree that while incentives

cannot compensate for an unfavourable investment climate, they can be decisive in the localization decision among similarly tempting countries or regions. What just said may be especially valid for the most developed Central and Eastern Europe economies, which have completed the transition process. Therefore, the grant of incentives and subsidies could play a critical role in the selection of the FDI location among countries in this area. In light of this, we will now concisely go over at FDI incentives in Hungary over time.

Indeed, the generosity of the incentive schemes granted in Hungary varied over time. Since the early 1990s, the Hungarian government has provided such incentives. Starting from then, three main periods can be distinguished (Sass, 2004): the first ending in 1996, the second from 1996 to 2002, and the third beginning in 2003/2004. Different economic and political conditions, policy objectives, FDI policies, and effects of other policies on FDI inflows characterized the three periods. However, all three of these periods present an elaborate array of incentives. These incentives include fiscal measures (tax holidays and reductions, deductions of specific costs from the tax base, and, until 1993, exemption of import duties on imported capital), financial incentives (grants supporting R&D, job creation, environmental protection, and the construction of infrastructure), and other incentives (institutional support, industrial free trade zones and industrial parks). Regarding the proportional weight of the various types of incentives, Hungary has relied more on fiscal than financial incentives.

As a former socialist economy, the Hungarian economy lacked capital and required extensive reforms and restructuring. Therefore, during this first period, Hungary was trying to attract as much FDI as possible, principally through the privatization of state-owned enterprises. The leading strategy was to attract investments from a few blue-chip companies, which, in other words, are internationally recognized, well-established, stable and profitable multinationals. This approach was justified by the "clustering" effect, according to which FDI from big and well-recognized MNEs should attract further investors, including competitors, into the location. The arrival of such blue-chip companies is indeed the best of advertisements for a national economy. In order to pursue this objective, specific agreements were made with foreign investors, also guaranteeing them monopoly situations or reasonably strong market conditions. In general, compared to the standards of the CEE region throughout those years, the Hungarian system of FDI incentives was considered more generous.

During the second period, from 1996 to 2002, the economic environment became more stable, and the GDP grew. Also thanks to the arrival of some blu-chip companies, FDI stock increased, reaching more than €5 billion at the end of 1995. The second wave of FDI in the late 1990s brought to Hungary green-field investments that significantly contributed to the modernization of the Hungarian economy by delivering new capital and technology and creating jobs. In this phase, the national government had a longer-term perspective, the aim of FDI-attracting policies did not limit to attracting FDI but also to increase its benefits in the host country. FDIs were indeed seen as a way to accomplish other governmental objectives such as supporting industrial and regional development, strengthening the country's trade balance, promoting R&D projects, and job creation. More specifically, the FDI incentives system was seeking to attract sizeable export-oriented manufacturing investments, so as to increase backward linkages with local companies. In this period, the Hungarian FDI incentive scheme became more transparent, more normative and less generous in comparison to both the precedent period and the incentive systems of other nations of the region. The most relevant FDI policy tools were fiscal incentives (tax allowances) and other measures like industrial free trade zones (IFTZs). In order to maximize the benefits of FDI for the host country, the nature of FDI incentives offered by the Hungarian government became more performance-linked. In order to be eligible for more substantial incentives, foreign investors were required to invest in specific areas, industries, and activities as well as meet particular employment creation and sales targets. The government supported a special policy initiative aiming to raise the proportion of domestic suppliers in TNCs manufacturing.

The third period started with the entrance of Hungary into the European Union. EU membership entailed a complete restructuring of the incentive system. Industrial Free Trade Zones (IFTZs) have been eliminated, and all companies operating in IFTZs have become part of the customs territory of Hungary. Moreover, fiscal measures, such as tax allowance, became consistent with the relevant EU legislation. The incentive scheme is compliant with EU regulations regarding state aid and competition.

The main goal of Hungary's FDI incentive system is to attract valuable investments in order to make Hungary one of the most influential European advanced manufacturing & innovation centres. This is possible by attracting high-added value investments, focusing not only on the "Made in Hungary" kind of projects but also on the "Invented in Hungary" type of venture. In order to improve its investment attractiveness, the Hungarian

Government introduced an incentive scheme supporting technology-intensive investments. Moreover, it has modified its incentive and taxation system related to R&D projects to make Hungary the innovation hub of Central and Eastern Europe, offering also strategic partnerships with large MNEs.

Currently, there is a wide variety of foreign direct investment incentives, both refundable and non-refundable, the Hungarian Government offers to pursue its objective and increase its competitiveness. The main kinds of state aid are tax incentives, cash subsidies (either from the national Government or from EU Funds), low-interest loans, and the provision of land for free or at reduced-price. The maximum amounts available are based on a regional aid intensity map. As you can see in Figure 38 below, regional aid intensity ranges between 30% and 50%, with the possibility of further increment in the case of SMEs. The area of Budapest is not eligible to receive any funding because its development levels are close to the EU average. Starting in 2022 some changes regarding the maximum regional aid intensity of some regions have been performed. Indeed, for FDIs located in Central Hungary (excluding Budapest), 50% of regional aid intensity is provided. The maximum support for Central Transdanubia has been reduced from 35% to 30%, while the aid available in Western Transdanubia has been raised from 25% to 30%. Additionally, in the counties eligible for the Just Transition Fund, the regional support can be further increased by 10%, given that the EU Commission approves such status of the counties (BorsodAbaúj-Zemplén, Heves and Baranya counties). The Just Transition Fund indeed is intended to support the economic diversification and reconversion of certain territories. Moreover, in the event the FDI exceeds €50 million of eligible costs, lower rates are applied to the exceeding part following EU regulations. This map is fundamental because all regional support aid initiatives we are going to describe refer to this map for the applicable maximum available regional aid intensity. Notification and approval by the European Commission are also necessary for some circumstances (such as when regional funding reaches a specific sum).

Figure 38: Regional aid intensity map, Hungary, 2022-2027
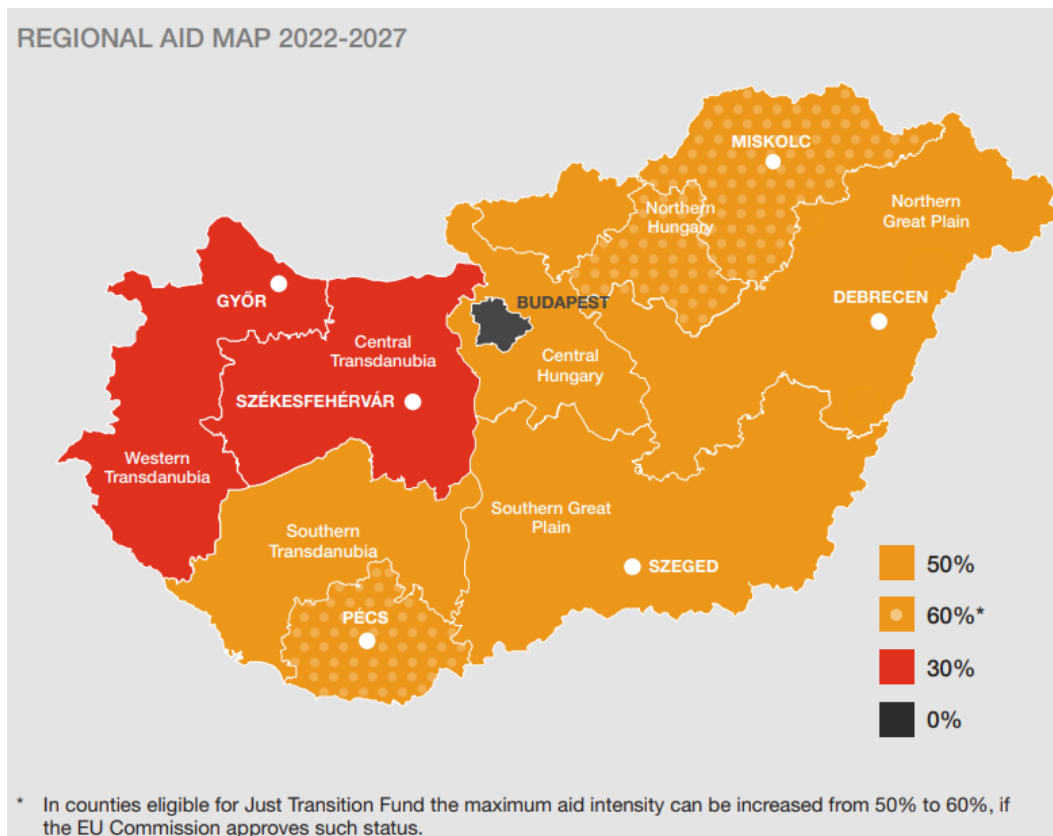
Source: PWC (2022), *Investing in Hungary 2022*, PricewaterhouseCoopers, London, UK.

The initiative named VIP investment cash subsidy is granted upon individual decision by the Government. This incentive seeks to attract investments in the manufacturing industry and shared service centre ("SSC") sector. In the case of FDI in manufacturing, investors have to invest at least a certain amount of capital (€5-10 million based on location), plus during the monitoring period, they have to satisfy some criteria related to the levels of employment, sales and wage costs. Instead, the only criterion that must be met when investors are establishing or expanding SSCs is related instead to the creation of new jobs. For both kinds of investment, the maximum aid intensity is set by the regional aid map depicted in Figure 38.

Investment Aid Scheme for Large Enterprises is the name of another cash subsidy made available by the Hungarian Government upon individual decision. This support measure focuses on attracting investments in the industrial sector, warehousing and storage. Companies applying to this initiative must have an annual average statistical headcount (on group level) between 150 and 13,000, plus the investment project must total at least HUF 100 million. The minimum granted subsidy is equal to HUF 50 million.

Development tax incentives are a further available scheme basing its maximum rates on the map of regional aid intensity. In this case, tax incentives may be claimed in the CIT (Corporate Income Tax) returns for a 13-year period. The development tax incentive is available up to 80% of the tax payable; however, the total cannot exceed the aid intensity ceiling for the county where the investment is implemented. There are various ways in order to be eligible for this support measure, projects supported by this incentive can consist of large investments (minimum amount depending on the region), R&D-related investments, or job-creation projects. The sole requirement for involved investments is related to some requisites concerning the retention of the average headcount of employees. However, even if the Global Minimum Taxation Rules are not yet finalized, it is worth noting that its introduction could impact the future use of development tax incentives. Therefore, as already stated in this work, it is highly critical to monitor the evolution of the situation and the eventual impact on the current tax incentives.

In addition to regional aid incentives, there are also non-regional aids from Hungarian funds. They are the VIP R&D subsidies and the VIP training subsidies. The formers are bestowed upon Governmental individual decisions and, as the name suggests, are intended to fund R&D projects that last at least one up to three years, with a minimum eligible expense of €1 million. The cash subsidy consists of up to 25% of eligible expenditure with a cap of €15 million. Claimant MNEs must create a minimum of ten new R&D-related jobs. The VIP training subsidies are financing opportunities for the training of employees. These incentives are subject to individual Government decisions too, and they are available to investors establishing or expanding a shared-service centre (SSC) or carrying out an asset-based investment of at least €5 million. The multinationals applying to this scheme will develop a training project that can last up to two years. During this period, the employees can be provided with both internal and external training. The available subsidy for a training project is a maximum of €2 million.

Furthermore, the Hungarian Government made available a tax incentive for energy efficiency investment projects. The amount of the tax incentive also in this case depends on the geographical area of the investment and it is up to 45% of eligible costs.

Finally, as an EU member, Hungary can access to EU funds aimed to finance investment projects related to a number of development goal, such as R&D activities, digitalization, and environmental issues. However, recently, intense tensions arose between the

Hungarian Government and the EU. EU's concerns regard Hungary's rule of law problems and corruption. Hungary has implemented some reforms, but they were deemed not sufficient according to the Commission. Indeed, in September 2022, the European Commission decided to apply the rule of law conditionality mechanism and freeze 65% of regional funds destined for Hungary under Cohesion Policy 2021-2027, for a total of €7.5 billion. This amount represents almost 20% of all EU funding that is foreseen to be granted to Hungary over the next seven years time span. Therefore, the remaining 80% of funds are not affected. Afterwards, the EU decided to reduce the suspended funding to 55%, corresponding to €6.3 billion. During the Covid pandemic, EU countries cooperate in order to set up a recovery fund. Funds for Hungary, equal to €5.8 billion, were granted provided that Hungary implemented reforms to increase judicial independence and tackle corruption. These conditions resemble the ones on the regional funds. Successively, Hungary, in order to unblock some of the frozen funds, decided to approve certain EU decisions that until then it had strategically vetoed. These measures regard the Ukraine support package and the introduction Global Minimum Corporate Tax of 15%. The Hungarian Government, therefore, has reached a compromise with the European Union. Provided that juridical and anti-corruption reforms are implemented, Cohesion Policy 2021-2027 and Recovery Fund resources will be granted.

Overall, we have seen that Hungary offers two main categories of FDI incentives: cash subsidies and development tax incentives. The business sectors where FDI are most incentivized by the Hungarian government are biotechnology, electronics, machinery, life sciences, IT and telecommunications, automotive, food industry and shared service centres. As listed above, cash subsidies can take numerous forms, and their weights may change according to the selected investment location. Moreover, each incentive scheme entails different conditions that must be met in order to release the funds. These obligations regard certain objectives the company has to achieve in the monitoring period following the grant of the incentives. Such requirements can consist of, for example, the achievement of certain sales revenue, the creation of a given number of jobs, or the retention of the base headcount.

Once FDIs are attracted to the local economy, the country has to provide the necessary conditions for the MNE to find it convenient to remain in the host country's economy. For this reason, the time profile of incentives is relevant; it has been claimed indeed that incentive measures should not be too front-loaded. In other words, they should not

provide all their monetary advantages close to the beginning of the incentive program. The risk, otherwise, is that "footloose" or "rent-seeking" investors will reap all the benefits right away and then flee rapidly to other more favourable locations. This risk is particularly present in incentives like cash subsidies or up-front tax breaks. On the other hand, investors may judge up-front FDI incentives as a sign of a political willingness to commit to a long-term collaboration relationship; or as a way to offset the loss-making early period of a FDI.

For this reason, as in the case of Hungary, governments may decide to offer generous and front-loaded incentives coupling them with certain contractual obligations. These terms should, however, not be excessively demanding, taking the form of actual performance requirements. Otherwise, as several studies demonstrated, they end up being counter-productive from the attracting-FDI perspective.

To this respect, many incentive schemes include "claw-back" clauses in the case that investors fail to fulfil their responsibilities, including formal recovery and payback procedures, to deter investors from opting out.

CONCLUSIONS

Throughout this work, we have seen how multinational corporations play a primary role in the global economic landscape. They are responsible for almost one-third of global production and around one-fourth of global employment (OECD, 2018). Nevertheless, despite the absence of supporting empirical evidence, MNEs are sometimes not looked upon kindly; quite the opposite, they are pointed at as dangerous threats to local wealth and identity. Other times, multinationals are considered carriers of wealth, innovation and labour opportunities. MNEs can implement foreign direct investments (FDI) or non-direct foreign investments. The latter, also known as portfolio investments, consist of simple purchases of stakes in companies on a foreign stock exchange. These operations are volatile since they respond to speculative considerations based on interest rate differentials and exchange rate expectations. A direct foreign investment instead reflects the aim of establishing a lasting interest by a resident enterprise in one economy (direct investor) in an enterprise (direct investment enterprise) which is resident in a different economy than that of the direct investor. Foreign direct investments signal the foreign investor's willingness to create a long-term relationship with the local enterprise and economy, and therefore, they tend to have a more lasting impact on the economic growth of the host country.

The inflow of FDI in a country implies the transfer of highly valuable resources, such as technologies, managerial and technical skills, and financial capital. Therefore, nations compete to create the most favourable conditions in order to attract MNEs' investments. We have seen that there are several reasons why some countries are able to attract more considerable amounts of FDIs than others. In the first place, however, there are two rationales behind the implementation of FDI by an MNE: efficiency-seeking or market-seeking strategies. Therefore, the main factor behind the localization decision of an FDI is its purpose: whether it is of the horizontal or vertical type of FDI. Horizontal FDIs occur when an MNE replicates its entire production process in the abroad subsidiary. In this case, the MNE will take advantage of the proximity to the foreign market to adapt its offer to the tastes and preferences of local demand. In a vertical FDI instead, the MNE fragments its production process by transferring some of its stages abroad. Implementing this kind of investment, the MNE seeks to improve the efficiency of its production process

and therefore looks for locations offering low-cost inputs. We can therefore try to predict which location would be preferred in case of horizontal and vertical FDI. Horizontal type of investments would tend to choose countries with good and low-cost access to large markets, displaying high-income populations. Vertical FDIs, instead, are attracted to regions with lower costs of factors and good transport and commercial connections with the nation of the mother company. Moreover, additional determinants may be taken under consideration during the localization decision; factors can be country-specific, related to a certain industry or even firm-specific. Nonetheless, as clearly emerged from our detailed analysis of Chapter 1, localization decisions upon investment projects are rarely affected by single economic policy measures; it is instead the overall national investment climate of a country that has a considerable influence.

We have understood that the presence of MNE's foreign affiliates in the countries has several interconnected effects. In the case of a greenfield investment, the direct impact simply derives from the net transfer of capital into the host country, with the consequent creation of new production facilities and related jobs and the transfer of technical and managerial skills (Barba Navaretti and Venables, 2004). In addition, FDIs generate indirect effects, better known as spillovers. The inflow of FDI in a country increases the competition causing the competing local firms to reduce their sales, in a crowding-out effect. However, the increased competitive pressure brought by foreign investment may increase the productivity of domestic companies by inducing them to reduce their internal inefficiencies and through the spillovers of knowledge and learning effects. We have studied that positive externalities may also occur in human capital formation. MNE can provide assistance and training to local suppliers and may also increase the domestic demand for skilled workers, therefore, increasing the incentive to invest in human capital formation.

Zooming in, we have performed a country analysis of Hungary from the FDI point of view. We identified why Hungary attracts or discourages the inflow of FDI in its economy. The various consideration regarding its national situation has been then summarized into a SWOT analysis, dividing them into strengths, weaknesses, opportunities and threats. Hungarian location is appreciated for its geographical position: it is located in the centre of Europe; and acts as a gateway to the European Union and other central and eastern European markets. Its transport network and infrastructures are an additional attractive feature for FDI implementation. These characteristics are

probably among the crucial ones that convinced many German and Austrian MNEs to locate some phases of their production processes in Hungary. The geographical proximity associated with the excellent transport network is a crucial benefit for implementing vertical FDIs, where inputs and intermediate goods must cross national borders several times in different stages of the production process. Additionally, the efficient transport network is attractive also for foreign affiliates established to serve a local or neighbouring market (horizontal FDI). Another pivotal determinant that drives several FDI investments in Hungary is the presence of a skilled workforce available at an advantageous labour cost. The specialized and educated human capital is both a cause and a consequence of the inflow of FDI in Hungary. The labour opportunities offering generally higher wages than local firms, made available by foreign MNEs, increased the incentive to invest in personal education. Plus, MNEs frequently provide training courses to local professionals, also collaborating with local educative institutions or universities. As a result, as we have seen in Figure 13 of Chapter 2, in 2020, Hungary had 23.5 STEM graduates per 1.000 inhabitants aged 20-29 years: the sixth higher in the EU. Another relevant variable considered in the FDI localization decision is the competitiveness of the fiscal system. This element, however, is always examined taking into account also the public goods and services provided by the Government of the host country. Hungary's 9% Corporate Income Tax rate (CIT) is the lowest in the EU, while the 27% VAT is the highest in Europe. We have seen, however, that the most indicative index of the actual fiscal pressure of a given national tax system is the effective average tax rate (EATR). Hungary's EATR in 2021 was 10.2%, namely the lowest among OECD countries. The CIT, nonetheless, is at the centre of an international debate between Hungary and the European Union, which is instead supporting the implementation of a 15% Global Minimum Corporate Tax rate. Recently, Hungary decided to remove its veto on its introduction, and thus, the new CIT rate will become applicable by 31 December 2023. It will affect multinational enterprise groups and large-scale national groups in the EU with combined financial revenues exceeding €750 million a year. In exchange for the removal of the veto on this measure and on the approval of a support package to Ukraine, Hungary obtained the unblocking of part of funds destined for Hungary from the EU Cohesion Policy 2021-2027 and the EU Recovery Fund. These funds will be granted on the condition that Hungary implements judicial and anti-corruption reforms. These controversies with the European Union are among the main discouraging elements for companies evaluating an FDI in Hungary. EU accused the country of displaying a high

level of corruption, of pursuing the dismantling of democratic institutions and of mismanaging European funds. EU funds are a large driver of Hungarian GDP growth and, as we saw in Chapter 3, are among the main incentives stimulating FDI in the nation. Therefore, Hungary cannot risk endangering the availability of such valuable funding as the Cohesion Policy 2021-2017 and the EU Recovery Fund. In addition, the above-EU average inflation and the volatility of the local currency exchange rate are other factors discouraging inward FDI in Hungary. Furthermore, the Russia-Ukraine conflict is another circumstance that does nothing but exacerbates the uncertainties regarding current Hungary's investment climate. The long-term consequences of the 2022 Russia-Ukraine conflict are still to be discovered. In the short run, the proximity to Ukraine could negatively affect the Central Eastern European countries' attractiveness to FDI projects. At the same time, MNEs fleeing Russia may find shelter in geographically close countries, such as Hungary. The precise effects on global FDI flows have yet to be determined.

But despite such a climate of global uncertainty, outlined by numerous challenges: record-high inflation, the long-term impact of the global pandemic, geopolitical tensions and so on, Hungary can still draw on the solid strengths that characterize its investment environment. In Chapter 3, we analysed Hungary's export basket and resulted evident that Hungary's best-performing sectors in terms of export are characterized by a considerable share of foreign MNEs. Consider, for example, the machinery, electronics, automotive, chemical or plastics and rubber sectors. As a consequence, also the most exported products are predominantly produced by affiliates of foreign MNEs: cars, motor vehicles, parts and accessories, video displays and packaged medicaments. Therefore, despite some of the risks and weaknesses listed above, for a number of reasons, several foreign MNEs, find it profitable to locate their affiliates in Hungary. Agglomeration and clustering effects certainly are among the factors that push MNEs to prefer Hungary compared to other locations. In this nation, some business sectors are exceptionally developed and populated, and multinationals find it beneficial to establish themselves in a region where other related firms are present: whether the are competitors, suppliers or customers. MNEs therefore seek to reap the benefits deriving from the geographical concentration of economic activities operating in the same business area. Agglomeration benefits arise from the knowledge spillovers between companies, the availability of specialized production factors and the presence of opportunities deriving from "upstream"

and "downstream" links with supplier and client companies. In addition, according to some scholars (DeCoster and Strange, 1993; Head, Ries and Swenson, 2000), in case companies are uncertain about where to invest, they may consider ration to imitate competitors' investment decisions. From this perspective it is essential to cooperate with the educational system, Hungarian universities indeed offer several practice-oriented educational paths.

The FDI incentives we reviewed in the latest part of Chapter 3 are a further influential factor when deciding where to direct an FDI. Even though their actual effect has been a matter of discussion in the empirical literature, incentives can be decisive in the localization decision among similarly attracting countries or regions. Hungary mainly offers two kinds of stimulus: cash subsidies and tax incentives. The Government aims to increase national competitiveness by attracting high-added-value foreign investments. For this purpose, Hungary implemented an FDI incentive scheme supporting technology-intensive investments and R&D projects, also planning strategic partnerships with large MNEs. Hungary, indeed, established itself as a cost-competitive manufacturing base in the EU; but more recently, the Government is pursuing an innovation-focused strategy, seeking to become a remarkably advanced manufacturing base. We refer, for example, to the "Ányos Jedlik" Hungarian E-Mobility Cluster, an organisation that gathers all relevant stakeholders committed to the development of electric mobility, such as automotive companies, energy utilities, universities, research centres, NGOs, and municipalities. As a result of this commitment, in August 2022, the Chinese multinational giant Contemporary Amperex Technology Co., Limited (CATL) announced an investment of EUR 7.34 billion to build a 100 GWh battery plant in Debrecen. This geographical location is strategic as it is close to the production plants of primary customer plants such as BMW, Volkswagen, Stellantis and Mercedes-Benz.

As we have seen, from a foreign investor point of view, the decision of a FDI localization is the result of a complex decisional process which takes into account a multitude of factors. Given its peculiar characteristics that we stated throughout this work, Hungary remained an attractive destination for FDIs, especially in some business sectors. However, considering that we are experiencing an unusual and challenging time; characterized by a general climate of uncertainty, investment decisions must be even more carefully pondered.

In the third chapter of this work, we analysed the impact of FDI on the Hungarian economy. First, we examined the effects of FDI inflows on the host country's GDP. Despite the empirical results in this sense being quite controversial and inconclusive, reviewing the foreign affiliates statistics for Hungary, we discovered that, during the period from 2008 to 2020, foreign-controlled firms in Hungary contributed an average of 46% of gross investment in tangible assets to the local economy. Moreover, foreign-controlled affiliates of MNEs significantly contribute also to employment and value-added. In 2020, for instance, foreign-controlled subsidiaries employed half of the workers working in the manufacturing sector. Plus, in the same year, the share of total value added generated by the foreign-controlled affiliates was nearly 50%, versus the EU average of 24%. Therefore, the inflows of FDIs strongly contributed to the GDP creation of Hungary, providing a considerable amount of investments, increasing the domestic production value-added and eventually being involved in the creation of several jobs. We have then analysed how the inflows of FDI impacted Hungary's exports and imports. As already stated, the best-performing economic sectors, in terms of exports, are strongly populated by foreign MNEs. In addition, Hungary's index of trade openness, namely the trade-to-GDP ratio, increased over the years, resembling the increasing trend of FDI inflowing into the nation. In 1990, Hungary's trade-to-GDP ratio was lower than 60%, while the value registered in 2021 exceeded 160% (EU average 98%).

Lastly, we introduced the concept of Economic Complexity, and we analysed how Hungary's Economic Complexity Index (ECI) changed over time: seeking to understand whether the inflow of FDI influenced its progression. The ECI is a comprehensive measure of the productive capabilities of national economic systems and, therefore, is a crucial determinant in the attraction of FDIs. FDIs directly affect host-country economic complexity when they regard the production of goods displaying high levels of diversification and ubiquity; and indirectly through knowledge spillovers. It is worth investigating whether FDI inflows in Hungary caused an increase in the economic complexity of the country because the ECI provides a valuable indicator of economic development. More precisely, when the complexity of the exports of a nation exceeds the expectations based on its income level, the country is expected to grow more rapidly in the future. We have seen how, according to the Atlas of Economic Complexity, in 2000, Hungary's ECI was 1.05, ranking 23rd out of the 133 included countries. Then, the country improved its index, reaching the value of 1.54 in 2020, corresponding to the 9th

position. According to the Observatory of Economic Complexity, Hungary's index passed from 0.71 in 2000 (24th position out of 129 nations) to 1.40 in 2020 (14th). The Hungarian economy is expected to grow more rapidly in the future since according to the Atlas of Economic Complexity Hungarian economy is more complex than expected for its income level.

We have seen how the overall effects of the inflow of FDI have been positive for the host country's economy, in this case, Hungary. The presence of foreign MNEs supported the GDP formation and created and developed some of the leading economic sectors, sometimes even from scratch as the automotive sector. The inflow of FDI, then, brought in valuable skills and expertise, stimulating exports and their complexity. Therefore, from a public policy point of view, we find it reasonable for Hungary to continue in its FDI-attraction strategy, targeting high-added-value foreign investments. In order to better pursue its objectives, Hungary should focus on creating an always more welcoming investment climate, promoting an easing of tensions with the EU and offering a stable and solid business environment. Hungary should aim for a harmonious system of collaboration between the government, multinational companies and educational institutions in order to create a dynamic framework that adapts to the needs of MNES and the country's development strategies. This also thanks to the integration of incentives that focus on more and more advanced and complex products and services, leveraging already well-developed sectors and exploiting the market opportunities that may arise.

REFERENCES

Adarov, A., Ghodsi, M., Hunya, G. and Pindyuk, O., (2019), *Foreign Investments Mostly Robust Despite Global Downturn; Shift into Services. FDI in Central, East and Southeast Europe*, The Vienna Institute for International Economic Studies.

Agrawal, A., Cockburn, I. and McHale, J. (2006), *Gone but not forgotten: knowledge flows, labor mobility, and enduring social relationships*, Journal of Economic Geography, pages 571–59.

Aitken B. and Harrison A. (1999*), Do domestic firms benefit from foreign investment? Evidence from Venezuela*, American Economic Review, 89, 605-618.

Albuquerque R. (2000), *The Composition of International Capital Flows: Risk Sharing through Foreign Direct Investment*, Bradley Policy Research Center, Working Paper No. FR 00-08.

Alfaro, L., Areendam, C., Kalemli-Ozcan. S. and Sayek, S. (2004), *FDI and economic growth: the role of local financial markets*, Journal of International Economics, vol. 64, pages 89-112.

Alps Alpine website, *About us*, Alpine Electronics Manufacturing of Europe Ltd., available at: www.alpsalpine.com/eu/company_hu/information.html

Antonietti, R. and Franco, C. (2021), *From FDI to economic complexity: a panel Granger causality analysis*, Structural Change and Economic Dynamics, vol. 56, pages 225-239.

Arnold, J.M. and Javorcik, B.S. (2005), *Gifted Kids or Pushy Parents? Foreign Acquisitions and Plant Performance in Indonesia*, Journal of International Economics, vol. 79, pages 42-53.

Aschauer, D. (1989), *Is Public Expenditure Productive?*, Journal of Monetary Economics, 23:117-200.

Baldwin R., Braconier H. and Forsild R., (1999), *Multinationals, Endogenous Growth and Technological Spillovers: Theory and Evidence*, CEPR Discussion Paper, No. 2155.

Bandelj, N. (2002), *Embedded Economies: Social Relations as Determinants of Foreign Direct Investment in Central and Eastern Europe*, Social Forces, Vol. 81, No. 2, pp. 411-444, Oxford University Press.

Barath, G., Molnar B., and Szepvolgyi A. (2001), *The Role of Foreign Capital in the Economic Transition of Southern Transdanubia*.

BBC News (2005), *BAA seals Budapest airport deal*, BBC News, available at: news.bbc.co.uk/2/hi/business/4540316.stm

Bénassy-Quéré, A., Fontagné, L. and Lahrèche-Révil, A. (2005), *How Does FDI React to Corporate Taxation?*, International Tax and Public Finance 12.

Blacktower Financial Management Group (2022), *Top European countries for new business entrepreneurs*, available at: www.blacktowerfm.com/news/top-european-countries-for-new-business-entrepreneurs/

Blomsrtom, M., Kokko, A. and Zejan, M. (2000), *Foreign Direct Investment: Firm and Host Country Strategies*, Palgrave Macmillan UK.

Blomsrtom, M., Lipsey, R. and Zejan, M. (1992), *What explains developing country growth?*, National Bureau of Economic Research Working Papers 4132.

Borensztein, E., De Gregorio, J. And Lee, J-W. (1998), *How does foreign direct investment affect economic growth?*, Journal of International Economics, vol. 45, pages 115-135.

Brambilla, I., Hale, G. and Long, C. (2009), *Foreign Direct Investment and the Incentives to Innovate and Imitate*, The Scandinavian Journal of Economics, Vol. 111, No. 4, Heterogeneous Firms and International Trade, pages 835-861.

Braunerhjelm, P., Ding, D. and Thulin, P. (2015), *Labour as a knowledge carrier: how increased mobility influences entrepreneurship*, The Journal of Technology Transfer, vol. 41, pages 1308-1326.

Budapest Business Journal (BBJ) (2022), *China Continues to Show Interest in Hungary, With More Opportunities on the Horizon*, available at: bbj.hu/politics/domestic/government/china-continues-to-show-interest-in-hungary-with-more-opportunities-on-the-horizon

Bureau of Economic Analysis (BEA) (2021), *Activities of U.S. Multinational Enterprises, 2019*, US Department of Commerce, 12/11/2021.

Carkovic, M. and Levine, R. (2005), *Does Foreign Direct Investment Accelerate Growth?*, Institute for International Economics. Working Paper, University of Minnesota Department of Finance.

Contemporary Amperex Technology Co., Limited. (CATL) (2022), *CATL announces its second European battery plant in Hungary*, available at: www.catl.com/en/news/983.html.

Decoster, G.P. and Strange, W.C. (1993), *Spurious Agglomeration*, Journal of Urban Economics, 33, 273-304.

Deloitte Hungary (2021), *Foreign investment related notification obligation in Hungary,* available at: www2.deloitte.com/hu/en/pages/legal/articles/foreign-investment-related-notification-obligation-hungary.html

Devereux, M. P. and Griffith, R. (1998), *Taxes and the location of production: evidence from a panel of US multinationals*, Journal of Public Economics, 68, 335-367.

Dunning, J. (1981), *International Production and the Multinational Enterprise*, London: Allen & Unwin.

Education First English Proficiency Index (EF EPI), available at: www.ef.com/wwen/epi/

Ekholm K. (1998), *Proximity advantages, scale economies, and the location of production*. The Geography of Multinational Firms, 59-76.

Embassy of Hungary in Doha, *Foreign Direct Investments (FDI) in Hungary*, available at: doha.mfa.gov.hu/eng/page/foreign-direct-investment-fdi-in-hungary

Ernst & Young (2022), *How will Europe compete for investment amid ongoing turbulence?*, EY Attractiveness Survey Europe May 2022.

European Chemical Industry Council, (CEFIC) *Landscape of the European chemical industry*, Hungary, Brussels, Belgium, available at: cefic.org/a-pillar-of-the-european-economy/landscape-of-the-european-chemical-industry/hungary/.

European Commission (EC) (2022), *Digital Economy and Society Index (DESI) 2022.*

European Commission (EC) (2022), *Digital Economy and Society Index (DESI) Hungary 2022*.

European Commission (EC) website, Just Transition Fund: About the Fund, available at: commission.europa.eu/funding-tenders/find-funding/eu-funding-programmes/just-transition-fund_en.

European Union website (2022), *Country profiles: Hungary*, available at: european-union.europa.eu/principles-countries-history/country-profiles/hungary_en.

EUROSTAT (2022), *Inward foreign affiliates statistics*, Statistics explained, available at: ec.europa.eu/eurostat/statistics-explained/index.php?title=Inward_foreign_affiliates_statistics#Foreign-controlled_enterprises_in_the_EU.

EUROSTAT (2022), *Structure of multinational enterprise groups in the EU*.

EUROSTAT (2022), *Tertiary education statistics*, Statistics explained.

Feng, X., Lin F. and Sim, N. (2019), *The effect of language on foreign direct investment, Oxford Economic Papers,* Volume 71, Issue 1, pp. 269–291.

Fontagné, L. (1999), *Foreign Direct Investment and International Trade: Complements or Substitutes?*, OECD Science, Technology and Industry Working Papers.

Foreign Service Institute of the U.S. Department of State, *Foreign Language Training*, available at: www.state.gov/foreign-language-training/

Fosfuri, A., Motta, M. and Ronde, T. (2001), *Foreign direct investment and spillovers through workers' mobility*, Journal of International Economics, vol. 53, pages 205-222.

Giorgio Fazio, G.M. Chiara Talamo (2008), *How "attractive" is good governance for FDI?,* Institutional Approach to Global Corporate Governance: Business Systems and Beyond, (International Finance Review, Vol. 9), Emerald Group Publishing Limited, Bingley, pp. 33-54.

Goodchild, S. (2019), *New warehouse, increased capacity at Bridgestone's Hungary tyre plant*, Tyrepress, available at: www.tyrepress.com/2019/09/new-warehouse-increased-capacity-at-bridgestones-hungary-tyre-plant/.

Gordon, R. H. and Hines, J. R. (2002), *International Taxation*, NBER Working Paper No. 8854.

Görg, H. and Strobl, E. (2005), *Spillovers from Foreign Firms through Worker Mobility: An Empirical Investigation*, The Scandinavian Journal of Economics, vol. 107, pages 693-709.

Guadalupe, M., Kuzmina, O. and Thomas C. (2012), *Innovation and Foreign Ownership*, The American Economic Review, vol. 102, pages 3594-3627.

Hamadeh, N., Van Rompaey C., Metreau, E. and Eapen, S.G. (2022), *New World Bank country classifications by income level: 2022-2023*, World Bank.

Hamermesh D.S. (1993), *Labour Demand*, Princeton University Press, Princeton.

Hankook Europe and CIS Mediacenter (2021), Press release*: Hankook extends its warehouse at Rácalmás site in Hungary*, available at: www.hankooktire-mediacenter.com/it/comunicato-stampa/news/hankook-extends-its-warehouse-at-racalmas-site-in-hungary/?flt=1&tx_news_pi1%5Bcontroller%5D=News&tx_news_pi1%5Baction%5D=detail&cHash=46f5dd4ed432c12be03e3624d7e3422b

Hausmann R. and Fernandez-Arias E. (2000), *Foreign Direct Investment: Good Cholesterol?*, Inter-American Development Bank, Working Paper No. 417.

Hausmann, R., Hidalgo, C.A. et al. (2011), *The Atlas of Economic Complexity: Mapping Paths to Prosperity*, Center of International Development at Harvard University, Harvard Kennedy School and MIT.

Head K., Ries J. and Swenson D. (2000), *Attracting Foreign Manufacturing: Investment Promotion and Agglomeration*, Regional Science and Urban Economics, 29:197-218.

Hidalgo, C. A. and Hausmann, R., (2009), *The Building Blocks of Economic Complexity*, CID Working Papers 186, Center for International Development and Harvard Kennedy School, Harvard University, Cambridge.

Hines, J. R. (1999), *Lessons from behavioral responses to international taxation*, National Tax Journal, 52, 305-322.

Hoekman, B. and Javorcik, B.S. (2006), Global Integration and Technology Transfer, copublication of The World Bank and Palgrave Macmillan.

Horvath, L. (1996), *FDI Inflow in East Central Europe*.

Hungarian Central Statistical Office website: www.ksh.hu/?lang=en

Hungarian Investment Promotion Agency (HIPA) (2018), *Automotive Industry in Hungary*.

Hungarian Investment Promotion Agency (HIPA) (2021), *Invest in Hungary*.

Hungarian Investment Promotion Agency website (HIPA) (2018), *Continental launched its latest development in Hungary*, available at: hipa.hu/news/continental-launched-its-latest-development-in-hungary/

Hungarian Investment Promotion Agency website (HIPA) (2022), *CATL's New Battery Plant To Become Hungary's Largest Greenfield FDI Project Ever*, available at: hipa.hu/news/catl-s-new-battery-plant-to-become-hungary-s-largest-greenfield-fdi-project-ever-/

Hungarian Investment Promotion Agency website (HIPA) (2022), *Investments in Hungary Reached New Highs in 2021 Yet Again*, available at: hipa.hu/news/investments-in-hungary-reached-new-highs-in-2021-yet-again/

Hungarian Investment Promotion Agency website (HIPA), *Automotive*, available at: hipa.hu/sector/automotive/

Hungarian Investment Promotion Agency website (HIPA), *Electronics*, available at: hipa.hu/sector/electronics/

Iacovone, L., Javorcik B.S., Keller, W. and Tybout, J. (2015), *Supplier responses to Walmart's invasion in Mexico*, Journal of International Economics, vol. 95, pages 1-15.

Ietto-Gillies, G. (2019),*Transnational Corporations and International Production*, Edward Elgar Publishing, Cheltenham.

InfomercatiEsteri, *Ungheria: scheda paese*, Osservatorio Economico, Ministero degli Affari Esteri e della Cooperazione Internazionale.

International Monetary Fund website: www.imf.org/en/Home

Investigate Europe (2022), *Explainer: Europe cuts off funds for Hungary – what is at stake?*, available at: investigate-europe.eu/en/2022/explainer-europe-cuts-off-funds-for-hungary-what-is-at-stake/#:~:text=80%25%20of%20EU%20funds%20to,8%20billion%20euros%20in%202021

Istituto per gli Studi di Politica Internazionale (ISPI) (2022), *Ungheria: problemi di coesione,* 19/09/2022.

ITL Group, Official website, available at: itlgroup.hu/

Javorcik B.S., Lo Turco, A. and Maggioni, D. (2017), *New and improved: does FDI boost production complexity in host countries?,* The Economic Journal, vol. 128, pages 2507-2537.

Javorcik, B.S. and Harding, T. (2011), *Can FDI help developing countries upgrade export quality?*, Centre for Economic Policy Research (CEPR).

Johansson, A., Heady, C., Arnold J., Brys, B. and Vartia L. (2008), T*axation and Economic Growth*, OECD Economics Department Working Papers ,No. 620, OECD Publishing, Paris.

Kalotay, K. (2022),*The war in Ukraine deals a blow to Russia's foreign direct investment link*, Centre for Economic and Regional Studies, Institute of World Economics, Eötvös Loránd Research Network Challenges Nr. 238.

Kim M., Liu A., Kim-Lee, T., Brown D. and Leblang D. (2015), *Lingua Mercatoria: Language and Foreign Direct Investment*, *International Studies Quarterly,* Volume 59, Issue 2, pp. 330–343.

Kiss, E. (2007), *Foreign Direct Investment in Hungary: Industry and Its Spatial Effects*, Eastern European Economics, Vol. 45, No. 1, pp. 6-28.

Kornai, J. (1994), *Transformational Recession: The Main Causes*, Journal of Comparative Economics, Volume 19, Issue 1, pp. 39-63.

Linneman, H. (1966), *An econometric study of international trade flows*, North-Holland Publishing Company, Amsterdam.

Magyar Nemzeti Bank (2007), *Direct Investment Statistics, Hungary 1995–2005.*

Magyar Nemzeti Bank (2011), Press release: *Hungary's balance of payments: 2011 Q4.*

Magyar Nemzeti Bank Statistics website: statisztika.mnb.hu/en

Mihály, P. (2000), *Foreign Direct Investment in Hungary – the post-communist privatisation story re-considered*, Acta Oeconomica , Vol. 51, No. 1 (2000/2001), pp. 107-129, Akadémiai Kiadó.

Ministry of Justice Hungary (2020), Government Decree 227/2020 (25 May 2020).

Mistura, F. and Roulet, C. (2019), *The determinants of Foreign Direct Investment: Do statutory restrictions matter?*, OECD Working Papers on International Investment, No. 2019/01, OECD Publishing, Paris.

Moran, T.H. (2011), *Foreign Direct Investment and Development: Launching a Second Generation of Policy Research: Avoiding the Mistakes of the First, Reevaluating Policies for Developed and Developing Countries*, Peterson Institute for International Economics, Washington, D.C..

Navaretti B.G., Venables A.J., (2004), *Multinational Firms in the global economy*, Princeton University Press.

Navaretti G.B. (2004), *Multinazionali: effetti nei paesi di destinazione*, Rivista di politica economica, 279-310.

Navaretti, B.G. and Venables A.J. (2006), Le Multinazionali nell'economia mondiale, Il Mulino, Bologna.

OECD (2000), *OECD Reviews of Foreign Direct Investment: Hungary*, OECD Publishing, Paris.

OECD (2003), *Checklist for Foreign Direct Investment Incentive Policies*, OECD Publishing, Paris.

OECD (2008): *OECD Benchmark Definition of Foreign Direct Investment*, fourth edition.

OECD (2010), *Tax Policy Reform and Economic Growth*, OECD Tax Policy Studies, No. 20, OECD Publishing, Paris.

OECD (2011), *Trade openness* in OECD Science, Technology and Industry Scoreboard 2011, OECD Publishing, Paris.

OECD (2017), *Hungary trade and investment statistical note*, International trade, foreign direct investment and global value chains.

OECD (2018), *Multinational enterprises in the global economy: Heavily debated but hardly measured.*

OECD (2021), *OECD Economic Surveys Hungary July 2021 – Executive summary*, OECD Economic Surveys Volume 2021/14.

OECD (2022), *International investment implications of Russia's war against Ukraine*, OECD Publishing, Paris.

OECD (2022), *OECD Economic Outlook Hungary*, volume 2022.

OECD Foreign Direct Investment Statistics website: www.oecd.org/investment/statistics.htm

OECD Going Digital Toolkit: goingdigital.oecd.org/

Open Government Partnership (OGP) (2017), *Media Briefing: Government of Hungary Withdraws from the Open Government Partnership*, 21/06/2017.

Pavlínek, P., Aláez-Aller R., Gil-Canaleta, C. and Ullibarri-Arce M. (2017), *Foreign Direct Investment and the development of the automotive industry in Eastern and Southern Europe*, European Trade Union Institute.

Piscitello L. (2006), *Gli effetti derivanti dalla presenza/attività di imprese multinazionali*, Politecnico di Milano.

PWC (2022), *Investing in Hungary 2022*, PricewaterhouseCoopers, London, UK, available at: www.pwc.com/hu/en/kiadvanyok/assets/pdf/Invest-in-Hungary-2022.pdf

Reganati F. (2002), *L'impresa multinazionale: teorie, determinanti ed effetti*, Cedam, Roma.

Rojec, M. and Knell, M. (2917), *Why is there a lack of evidence on knowledge spillovers from foreign direct investment?*, Journal of Economic Surveys, pages 1-34.

Romer, P.M. (1992), *Two Strategies for Economic Development: Using Ideas and Producing Ideas,* Proceedings of the World Bank annual conference on Development Economics.

Ruta, M. (2022), *The Impact of the War in Ukraine on Global Trade and Investment*, World Bank Group, *Washington, DC* .

Sass, M. (2003),*The effectiveness of host country policy measures in attracting FDI: The case of Hungary*, The Development Dimension of FDI: Policy and rule-making perspectives, UNCTAD.

Sass, M. (2004), *FDI in Hungary: The first mover's advantage and disadvantage*, EIB Papers, European Investment Bank, Luxembourg, Vol. 9, Iss. 2, pp. 62-90.

Sass, M. and Kalman, K. (2012), *Inward FDI in Hungary and its policy context*, Country profiles of inward and outward foreign direct investment issued by the Vale Columbia Center on Sustainable International Investment.

Shatz H. (2003), *Gravity, education, and economic development in a multinational affiliate location*, The Journal of International Trade & Economic Development, 12:2, 117-150.

Skytrax: *World Airport Awards 2022*: available at: www.worldairportawards.com/best-airports-2022-by-global-region/

Swenson, D.L, and Chen, H. (2014), *Multinational Exposure and the Quality of New Chinese Exports*, Oxford Bulletin of Economics and Statistics.

Tax Foundation (2022), *International Tax Competitiveness Index 2022*, Center for Global Tax Policy, available at: taxfoundation.org/2022-international-tax-competitiveness-index/

Than, K. (2014), *Hungary's Orban sees two-thirds of banks in domestic hands*, Reuters News Agency, 14/11/2014, available at: www.reuters.com/article/hungary-banks-idUSL6N0T41RF20141114

Than, K. (2022), *Hungary licenses two new reactors at Paks nuclear plant*, Reuters News Agency, 26/08/2022, available at: www.reuters.com/business/energy/hungary-licenses-two-new-reactors-paks-nuclear-plant-2022-08-26/

Than, K. and Szakacs, G. (2020), *Hungary ready to help Audi run local plant at full capacity: Orban*, Reuters News Agency, 15/06/2020, available at: www.reuters.com/article/us-hungary-audi-orban-idUKKBN23M1V7

The Atlas of Economic Complexity, *Country and Product Complexity Rankings*, Harvard Growth Lab, Center for International Development at Harvard University, available at: atlas.cid.harvard.edu/rankings

The Atlas of Economic Complexity, *Glossary*, Harvard Growth Lab, Center for International Development at Harvard University, available at: atlas.cid.harvard.edu/glossary

The Observatory of Economic Complexity, *Country Rankings*, available at: oec.world/en/rankings/eci/hs6/hs96

Tiebout, C. M. (1956), *A Pure Theory of Local Expenditures*, Journal of Political Economy, 64, 416-24.

Tucci, M. (2020), *L'internazionalizzazione delle imprese: il caso dell'Ungheria*.

U.S. Department of State, Bureau of Economic and Business Affairs, *2020 Investment Climate Statements: Hungary*, available at: www.state.gov/reports/2020-investment-climate-statements/hungary/

U.S. International *Trade Administration*, *Hungary country commercial guide, Investment Climate Statement*, available at: www.trade.gov/country-commercial-guides/hungary-investment-climate-statement

UN Economic Commission for Europe website (UNECE): w3.unece.org/PXWeb/en

UNCTAD (2001), *World Investment Report 2001*.

UNCTAD (2002), *World Investment Report 2002*.

UNCTAD (2004), *World Investment Report 2004*.

UNCTAD (2005), *World Investment Report 2005*.

UNCTAD (2006), *World Investment Report 2006*.

UNCTAD (2007), *World Investment Report 2007*.

UNCTAD (2008), *World Investment Report 2008*.

UNCTAD (2009), *World Investment Report 2009.*

UNCTAD (2010), *World Investment Report 2010.*

UNCTAD (2011), *World Investment Report 2011.*

UNCTAD (2012), *World Investment Report 2012.*

UNCTAD (2013), *World Investment Report 2013.*

UNCTAD (2014), *World Investment Report 2014.*

UNCTAD (2015), *World Investment Report 2015.*

UNCTAD (2016), *World Investment Report 2016.*

UNCTAD (2017), *World Investment Report 2017.*

UNCTAD (2018), *World Investment Report 2018.*

UNCTAD (2019), *World Investment Report 2019.*

UNCTAD (2020), *World Investment Report 2020.*

UNCTAD (2021), *World Investment Report 2021.*

UNCTAD (2022), *World Investment Report 2022.*

UNCTADstat: UNCTAD statistics data centre website:
unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx?IF_ActivePath=P,6&sCS_ChosenLang=en

UNESCO Institite for Statistics website (UIS): uis.unesco.org/

Urbaczek, U. and Waltert, S. (2005), *Foreign Direct Investment in Hungary*, Cracow University of Economics.

Veres, M. (2018), *Yesterday's FDI Dependency Remains Today's Reality The evolution of Hungary's external trade, and the relevance of Germany since 1990*, Friedrich-Ebert-Stiftung Budapest.

World Bank Open Data: data.worldbank.org/

World Intellectual Property Organization (WIPO) (2022), *Global Innovation Index 2022: What is the future of innovation-driven growth?*, Geneva.

Xin, C. (2020), *Foreign Direct Investment in Central and Eastern European countries*, China-CEE Institute.

Zhang, K.H., (2006), *How Does FDI Affect a Host Country's Export Performance? The Case of China*, Economia Internazionale / International Economics, Camera di Commercio Industria Artigianato Agricoltura di Genova.

Zoltan, S. (2022), *Orban Calls for End of EU Sanctions on Russia, Nemzet Reports*, Bloomberg Television, 22/09/2022.

Zongo, A. (2021), *The effects of restrictive measures on cross-border investment: Evidence from OECD and emerging countries*, hal-03432663.