THE TRADE POLICY STRATEGY 2.0 FOR NORTH MACEDONIA

Trade Competitiveness Diagnostic and State Aid Effectiveness Report

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REPUBLIC OF NORTH MACEDONIA

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ABBREVIATIONS AND ACRONYMS

AP5	Additional Protocol 5	NTFC	National Trade Facilitation Committee
CEFTA	Central European Free Trade Agreement	PIT	Personal income tax
CEPII	French research center in international economics	PSM	Propensity Score Matching
CIT	Corporate income tax	PTAs	Preferential trade agreements
EFTA	European Free Trade Agreement	RCA	Revealed comparative advantage
EU	European Union	ROI	Return on Investment
FDI	Foreign direct investments	RTAs	Regional trade agreements
GSP	Generalized System of Preferences	SAA	Stabilization and Association Agreement
GSTP	Global System of Trade Preferences for Developing Countries	SEZ	Special economic zones
GVC	Global value chain	SSC	Social security contributions
ICT	Information and Communication Technology	TFA	Trade facilitation agreement
LPI	Logistics Performance Index	TIDZ	Technological and industrial development zone
M&E	Monitoring and evaluation	UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
MFN	Most favored nation	WDI	World development indicators
MNE	Multinational enterprises	WTO	World Trade Organization
NTMs	Non-tariff measures		

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Executive Summary

For a small and landlocked country like North Macedonia, trade integration is particularly important to sustain the country's economic growth and transformation. Due to its relatively small domestic market, the economy of North Macedonia relies heavily on integration within the region and the global economy to continue to grow and benefit from foreign direct investment (FDI), technology flows, and global value chain (GVC) integration. Although the country has made great strides in reforming its economy over the last two decades and attracting greenfield FDI, its economic structure has changed little, and 18 percent of the population still lives in poverty.[1] Clearly, given the country's geographic characteristics, trade will be the engine of growth by transforming the economy, creating viable jobs, and reducing poverty after the COVID-19 pandemic.

The importance of trade became even more visible during a global crisis and in the post-pandemic recovery period. First, the COVID-19 pandemic has disrupted GVCs and FDI flows, contributing to the decline in economic growth of North Macedonia in 2020 to 6.1 percent. However, the World Bank's recent report on reshaping GVCs demonstrates that the impact on firms integrated into GVCs has been mitigated by the financial and technical support provided by lead firms during the pandemic to maintain their investments.[2] In fact, the pandemic has shown that trade-related jobs are more resilient in times of pandemic and the integration in global markets is critical to maintain economic growth and the flow of important products that can help mitigate the impact of the pandemic. Further, in North Macedonia, foreign-owned and exporting firms have been less affected by the pandemic and have recovered faster than those focused on only on the domestic market. They were also able to recover jobs faster.[3] Trade will play an important role in the recovery phase by diversifying exports and increasing access to new foreign markets.

Trade integration has contributed to North Macedonia's rise to the status of a middle-income country, but its trade strategy is showing signs of fatigue. Effective trade policy can have a positive impact on economic growth by diversifying the economy through better access to new markets, higher spillover effects on local economy, and by promoting reforms that can improve the business climate. North Macedonia has made considerable progress in this direction, but its trade strategy requires rethinking, exacerbated by the COVID-19 pandemic in 2020 and the war in Ukraine in 2022.

The lack of trade diversification and economic transformation limits the role of trade in North Macedonia's growth model. The country has moved to more sophisticated GVC participation thanks to its attractiveness to export oriented FDI over the past two decades, but the country has

[1] World Bank (2022), Regular Economic Report for the Western Balkans #21.
[2] World Bank (2020), World Development Report.
[3] World Bank (2022), https://www.enterprisesurveys.org/content/dam/enterprisesurveys/documents/covid-1/country-profile-North-Macedonia--Round-2_English.pdf

experienced a greater concentration of its exports, although its export basket contains more sophisticated products than ever before. The concentration of exports is likely the result of a lack of transformation in the economic structure, which has also slowly eroded the benefits of the diversification of exports that took place after the global financial crisis. It could also be the result of an excessive focus on incentivizing FDI firms focused on the automotive supply-chain through generous tax exemptions and state aid. The concentration of exports limits the role of trade in the country's economic growth. Even before the pandemic, its economic growth rates were already below its peers.[4] In the recovery phase, economic growth was driven mainly by consumption and, to a lesser extent, investment, while net exports did not contribute to growth recovery.[5]

Also, trade openness in services has been weaker than for merchandise, highlighting the untapped potential for trade in services. In terms of services, North Macedonia has not shown any significant improvement in the past decade and remains at the same level as in the 2006–08 period. The country's performance is lower than in most of its aspirational peers and some of its structural peers. The economy can benefit from exploiting its untapped potential in trade in services, as they will be key in transforming the economy towards that of a high-income country.

North Macedonia's growth strategy should aim to diversify the economy and seek export oriented FDI that would have stronger spillover effects on the domestic economy. First, specialization in the automotive industry has led to diversification gains. However, these gains cannot be sustained if GVC integration is mainly through cheap labor. To achieve higher levels of integration, North Macedonia needs to improve its business service offering, which also involves the ability to produce more complex products and to expand into sectors, such as agriculture, agri-processing, and services, which can be beneficial due to its proximity to the EU and opportunities to serve the Western Balkans market.

State aid provided through tax incentives to boost exports and attract FDIs will need to be redesigned to be more effective. Not only do they not comply with EU *acquis communautaire*, but to become more effective, these incentives need to be performance-based, better stimulate job-creation, and incentivize linkages with the local economy. Through generous tax incentives—equivalent to 5 percent of total tax revenues foregone in the 2017–20 period—provided mostly to firms in Technological and Industrial Development Zones (TIDZs),[6] which accounted for one-third of exports in 2020, the government in North Macedonia supported the creation of only 3 percent of total employment.[7] Further, tax incentives did not lead to higher spillover effects on the rest of the economy. Since 2013, there has been a slight improvement in terms of FDI local

[4] World Bank (2018), Country Systemic Diagnostic for North Macedonia.
[5] World Bank (2022), Regular Economic Report for the Western Balkans #21.
[6] Similar tax incentives are offered on a case-by-case basis to firms outside of TIDZ, such as for large ICT companies Endava and Scalefocus, and automotive companies like Krombert&Shubert, Draexlmaier, Kostal.
[7] For about 19,000 jobs in TIDZs, taxes foregone amounted to $17,000 per job or about 2.8 times a worker's annual wages.

spillovers and upstream linkages with domestic firms. These incentives, however, did increase investments and exports. Foreign firms continue to purchase only about 10 percent of their inputs from domestic suppliers and continue to operate more independently of domestic production networks.[8] Finally, while tax incentives to FDI firms in TIDZs increased profitability, this was still insufficient for firms to meet the general investment hurdle. This suggests that the firms attracted have extremely low margins, and it is questionable whether this would be sustainable in the medium-term, and whether these firms might have the temptation to move to a more profitable investment location.

A revamped trade strategy is needed that will allow North Macedonia to move further up the GVC ladder and expand its economic diversification through agriculture, agri-business, services, or more complex manufacturing, which will ultimately lead to greater job creation, business survival, and diversification of the economy as a whole. The trade strategy also provides important information for the ongoing preparation of the government's Smart Specialization Strategy. The next generation of trade policy reforms that can revive the export-led growth model will require a more complex set of policy actions and strong high-level political support. With policy priorities focusing tightly on attracting higher-value-added segments of specific value chains, it will be important to adapt incentives and state aid accordingly, as well as address trade policies:

Policy reforms related to trade policy:

- *Short-term:*
    - *Streamline border procedures and improve coordination among agencies* to reduce delays from customs clearance and trade costs with its main trading partners. In addition, North Macedonia should establish a mechanism for regular review of and database for non-tariff measures, achieve compliance with the last two World Trade Organization (WTO) Trade Facilitation Agreement measures, and implement joint border inspections. Finally, the country should reinforce the public-private dialogue to identify the obstacles to trade and implement concrete measures that can facilitate trade.
    - *Open up to greater labor mobility within the Western Balkans to reap the benefits of trade in services,* for example, through agreements on the mutual recognition of professional qualifications, which would enable the country to build a competitive services market.
- *Medium-term:*
    - *Close the remaining gaps in the transport network, including railways, and improve the maintenance of transport infrastructure and road safety* through well-targeted new investments and adequate maintenance budgets for both road and rail transport.

[8] Jolevski and Madzarevic-Sujster 2021. The Impact of COVID-19 on Firms in North Macedonia. World Bank Group

This will allow North Macedonia to benefit from the country's position as a regional transit hub and better connect domestic firms to international markets.

Policies related to deep regional trade agreements (RTAs):

- *Short-term:*
  - *Align tariffs with EU norms.* Import tariffs on inputs for the North Macedonian firms' production should not be higher than the tariffs on the finished imported products that are directly competing on the domestic market. This problem is especially evident in the automotive sector, production of photovoltaics, salami and other meat products. While some tariff reductions were made during the COVID-19 crisis, they were limited and temporary.
- *Medium-term:*
  - *Continue to expand the network of bilateral and multilateral trade agreements and deepen the existing ones.* North Macedonia has made significant progress in terms of liberalization at the regional level. However, integration into the global trade network opens opportunities that should not be overlooked, including by expanding to North Africa and Arab countries. The economy should therefore continue their efforts towards global trade integration. The depth of RTA matters for export growth as firms operating in markets with deeper agreements tend to be more productive, profitable, and larger in size.
  - *Deep RTAs must be accompanied by a set of domestic policies that allow companies to benefit from them, in terms of size and sectors.* Creating the right business environment to improve the productivity of domestic firms can unlock the benefits expected from deeper RTAs with all of North Macedonia's trading partners. This requires a more efficient allocation of existing resources and a series of horizontal measures that can support the diversification of the economy as a whole, for example, in the areas of governance, education, infrastructure, and trade openness.
  - *New opportunities need to be explored at the sectoral level, predominantly in the agricultural and services sectors.* The current food crisis resulting from the war in Ukraine is putting pressure on agricultural products, including staple foods. North Macedonia has yet to exploit its agricultural potential by increasing productivity in the agricultural and agri-business sectors and using RTAs to benefit from foreign markets. In the services sector, the information and communication technology industry has the potential to grow and create more sustainable and better paid jobs while it can be shielded from global crises like COVID-19. Deep RTA can support the reforms needed to make North Macedonia a more attractive destination as firms reorganize their value chains amid geopolitical and other risks that emerged in recent times.

Policies related to state aid:

- *Short-term:*
    - *Revise the tax exemptions in line with the EU acquis:* Policy regarding special economic zones (SEZs) should be targeted and time-limited and continuous, rather than broad in terms of scope and geography. Expanding the benefits associated with SEZs is not consistent with the EU *acquis* and creates an unfair competition for local exporters of similar products. Similarly, SEZs are not compliant with the WTO Agreement on Subsidies and Countervailing Measures.
    - *Put in place an export readiness support* that would help with reaching to the export markets through market research, meeting market requirements related to standards, certifications and NTM, supporting exhibitions at specialized trade fairs, export financing (factoring, guarantees, insurance), as well as support for e-commerce, or even shared offices and marketing staff in foreign markets.
    - *Improve state aid transparency and put monitoring and evaluation in place:* Creating the state aid registry and producing annual reports on the costs of state aid (ideally annexed to the national budget) and a more thorough review of incentives every three years (including a review of which incentives to possibly add or abolish) would help identify opportunities to boost the effectiveness of state aid.
- *Medium-term:*
    - *Consider shifting to a performance-based incentive system:* Current generous tax incentives need to be replaced with state aid, creating higher value-added for the economy and avoiding unfair competition with local firms. Shifting to a more performance-based system of tax credits can better assist new firms, while helping to improve the cost-effectiveness of tax incentives by linking the amount of benefits to a specific government objective such as employment growth, skills training, or growth in knowledge-intensive investments. Implementing performance-based incentives in other policies beyond the ones analysed in this report is highly recommended.
    - *Focus on human capital and innovation*: The government might now consider incentives that target developing human capital and innovation support in the short term while, in the long term, education reforms to address this issue take root.
    - *Put in place a supplier development program:* A supplier development program to address market and coordination failures may facilitate links of domestic firms with FDI firms and upgrade local firm capabilities. State aid for skills upgrading, digitalization, innovation, and development of local suppliers remain important for strengthening domestic firms, which were more affected by the crises than foreign-owned firms operating in North Macedonia. The government of North Macedonia is currently working on policies that aim to increase skills and deepen the relationship of local firms in global value chains. One example is the Smart Specialization Strategy of the Ministry of Economy and Ministry of Education and Science. Nonetheless, there is space to explore other possibilities such as digital matchmaking platforms, supplier

audits and certifications, technical assistance for meeting required technical, quality and ESG standards, and managerial skill upgrades, among others.

The proposed reform agenda needs to be considered as part of a broader strategy to improve the business climate and attractiveness for investment and raise productivity in the economy. Ultimately, the country's ability to achieve greater economic diversification and upgrading will depend on a large number of different factors, including competition policy, investment policies, innovation, education policies.

The rest of the report is organized as follows: The *first chapter* examines the trade trends and performance of North Macedonia over the past decade. This includes an in-depth analysis of North Macedonia's recent and historical trade performance, while a closer look at merchandise exports provides a better understanding of the country's trade weaknesses. It also includes an analysis of export diversification, export relationship survival, new entrants in exports, and GVCs. The *second chapter* addresses the state of North Macedonia's trade policy by examining (i) tariff and non-tariff measures, (ii) trade logistics and infrastructure, (iii) trade liberalization through free trade agreements, and (iv) restrictions on trade in services. It concludes with a number of policy recommendations that can address these challenges but also how to design the smart specialization policies. The *third chapter* addresses the impact of North Macedonia's deep trade agreements on its exporters by looking at what policy area most contributed to the boost of North Macedonia's exports, what the impact of RTA was at the sectoral and firm levels, and what firm characteristics matter for positive effects in RTAs. Finally, *the fourth chapter* evaluates the costs and benefits of state aid given to firms in North Macedonia's TIDZs. The analysis uses micro-level data and simulations to analyze the costs of tax exemptions offered to firms that joined the TIDZs and explores the potential benefits from such state aid.

Why are the measures needed?	What measures are being proposed?		What is the likely impact of the measures?
	Short-Medium Term (6–18 months)	Medium-Long Term (18–36 months)	
Reduce regional and international trade time and costs			
Removing trade barriers and improvements in infrastructure would ease trade in goods and services and ensure supplies	• Streamline border procedures and improve coordination among agencies • Establish a mechanism for regular review of NTMs and implement the remaining WTO TFA measures • Implement joint inspections with neighbouring countries • Open up to greater labour mobility within the Western Balkans to reap the benefits of trade in services	• Close the remaining gaps in the transport network, including railway, and improve the maintenance of transport infrastructure and road safety	• Lower trade costs for businesses and a more conducive environment for participation in regional value chains • Improved trade facilitation expands the platform for manufacturers and service providers to connect with regional value chains. • Facilitated transit of goods across borders boosts exports and reduces supply shortages • Improved compliance with the WTO TFA
Unleash the benefits of regional integration and deep trade agreements			
Deeper regional integration would support the country's Smart Specialization Strategy and open up new jobs at home	• Evaluate the impact of tariffs reforms to align tariffs with EU tariffs • Review tariffs to reduce input costs, including by reducing the number of duties and charges on imports.	• Reform tariff schedule • Continue to expand the network of bilateral and multilateral trade agreements and deepen existing ones • Ensure that complementary domestic policies (competition, education, investment, etc.) create a favorable business environment to benefit from deep trade agreements • New opportunities need to be explored at the sectoral level, mainly in the agricultural and services sectors	• Cheaper intermediate inputs for many industries would foster substantial growth and job creation in these sectors • Deepened regional trade integration • Diversified export basket beyond goods to include services • Enhanced smart specialization

Why are the measures needed?	What measures are being proposed?		What is the likely impact of the measures?
	Short-Medium Term (6–18 months)	Medium-Long Term (18–36 months)	
Reform state-aid policy to improve revenues, competitiveness, and diversification of the economy			
Reformed state aid policy could boost international competitiveness of local firms and create higher value-added jobs	• Revise the tax exemptions in line with the EU acquis and with a time-bound targeted scope • Put in place an export readiness support program • Improve state aid transparency and put monitoring and evaluation in place such as creating a state aid registry and a report on the annual costs resulting from state aid	• Shift to a performance-based incentive system by linking the level of benefits to a specific target, such as employment growth, skills development, or growth of knowledge-intensive investment and beyond FDI firms • Focus on human capital and innovation through education reforms	• Reduce revenue costs associated with state aid • Promote skills upgrading, R&D, innovation, compliance with ESG and technical standards • Keep highly skilled sectors globally competitive • Improve linkages between domestic suppliers and foreign firms

1. The State of Trade Integration of North Macedonia

Trade integration and global value chain (GVC) participation have contributed to North Macedonia's rise to the status of a middle-income country, but its trade strategy is showing signs of fatigue. Effective trade policy can have a positive impact on economic growth by diversifying the economy through better access to new markets, integrating GVCs, and by promoting reforms that can improve the business climate, attracts investment, and increase the overall productivity of the economy. North Macedonia has made considerable progress in this direction, but its trade strategy started to show signs of fatigue and export concentration, exacerbated by the COVID-19 pandemic in 2020 and affected by the war in Ukraine in 2022.

The increasing concentration in key export sectors has limited the role of trade in North Macedonia's economic growth model and increased the country's dependence on specialized products and markets. Export concentration has taken place in the past decade, although the country attracted significant export-led foreign direct investment (FDI), which had initially diversified the export basket into more sophisticated products than ever before. That strategy eroded over the years due to low levels of economic transformation and low spillovers to the domestic economy**.** This is also evident in the recovery phase, where economic growth post-COVID-19 was driven mainly by consumption and, to a lesser extent, investment, while net exports did not contribute to the growth level of the recovery.[9] The next generation of trade policy reforms that can revive the export-led growth model will require a more complex set of policy actions and strong high-level political support.

This chapter examines the trade trends and performance of North Macedonia over the past decade. This includes an in-depth analysis of North Macedonia's recent and historical trade performance. A closer look at merchandise exports provides a better understanding of the country's trade weaknesses.[10] Also, an analysis of export diversification, export relationship survival, new entrants in exports, and GVCs is included.

1.1 Timid recent trade performance and openness

North Macedonia is well integrated in the global trading system in terms of merchandise trade but has demonstrated rather timid progress over the past decade. The trade openness indicator combines the importance of exports and imports and gives an indication of reliance of domestic producers on foreign demand and of the demand of imports by domestic consumers and producers. Figure 1 shows that the share of merchandise trade in GDP in 2016–18 is slightly higher than in 2006–08. Although North Macedonia is relatively open to trade given its level of economic development, it has made less progress compared to some of its structural peers such

[9] World Bank (2022), Regular Economic Report for the Western Balkans #21.
[10] Based on Reis and Farole (2012)

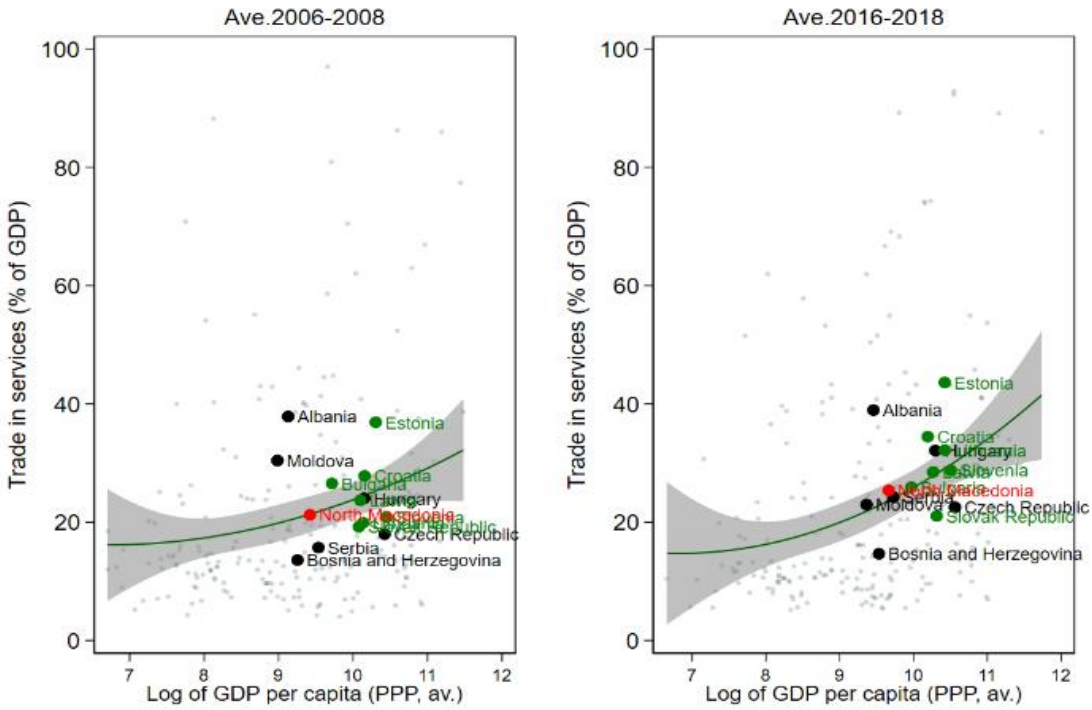
as the Czech Republic, Lithuania, the Slovak Republic, and Slovenia and given the export-oriented investment incentives it has offered.

Figure 1: Merchandise Trade Openness of North Macedonia and Peers 2006–08 and 2016–18

Source: World Development Indicators. Note: Trade openness is the ratio of exports plus imports over GDP. Empirically, the relationship between trade openness and per capita income is linear. The curve shows the average of trade openness conditional on a given per capita income. The grey band represents the 95 percent confidence interval. The year 2020 should be cautiously interpreted as not all economies have reported their imports statistics.

By contrast, trade openness in services has been weaker than for merchandise, highlighting the untapped potential for trade in services. In terms of services, North Macedonia has not shown any significant improvement in the past decade and remains at the same levels as in the 2006–08 period (Figure 2). It should be noted that the country's trade openness matches the country's levels of economic development. But when compared, the country's performance is lower than most of the aspirational peers and some structural peers. Hence, the economy of North Macedonia can benefit from exploiting its untapped potential in trade in services.

Figure 2: Services Trade Openness of North Macedonia and Peers 2006–08 and 2016–18



Source: World Development Indicators.Note: Trade openness is the ratio of exports plus imports over GDP. Empirically, the relationship between trade openness and per capita income is linear. The curve shows the average of trade openness conditional on a given per capita income. The grey band represents the 95 percent confidence interval. The year 2020 should be cautiously interpreted as not all economies have reported their imports statistics.

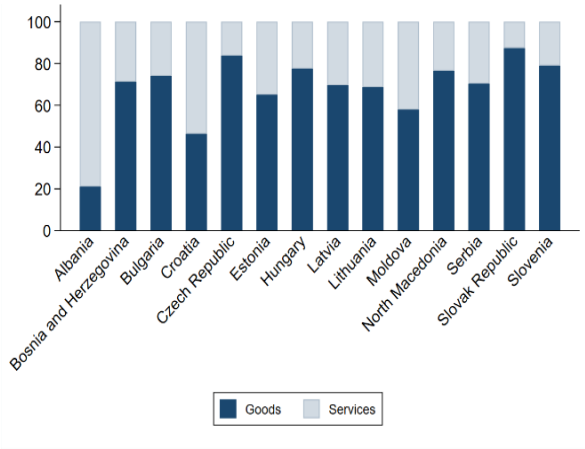
As a small, landlocked country, North Macedonia relies on imports to develop its economy. Imports can help the country meet its domestic consumption by providing access to cheaper and better-quality goods, but it can even more crucially improve the access to inputs and imported technologies that are necessary to improve the productivity and competitiveness of domestic exporters. The country follows a similar trend to other countries of similar size and geographical location. Figure 3 shows the ratio of exports and imports of goods and services to GDP for North Macedonia. Trade in goods accounted for 107 percent of GDP in 2020 (imports 63 percent and exports 45 percent), while trade in services accounted for 21 percent (imports 9 percent and exports 12 percent). As in most countries, trade in goods tends to be higher than trade in services. Furthermore, the share of imports of goods in GDP also tends to be higher as imports are necessary to support the development of the domestic economy and to satisfy consumer demand.

Figure 3: Trade Openness of Exports and Imports of Goods and Services, 2007–20

Source: World Development Indicators. Note: Trade openness is the ratio of exports plus imports over GDP.

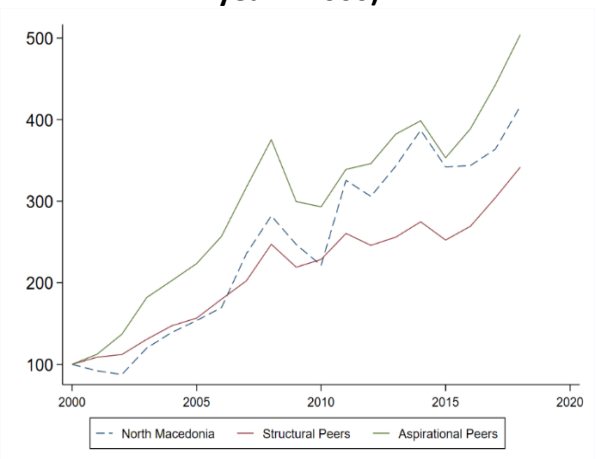
Export performance in North Macedonia is affected by the poor performance of services exports compared to other countries. Figure 4 shows the percentage share of exports of goods and services in total exports in 2019. North Macedonia has the lowest share, with services exports accounting for only about 20 percent of total exports in 2019. Figure 5 shows the evolution of trade in services with a base year in 2000. North Macedonia performs worse than its aspirational peers but better than its structural peers, on average, suggesting that there is untapped potential for improving services exports.[11] Total exports remain dominated by merchandise goods. Yet, services exports will play a key role in transforming the economy and supporting the expansion of export activities into regional and global markets.

Figure 4: North Macedonia and Peers' Share of Goods and Services in Total Exports in 2019



Source: World Development Indicators.

Figure 5: North Macedonia and Peers' Services Exports Evolution 2000–19 (base year = 2000)



Source: World Development Indicators.

[11] Aspirational peers are: Bulgaria, Croatia, Estonia, Latvia, Lithuania, Slovenia, and Slovakia. Structural peers are: Albania, Bosnia and Herzegovina, Serbia, Hungary, Republic Czech, and Moldova.

1.2 Two distinct historical trade episodes

North Macedonia's export growth can be split in two periods over the past decade, the first one being driven by metals and services exports and the second one by the automotive industry. From 2005–08, exports grew strongly, partly due to exports in metals and services (Figure 6–Panel A). The growth was particularly stark for metals, which grew at an average annual rate of 31.4 percent followed by services at 11.8 percent, increasing the services share in total exports to 30 percent in 2009. However, from 2009 onwards, export growth was mainly driven by machinery and electronics, chemicals, and transport goods. Their respective average annual growth rates were 27.4 percent, 28.7 percent, and 22.7 percent until 2019, outpacing the growth of services, which averaged only 7 percent annually. The structural shifts resulted from the establishment of special economic zones, discussed in chapter 4. As a result, the share of services in total exports shrank by 10 percent down to 19.7 percent in 2019.

Metals are North Macedonia's most important export commodity, followed by transport and tourism services, as well as machinery and electronics, and automobiles. Figure 6–Panel B presents the composition of goods and services exported by North Macedonia in 2019. Exports of tourism and transport partly explain services exports growth and represent 8.9 percent of total exports. On the merchandise side, exports are dominated by machinery and electronics, and chemicals—each sector accounts for about 20 percent of total exports. The automotive industry has grown in recent years, reaching up to 10 percent of total exports, which can rise to as much as 30 percent if auto-related goods, such as electrical panels and car seats are taken into account. But agricultural or traditional exports, such as textiles, footwear, or foodstuff are not among the top 20 products. The decline in exports of footwear and textiles results from a rise in labor costs and a decline in global competitiveness.

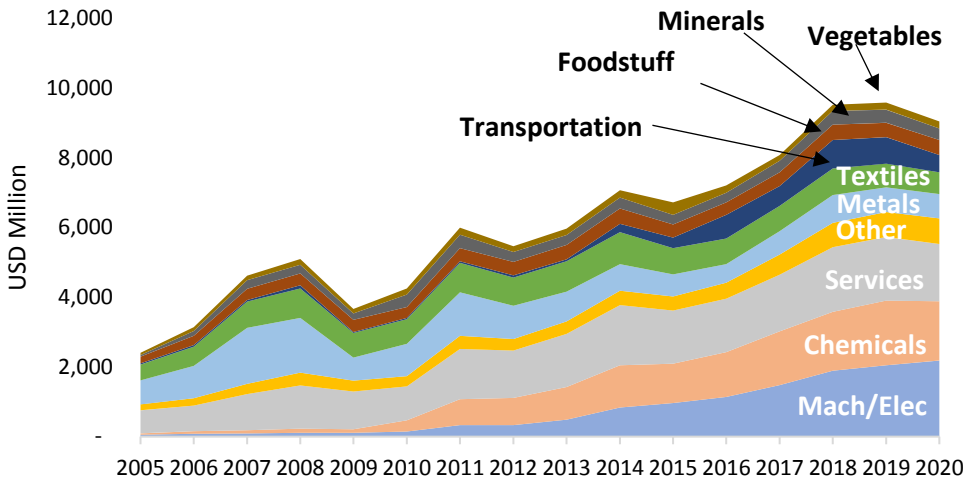
North Macedonia's exports are increasingly oriented toward the EU market and the UK; yet remain limited with regional neighbors in the Western Balkans and other trade partners. The top 20 export destinations accounted for 89.3 percent of goods and services exports in 2019 (Figure 6–Panel C). Because of its preferential market access, the EU, Central European Free Trade Agreement (CEFTA), and Turkey remain the main export destinations. Nearly half of total exports go to Germany, with $5.35 billion accounting for 46.1 percent. Although exports to the Western Balkans have increased in absolute terms, their share in total exports remains small. For example, North Macedonia's trade with its immediate neighbors, such as Albania, is low, at about $54.4 million. However, exports to Serbia are relatively high, at $610 million.

Overall, the markets with which North Macedonia has signed regional trade agreements account for more than 90 percent of total exports. Of North Macedonia's top 20 export

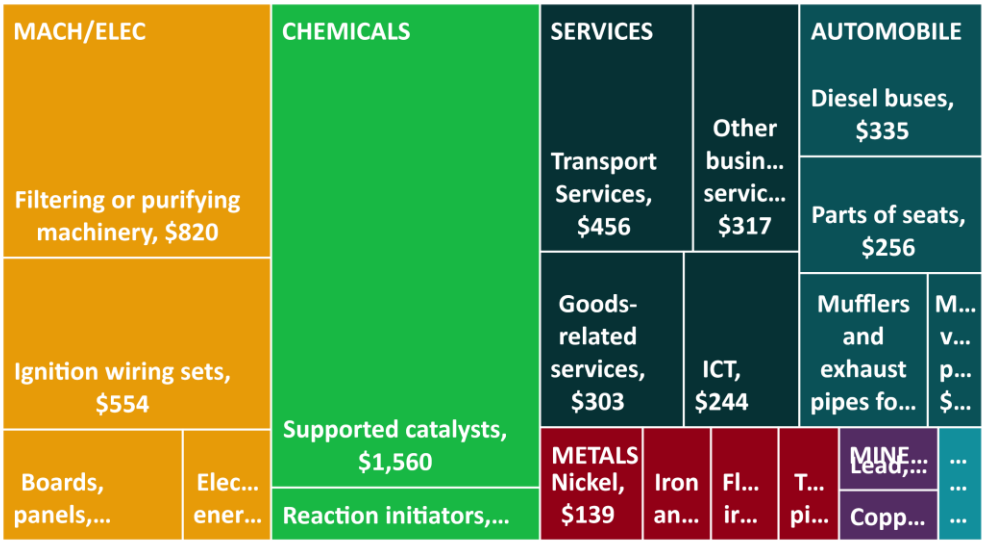
destinations, only exports to two countries are not covered by a trade agreement, namely the United States and China.

Figure 6: North Macedonia's Exports Performance, Composition, and Destinations

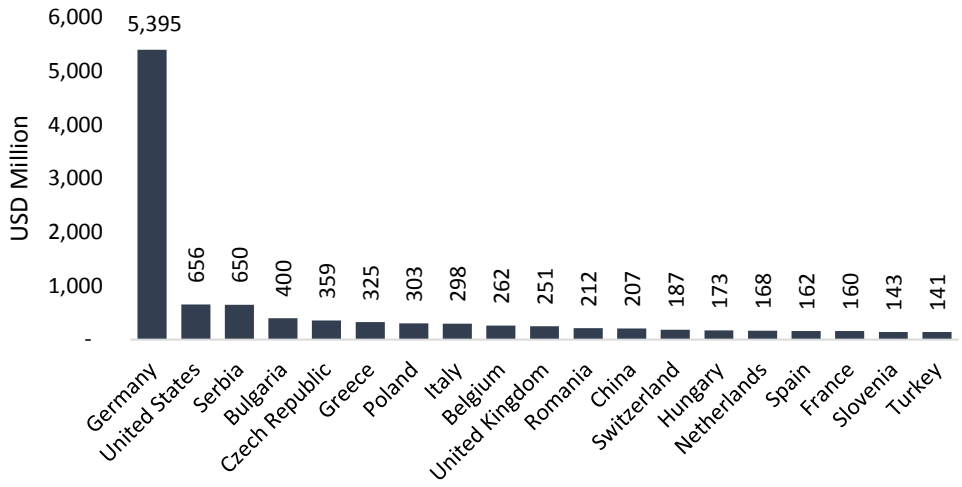
Panel A: North Macedonia's exports growth was partly driven by Mach/Elec and Chemicals



Panel B: Services constitutes about 20 percent of total exports, followed by Mach/Elec, Chemicals and Automotive industry, 2019.



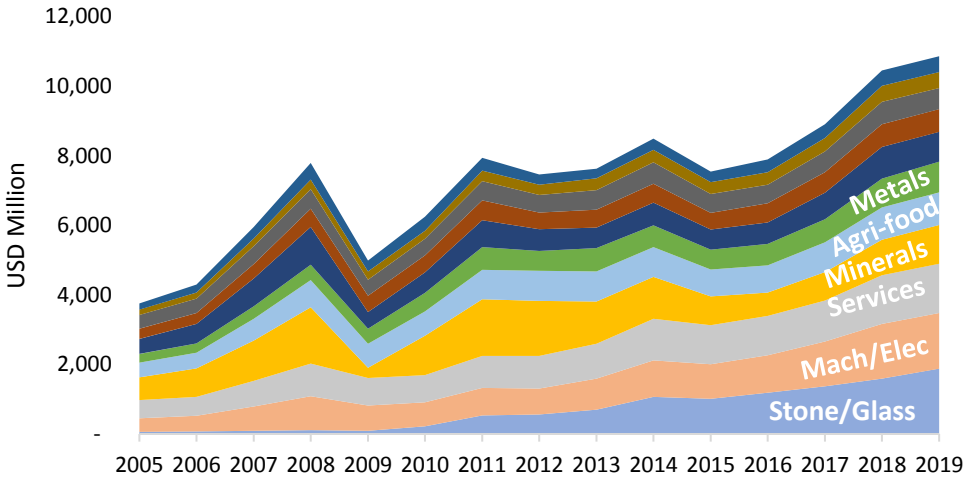
Panel C: The most important exports destinations are EU countries, the US and China, 2019.



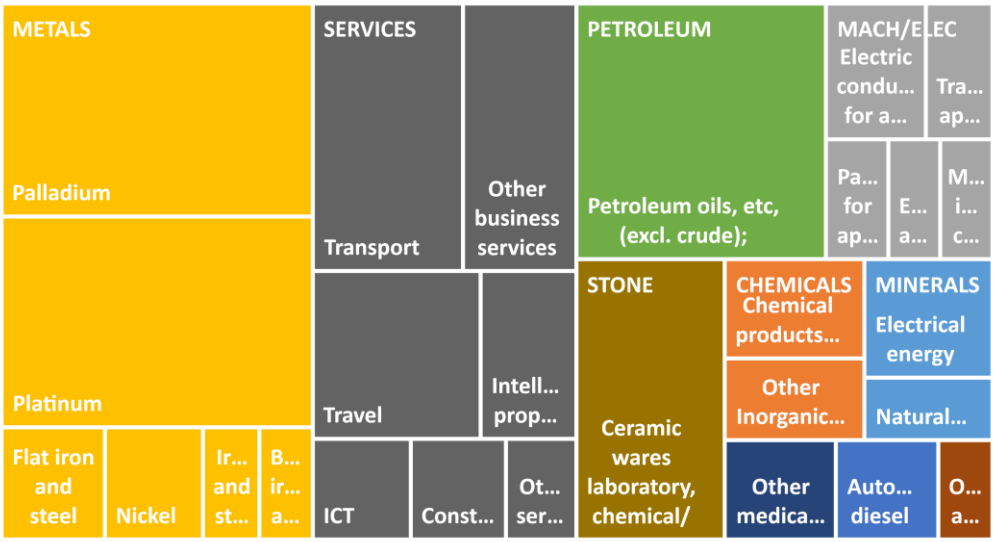
Source: WITS mirror export data and BOP6. Notes: Serbia was added manually for year 2019.

Figure 7: North Macedonia's Imports Trends, Composition, and Origins

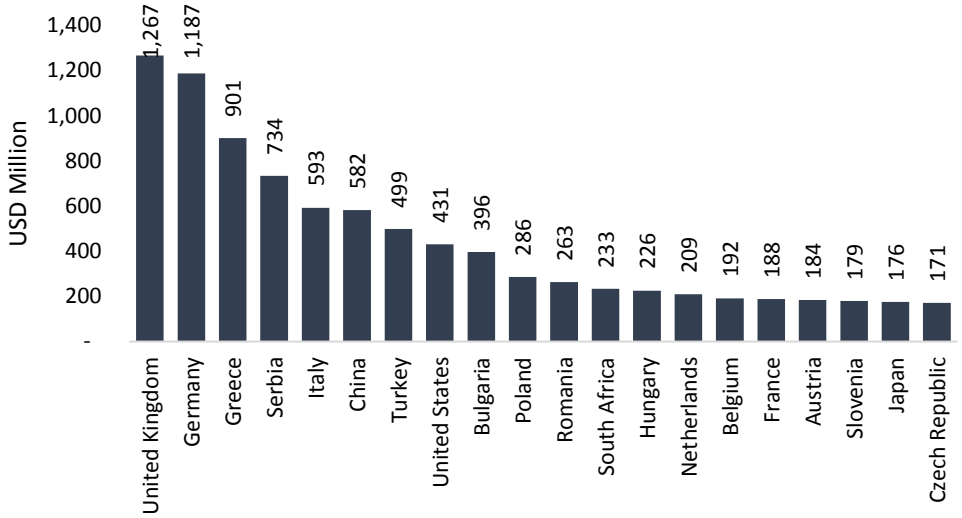
Panel A: imports have been growing slowly and tend to remain at similar levels



Panel B: Imports are mainly composed of metals, services, petroleum, stone and mach/elec, 2019.



Panel C: The main imports sources are the EU, the UK, Serbia, the USA and China, 2019



Source: WITS mirror export data and BOP6. Notes: Serbia was added manually for year 2019.

North Macedonia's imports consist of a diversified basket of complex goods and services that are not produced domestically or serve as intermediate goods. In general, imports have increased over time, with the exception of 2009, when imports declined, in part, due to a drop in mineral imports (Figure 7–Panel A). From 2012, imports started to increase again, mainly driven by machinery and electronic equipment, in line with the growth of exports of similar categories, indicating high import dependence, trade integration, and GVC participation in the automotive industry. The main imported goods are stone and glass, especially ceramics (Figure 7–Panel B). Imports of ceramics have been growing at an average annual rate of 25.6 percent since 2005, from $61 million in 2005 to $1.37 billion in 2019. In addition, the import basket is quite diversified. Metals account for about 15.4 percent, services for 13 percent, and petroleum for 7 percent. Finally, the main sources of imports are China, the EU, the UK and the United States, and also include trading partners such as Serbia and Turkey (Figure 7–Panel C).

1.3 Fragilities of North Macedonia's merchandise exports

1.3.1 Weak growth rate of exporters in new sectors with higher value-added

Over the past decade, North Macedonia expanded its revealed comparative advantage (RCA) to new sectors mostly related to the automotive industry, making the overall composition of its export basket more complex.[12] Table 1 shows the evolution of exports by sector. In the period 2005–07, North Macedonia had an RCA in five sectors: metals, textiles, footwear, foodstuff, and vegetables. At that time, exports were dominated by two sectors, textiles and metals, which accounted for more than 60 percent of total exports. While North Macedonia has maintained its RCAs in its five traditional sectors over time, new RCAs have emerged in two sectors related to the automotive industry: machinery and electronics, and transportation.

North Macedonia's export performance has been sustained by the country's strategy to attract export oriented FDI in the automotive industry to offset the decline in metal prices. The automotive industry has allowed North Macedonia to maintain a positive performance of its exports by offsetting the decline of metals exports caused by lower world prices and the closure of a major metal exporter in 2016 due to environmental issues. Figure 8 shows that in the period before the global financial crisis, booming metal prices drove North Macedonia's export performance. In the second phase, starting in 2010, North Macedonia was able to offset falling global metal prices thanks to FDI in the automotive industry. As a result, the three sectors, chemicals, machinery and electronics, and transportation showed strong average annual growth rates of 24 percent, 22 percent, and 21 percent, respectively, in the period between 2005 and 2018. However, traditional sectors, also important to the economy, such as textiles, footwear and foodstuff, showed lower growth rates, ranging from 0 to 3 percent, while the metals sector showed a negative growth rate.

The prospects for export-led growth in North Macedonia have become more uncertain due to the crises caused by the pandemic and the war in Ukraine. Spikes in world metal prices may result in short-term gains for North Macedonia. However, the latter are likely to affect the automotive supply chain, in which North Macedonia is deeply integrated. In addition, lower demand and bottlenecks in the supply chain could also have a damaging impact on the economy.

Table 1: North Macedonia's Export Values, Shares of Total Exports, and RCA by Sector for 2005–07 and 2016–18

Sectors	Average 2005–07			Average 2016–18			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Value	% of total	RCA	Value	% of total	RCA	CAGR (%)
01-05 Animal	27.7	0.9%	0.38	25.45	0.4%	0.2	-1%

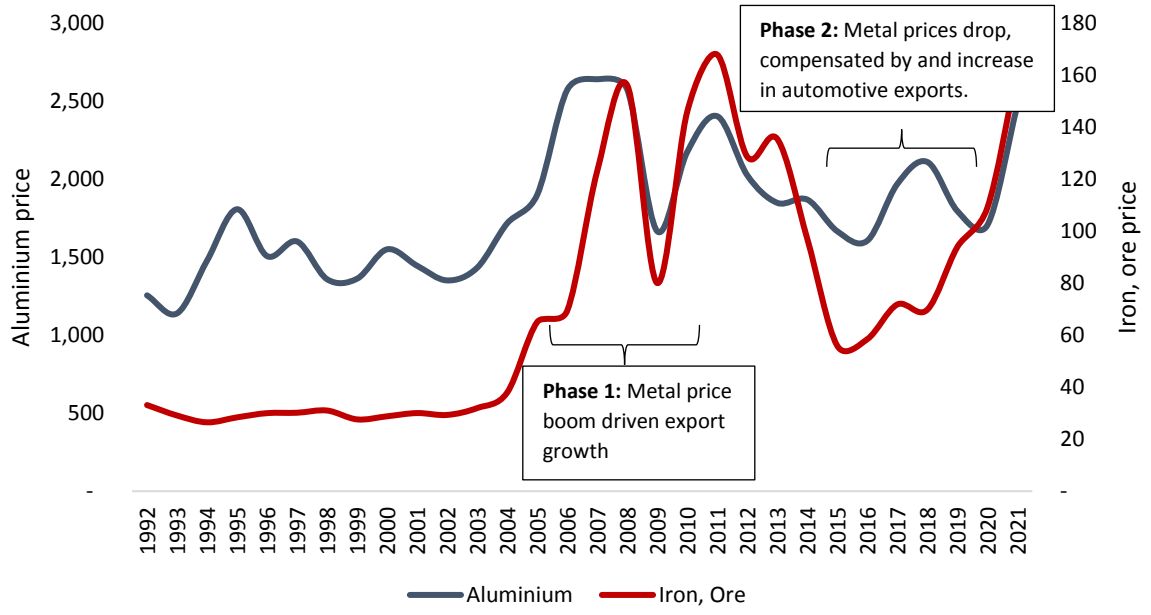
[12] The RCA index is the ratio of a country's export share in a specific sector to the world share of that sector in total world exports. An RCA index above 1 indicates that the country's share of exports in a sector exceeds the global export share of that product and is thus a measure of its competitiveness.

06-15	Vegetable	130.4	4.4%	1.22	179.98	2.5%	0.9	2%
16-24	Foodstuffs	294.1	9.9%	2.57	443.49	6.1%	2.2	3%
25-27	Minerals	169.6	5.7%	0.25	365.02	5.1%	0.5	6%
28-38	Chemicals	79.2	2.7%	0.21	1,616.72	22.4%	2.7	24%
39-40	Plastic / Rubber	28.7	1.0%	0.16	90.26	1.2%	0.3	9%
41-43	Hides, Skins	18.1	0.6%	0.67	13.68	0.2%	0.4	-2%
44-49	Wood	26.3	0.9%	0.21	36.61	0.5%	0.3	2%
50-63	Textiles, Clothing	627.9	21.1%	3.35	756.12	10.5%	3.2	1%
64-67	Footwear	76.7	2.6%	2.35	79.19	1.1%	1.5	0%
68-71	Stone / Glass	59.7	2.0%	0.48	93.18	1.3%	0.3	3%
72-83	Metals	1,240.3	41.8%	3.59	790.94	10.9%	1.9	-3%
84-85	Mach/Elec	110.0	3.7%	0.10	1,706.20	23.6%	1.0	22%
86-89	Transportation	49.7	1.7%	0.11	703.27	9.7%	1.1	21%
90-97	Miscellaneous	31.9	1.1%	0.13	327.79	4.5%	0.9	18%
Total		2,970	100%		7,228	100%		7%

Source: WITS mirror export data. Note: Columns (1) and (4) state the total value of exports by sector (in nominal terms) across two periods (2005–07 and 2016–18). When divided by population and expressed in real terms, exports per capita can be a good indicator to judge how successful a country has been in facing international competition. Columns (2) and (5) indicate the share of these exports in all periods that when divided by the world share of those sectors in total world exports, gives RCA in columns (2) and (6). Colum (7) shows the compound annual growth rate.

The RCA has several limitations, so it should be interpreted with caution. It can provide useful information on a country's progress in terms of the emergence of new sectors in the export industry. In the case of North Macedonia, the government's efforts to attract greenfield FDI successfully led to exports growth and diversified the composition of the export basket, as evidence shows the emergence of new export sectors in recent years.

Figure 8: World Prices of Aluminum and Ore

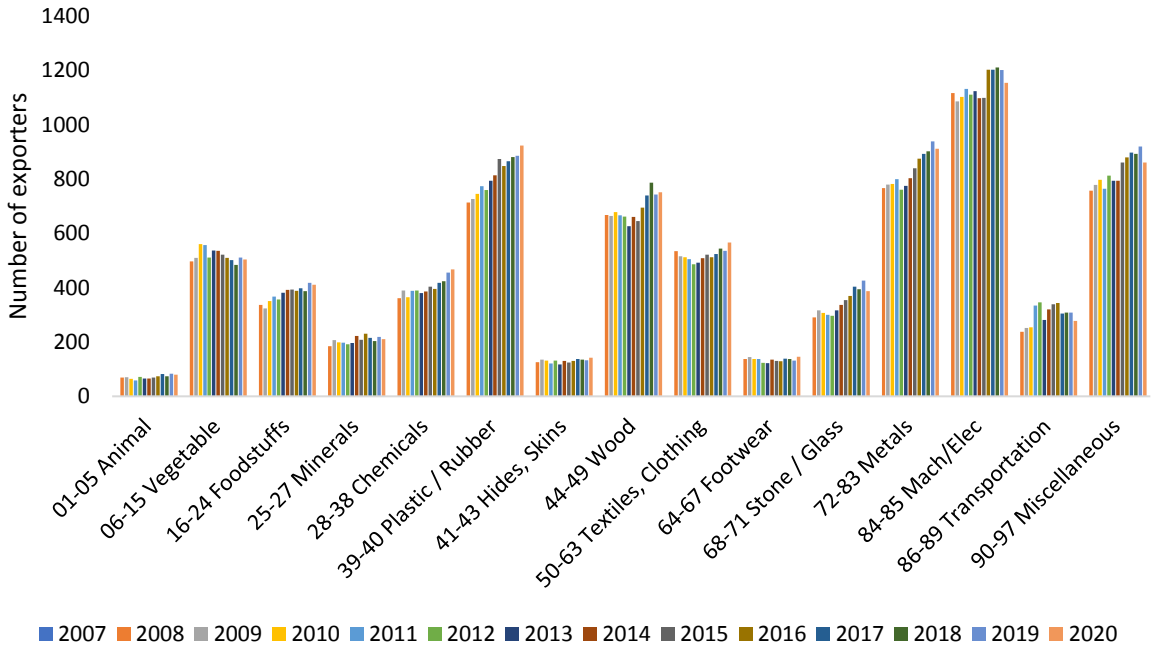


Source: World Bank Commodity Price Data (The Pink Sheet).

The number of exporters has increased in all sectors but has been particularly strong in sectors with a small share of total exports and in the metals and chemicals sectors. The largest increase recently was in two relatively small sectors of the economy—wood and plastics/rubber—which account for less than 1.7 percent of total export shares, representing $122 million in 2020 (Figure 9). The second most important sector, which hosts most exporters, is the traditional metal industry. Finally, the textile and footwear sectors, as well as the vegetable and food sectors, did not show very strong growth in terms of the number of exporters.

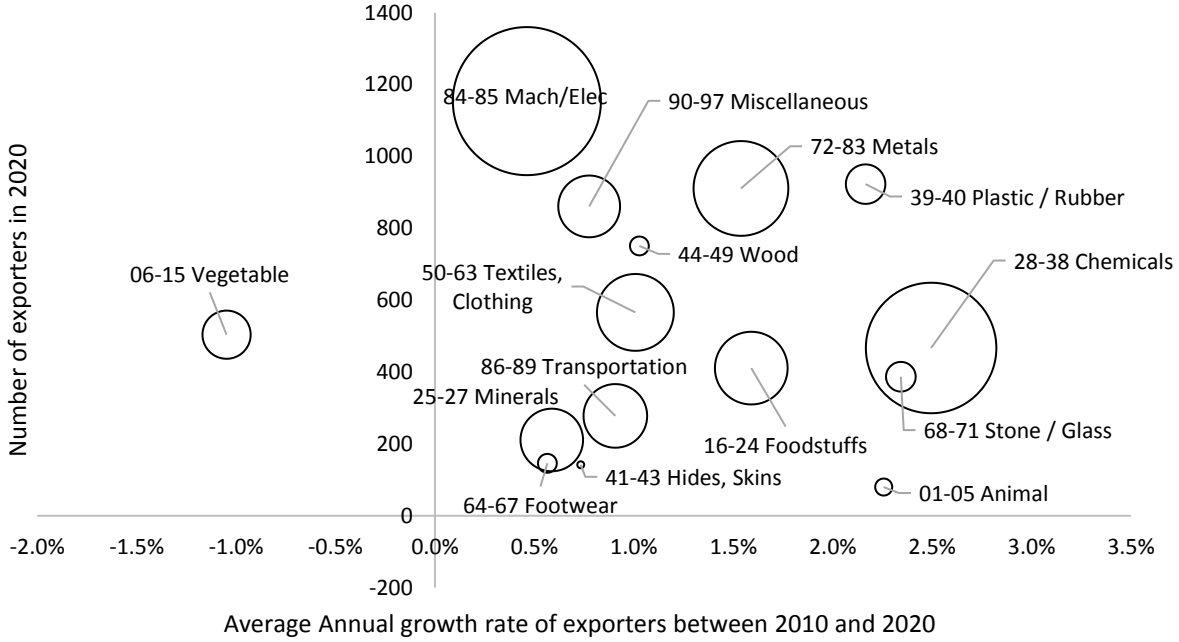
Low rate of new exporters in new sectors with higher value-added provides evidence of weak economic transformation of the economy. Figure 10 shows that the number of exporters in the animal, plastics/rubber, metals, and chemicals sectors has increased by more than 2 percent per year on average over the period 2010–20. In contrast, the transportation, and machinery and electronics sectors, although relatively new and the result of export-led FDI, have only grown at an average rate of 0.9 percent and 0.5 percent, respectively. Evidence indicates that automotive industry exports are concentrated in a handful of firms. The machinery and electronics sector is home to most exporters (about 15 percent in 2020) and accounts for the largest share of the economy. The transportation sector represents a relatively small number of exporters that remained stable over time but accounts for 10 percent of total exports, on average, in a year.

Figure 9: Evolution of the Number of Exporters by Sector, 2010–20



Source: Customs firm-level transactions data.

Figure 10: Average Growth of Exporters by Sector, 2010–20



Source: Customs firm-level transactions data. Note: the bubbles represent the value of exports in 2020 of each sector.

1.3.2 Low diversification of merchandise exports for products and markets

The number of products exported, and markets reached by North Macedonia is lower than in its peer countries, indicating less diversification. The number of products exported fell from 1,220 to 1,001 between 2010 and 2015, before rising again to 1,103 in 2018 (Figure 11), which is significantly lower than some peers with more than 3,266 products, except for Albania and Moldova. In contrast, between 2008 and 2018, the number of markets reached increased from 66 to 89. Yet, the country has the lowest number of markets reached compared to peers, some of which have reached more than 130, except for Albania, which has only 74 markets (Figure 12).

North Macedonia's diversification in terms of products and markets is limited by country dependence on specific industries and destination markets. The Herfindahl-Hirschman[13] (HHI) index gives more information about the concentration in products and markets (excluding petroleum). It shows that North Macedonia was more diversified in terms of products and markets in 2005 than it is today (Figure 13 and Figure 14). The deterioration in the degree of diversification can be explained by a greater dependence on existing markets, such as Germany,

[13] The HHI is computed as the sum of squared shares of each product (market) in total export. A country with a perfectly diversified export portfolio will have an index close to zero, whereas a country exporting only one export (market) will have a value of 1 (least diversified).

or by increasing exports in sectors, mainly automotive, where the country is trying to build up a comparative advantage, potentially leading to a lower level of competitiveness in other sectors.

North Macedonia has become increasingly dependent on its five main exported products and markets, at higher levels than peers. Another way to understand the degree of concentration is to look at the share of the top five products and markets in total exports. North Macedonia appears to be increasingly dependent on its top five exported products and shows a tendency to be more concentrated than most of its peers (Figure 15). Similarly, North Macedonia is more dependent on its top five markets compared to its peers, except for Albania and Moldova (Figure 16).

Overall, North Macedonia's diversification gains seem to have diminished in recent years, especially in products and to a lesser extent in markets. Concentration is visible in products, where there has been a shift in favor of chemicals and specific manufactured goods since 2005. Export growth in these goods, while positive, was concentrated in a handful of products, either commodities or because the country is involved in vertical production chains. Other sectors such as textiles and agriculture have reduced their expansion, shrinking the diversity of products the country has to offer. In terms of the market, exports of certain automotive products and mechanical and electronic products have improved export growth, but there are indications that although the country is exporting more complex products, the spillover effects on the domestic economy may be lower than expected.

Figure 11: Number of Exported Products for North Macedonia and Peers (2005–8)

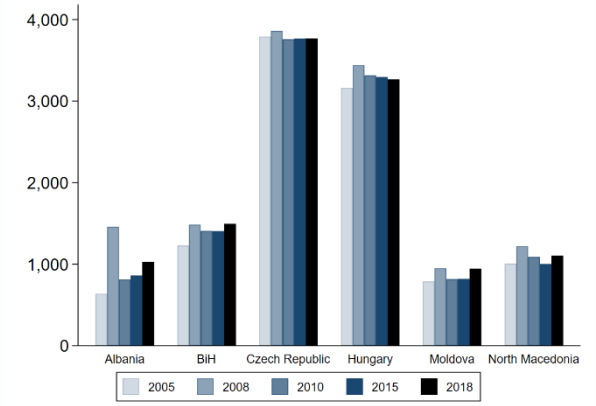


Figure 12: Number of Export Destinations for North Macedonia and Peers (2005–18)

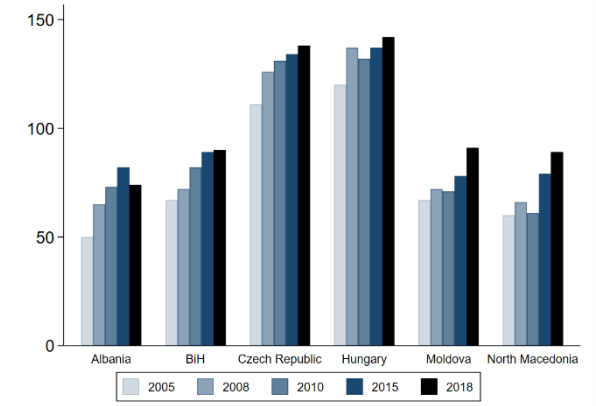


Figure 13: Herfindahl-Hirschman Index for Products for North Macedonia and Peers (2005–18)

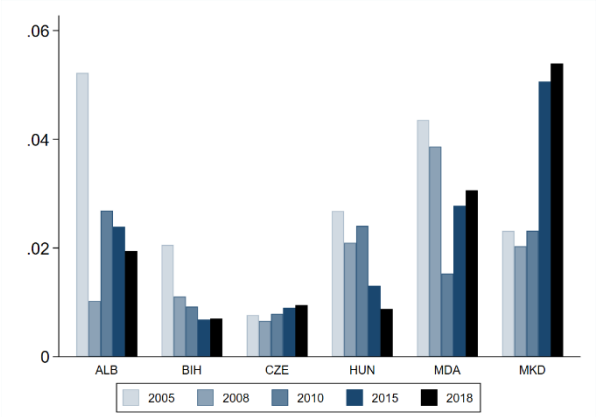


Figure 14: Herfindahl-Hirschman Index for Markets for North Macedonia and Peers (200518)

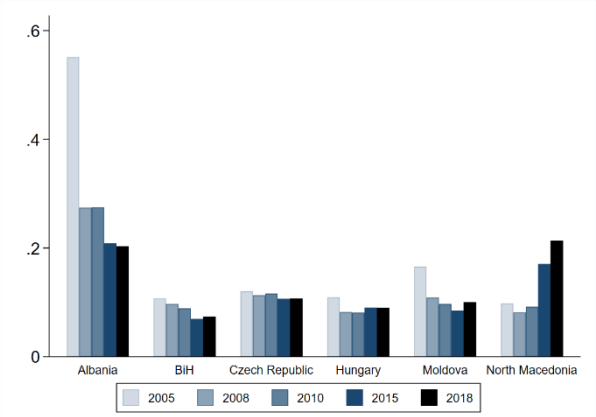


Figure 15: Share of Exports Explained by Top-5 Products for North Macedonia and Peers (2005–18)

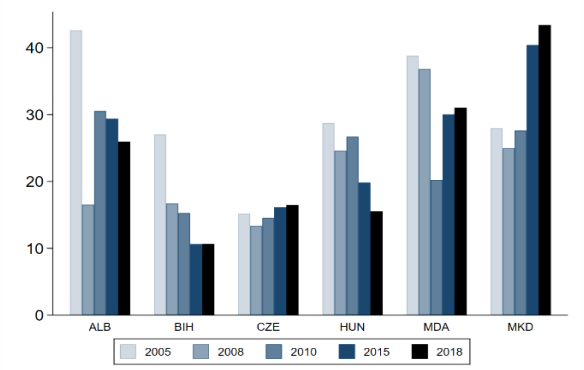
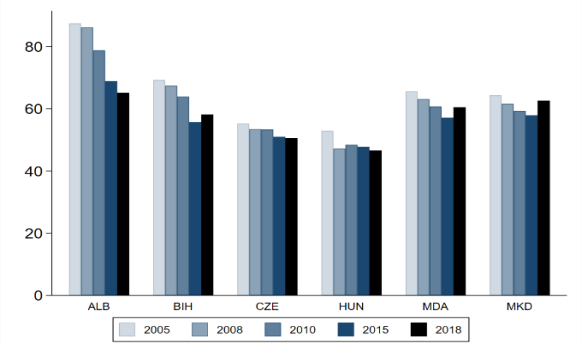


Figure 16: Share of Exports Explained by Top-5 Markets for North Macedonia and Peers (2005–18)



Source: WITS mirror export data

Export diversification to new markets and products is limited by the smaller size of firms in North Macedonia. There are large differences between firms in terms of the diversity of products and markets exported. While large firms are well diversified, small firms are less able to mitigate risk through product and market diversification. Table 2 shows the average number of products and destinations by firm size from 2008 to 2020. In 2008, the group of exporters in the top quartile of the export value distribution reached an average of 4 markets and exported 15 products. In addition, the average number of products exported for firms in the top 25th percentile increased from 15.2 in 2008 to 16.5 in 2020, while it slightly decreases from 1.9 to 1.8 for firms in the bottom 25th percentile. The average number of market destinations also increases from 4.4 to 5.7 for the top 25th percentile companies, while it remains unchanged for the bottom 25th percentile firms to one market.

Table 2: Average Number of Products and Markets by Exporter Size

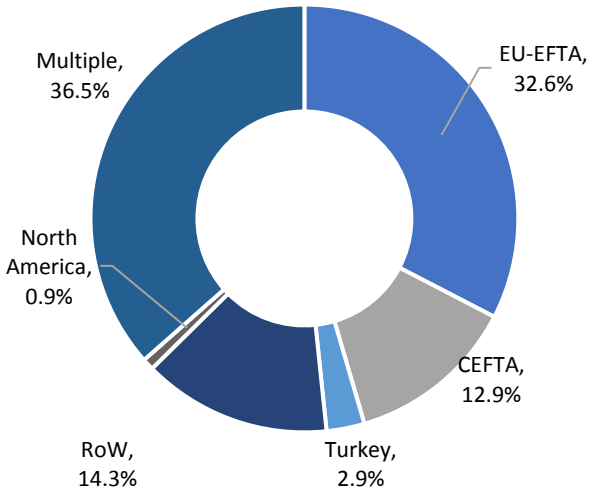
	Average number of products			Average number of markets		
	Bottom 25	Middle	Top 25	Bottom 25	Middle	Top 25
2008	1.9	4.4	15.2	1.2	1.7	4.4
2009	2.1	4.5	15.4	1.2	1.9	4.7
2010	1.8	4.7	14.0	1.1	1.8	4.9
2011	1.9	4.5	14.3	1.2	1.7	4.9
2012	1.8	4.6	14.1	1.1	1.8	4.9
2013	1.8	4.8	15.4	1.2	1.8	5.3
2014	1.7	4.8	15.5	1.1	1.8	5.4
2015	2.1	4.6	15.8	1.1	1.8	5.6
2016	1.8	4.5	16.0	1.1	1.8	5.8
2017	1.9	4.7	16.3	1.1	1.8	5.9
2018	1.8	4.6	16.5	1.1	1.8	5.8
2019	1.8	4.4	16.4	1.2	1.8	5.9
2020	1.8	4.6	16.5	1.2	1.9	5.7

Source: Customs firm-level transactions data.

The EU destinations are among the most popular export destinations for North Macedonia's firms. In 2020, about 32.6 percent of firms exported only to EU-European Free Trade Association (EFTA) countries and 12.9 percent only to CEFTA countries (Figure 17). Firms exporting to North America, Turkey, and Ukraine represent a relatively small share of exporters, 3.7 percent. Only 141 companies out of 3,769 exported to these countries. However, about 36.5 percent of all export firms, that is 1,376 firms, shipped goods to more than one region, showing a greater range of diversity in terms of markets. These exporters are categorized under "multiple" in Figure 17.

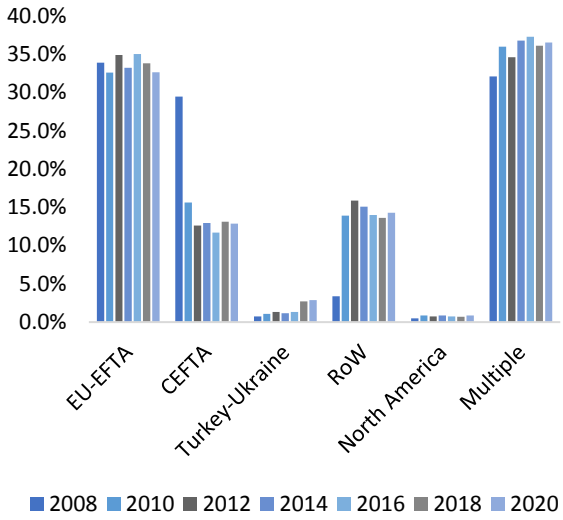
The decrease of the number of exporters to EU-EFTA has been compensated by a larger share of exporters to the rest of the world. The percentage of exporters to EU-EFTA countries has decreased from 33.9 percent in 2008 to 32.6 percent in 2020, while the percentage of exporters to CEFTA has decreased from 29.4 percent to 14.3 percent (Figure 18). Finally, the percentage of exporters to North America, Turkey, and Ukraine has remain relatively low and stable over time. By contrast, exporters to the rest of the world increased from 3.4 to 14.3 percent. Firms that exported in more than one market, the diversifiers, have increased from 32.1 to 36.5 percent.

Figure 17: Share of Exporters by Region in 2020



Source: Customs firm-level transactions data.

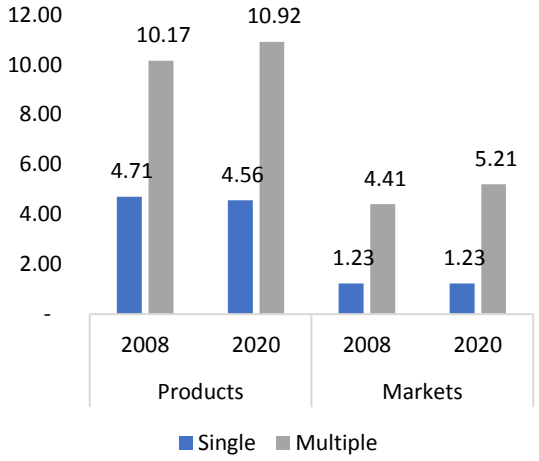
Figure 18: Share of Exporters by Region, 2008–20



Source: Customs firm-level transactions data.

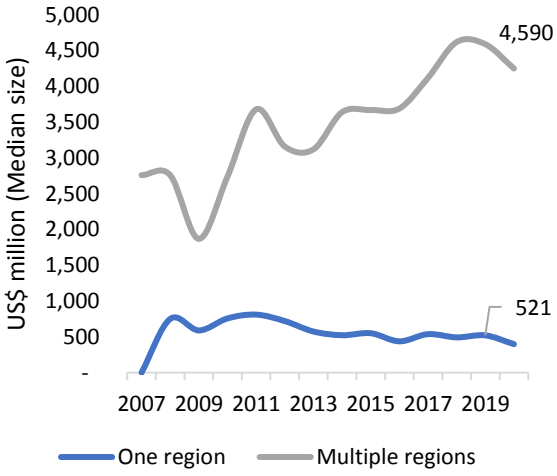
Diversifier firms that export to more than one region tend to be bigger and export a wider range of products. Figure 19 shows that exporters in North Macedonia that operated in various regions are relatively well diversified in terms of their products. Firms operating in one market export 4-5 products, on average, while firms operating in multiple markets export more than 10-11 products. Similarly, firms that operate in one region reach only 1-2 markets, against firms that operated in multiple regions that reach 5-6 markets. Evidence suggests that exporters operating in more than one region are likely to be more diverse in terms of product and markets and 3.5 larger in terms of size, on average (Figure 20). These represent about 36.5 percent of the total number of exporters. More generally, North Macedonia, follows a similar trend to some aspirational countries, such as Croatia or Poland.

Figure 19: Average Number of Products and Markets by Exporters Operating in a Single or in Multiple Regions in 2008 and 2020



Source: Customs firm-level transactions data.

Figure 20: Median Exports Value in US$ Millions by Exporters Operating in a Single or in Multiple Regions, 2008–20



Source: Customs firm-level transactions data.

However, the number of small firms specializing in only one product and market has increased over time. Table 3 provides additional evidence of firm heterogeneity in export performance by reporting the share of firms serving a given number of markets and selling a given number of products in 2008 and 2020. Table 4 provides the share of each category in total exports. In 2008, about 31.3 percent of total exporters served only one market and exported one product, accounting for 0.9 percent of total exports. In contrast, firms that export to more than 10 markets and sell more than 10 products account for 1.2 percent in 2008 and 2.3 percent of exporters in 2020. Their share of total exports doubled from 31.0 percent in 2008 to 60.9 percent in 2020.

Table 3: Heterogeneity of North Macedonia's Firms—Share of Firms by Categories Defined by a Given Number of Products and Markets.

Panel A: 2008

Number of products	Number of markets: 1	2 - 5	5 - 10	>10
1	31.3%	4.2%	0.1%	0.0%
2 - 5	18.4%	16.9%	1.1%	0.1%
5 - 10	3.7%	6.4%	1.2%	0.4%
>10	3.8%	7.9%	3.3%	1.2%

Panel B: 2020

Number of products	Number of markets: 1	2 – 5	5 - 10	>10
1	31.6%	5.2%	0.3%	0.1%
2 - 5	15.9%	17.9%	1.7%	0.4%
5 - 10	3.1%	5.9%	2.1%	0.9%
>10	3.7%	6.6%	2.5%	2.3%

Table 4: Heterogeneity of North Macedonia's Firms—Share of Total Exports of Firms by Categories Defined by a Given Number of Products and Markets

Panel A: 2007

Number of products \ Number of markets	1	2 - 5	5 - 10	>10
1	0.9%	1.0%	0.1%	0.1%
2 - 5	1.4%	8.1%	1.5%	4.4%
5 - 10	0.5%	3.2%	2.6%	1.7%
>10	5.3%	17.9%	20.2%	31.0%

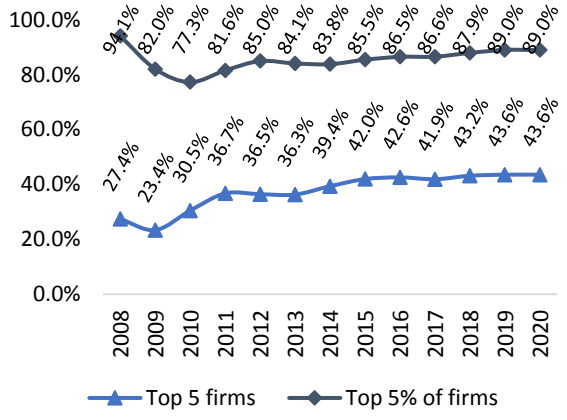
Panel B: 2020

Number of products \ Number of markets	1	2 - 5	5 - 10	>10
1	0.8%	1.4%	0.1%	0.0%
2 - 5	0.9%	4.3%	1.3%	1.6%
5 - 10	0.3%	0.9%	1.7%	2.3%
>10	2.3%	11.1%	10.1%	60.9%

Source: Customs firm-level transactions.

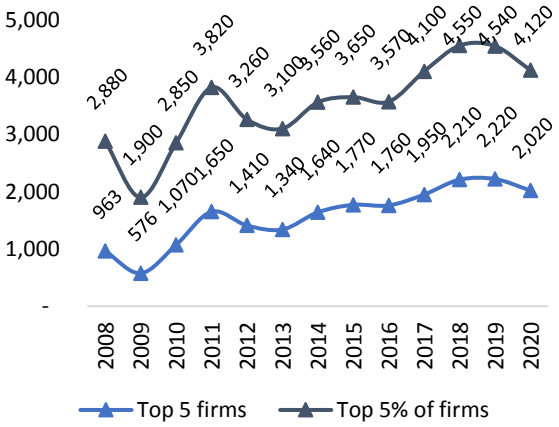
The top 5 percent of exporters collectively contribute to more than 80 percent of total exports, and this share has remained unchanged over time, creating concentration in the export sector. Figure 21 shows the contribution of the top five exporters and the top 5 percent of all exporters from 2008–20 and Figure 22 shows their total export values in millions of US dollars. The share of total exports of the top 5 exporters increased from 27.4 percent in 2008 to 43.6 percent in 2020. The export values have doubled from $963 million to $2 billion. The share of total exports of the top 5 percent exporters initially decreased over the period 2008–10. After this period, their share increased to 89 percent with an export value of $4.1 billion in 2020. Concentration has been increasing, indicating that a lower number of new entrants are entering the export market.

Figure 21: Total Exports Share of North Macedonia Top 5 Exporters and Top 5 Percent of Exporters



Source: Customs firm-level transactions.

Figure 22: Total Exports Values of North Macedonia Top 5 Exporters and Top 5 Percent of Exporters



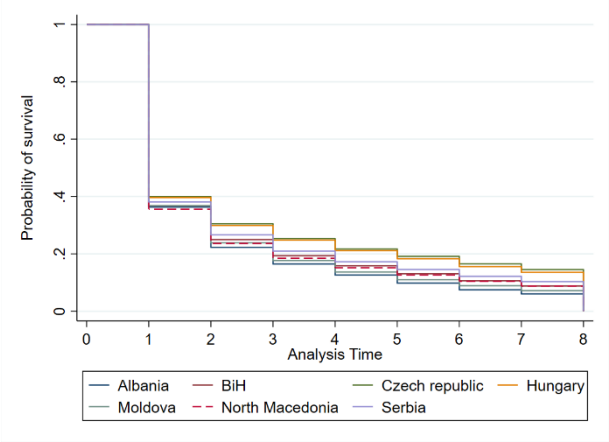
Source: Customs firm-level transactions.

1.3.3 Low survival of merchandise exports than peers

North Macedonia's survival rate is among the lowest in the region, except for Albania and Moldova. Figure 23 shows that the probability of North Macedonian export relationships at the product-destination level surviving past the first year is less than 35.6 percent and the probability of maintaining that relationship for more than two years is less than 23.6 percent. In comparison, survival rates of peer countries are slightly higher than for North Macedonia, which has the lowest survival rate in the first year. However, past the second year of survival, North Macedonia's survival rates become higher than some of its peers, for example Albania and Moldova.

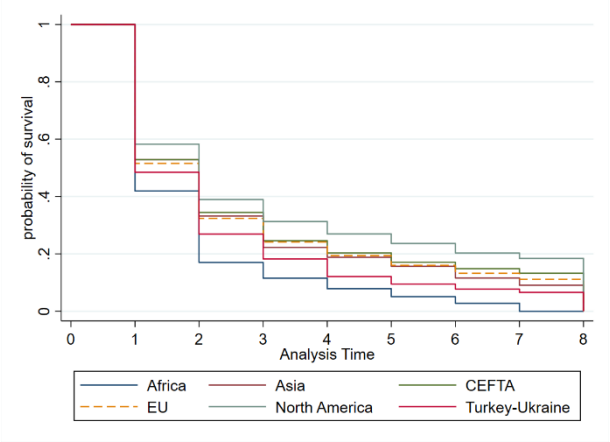
North Macedonia export activities survive longer in North America, CEFTA countries, and the EU. Figure 24 compares the survival rates of North Macedonia's exports to different groups of countries, including Africa, Asia (China, India, Malaysia, Indonesia, and Vietnam), and countries with which free trade agreements (FTAs) exist, such as CEFTA (Albania, Bosnia and Herzegovina, Moldova, Serbia, and Kosovo), the EU-28, North America (the United States and Canada), Turkey, and Ukraine. Overall, evidence shows that more than 50 percent of export relationships tend to survive past the first year in all markets, except for African countries and Turkey, although North Macedonia has an FTA with the latter.

Figure 23: Survival Rates for North Macedonia and Peer Countries (2010–18)



Source: WITS mirror export data.

Figure 24: Survival Rates by Region for North Macedonia (2010–18)



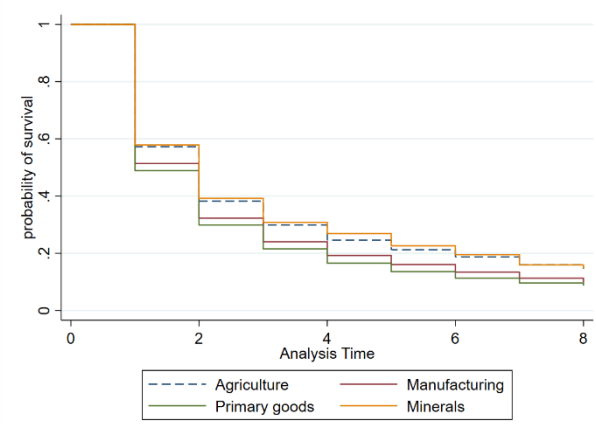
Source: WITS mirror export data.

Export relationships tend to last longer in markets where North Macedonia has a regional trade agreement (RTA) in force and in the primary sectors. More than 50 percent of export relationships survive past the first year for trade partners where there is an RTA in force (Figure 24). The results show a higher probability that an export relationship will survive with North America, followed by CEFTA and the EU. By contrast, export relations with Asia and Africa, and Turkey and Ukraine, two trading partners with which North Macedonia has an FTA, have the

lowest survival rate. Figure 25 shows that export relationships tend to last longer in the minerals and primary sectors.

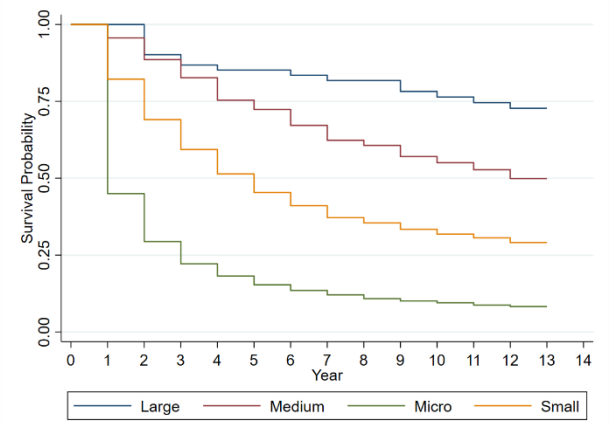
Meanwhile, larger exporters had higher survival rates, while only half of the medium and small exporters tend to survive in the long term. Figure 26 shows the survival rate for North Macedonia's exporters by size from 2008–20 using customs firm-level data. The likelihood of a midsize exporter's trading relationship surviving past the 12th year, or a small exporter's surviving five years, is about 50 percent, whereas only one in two micro exporters survives past the first year. The survival dimension of North Macedonia's firms shows that more than half of the large and medium exporters tend to survive more than 10 years, followed by half the small exporters, which survive past the 5th year. Micro-firms have the smallest survival rate.

Figure 25: Survival Rates by Sector for North Macedonia (2010–18)



Source: WITS mirror export data

Figure 26: Firm Survival Rate by Firm Size, 2008–20



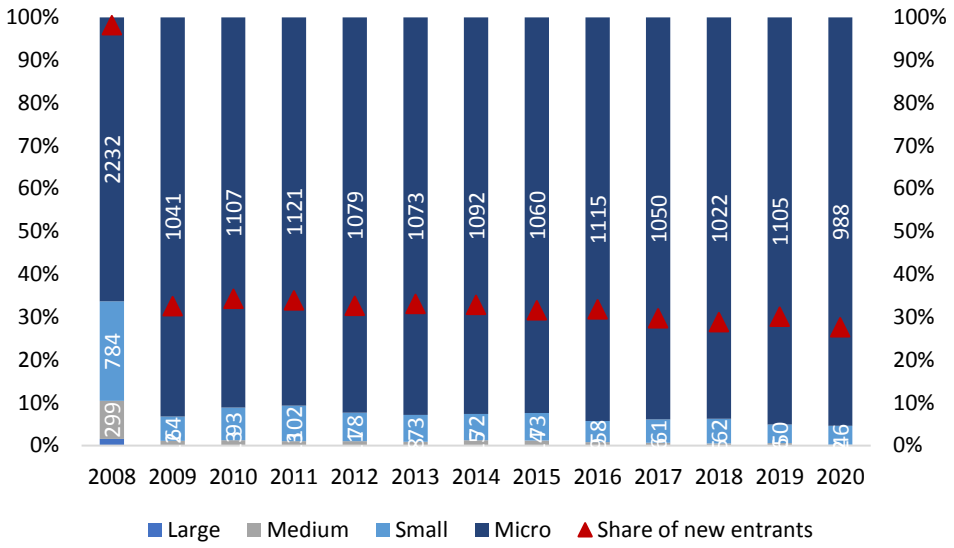
Source: Customs firm-level transactions.

1.3.4 Slow and small market entry of exporters

New exporters tend to be micro or small firms with a value of exports lower than $100,000 per year. Between 2008 and 2020, a total of 17,175 firms entered export activities. The number of new firms entering exports has been in decline over the past years from 3,367 new entrants in 2008 to 1,036 in 2020. The largest portion of entrants are micro firms that have export revenue of less than $100,000. For example, Figure 27 shows that 998 micro, 46 small, 2 medium, and 0 large firms entered export activities in 2020.

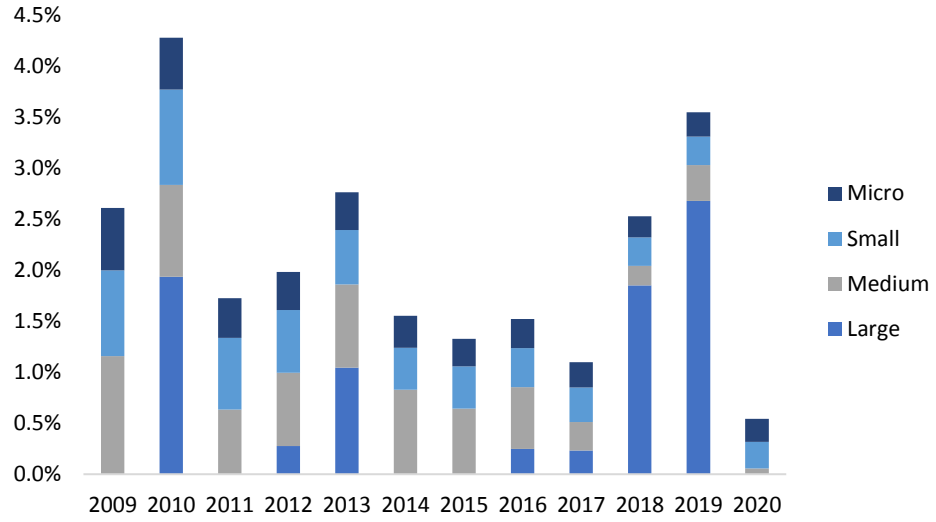
Although new entrants represent about one-third of exporters in a given year, their share of total exports is relatively low. The large number of entrants entering the export market is mainly composed of micro firms. For example, in 2020, 988 new micro-firms started to export but their share of total exports was 0.5 percent (Figure 28). The relatively small size of new entrants is typical of developing countries and underscores the importance of competitiveness in improving the long-term survival of these firms.

Figure 27: Entry into Export Activities by Firm Size, 2008–20



Source: Customs firm-level transactions.

Figure 28: Entry into Export Activities by Firm Size, 2008–20



Source: Customs firm-level transactions.

The pattern of entry of North Macedonia's firms in export activities is dominated by micro-sized firms that choose to start exporting by entering only one market with one product in the first year of exporting. Table 5 shows the entry patterns by firm size from 2008–20. Nearly half of firms chose to start exporting by entering only one market with one product in the first year of export activities. The most common pattern of entry into export markets over the last decade was that of micro firms entering one market with one product, which accounted for 44 percent of the 18,549 entry episodes recorded between 2008 and 2020. Micro firms entering one market with two to five products represented another 18.7 percent of entries and micro firms entering

one market with more than five products accounted for another 5.3 percent of entries. Overall, firms entering one market with one or more products represented 68.1 percent of all entry episodes over the last decade.

Table 5: Entry Patterns by Number of Markets and Products (2007–20)

Large = 580

# destinations \ # products	1	2 to 5	5+	Total
1	0.0%	0.0%	0.5%	0.5%
2 to 5	0.0%	1.4%	10.5%	11.9%
5+	0.0%	18.1%	69.5%	87.6%
Total	0.0%	19.5%	80.5%	100.0%

Small = 4,001

# destinations \ # products	1	2 to 5	5+	Total
1	6.5%	5.8%	4.4%	16.7%
2 to 5	7.3%	26.7%	26.0%	60.0%
5+	1.2%	4.7%	17.3%	23.3%
Total	15.0%	37.2%	47.8%	100.0%

Medium = 84

# destinations \ # products	1	2 to 5	5+	Total
1	0.7%	0.7%	2.6%	4.1%
2 to 5	1.8%	7.1%	19.7%	28.6%
5+	0.6%	9.5%	57.3%	67.3%
Total	3.1%	17.3%	79.6%	100.0%

Micro = 18,549

# destinations \ # products	1	2 to 5	5+	Total
1	44.0%	18.7%	5.3%	68.1%
2 to 5	5.4%	18.6%	6.2%	30.2%
5+	0.4%	0.5%	0.9%	1.8%
Total	49.8%	37.8%	12.4%	100.0%

Source: Customs firm-level transactions.

However, small, medium, and large firms exhibit greater diversification in terms of markets and products. Small companies entering more than two markets and exporting more than two products accounted for 74.8 percent of the 4,001 entry episodes recorded between 2008 and 2020. Medium-sized firms accounted for more than 93.5 percent and large companies accounted for 99.5 percent. Evidence suggests that the size of firms entering the export market matters for market and product diversification, as larger firms tend to diversify their export activities more than micro firms.

1.4 Good GVC Integration but in limited manufacturing

North Macedonia is relatively well integrated into GVCs, yet the spillovers into the domestic economy have been limited. Participation in GVCs is an important economic factor for economic diversification, as it can have spillover effects on the domestic economy and enables knowledge transfer to domestic exporters. To increase the linkages between the local economy and the exporting firms participating in GVCs, supply-side measures are needed. Evidence suggests that domestic supplier linkages remain low in North Macedonia and that government state aid (assessed in chapter 4), while enabling the development of the export sector, are reaching their limits.[14] Therefore, a new strategy is needed that will allow North Macedonia to move further up the GVC ladder and expand its economic diversification through services or more complex

[14] World Bank (2018). Systemic Country Diagnostic for North Macedonia.

manufacturing, which will ultimately lead to greater business survival and diversification of the economy as a whole.

In terms of GVC participation, North Macedonia belongs to the category of exporters with limited manufacturing according to the World Bank taxonomy of GVC participation[15] (see Box 1 for more information on the taxonomy of GVC participation). The country could benefit from a transition to more sophisticated participation in GVCs, that is, advanced manufacturing and services. However, the biggest growth spurt usually comes when countries transition from exporting commodities to light manufacturing as has happened recently to Bangladesh, Cambodia, and Vietnam. In the case of North Macedonia, which has already transitioned to light manufacturing thanks to its investment framework that attracted FDI in the automotive industry and made the country become one of the top destinations for automotive assembly, the transition needs to take place at higher levels, that is, to advanced manufacturing and services. This transition requires policymakers to implement more complex reforms to unlock the potential for more advanced manufacturing and services.

Box 1: Definitions of GVC Taxonomy Groups

The rules take into account country size because smaller countries naturally rely on trade to a relatively greater extent. The following taxonomy groups are defined sequentially:

(1) Commodities: Manufacturing share of total domestic value added in exports is less than 60 percent, and

- Small countries: Backward manufacturing is less than 20 percent.
- Medium-size countries: Backward manufacturing is less than 10 percent.
- Large countries: Backward manufacturing is less than 7.5 percent.

These criteria ensure that manufacturing is a small share of exports and that backward linkages in manufacturing are limited.

This group is further subdivided as follows:

- Low participation: Primary goods' share of total domestic value added in exports is less than 20 percent.
- Limited commodities: Primary goods' share of total domestic value added in exports is equal to or greater than 20 percent but less than 40 percent.
- High commodities: Primary goods' share of total domestic value added in exports is equal to or greater than 40 percent.

These criteria define countries according to their export dependence on manufacturing.

(2) Innovative activities (based on remaining countries)

- Small countries: Intellectual Property receipts as a percentage of GDP are equal to or greater than 0.15 percent, and research and development (R&D) intensity is equal to or greater than 1.5 percent.
- Medium-size and large countries: IP receipts as a percentage of GDP are equal to or greater than 0.1 percent and R&D intensity is equal to or greater than 1 percent.

These criteria split groups into those that spend a relatively large share of GDP on research and receive a large share of GDP from IP.

[15] World Bank (2020).

3) Advanced manufacturing and services (based on remaining countries)

Share of manufacturing and business services in total domestic value added in exports is equal to or greater than 80 percent, and

- Small countries: Backward manufacturing is equal to or greater than 30 percent.
- Medium-size countries: Backward manufacturing is equal to or greater than 20 percent.
- Large countries: Backward manufacturing is equal to or greater than 15 percent.

(4) Limited manufacturing (rest of sample)

North Macedonia could benefit from a transition to more sophisticated participation in GVCs, that is, advanced manufacturing and services. The transition from limited manufacturing to more sophisticated participation in GVCs becomes increasingly more demanding in terms of skills, connectivity, and regulatory institutions. GVC participation is determined by factor endowments, geography, market size, and institutions. These fundamentals alone need not dictate destiny, however, policies also play an important role.

North Macedonia's path toward greater integration into GVCs will require a multipronged strategy aiming at: increasing the attractiveness of FDI, improving access to credit, avoiding rigid regulation of the labor market, improving access to inputs by reducing tariffs, streamlining non-tariff measures (NTMs) and reforming services, pursuing deeper trade agreements, reforming customs, liberalizing transport services, investing in roads, investing in ICT connectivity, promoting political stability, and establishing a conformity assessment regime for standards certifications. The most important policies will be discussed in chapter 2.

The level of GVC participation[16] in North Macedonia follows the average of its structural and aspirational peers. Figure 29 presents the GVC participation of North Macedonia and its structural peers from 1995–2018. Since 2000, North Macedonia's GVC participation has been 60 percent or above, which is higher than Albania and Bosnia and Herzegovina, but lower than the Czech Republic and Hungary. According to the 2020 *World Development Report*, GVC participation has slowed down since the 2008 global financial crisis.

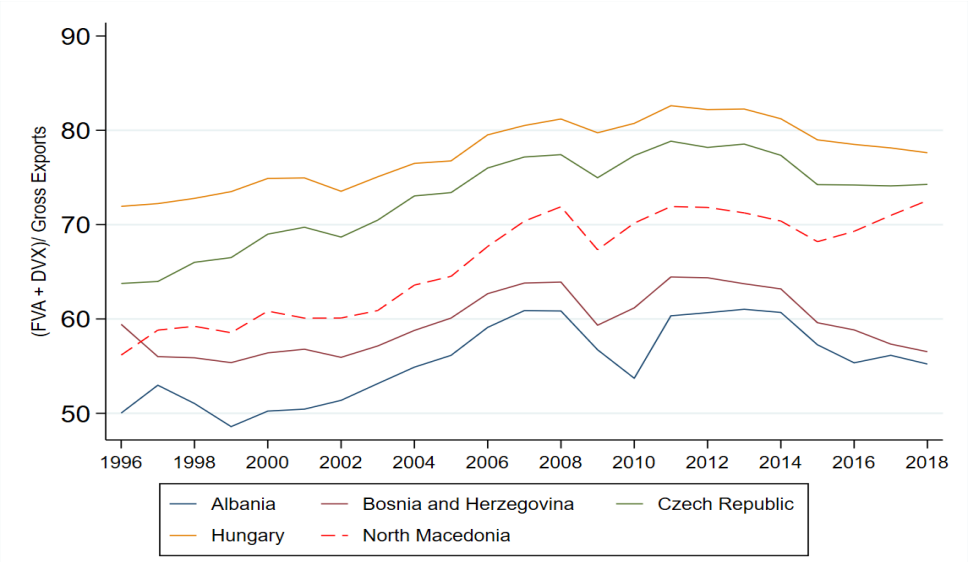
The economy of North Macedonia is dominated, to a limited extent, by manufacturing and has stronger backward linkages.[17] Figure 30 shows the GVC participation of North Macedonia and its peers in 2013, 2015, and 2018. The share of backward linkages in total exports in North

[16] To measure GVC participation we rely on the UNCTAD-Eora GVC Database as it is the only source with data on North Macedonia—the alternatives would have been the OECD-WTO Trade in Value Added database, World Input-Output Database or Global Trade Analysis Project (GTAP). The data is available: https://worldmrio.com/unctadgvc/.

[17] *Backward GVC participation:* a country's exports embody value added previously imported from abroad. For example, if the bicycles exported by China use imported intermediates, then GVC participation is considered backward because the intermediates used in exports are from the previous stage. *Forward GVC participation:* a country's exports are not fully absorbed in the importing country and instead are embodied in the importing country's exports to third countries. In the bicycle example, if India sends aluminum tubing to China where it is further used in the production of the bicycle later exported, then India's GVC participation is considered forward because the exporter is at the early stage of production of the bicycle.

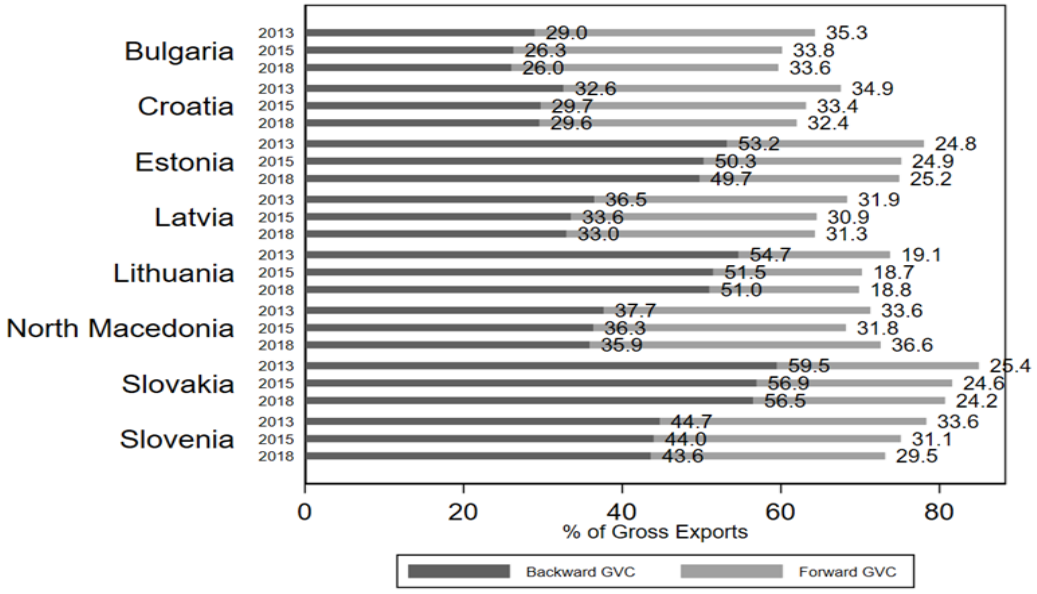
Macedonia is 36 percent, on average, and the share of forward linkages is 33 percent. The country is following a similar trend to some of its aspirational peers, with the exception of Estonia, Lithuania, Slovakia and Slovenia, which have been outperforming North Macedonia in terms of backward linkages.

Figure 29: GVC Participation (Percent of Gross Exports) for North Macedonia and Peers (1995–2018)



Source: EORA database.

Figure 30: Backward and Forward GVC Participation for North Macedonia and Peer Countries, 2013, 2015, and 2018



Source: EORA database.

Box 2: The Slowdown of GVC Exports in North Macedonia during COVID-19

The general slowdown of trade flows in North Macedonia was also affected by the COVID-19 pandemic and the resulting slowdown in trade flows. The decline in North Macedonia's exports was exacerbated in 2020 by the collapse of GVCs. As one of the region's most integrated economies in GVCs, the impact of the pandemic was felt directly by exporters.[18] The main channels through which the economy was affected were the slowdown in production in China and lower demand in the EU.

The most affected sectors were machinery and equipment manufacturing and mechanical equipment but with limited effects on the domestic economy due to low linkages with domestic suppliers. The strong GVC integration of these sectors with the automotive industry and Germany was the most affected. Nevertheless, the high import share of the large exporting companies in North Macedonia, located in the Technological and Industrial Development Zones, and the low level of integration with the local economy allowed the country to cushion some of the impact by reducing imports as well at that time.

The export companies that were part of the GVC were also the first to recover and preserve jobs. Thanks to the financial stability offered by the lead company to cushion the impact of the pandemic, this helped and reduce the employee turnover in GVC exporters firms.[19] When trade costs are low and countries ensure the free movement of goods, participation in GVCs has also helped maintain stability and economic growth. Therefore, automation and digitization of customs, as well as deeper regional integration, should be top priorities for North Macedonia to cushion the potential impact of future external shocks.

Some of the indirect effects of the Ukraine crisis on the global economy will also be felt in North Macedonia. Automotive supply chains are likely to be affected due to Germany's dependence on imports from Ukraine, as well as higher commodity prices for metals and oil and most likely lower demand in the EU in the near future, and from Russia due to sanctions. These events are likely to have an indirect impact on North Macedonia's economy, some positive and others negative.

1.5 Summary of challenges and potential bottlenecks

The recent history of North Macedonia is one of strong export oriented greenfield FDI and strong trade relations with the EU. The economic linkages have mainly been expressed by means of FTAs and specific benefits directed to export-led investments. North Macedonia's trade liberalization efforts accompanied by policies to actively use special economic zones to attract foreign investments have led to a long-term shift in the engine of trade growth from metals to manufactured goods or components related to the automotive industry.

In response to changes in the global economy and international investment patterns, North Macedonia has transformed its economy and entered new export industries, yet the short-lived gains in diversification have not been maintained. In addition to minerals and chemicals, more sophisticated products, such as machinery and electronics, transportation, and services have emerged. However, the export oriented FDI strategy is showing signs of fatigue, as North Macedonia's trade openness has not improved as much as that of its peers in recent years.

Despite the progress in trade integration of the past years, North Macedonia still faces significant challenges. The analysis shows that North Macedonia has made a lot of progress in

[18] OECD (2021)

[19] Srbinoski, Petreski, & Petreski (2020)

recent years, buts its integration presents relevant fragilities such as the lack of sufficient diversification, excessive exporter concentration, low survival in exports particularly for non-RTA partners, and small firms entering markets with low survival rates and concentrated markets and products. In addition, North Macedonia has untapped opportunities to expand trade in both goods and services, such as tourism, logistics, ICT, and health care.[20] Despite the authorities having long had a positive attitude to export-oriented FDI, the export basket of North Macedonia has become less diversified due to several challenges that are highlighted in the following chapter.

[20] World Bank (2018). Systemic Country Diagnostic for North Macedonia.

2. The State of Trade Policy in North Macedonia

Trade policies that aim at economic transformation can have a positive impact on economic growth and poverty reduction. Export-oriented FDI alone cannot diversify the overall economy and the export basket unless the right domestic policies are in place to facilitate the flow of goods and services and to create linkages between domestic suppliers and foreign investments. Although the authorities have long had a positive attitude toward export oriented FDI, the export basket of North Macedonia became less diversified due to various challenges revolving around misaligned export and import regulations. This chapter looks at these.

North Macedonia's prospects for export growth depend critically on trade policies and logistics that aim at improving regional trade but should not limit the country's strategy beyond regional markets. Being a landlocked country, North Macedonia relies heavily on its economic ties with its immediate neighbors. Regional markets, in this case with the EU and the Balkans, have been important drivers of North Macedonia's export growth. About 90 percent of exports are absorbed by the top 20 destinations, most of which are EU countries. For example, more than 45 percent of North Macedonia's exports go to Germany. Yet, trade with Western Balkan countries remains limited.

Improved connectivity to regional and global markets can unleash the untapped trade potential in goods and services. Achieving this goal requires lowering trade costs through logistics conditions, low tariffs, reduced number of NTMs, and the diversification of destination markets and the attraction of FDI that create linkages to domestic suppliers. These factors are important determinants of North Macedonia's export performance and trade integration to a large extent.

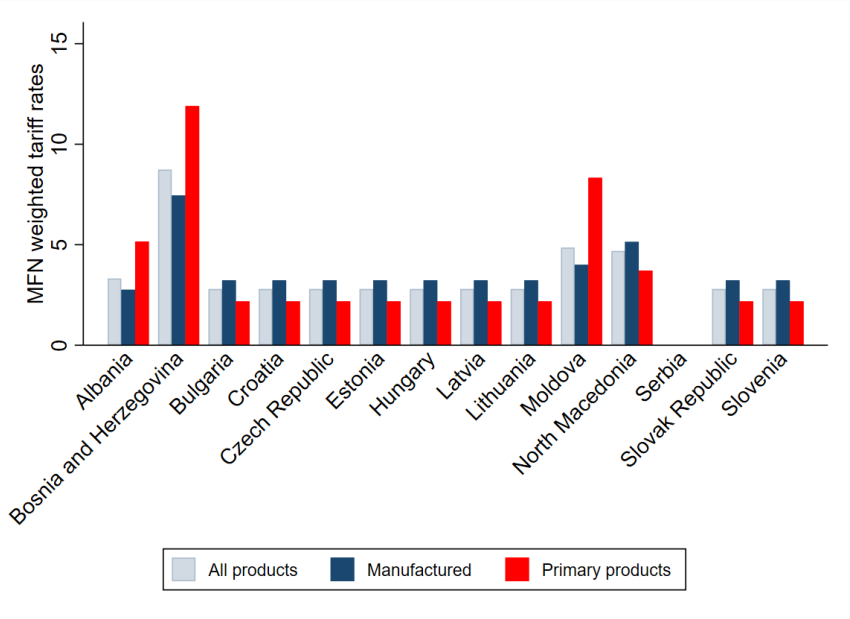
What are the gaps in the trade policy of North Macedonia? This chapter addresses the state of North Macedonia's trade policy by examining (i) tariff and non-tariff measures, (ii) trade logistics and infrastructure, (iii) trade liberalization through FTAs, and (iv) restrictions on trade in services. It concludes by highlighting a number of policy recommendations that can address these challenges.

2.1 High tariffs and low implementation of streamlined NTMs

In 2020, North Macedonia's average most favored nation (MFN) ad valorem tariff was 4.7 percent. Average MFN tariff rates were 93.7 percent for primary products and 5.1 percent for manufactured products (Figure 31). MFN tariff rates are high compared to other countries in the region, except for Bosnia and Herzegovina, Moldova, and Serbia. The overall tariff is double the

average of the EU and slightly above the average of all Europe and Central Asia countries. Moreover, North Macedonia has reduced the MFN tariff rates of all its primary goods, yet not for manufactured goods. For example, the MFN tariff rates for manufactured products only went down from 5.4 percent in 2011 to 5.1 percent in 2020. A recent World Bank study[21] suggests that harmonizing tariffs with the EU levels would have a strong positive impact. The analysis points to a positive impact of the tariff harmonization with potential tangible benefits for the North Macedonia's economy. These would come in the form of potential investment and jobs, while at the same time making the country more cost-competitive compared to other investment locations. These benefits would come at a comparatively small fiscal cost for the government.

Figure 31: Most Favored Nation Tariff Rates in North Macedonia and Peers in 2020



Source: WDI.

In addition, the Customs Administration has recently started to apply an Integrated Tariff Environment (ITE), called the TARIM system. Operators have the advantage of accessing online (electronically) information that was previously provided only on paper, and they are informed about customs duties, national excise taxes, and national non-tariff measures, as well as all import and export restrictions for each tariff code.[22]

However, non-tariff barriers are the major constraints to export-growth and diversification by reducing the movement of goods in and out of North Macedonia. While North Macedonia has aligned the majority of its regulations to the EU *acquis* and has tried to eliminate a large number of NTMs, the country lacks the capacity to implement new regulations, creating a loophole for potential non-tariff measures. Moreover, non-tariff barriers are the biggest obstacles to export

[21] World Bank blog post: "Making North Macedonia more attractive for export-oriented investors" March 10, 2021.
[22] WTO (2019)

growth and diversification, as they hinder the movement of goods in and out of North Macedonia. In addition, North Macedonia still does not have a list of non-tariff barriers. Therefore, creating a detailed account that maps the full list of available NTMs could help in judging how binding they are.

2.2 Current state of logistics and infrastructure are bottlenecks

Better logistics and infrastructure are necessary to improve the connectivity of North Macedonia with its regional markets and to fully benefit from its location as a transit hub. Overall poor logistics translates into weak export performance, and low export survival rates, preventing exporters from becoming more competitive in foreign markets. High trade costs are associated with low first year survival, especially so for micro, small, and medium enterprises (less than 50 percent survive in North Macedonia). Similarly, uncertainty in the time to clear imports lowers the survival rate for new exporters, reducing the number of firms that continue to serve the foreign markets after the first year.[23] This is important for North Macedonia, where new exporters tend to be small.

North Macedonia's efforts to facilitate trade have led to improvements in logistics, but barriers to export growth remain in the areas of infrastructure, customs, and tracing and tracking. North Macedonia's Logistics Performance Index[24] (LPI) results are comparable to those of Albania and Moldova, but they fall behind other peers (Figure 32). North Macedonia's performance comparatively lags in three categories: (i) infrastructure, (ii) customs, and (iii) tracking and tracing. The first reflects the overall dependence of the export sector on road transport, mainly because it is a landlocked country, but also because trade takes place with markets that require mainly road transport because of their proximity. The latter two dimensions (customs and tracking and tracing) reflect that border compliance and time spent at the border remain barriers to trade in North Macedonia and that logistics markets are underdeveloped, which reduces the opportunities for freight and logistics companies in North Macedonia to operate internationally.

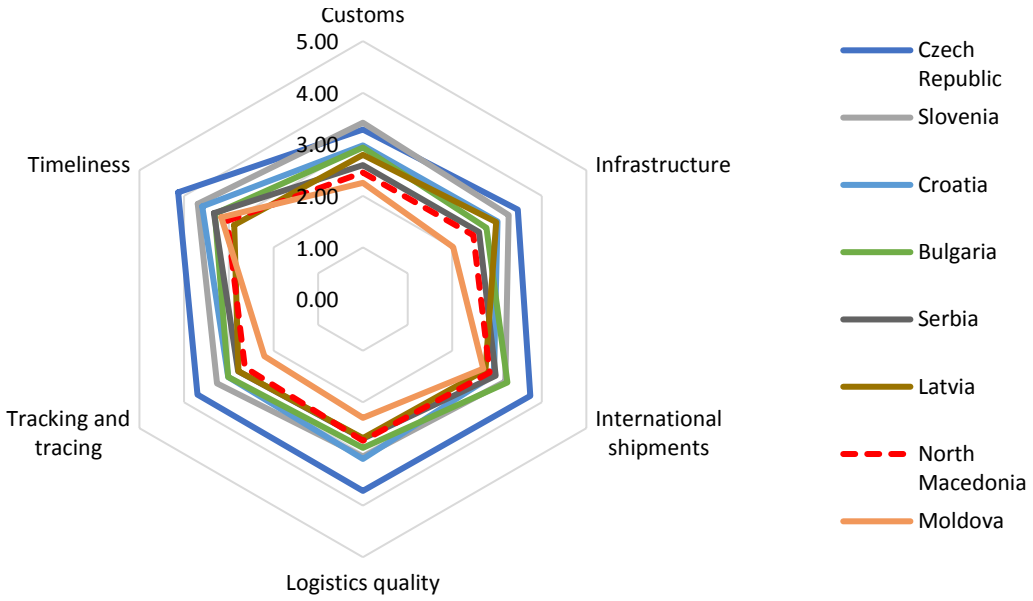
Although North Macedonia has made significant progress in improving hard and soft infrastructure, it would benefit from upgrading and maintaining its road and rail network. The inadequate maintenance of the road network, which is located on two major pan-European economic corridors, is an obstacle to the economic development and regional integration of

[23] Vijil (2019)

[24] The World Bank's Logistics Performance Index (LPI), which is published every other year, analyzes countries in six components: the efficiency of customs and border management clearance; the quality of trade and transport infrastructure; the ease of arranging competitively priced shipments; the competence and quality of logistics services; the ability to track and trace consignments; the frequency with which shipments reach consignees within scheduled/expected delivery times. The LPI relies on an online survey distributed among logistics professionals—multinational freight forwarders, and main express carriers—as they are best positioned to assess how countries perform. In 2018, the LPI scored 160 economies. The highest score was 4.20, reached by the number one ranked country, Germany. The lowest score was Afghanistan, with 1.95.

North Macedonia. The first is the Corridor VIII (east-west) from Dures (Albania) to Varna (Bulgaria) via Skopje, along which, several untapped railways and single-line rails prevent business growth. Recently, ministers from Bulgaria, Albania and North Macedonia have signed a memorandum outlining plans to complete the missing rail links between their countries by 2030 but pointing out that this will require significant investment.[25] In addition, the EU Economic and Investment Plan for the Western Balkans considers the rail Corridor VIII between Skopje and the Bulgarian border as a flagship project within the framework of the development of the Trans-European Transport Network (TEN -T). The second is Corridor X (north-south) which runs between Salzburg in Austria and Igoumenitsa or Thessaloniki in Greece.

Figure 32: Trade Facilitation and Logistics Indicators, 2018



Source: World Bank LPI index 2018.

Without maintenance, additional transit traffic along both corridors and North Macedonia's regional connectivity will be hampered and new business opportunities could be lost. The road network is the backbone of the economy as it serves the main industrial areas, notably Technological and Industrial Development Zones (TIDZs), tourism destinations, and agricultural sites. According to the Balkan Barometer,[26] transport infrastructure quality has been deteriorating in recent years with 23 percent of the firms rating the quality as very poor or poor. To uphold a competitive export sector and the role of the transit hub, North Macedonia has to improve the maintenance of its road network and infrastructure. The lower perception of road quality by the business community could be due to the high level of public investment in new road infrastructure rather than maintenance in recent years. Finally, some sectors, in which

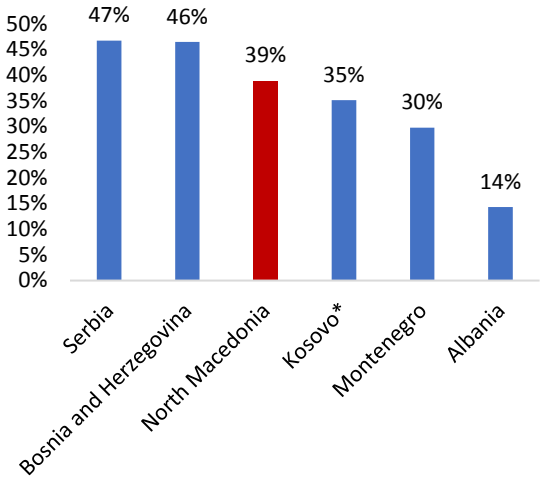
[25] See link: https://www.railwaygazette.com/infrastructure/bulgaria-north-macedonia-and-albania-sign-rail-corridor-memorandum/60148.article

[26] Description of Balkan Barometer: Balkan Barometer is an annual survey of public opinion and business sentiments for the Western Balkans economies, by the Regional Cooperation Council.

North Macedonia can be competitive, are particularly vulnerable to poor infrastructure conditions, such as the export of processed agricultural products, which can be hampered by the lack of modern storage facilities or technologies for packaging and labelling.

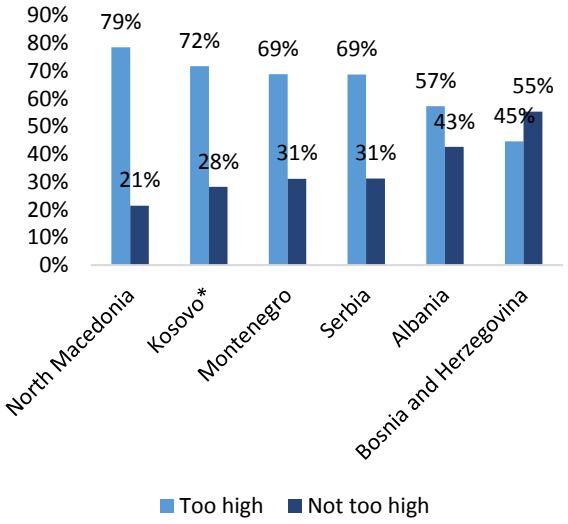
In addition, customs performance is weaker than in other countries and further improvements are needed to reduce costs and time at the border, despite recent advances in integrated border crossings. According to the Balkan Barometer 2021, more than 39 percent of the firms need more than 5 days to clear imports at customs (Figure 33), and more than 79 percent of companies believe that cross-border transaction costs are high in the Western Balkans, with the highest for firms in North Macedonia (Figure 34). The most important milestone for regional trade was the opening of the integrated border crossing between North Macedonia and Serbia at the border between Presevo and Tabanovce.[27] The border crossing is located on the Corridor X and Corridor VIII economic corridors, making it one of the most important border crossings in the Western Balkans. So far, however, only the police inspections are carried out jointly. Cargo inspection is still carried out separately by the two sides. Another initiative for joint control was launched between North Macedonia and Albania at the Quafe Thane/Kjafasan border crossing but has not progressed beyond a few initial meetings.

Figure 33: Number of Firms That Said They Need More Than 5 Days to Import Goods in 2021



Source: Balkan Barometer 2021.

Figure 34: Cross-Border Transactions among Western Balkan Economies in 2021



Source: Balkan Barometer 2021.

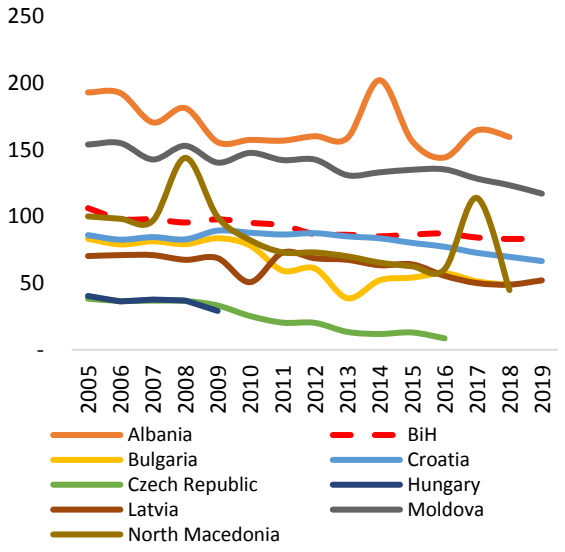
Logistics and connectivity problems are reflected in higher trade costs for North Macedonia. Figure 35 shows the bilateral trade costs between North Macedonia and its largest trading partner, Germany, compared to its peers. North Macedonia's trade costs are relatively high, except when compared to Albania and Moldova. Trade costs measure the price difference

[27] https://www.wb6cif.eu/2019/08/27/serbia-and-north-macedonia-open-integrated-border-crossing-for-better-regional-cooperation/

between domestic trade and international trade in the same type of goods. Thus, they capture the impact of logistics, but also of trade policy and non-tariff measures. As a result, trade costs are higher for agricultural sectors, mainly due to more restrictive policies, than for manufacturing.

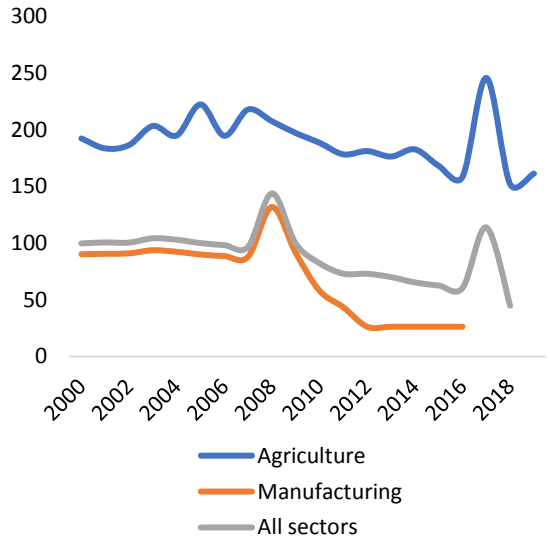
Export competitiveness in traditional sectors may be hindered by higher trade costs in North Macedonia than in its competitors. In North Macedonia, manufacturing costs decreased between 2008 and 2012 (Figure 36), indicating improvements in logistics and infrastructure as a result of attracting greenfield FDI and the establishment of the TIDZ. Since 2012, however, manufacturing trade costs remain stagnate. Despite having higher bilateral trade costs, North Macedonia remains an attractive destination for greenfield FDI, especially in the automotive industry. However, the focus of the government on the automotive sector is likely to lose this advantage in other sectors such as textiles, footwear, food, and agricultural products where the unit price matters more.

Figure 35: Bilateral Trade Costs with Germany for North Macedonia and Peers



Source: World Bank, UNESCAP.

Figure 36: Bilateral Trade Costs with Germany by Sectors for North Macedonia



Source: World Bank, UNESCAP.

The lack of logistics services such as tracing and tracking shipments reduce North Macedonia's attractiveness as a transit hub and support economic development by making mobility and trade easier. As countries develop their logistics and connectivity with the region and the nearest ports, the provision of logistics services becomes critical to the country's overall performance in terms of transit cargo and exports. However, to improve tracking and tracing of shipments, it will require the development of skills through education to enable the country to facilitate trade flows and transit cargo through internationally competitive logistics services.

2.3 Regional trade agreements facilitate trade in goods and services

The network of RTAs in North Macedonia covers trade with most of its regional trading partners, thus integration with the EU and neighboring countries is well established. North Macedonia is party to a number of bilateral and multilateral FTAs, the first of which was signed between North Macedonia and Turkey in 2000, followed by a bilateral agreement with Ukraine in 2001. Having entered into a FTA with the EFTA in 2002, North Macedonia opened the door for market access to its European partners. North Macedonia has been a member of the World Trade Organization (WTO) since 2003. In 2004, North Macedonia signed the Stabilization and Association Agreement (SAA) with the EU, providing for the free movement of goods and services between EU and potential candidate countries. In 2006, North Macedonia became a signatory of the CEFTA, through which the country has achieved tariff liberalization on manufactured and agricultural products. The country continues to bring its legislation in line with the EU acquis.

North Macedonia has also put efforts into the liberalization of trade in services, which plays an important role in diversifying the economy. The SAA covers trade in services and in December 2019, CEFTA members strengthened the treaty through the conclusion of Additional Protocol 6 on trade in services which aims at promoting trade in services at the regional level, such as ease of licensing and professional qualification procedures and e-commerce capacities. To this end, actions that aim at even further liberalizing labor markets (mini-Schengen), such as the ones signed by Albania, North Macedonia, and Serbia fit into this framework and lay the groundwork for EU accession.

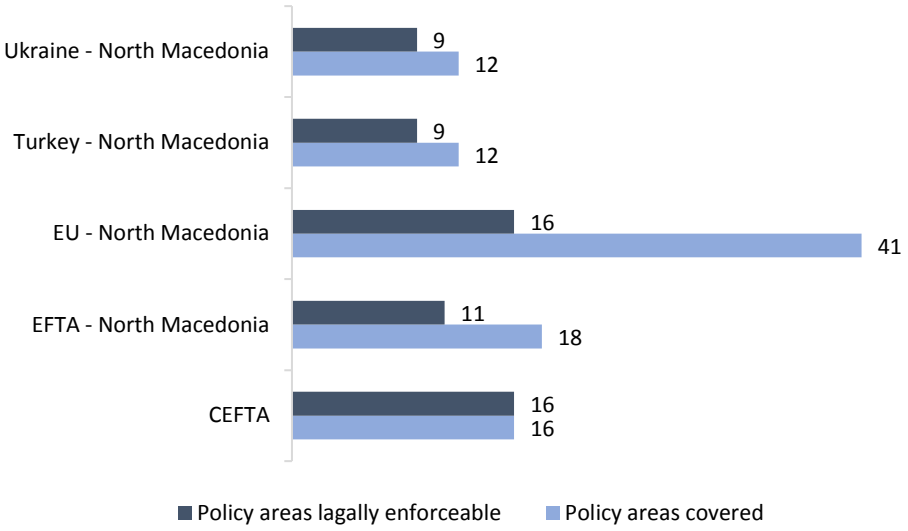
Despite North Macedonia's efforts to liberalize trade in services, some regulatory bottlenecks remain in place. North Macedonia has not reported any protectionist legal changes recently. But more could be done. There are cross-cutting policies affecting foreign service providers such as restrictions on conducting professional services, the acquisition and use of land and real estate by foreigners, as well as the mandatory minimum capital requirements in the form of a deposit that must be placed in a bank or notary's office to register a limited-liability entity. North Macedonia also applies limitations on the movement of people through quotas and labor market tests for work permits issued to third-country nationals.[28] Reducing these and other efforts could significantly reduce the costs of trade in services.

In addition, North Macedonia's trade with more distant markets is not covered by RTAs, reducing access to markets outside Europe. Bilateral treaties with non-EU states are rare, except for CEFTA Countries, Turkey, and Ukraine. Recently, a new treaty was signed with the UK which entered into force on January 1, 2021. Trade with other countries is subject to the Generalized System of Preferences (GSP) applied by Kazakhstan, New Zealand, and the Russian Federation, and the Global System of Trade Preferences for Developing Countries (GSTP).

[28] OECD (2021)

The network of RTAs of North Macedonia covers regional trade well, but not all RTAs have the same depth. The depth of trade agreements is an important indicator of economic ties between trade partners as it improves discipline and business confidence (Figure 37). Yet, not all RTAs are equally deep. In the case of North Macedonia, the RTAs with Turkey and Ukraine are less deep in general, which is also reflected in the smaller number of exporters reaching those markets and the low export values. In addition, the depth of the RTA tends to be more important for larger companies, which benefit from the discipline created by the RTA in the business environment. However, most exporters from North Macedonia to Turkey and Ukraine are micro and small exporters. Deeper RTAs could attract larger exporters.

Figure 37: Depth of North Macedonia's Regional Trade Agreements



Source: World Bank Deep Trade Agreements Database.
Note: The legal enforceability of PTA provisions depends on the language used in the legal text of the agreements. If commitments are expressed with a clear, specific and imperative language, they can be invoked more successfully by a complainant in a settlement proceeding. Thus, they are deemed legally enforceable. In contrast, unclearly formulated legal language might be related to policy areas that are covered but that might not be legally enforceable.

In addition, North Macedonia is a signatory of the WTO Trade Facilitation Agreement and CEFTA Additional Protocol 5 (AP5), with a high level of compliance. North Macedonia notified all the measures except for two—enquiry points and pre-arrival processing—making it the country with the highest level of compliance in the Western Balkans. North Macedonia has set up its National Trade Facilitation Committee (NTFC) which was initially housed at North Macedonia's branch of the International Chamber of Commerce (September 2016), but a year later was moved under the Ministry of Economy. This set-up is in line with international practice, as the formal channels with the WTO are typically housed in the Ministry of Economy and/or Trade. In addition, the AP5 closely mirrors the WTO Trade Facilitation Agreement (TFA) in terms of its objectives and articles and entered into force in April 2018. The AP5 requires members to

coordinate and collaborate with one another with the objective of harmonizing documents and procedures across the region, and exchanging data, including on risk management and pre-arrival information. These obligations are particularly challenging for sanitary and phytosanitary agencies as they do not have a common IT system in contrast to customs.

Overall, integration has progressively deepened with neighboring countries, promoting the movement of goods, services, capital, and people across borders, mimicking the approach of the EU's single market. For example, in terms of free movement of labor, North Macedonia, along its neighbors Albania and Serbia, has agreed to open its labor market by 2023. This means that all border controls between the three states will be removed by 2023, creating one contiguous zone of free movement for goods, services, capital, and people–mimicking the four freedoms of the EU's single market.

A trade policy that facilitates cross-border economic activity can promote the competitiveness and growth of the overall economy. Trade liberalization measures provide access to larger markets, leading to greater economies of scale and efficiency gains, improving the overall competitiveness of domestic firms. Efforts to integrate the global trading system have opened North Macedonia to world markets. The country is a member of several trade agreements and has seen an increase in manufacturing exports as a result of the government strategy of using incentive packages to attract FDI. However, the FDI export-led model has come to maturity and needs to be upgraded to diversify the country exports basket in advanced manufacturing and services.

2.4 The role of special economic zones in North Macedonia: adjusting competition for domestic exporters

North Macedonia is recognized as a regional pioneer for free economic zones and its favorable investment environment that has transformed the economy. The special economic zones (SEZ) helped diversify the export basket of the country away from commodity exports, notably metals, and led to an increase in exports of manufactured products mainly in the automotive industry. The law on TIDZs has been in existence since 2008 and the country is now home to a world-class automotive industry as it has attracted high-value investments, especially in the field of assembly of vehicles,[29] which have made the country one of the top locations for the automotive industry and have been supported by its proximity to the largest EU market, Germany. A considerable proportion of exports is currently produced by foreign investors who arrived in the past decade thanks to the incentives package provided by the government. Yet, the investments attracted were mainly focused on labor-intensive products.

[29] The strategy was particularly successful in the automotive sector. In 2009–16, North Macedonia attracted net FDI of €588 million into the vehicle and transport equipment sector, representing 33 percent of all net FDI and close to 75 percent of manufacturing FDI.

The SEZs in North Macedonia have likely reached their potential[30] in targeting mainly greenfield investments in labor-intensive production, while creating unfair competition for domestic businesses. The evidence suggests that upstream linkages of firms in the SEZs with domestic firms are limited and that most SEZ firms have both high imports and high exports, with limited productivity spillovers to domestic firms. Moreover, SEZs negatively affect exporters who do not enjoy similar exemptions when exporting similar products to similar markets, which hurts the competitiveness of domestic exporters outside SEZs. Policy regarding SEZs should be targeted, time-limited and continuous, rather than broad in terms of scope and geography. Expanding the benefits associated with SEZs is not consistent with the EU *acquis* and harms the competitiveness of local exporters of similar products. Domestic firms attempting to enter similar value chains are at a disadvantage because of the unfair competition created by various tax exemptions. For example, the payroll tax exemption in the textile sector, which puts firms not located in the SEZ at a disadvantage because they are unable to achieve similar tax treatment as they pay payroll taxes. Similarly, SEZs are not compliant with the WTO Agreement on Subsidies and Countervailing Measures. Finally, there is little evidence that FDI spills over into the local economy through supplier linkages.

The future of North Macedonia's export-led growth model will depend more on fundamentals that promote the competitiveness of domestic exporters than on transient policy distortions. The sustainable development of SEZs requires competitiveness grounded in fundamentals, such as high-skilled workers, a friendly business environment, and high-quality infrastructure and logistics. These fundamentals will gain importance when it comes to aligning with the WTO Agreement on Subsidies and Countervailing Measures. Moreover, linkages to the domestic economy are difficult to establish without incentives to source inputs domestically, which limits the possibilities for knowledge transfer beyond the SEZs as has been observed in North Macedonia and peer countries.

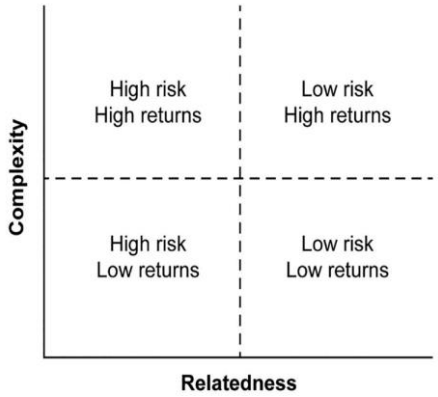
SEZs experienced a general decline over recent years in terms of trade and employment. Between 2017 and 2020, while SEZ employment increased from 9,700 to 12,300 employees, export volumes fell between 2019 and 2020, as expected, from 2.2 to 2.0 billion of exports (see chapter 4 for more details). Greenfield investments in the TIDZ experienced severe drops in revenue, profits, and investments during the start of the COVID-19 pandemic.[31] However, they still expect a rebound in the recovery phase despite the war in Ukraine. This creates the momentum for the government to change the course of its export oriented FDI policies.

[30] World Bank (2018). Systemic Country Diagnostic for North Macedonia.
[31] Srbinoski, Petreski, & Petreski (2020)

2.5 Informing policies for future smart specialization

Smart specialization strategies[32] can contribute to the diversification of the economic structure and export basket of North Macedonia. Smart specialization strategies (SS) are aimed at leveraging the existing productive knowledge of countries, regions, municipalities, or cities to build new comparative advantages in related technologies and industrial sectors in order to diversify.[33] At the heart of SS's policies is knowledge production, which is formally evaluated using economic complexity methods.[34] These methods are used to construct measures of complexity and relatedness. Measures of complexity provide a proxy for the productive knowledge present in a location (e.g., country) or activity (e.g., product exports), while measures of relatedness indicate how close the knowledge of the location is to the knowledge required to develop a specialization in an activity. Today, economic complexity methods are being combined with various machine learning techniques to develop relevant policy applications, as seen in reports on smart specialization in Europe,[35] China's special economic zones,[36] Mexico's smart diversification strategy,[37] or papers calling for improving manufacturing in the United States.[38] The diversification frontier[39] is a summary

Figure 38: Diversification frontier



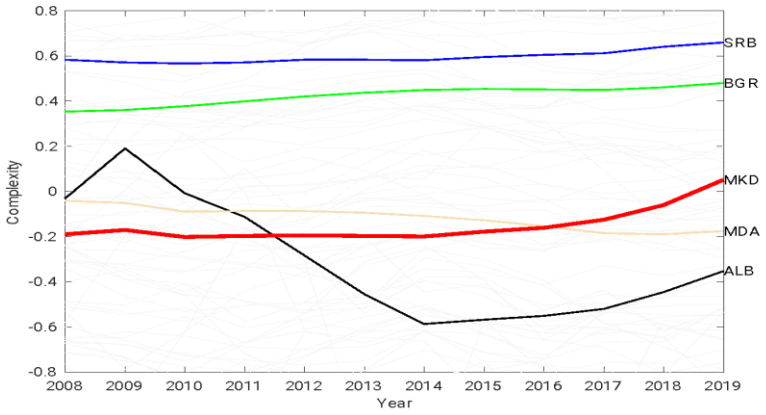
Source: Balland et al. (2019).

[32] Stojkoski, Stojanov and Tevdovski (2022)
[33] Balland et al. 2019
[34] Hidalgo 2021; Balland et al. 2022
[35] Balland et al. 2019; Deegan, Broekel, and Fitjar 2021; Foray, David, and Hall 2009; Hassink and Gong 2019; Montresor and Quatraro 2020
[36] Poncet and De Waldemar 2015; Kahn et al. 2018; Zheng et al. 2016
[37] Economía n.d.
[38] Admin 2022
[39] This graph maps the products in which the country (or municipality) does not possess a relative comparative advantage (RCA). The potential new products are located in one of four quadrants according to their relatedness (x-axis) and their complexity (y-axis) relative to the existing knowledge core of the region (the horizontal line that divides the upper and lower quadrants is the complexity of the economy). The four quadrants highlight the cost–benefit trade-off that undergirds SS policy. The top quadrants include products that are more complex than the current level of complexity of the country, whereas the right quadrants include products that are more related and more likely to be exported by the country in the future. The policymaker should consider developing those products that occupy the top-right quadrant because it is these products that promise above-average returns (higher complexity) at relatively low risk (higher relatedness). Products in the bottom-left quadrant are poor choices for SS because they are far removed from the existing knowledge core of the economy and therefore risky, and they are characterized by relatively low complexity value. The bottom-right and top-left quadrants represent risk-return profiles that are less straightforward to appraise. The high risk-high returns quadrant might yield significant rents to an economy, though the probability of sustained innovation in these unrelated products is low. Products that fall in the low risk-low returns quadrant have a strong likelihood of successful development, yet they present little value added to the economy.

of economic complexity, product complexity, and relatedness density in a single graph (Figure 38) that can help suggest specialization strategies, thus eliminating the drawbacks of using a single indicator.

North Macedonia's economic complexity is lower than that of its most performing neighboring countries but has showed signs of improvement in recent years. At the beginning of the 2010s, North Macedonia had a below average Economic Complexity Index (ECI)[40] (Figure 39) and ranked lower than neighboring countries (Bulgaria and Serbia) and countries with a similar production structure (Albania and Moldova). In 2012, the country had a comparative advantage in 502 HS6 products and had the most similar export structure to Albania and Moldova (these are the countries with which North Macedonia shares a comparative advantage in most products. However, after 2015, North Macedonia's complexity increased and is currently around the world average. In 2019, the country had comparative advantages in 457 HS6 goods 2019 (out of 4619), outperforming economies with similar export structures (Albania and Moldova), but still lagging the most complex neighboring countries (Bulgaria and Serbia).

Figure 39: Economic complexity of North Macedonia over the years.



Source: WITS export data.

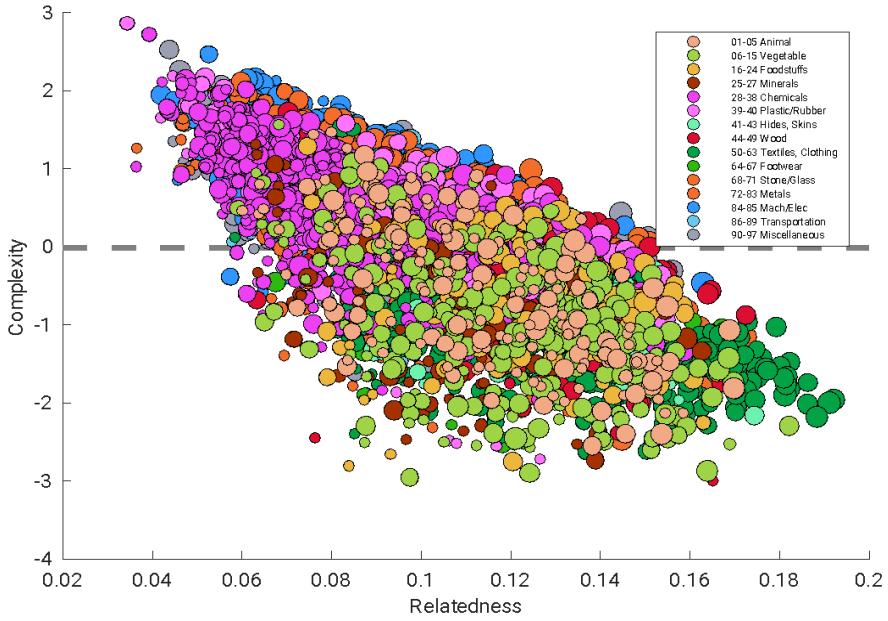
In addition, the drivers of diversification in North Macedonia tend to be more complex at the industry and product level, but also riskier in terms of strategic choice due to lower levels of knowledge production or connection with existing production capacity. Figure 40 illustrates the diversification frontier for North Macedonia.[41] The general prediction shows a downward trend,

[40] ECI is an abstract measure of an economy's productive knowledge inferred from data connecting locations to the activities in which they are specialized. In terms of trade data, economies that have comparative advantage in products which are not exported by others have higher ECI, and vice versa, economies that have comparative advantage only in products that are often exported by most countries have lower ECI. The index is a standardized measure, meaning that the average is 0: countries with ECI above 0 are more complex than the average country in the world, and countries with ECI below 0 are less complex than the average.

[41] The complexity of a product is measured through the Product Complexity Index (PCI), an analogous complexity measure to ECI, but for products. The relatedness is measured with the Relatedness density which calculates the percentage of related products that are present in a country.

suggesting that the country needs to focus strategically on building a comparative advantage in more complex products that are not related to existing knowledge production or in less complex products but related to existing knowledge production. Policymakers strive to improve the complexity of the economy, but in the case of North Macedonia, the selection of complex products involves a high degree of risk. To achieve better outcomes, policymakers should ensure that the selected products can at least be supported by existing infrastructure and are developed in locations where knowledge is already being produced. Figure below illustrates diversification frontiers in three municipalities: Ilinden, Kavadarci and Ohrid.

Figure 40: Diversification frontier of North Macedonia in 2019



Source: WITS export data. *Note:* HS-6 products without Revealed Comparative Advantage. The scatter size is proportional to the export volume.

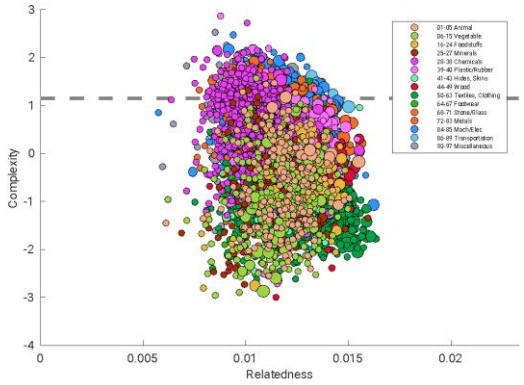
A similar approach to that used at the national level provides additional information on the diversification frontier for three selected municipalities: Ilinden, Kavadarci, and Ohrid. In 2019, Ilinden had above average complexity (ECI=1.14). Ilinden's diversification frontier is shown in Figure 41 - Panel A. The diversification frontier has no slope, implying that the municipality can engage in both related and unrelated diversification, related diversification being less risky. In contrast, Kavadarci (Panel B) and Ohrid (Panel C) show below-average complexity (ECI=0.50 and ECI=0.40 respectively) and a downward trend, implying that both municipalities need to undertake riskier diversification towards more complex products, but less closely linked to the municipalities' existing production structure.

North Macedonia should define its smart specialization strategy based on five determinants. First, the municipalities that have the most knowledge about the proposed product should be selected as target locations for building comparative advantage. Second, the strategy should be

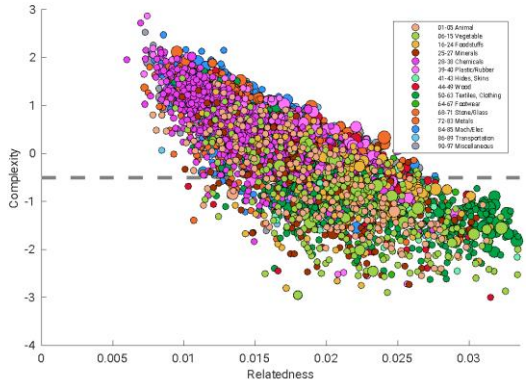
based on examples from peer countries with similar comparative advantages and economic structures. Third, the strategy should also be based on market size by considering the top three countries for these products (usually developed countries or larger economies). Fourth, it should consider the inclusiveness of the product, i.e., products with a lower Product Gini Index (PGI).[42] And fifth, it should consider products with lower environmental impacts, i.e., a lower Product Emission Intensity Index (PEII).[43]

Figure 41: Diversification frontier of Ilinden, Kavadarci and Ohrid in 2019

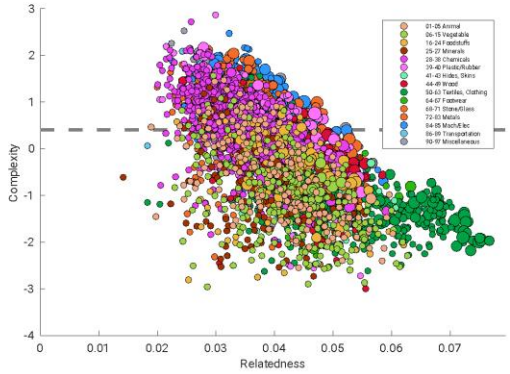
Panel A: Ilinden



Panel B: Kavadarci



Panel C: Ohrid



Source: WITS export data. *Note:* HS-6 products without Revealed Comparative Advantage. The scatter size is proportional to the export volume.

There is still room to diversify exports related to the current economic structure of North Macedonia, but mainly in the metals sectors and furniture. The products that are highly related to the current economic structure of North Macedonia suggest that the closest products are

[42] The PGI measures the average level of income inequality of a product's exporters, weighted by the importance of each product in a country's export basket. The values of PGI range between 0 and 1 with higher values implying that the specialization of the product is associated with higher inequality.

[43] The PEII measures the average level of emission intensity of a product's exporters, weighted by the importance of each product in a country's export basket. The values of PEII range between 0 and infinity with higher values implying that the specialization of the product is associated with higher emission intensity.

mainly metals and miscellaneous goods[44]. About 1,900 products that had a higher complexity of the complexity of the country can be found as potential targets for developing comparative. The analysis suggests three products on HS 6-digit that can have a great potential for increasing the export competitiveness of North Macedonia if they are carefully selected by considering their inclusiveness and environmental impact. The products are (i) Aluminum Doors/Windows/Frames and Thresholds, (ii) Illuminated Signs, and (iii) Furniture Parts, Nes.

In addition, several new products can enhance economic diversification and competitiveness. The analysis uses a methodology to generate future comparative advantage that can be developed in a period of five years.[45] Diversification of the economy through new products with a high degree of relatedness is less risky for North Macedonia, since the country is likely to have some base of knowledge production in this product. These products are again metals, such as aluminum, doors, windows and frames supporting the first analysis based only on economic complexity. Other products are prefabricated buildings, and Chocolate/Cocoa Preps/Block/Slab/Bar. The 20 possible products have the highest relatedness are listed in Table 6. In contrast, the development of comparative advantage in the products that have the highest complexity might yield higher returns, but it is riskier. The 20 products suggested by our predictions that have the highest complexity are listed in Table 7. In this case, the product with the highest relatedness is "Continuous Action Elevators or Conveyors for Goods" (highlighted in green), while the product with the highest municipality relatedness is "Other Monofilament, 1mm Rods" (highlighted in yellow). The most complex product that can be developed with this type of policy is Microwave Tubes, except Magnetron-Klystron (highlighted in blue).

North Macedonia has the potential to further develop its strategy of smart specialization, which can help diversify the structure of its economy and its export basket. However, an important caveat in this study is that services were not considered. As mentioned in the first section, services play a critical role in diversifying the economy and complement diversification at the product level.

[44] Products are selected using a naïve model which suggests that developing comparative advantage in products that are highly related to the productive structure of North Macedonia, there is already some amount of export, and which are more complex than the complexity of the country.

[45] We also construct a predictive regression model to suggest the development of comparative advantage in new products. In particular, the regression approach is based on the current level of comparative advantage, relatedness, and country specific features to generate expectations about the future comparative advantage (developed in a period of 5 years). Stojkoski, Stojanov, Tevdovski, 2022.

Table 6: Top 20 possible products for future export with highest relatedness

Product Code	Product Name	PCI	PGI	PEII	RD	RCA	Most similar countries with RCA	Countries with highest RD	Municipalities with highest RD	Municipality RD
761010	Aluminium Doors/Windows/Frames And Thresholds	0.05	42.17	324.30	0.15	0.834	Albania, Bosnia and Herzegovina, Serbia	Italy, China, Spain	Skopje, Stip, Kocani	0.101
681011	Building Blocks/Bricks Of Cement Or Artificial Ston	0.01	42.18	356.18	0.15	0.773	Bosnia and Herzegovina, Dominican Republic, El Salvador	Italy, Germany, China	Skopje, Stip, Kocani	0.096
940600	Prefabricated Buildings	0.18	39.93	305.30	0.14	0.447	Albania, Moldova, Bosnia and Herzegovina	Italy, China, Spain	Skopje, Stip, Kocani	0.107
760421	Profiles/Hollow, Aluminium Alloyed	0.08	40.30	346.34	0.14	0.746	Albania, Morocco, Bosnia and Herzegovina	Italy, China, Spain	Skopje, Stip, Tetovo	0.092
392010	Non-cellular Ethylene Polymers Sheets	0.08	41.43	272.32	0.14	0.460	Bosnia and Herzegovina, Dominican Republic, El Salvador	Italy, Spain, Germany	Skopje, Stip, Gevgelija	0.092
482290	Bobbins/Spools And Similar Supports Of Paper, Nes	0.30	41.81	284.28	0.14	0.642	Dominican Republic, El Salvador, Greece	Italy, Spain, Germany	Skopje, Stip, Kumanovo	0.088
481820	Paper Handkerchiefs/Cleansing Facial Tissues, Towel	0.03	43.04	285.61	0.14	0.475	Bosnia and Herzegovina, Jordan, El Salvador	Italy, Germany, Spain	Skopje, Stip, Kumanovo	0.089
841850	Refrigerator/freezer Chests, cabinets, showcases	0.31	40.26	238.01	0.13	0.694	Serbia, Guatemala, Romania	Italy, China, Spain	Skopje, Stip, Gostivar	0.088
200791	Citrus Based Jams, Jellies, Marmalade, Etc_	0.03	45.17	283.06	0.13	0.717	Bosnia and Herzegovina, Greece, Egypt	Italy, Spain, China	Skopje, Stip, Gevgelija	0.090
180631	Chocolate/Cocoa Preps/Block/Slab/Bar, Filled, %2k	0.45	42.43	278.51	0.13	0.709	Serbia, Bulgaria, Turkey	Italy, Germany, Poland	Skopje, Stip, Tetovo	0.086
871620	Trailers For Agricultural Purposes	0.40	40.59	267.53	0.13	0.682	Guatemala, Bulgaria, Kenya	Italy, Germany, Spain	Skopje, Stip, Tetovo	0.084
491110	Trade Advertising Materia/Catalogues Etc.	0.74	39.01	237.54	0.13	0.420	El Salvador, Serbia, Guatemala	Italy, Germany, Spain	Skopje, Stip, Kumanovo	0.087
391740	Fittings For Plastic Tube, Pipe Or Hose	0.50	40.18	248.21	0.13	0.493	Moldova, Serbia, Turkey	Italy, Germany, Spain	Skopje, Stip, Prilep	0.087
732510	Cast Articles Of Nonmalleable CastIron Nes	0.47	39.47	283.08	0.13	0.665	Tunisia, Bulgaria, Turkey	Italy, China, Spain	Skopje, Stip, Kumanovo	0.088
761690	Articles Of Aluminium, Nes	0.55	39.57	266.52	0.12	0.970	Cambodia, Tunisia, Romania	Italy, China, Germany	Skopje, Stip, Ohrid	0.085
300490	Medicaments Nes, In Dosage	0.37	40.40	192.68	0.12	0.618	Jordan, Greece, Croatia	Italy, Spain, Germany	Skopje, Stip, Kocani	0.086
940340	Kitchen Furniture, Wooden Nes	0.35	39.62		0.12	0.483	Moldova, Bosnia and	Italy, China,	Skopje, Stip,	0.084

				297.96			Herzegovina, Serbia	Germany	Tetovo	
847490	Parts For Mineral Sort, Screen/Mix, Etc	0.18	41.89	297.63	0.12	0.466	Turkey, Croatia, Pakistan	Italy, China, Spain	Skopje, Stip, Kocani	0.086
482340	Paper Rolls, Sheets, Dials For Recording Instruments	0.02	41.67	356.46	0.12	0.519	Bosnia and Herzegovina, Macau, Jordan	Italy, China, Spain	Skopje, Stip, Kocani	0.089
720941	Cold Rolled Iron Or Non-alloy Steel, Flat-Width	0.10	43.53	341.93	0.12	0.542	Jordan, Serbia, Vietnam	Italy, Germany, China	Skopje, Kumanovo, Stip	0.092

Table 7: Top 20 possible products for future export with highest complexity.

Product Code	Product Name	PCI	PGI	PEII	RD	RCA	Most similar countries with RCA	Countries with highest RD	Municipalities with highest RD	Highest Municipality RD
854049	Microwave Tubes, Except Magnetron klystron	1.64	39.52	224.17	0.05	0.549	France, Russia, United Kingdom	Germany, United States, France	Skopje, Stip, Kumanovo	0.052
870840	Transmissions For Motor Vehicles	1.45	41.58	227.05	0.08	0.490	Romania, Slovakia, Mexico	Germany, Italy, United States	Skopje, Ohrid, Cucer Sandevo	0.058
721122	Hot Rolled Iron Or Non-alloy Steel, Width<600m	1.40	38.31	213.12	0.08	0.858	Latvia, Slovakia, Hungary	Germany, Italy, France	Skopje, Kumanovo, Cucer Sandevo	0.065
684610	Cerium Compounds	1.39	37.66	306.22	0.06	0.850	Estonia, Austria, France	China, Germany, Italy	Skopje, Stip, Ohrid	0.050
871390	Mechanical Wheelchairs	1.22	39.47	229.55	0.07	0.858	Vietnam, Denmark, Luxembourg	China, Germany, Italy	Skopje, Veles, Stip	0.052
845180	Machinery ToImpregnate Textiles, Make Linoleum, Etc	1.16	39.64	218.40	0.09	0.510	Macau, Turkey, Portugal	Italy, China, Germany	Skopje, Stip, Struga	0.074
843020	Snow ploughs And Snow blowers, Not Self-propelled	1.15	39.31	271.88	0.09	0.541	Croatia, Lithuania, Poland	China, Germany, Italy	Skopje, Struga, Stip	0.079
722240	Angles/Shapes And Sections, Stainless Steel	1.12	41.61	245.96	0.09	0.558	Mauritius, Spain, Slovakia	Italy, Germany, China	Skopje, Stip, Kumanovo	0.063
870839	Brake System Parts Except Linings	1.09	39.98	260.10	0.10	0.605	Bosnia and Herzegovina, Romania, Portugal	Italy, China, Germany	Skopje, Stip, Kumanovo	0.068
843120	Parts Of Fork/lift Etc.	1.09	40.18	265.34	0.10	0.707	Bosnia and Herzegovina, Sri Lanka, Bulgaria	Italy, Germany, China	Skopje, Stip, Veles	0.071
293940	Ephedrines, Salts, In Bulk	1.08	44.65	338.72	0.07	0.497	Bosnia and Herzegovina, Georgia, Italy	Italy, Germany, China	Skopje, Stip, Ohrid	0.057
6841391	Parts Of Pumps For Liquids	1.07	39.01	229.67	0.09	0.863	Romania, Denmark, Hungary	Germany, Italy, France	Skopje, Ohrid, Cucer Sandevo	0.063

6841990	Parts Laboratory, industrial Heating/cooling Machinery	1.03	37.89	222.00	0.10	0.464	Moldova, Portugal, Denmark	Italy, Germany, China	Skopje, Stip, Prilep	0.073
391690	Other Monofilament	1.01	39.37	243.28	0.10	0.663	Bosnia and Herzegovina, Slovakia, Denmark	Italy, Germany, Spain	Skopje, Stip, Kumanovo	0.081
580135	Woven Warp Pile Fabric Manmade Fibre, Cut	0.99	48.20	218.33	0.08	0.693	Turkey, Portugal, Italy	China, Italy, Germany	Skopje, Stip, Stip	0.060
871420	Wheelchair Parts	0.97	38.53	251.12	0.09	0.954	Latvia, Poland, Denmark	Germany, China, Italy	Skopje, Veles, Stip	0.065
600192	Pile Knit Or Crochet Fabric Of Manmade Fibres, Nes	0.97	40.22	382.13	0.06	0.546	El Salvador, China, Chinese Taipei	China, Chinese Taipei, Italy	Skopje, Stip, Stip	0.050
560300	Nonwovens Textiles Except Felt	0.95	39.93	227.51	0.10	0.785	Greece, Turkey, Egypt	Italy, China, Germany	Skopje, Stip, Gostivar	0.080
321410	Mastics, Painters, Fillings	0.90	38.69	285.83	0.11	0.593	Serbia, Kyrgyzstan, Turkey	Italy, Germany, France	Skopje, Stip, Kumanovo	0.074
842839	Continuous Action Elevators Or Conveyors For Goods Ne	0.89	38.49	245.95	0.12	0.468	Bosnia and Herzegovina, Portugal, Denmark	Italy, Germany, Spain	Skopje, Stip, Kumanovo	0.078

2.6 Policy recommendations

Looking ahead to the next decade, North Macedonia has considerable potential to accelerate its convergence with EU income levels on the back of further expansion and upgrading of the export-oriented manufacturing and services sector and modernization of SEZ. The next generation of trade policy reforms that can revive the export-led growth model will require a more complex set of policy actions and strong high-level political support. In this context, however, the reform agenda must be seen as part of a broader strategy to improve the business climate and attract investment, as well as to increase productivity in the economy. Ultimately, the North Macedonia's ability to achieve greater economic diversification and upgrading will depend on a variety of different factors, including competition policy, investment policy and innovation among others.

However, the current events surrounding the war in Ukraine call for an intelligent sequence of policy reforms that can change the structure of the economy by diversifying exports and improving the competitiveness of the private sector in North Macedonia. The war in Ukraine could reduce global trade due to its impact on commodity and energy prices or the decline in light manufacturing and electronics across the world. For example, the war could create bottlenecks in supply chains, as seen in the automotive industry, and inflationary pressures in the EU and elsewhere could reduce demand for some of the most complex products manufactured in North Macedonia, usually products related to the automotive industry. In addition, North Macedonia is highly dependent on natural gas and coal imports from Russia and Ukraine, which could increase the vulnerability of the private sector. To move forward, the country needs to take into account these external shocks in order to reposition itself by creating an environment that fosters the competitiveness of firms and industry leaders that are ready to integrate new vertical production channels.

Policies that can help North Macedonia diversify its exports and increase its participation in GVCs through FDI that is better linked to domestic firms are:

- **Aligning tariffs with the EU will improve private sector productivity and competitiveness.** The reduction of import tariffs will benefit the private sector by lowering the cost of imported inputs. In North Macedonia, the private sector has expressed concern about tariffs on inputs, which are higher than import tariffs on finished products. During the COVID-19 pandemic, some tariffs were reduced, but only to a limited extent and temporarily. The problem exists primarily in the automotive industry, in the manufacture of photovoltaic equipment, and in the production of salami and other meat products.
- **Continuing to expand the network of bilateral and multilateral trade agreements.** North Macedonia has made significant progress in terms of liberalization at the regional level. However, integration into the global trade network opens opportunities that should not be overlooked. North Macedonia should therefore continue their efforts towards global

trade integration to improve its market access. New export opportunities are emerging, particularly in agriculture and food products in North Africa and Arab countries, where, in contrast to the EU, there are less stringent requirements that can be more easily met by domestic producers. However, it is important to nuance the potential for expansion to the Maghreb. Trade costs could be higher for the Maghreb region due to low supply from shipping lines or more expensive container shipping rates. In addition, some of the Maghreb countries remain averse to trade. Finally, North Macedonia's trade with Turkey remains low despite the existence of FTA.

- **Deepening its existing network of RTAs.** The depth of RTA matters for export growth as firms operating in markets with deeper agreements tend to me more profitable and larger in size. It is particularly important to promote the regional integration of North Macedonia into the Western Balkans and the EU. In addition, the government should ensure that the obligations under CEFTA Additional Protocol 6 (AP6) on trade in services are fulfilled, which can further promote regional integration and create new opportunities for the private sector. Specific provisions are discussed in chapter 3.
- **Revising its export-oriented FDI strategy** and undertaking a thorough assessment of the linkages between FDI-supported and domestic firms and their contribution to the domestic economy, including firms' productivity growth and export of more complex products with domestic value-added, employment of educated labor, and investment in R&D.
- **Streamlining border procedures and improving coordination among agencies**[46] to reduce delays from customs clearance and trade costs. In addition, North Macedonia should establish a mechanism for regular review of and database for NTMs, achieve compliance with the last two WTO TFA measures, and implement joint border inspections. Finally, the country should reinforce the public private dialogue to identify the obstacles to trade and implement concrete measures that can facilitate trade.
- **Opening up to greater labor mobility within the Western Balkans to reap the benefits of trade in services,** for example, through agreements on the mutual recognition of professional qualifications, which would enable the country to build a competitive services market.
- **Closing the remaining gaps in the transport corridor, including railway, and improving the maintenance of transport infrastructure and road safety** through well-targeted new investments and an adequate maintenance budget. It will allow North Macedonia to

[46] The World Bank has an ongoing project in the Western Balkans on Trade and Transport Facilitation that aims to reduce trade costs and increase transport efficiency with a) the adoption and implementation of the national single window; (b) the improvements of border crossing points and crossing points in selected trade corridors (Kafasan with Albania and Deve Bair with Bulgaria); (c) the implementation of electronic data interchange ; d) the adoption of an intelligent transport system and corridor performance monitoring; and e) the improvement of railway level crossings. The project also has a component on supporting the government to meet the obligations from CEFTA protocol AP6 on Trade in Services,

benefit from the country's position as a regional transit hub and better connect domestic firms to international markets. Exporters and importers use the port of Thessaloniki as the main route for accessing distant markets and yet must use trucks to transport their goods from North Macedonia to Greece, even though rail transport is cheaper worldwide. While major rail improvements are extremely costly, some incremental improvements can be achieved through better management of existing infrastructure.

- **Creating a conducive environment to internationalize firms, helping exporters and improving firms' survival in foreign markets.** This type of support could be provided by the Agency for export promotion, economic attaches in the embassies, Development Bank), business chambers, private consultants, or export/import companies. The type of support could include market research, information on requirements and standards to improve exporters quality, certification and NTM, as well as supporting exhibitions at specialized trade fairs and march-making with buyers, export financing (factoring, guarantees, insurance), and support for e-commerce or even shared offices and marketing staff in foreign markets.

3. The Impact of Trade Agreements on North Macedonia's Exporters

As stated earlier, North Macedonia signed five RTAs between 2000 and 2021 and has made significant efforts to liberalize its trade. Over time, these agreements have evolved in several directions, some covering only goods and others covering services too, but have generally remained at the regional level. The main trading partners are the EU countries, Western Balkans countries, Turkey, and Ukraine. In an early phase, agreements were signed with Turkey (2000) and Ukraine (2001), followed by an extension to EFTA countries (2002). In 2003, North Macedonia joined the WTO before continuing its trade liberalization with EU countries (2004) and Western Balkan countries through CEFTA (2006).

However, the depth of North Macedonia's trade agreements varies. The deeper trade agreements can have a positive impact on the economy by extending the agreements to additional policy areas, which may or may not be legally enforceable depending on the text used in the FTAs. In the case of North Macedonia, the most far-reaching FTA is the one with the EU, followed by EFTA and CEFTA (Table 8 shows North Macedonia's trade agreements and the number of policy areas covered).

Table 8: North Macedonia's Trade Agreements

Name of the RTA	Partners	Years	# of policy area covered
CEFTA	Albania; Bosnia and Herzegovina; Moldova, Republic of; Montenegro; North Macedonia; Serbia; UNMIK/Kosovo	2006-2020	16
EFTA—North Macedonia	Iceland; Liechtenstein; Norway; Switzerland	2002-2020	18
EU—North Macedonia	Austria; Belgium; Bulgaria; Croatia; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Latvia; Lithuania; Luxembourg; Malta; Netherlands; Poland; Portugal; Romania; Slovak Republic; Slovenia; Spain; Sweden; United Kingdom	2004-2020	41
Turkey—North Macedonia	Turkey	2001-2020	12
Ukraine—North Macedonia	Ukraine	2008-2020	12

Source: WTO.

How did North Macedonia's RTA impact the performance of its exporters? This chapter analyzes the impact of North Macedonia's deep trade agreements on its exporters through the following

research questions: What policy area covered by North Macedonia mostly contributed to the boost of North Macedonian exports? What was the impact of RTA at the sectoral level? What firm characteristics matter for RTAs positive effects? And what sectors or types of firms were the most affected? The analysis shows that deep trade agreements have contributed to a boost in exports of domestic firms, but the benefits are asymmetric. Evidence shows that large firms and the ones in the manufacturing sector have benefited the most.

3.1 Deep trade agreements promote economic diversification

Deeper trade agreements covering policy areas beyond traditional market access for goods can promote export diversification, including by facilitating a country's integration into GVCs. At the sectoral level, deep trade agreements help countries to integrate into higher value-added industries, enabling the transformation of the domestic economic structure to maintain growth levels and create sustainable jobs. The literature shows that deeper preferential trade agreements increase both domestic (forward linkages) and foreign (backward linkages) value-added of intermediate goods.[47]

Deeper trade agreements promote trade expansion among members and have positive spillover effects on trade with non-members. Through preferential trade agreements (PTAs), member countries have extended the reach of their commitments well beyond tariffs and additional obligations in policy areas covered by the WTO, such as customs administration and contingent protection, to policy areas such as investment and competition policy. The deepening of trade agreements does not come at the expense of trade with non-member countries.[48] This argument confirms Baldwin's (2014) "negative trade diversion" hypothesis, as deep agreements feature many non-discriminatory provisions, such as those regulating services, competition policy, subsidies, or standards, that stand to improve trade vis-à-vis outsiders and generate positive spillover effects.

Both arguments for deepening trade agreements offer firms the opportunity to diversify their market destinations by incorporating international production processes. First, deeper trade agreements facilitate the integration of firms GVCs, allowing them to increase their production output through technology transfers.[49] Second, the "extended gravity" effect has shown that firms' decisions to export to new markets is not only based on geographic proximity, but also on earlier and subsequent destinations,[50] supporting Lee et al.'s (2019) argument that PTAs reduce firms' entry costs to new markets. The latter casts doubt on the conventional view that by lowering tariffs between members, PTAs increase trade discrimination against firms in third

[47] Mattoo, Mulabdic, & Ruta (2017)
[48] Mattoo, Mulabdic, & Ruta (2017)
[49] Laget, et al. (2018)
[50] Morales, Sheu, & Zahler (2019)

countries, leading to a reduction in their exports at the expense of less efficient producers in member countries (trade diversion).

Box 3: Linking Deep Trade Agreements with Exporters' Databases

The empirical analysis of this chapter is based on firm-level data and the deep trade agreements database. The analysis is based on a unique database of the North Macedonia's Customs Administration for export transactions at the firm level. The firm-level dataset was merged with the Content of Deep Trade Agreement[51] database from the World Bank, which provides information on the content of six active RTAs ratified by North Macedonia. The gravity model database is completed using CEPII for distance between North Macedonia and destination countries and the MacMap (CEPII) database for the tariff faced by North Macedonian exporters at the destination.

The firm-level customs transactions data provided information on the export of North Macedonia firms over the period 2008–20. The database includes exports at the firm-product-destination level. The product level classification is at the Harmonized System 6 digits. The database only covers non-services sectors. The exports of each firm are tracked over time with a unique identifier. Beyond the granularity of the database, the individual exporters data allows for more complex empirical investigations to understand the impact of regional trade agreement on those firms by looking at the size of firms, their participation in GVCs, and their sectorial affiliation.

The Content of Deep Trade Agreement database contains information on the specific provisions included in more than 300 active preferential trade agreements, and in particular on the five trade agreements that North Macedonia has in force over the period 2008–20. Table 9 shows a list of RTAs that entered into force for North Macedonia, their partners, and the number of policy area covered by those agreements.

Table 9: Groups of RTA Provisions

WTO+	WTO-X	WTO Core
• Tariffs industrial goods	• Anti-Corruption	• Tariffs industrial goods
• Tariffs agricultural goods	• Health	• Tariffs agricultural goods
• Customs Administration	• Competition Policy	• Customs Administration
• Export Taxes	• Human Rights	• Export Taxes
• SPS Measures	• Environmental Laws	• SPS Measures
• State Trading Enterprises	• Illegal Immigration	• State Trading Enterprises
• Technical Barriers to Trade	• IPR	• Technical Barriers to Trade
• Countervailing Measures	• Illicit Drugs	• Countervailing Measures
• Antidumping	• Investment Measures	• Antidumping
• State Aid	• Industrial Cooperation Labour	• State Aid
• Public Procurement	• Market Regulation Information Society	• Public Procurement
• TRIMS Measures	• Movement of Capital	• TRIMS Measures
• GATS	• Mining	• GATS
• TRIPs	• Consumer Protection	• TRIPs
	• Money Laundering	• Investment Measures
	• Data Protection	• Movement of
	• Nuclear Safety	• Capital
	• Agriculture	• IPR
	• Political Dialogue Approximation of Legislation	• Competition Policy
	• Public Administration	
	• Audio-visual	
	• Regional Cooperation	
	• Civil Protection	

[51] Hofmann, Osnago, & Ruta (2017)

	• Research and Technology Innovation Policies • SMEs • Cultural Cooperation • Social Matters • Economic Policy Dialogue Statistics • Education and Training • Taxation • Energy • Terrorism • Financial Assistance • Visa and Asylum

Source: World Bank Deep Trade Agreements Database. Note: The definition WTO+ and WTO-X groups follows Horn et al. (2010). The definition of "core" provisions follows Mattoo et al. (2017).

3.2 Legally enforceable provisions in RTAs boost exports

Legally enforceable provisions in RTAs have the strongest effect on firms' exports in North Macedonia. Table 10**Error! Reference source not found.** column 1 shows the that the effect of an RTA with the destination country (captured as a dummy variable) on exports of North Macedonia's firms is positive. The results are consistent with previous studies, as the presence of an RTA increases exports by 10 percent, on average. Columns 2 and 3 show the results by broad type of provision, versus legally enforceable provisions. The Content of Deep Trade Agreement database provides information on whether each provision in an RTA is legally enforceable or not. The results show that legally enforceable provisions have the strongest positive and significant effect on the exports of North Macedonia's firms. A 10-percent increase in the number of provisions in the RTA implies a 0.49 percent increase in exports by firms. For this reason, the following analysis will be based only on legally enforceable provisions. Controlling for applied tariffs on products at the destination, the estimation sample shrinks due to missing data on tariffs, and the role of RTA depth, although a positive sign, is inaccurately estimated. The control variables for destination income (GDP) and geography related to export costs (distance) have the expected sign. That is, distance has a negative impact on exports, while GDP has a positive impact because the destination country has stronger demand.

Table 10: Deep RTAs and the Export of North Macedonia's Firms

	Exp (ln) (1)	Exp (ln) (2)	Exp (ln) (3)	Exp (ln) (4)
RTA	0.103***			
	(0.033)			
RTA depth		0.003		
		(0.009)		
RTA depth (legal)			0.049***	0.030*
			(0.013)	(0.016)
Ln(tariff+1)				-0.665***
				(0.119)
Distance (ln)	-0.229***	-0.227***	-0.247***	-0.230***
	(0.020)	(0.019)	(0.021)	(0.021)
GDP (ln)	0.154***	0.154***	-0.247***	0.180***
	(0.006)	(0.006)	(0.007)	(0.008)
Fixed Effects				
Firm	Yes	Yes	No	No
Sector	Yes	Yes	Yes	Yes
Year	Yes	Yes	No	No
FirmYear	No	No	Yes	Yes
Observations	101,415	101,415	94,255	69,024

Notes: Ordinary least square estimates, destination-year cluster standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Only WTO+ legally enforceable and core provisions increase North Macedonia's exports, as they are more likely to be adopted at the destination. Table 11 is a replication of the baseline estimation using legally enforceable WTO+ provisions to calculate the depth of RTAs (columns 1-2). As expected, trade-related legally enforceable provisions, which are generally more likely to be adopted at the destination, increase exports by North Macedonia's firms. Columns 3-4 use WTO X provisions for RTA depth, while columns 5-6 use WTO core provisions. The results indicate that WTO+ has the strongest effect on exports of North Macedonia's firms, followed by WTO core provisions, while WTO-X has a negative effect. A 10-percent increase in WTO-X provisions can boost firms' exports by 0.91 percent.

Table 11: The Role of Legally Enforceable, WTO+, WTO-X and "Core" RTA Provisions in Affecting the Export of North Macedonia's Firms.

	Exp (ln) (1)	Exp (ln) (2)	Exp (ln) (3)	Exp (ln) (4)	Exp (ln) (5)	Exp (ln) (6)
RTA depth (WTO+)	0.091***	0.067***				
	(0.016)	(0.020)				
RTA depth (WTOX)			-0.047***	-0.045***		
			(0.018)	(0.020)		
RTA depth (core)					0.047***	0.031**

					(0.011)	(0.014)
Ln(tariff+1)		-0.590***		-0.728***		-0.646***
		(0.120)		(0.109)		(0.119)
Distance (ln)	-0.232***	-0.222***	-0.305***	-0.274***	-0.247***	-0.234***
	(0.019)	(0.020)	(0.019)	(0.020)	(0.020)	(0.021)
GDP (ln)	0.169***	0.181***	0.178***	0.190***	0.169***	0.181***
	(0.007)	(0.008)	(0.008)	(0.009)	(0.007)	(0.008)
Fixed Effects						
Sector	Yes	Yes	Yes	Yes	Yes	Yes
Firm-Year	Yes	Yes	Yes	Yes	Yes	Yes
Observations	94,255	69,024	94,255	69,024	94,255	69,024

Notes: Ordinary least square estimates, destination-year cluster standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Deep RTAs do not have a positive effect on export prices, suggesting that they do not affect iceberg costs but all the other costs. Table 12 shows the effect of deep RTA on the export price of North Macedonia's firms (approximated by export units) and their export quantity (in kg). Export prices are positive but insignificant, which means that deep RTAs do not increase the variable components of trade costs (the so-called iceberg trade costs), but rather all the other type of trade costs that may hamper the export performance of firms. The point estimates for export quantities, which, unlike export values, are positive and significant.

Table 12: The Effect of Deep RTAs on Export Volume and Export Prices

	Exp Qty (ln) (1)	Exp Tuv (ln) (2)
RTA depth (legal)	0.043***	0.006
	(0.014)	(0.006)
Distance (ln)	-0.327***	0.085***
	(0.019)	(0.007)
GDP (ln)	0.160***	0.008***
	(0.009)	(0.003)
Fixed Effects		
Sector	Yes	Yes
Firm-Year	Yes	Yes
Observations	94,255	94,255

Notes: Ordinary least square estimates, destination-year cluster standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

3.3 Deep RTAs boost manufacturing exports

Deep RTAs boost exports in manufacturing but have little impact in agriculture. Table 13 presents subsamples of manufacturing and agricultural firms to examine the effect of deep RTAs on the two different macro sectors. The results show that deep RTAs in North Macedonia boosted

exports of manufacturing firms, while it seems that deep RTAs had an insignificant and negative effect on agricultural firms. This can be explained by the fact that the economic focus of North Macedonia in recent years has been on export oriented FDI in manufacturing, while the agricultural sector has underperformed and been unexploited from a trade perspective.

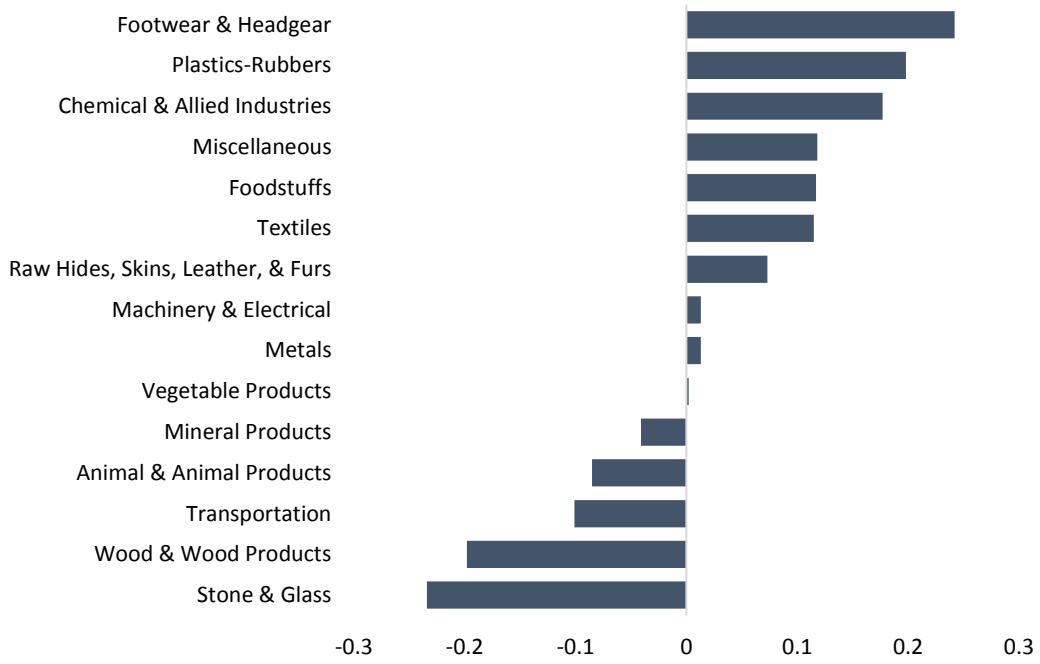
Table 13: Manufacturing vs Agriculture Firms

	Exp (ln) (1)	Exp (ln) (2)	Exp (ln) (3)	Exp (ln) (4)
RTA depth (legal)	0.050*** (0.016)	0.071*** (0.022)	0.006 (0.017)	-0.023 (0.020)
Ln(tariff+1)		0.360 (0.322)		-0.514*** (0.140)
Distance (ln)	-0.258*** (0.020)	-0.250*** (0.026)	-0.258*** (0.028)	-0.238*** (0.027)
GDP (ln)	0.214*** (0.008)	0.228*** (0.010)	(0.010) (0.010)	0.117*** (0.012)
Fixed Effects				
Sector	Yes	Yes	Yes	Yes
Firm-Year	Yes	Yes	Yes	Yes
Observations	62,651	44,492	30,919	24,042

Notes: Ordinary least square estimates, destination-year cluster standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

The manufacturing sector benefits from deep trade agreements and records higher exports than the primary sector. To better understand the impact on manufacturing, Figure 42 looks at the impact of FTAs on 15 different sectors at HS 1-digit headings of the classification HS. The results confirm the positive impact on manufacturing (including agribusiness) and the lack of a positive impact of deep RTAs on the primary and agricultural sectors. The largest effect is seen in footwear and headwear, chemical products, and textiles.

Figure 42: The Effect of Deep RTAs on Sectors



Source: Authors' estimations based on gravity model. Note among the positive impacts, all the coefficients are statistically significant except for Raw Hides, Skins, Leather & Furs, and Miscellaneous.

3.4 Firm characteristics matter for RTA positive effects

Deep RTAs have a positive effect on large companies at the expense of smaller and less productive companies. Table 14 shows the impact of RTAs on different firm sizes (small, medium, and large) for all firms, columns 1 and 2, for manufacturing, columns 3 and 4, and for agriculture, columns 5 and 6. Small- and medium-sized firms suffer from competition with large firms in North Macedonia. Moreover, larger firms are better able to exploit the potential of RTAs and may have also moved to North Macedonia as a result of the existence of RTAs. The heterogeneous effects of RTAs suggest that there is a large potential for welfare gains for Macedonian workers. Large firms tend to have higher wages and, thanks to deep RTAs, can further expand production to serve new markets abroad. Such a shift is likely to drive up wages and reallocate labor from less productive firms to more productive firms.

Deeper RTAs in North Macedonia mainly benefit large firms and the ones that participate in GVCs. Table 15 tests the heterogeneous effect by interacting the main variable for the depth of RTAs with three characteristics of firms: (i) size above the 75th percentile of the distribution; (ii) size above the 90th percentile of the distribution; and (iii) GVC participation (here identified by firms that import and export at the same time). It clearly emerges that only large and GVC firms benefit from deeper RTAs at the destination.

Table 14: The Impact of RTAs by Firm Size

	Exp (ln) (1)	Exp (ln) (2)	Exp (ln) (3)	Exp (ln) (4)	Exp (ln) (5)	Exp (ln) (6)
RTA depth x Big	0.062***	0.044**	0.064***	0.085***	0.0018	-0.010
	(0.013)	(0.017)	(0.018)	(0.024)	(0.018)	(0.021)
RTA depth x Medium	-0.039**	-0.058***	-0.036	-0.014	-0.082***	-0.110***
	(0.019)	(0.022)	(0.027)	(0.036)	(0.027)	(0.029)
RTA depth x Small	-0.132	-0.049	-0.131	-0.034		
	(0.140)	(0.138)	(0.146)	(0.139)		
Ln(tariff+1)		-0.663***		0.346		--0.513***
		(0.119)		(0.322)		(0.140)
Fixed Effects						
Sector	Yes	Yes	Yes	Yes	Yes	Yes
Firm-Year	Yes	Yes	Yes	Yes	Yes	Yes
Observations	94,255	69,024	62,651	44,492	30,919	24,042

Notes: Ordinary least square estimates, destination-year cluster standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 15: The Impact of RTAs by Firm Size and GVC vs. Non-GVC Firms

	Exp (ln) (1)	Exp (ln) (2)	Exp (ln) (3)	Exp (ln) (4)	Exp (ln) (5)	Exp (ln) (6)
RTA depth (legal)	-0.039**	0.038**	-0.075***	-0.058***	0.019	-0.104***
	(0.019)	(0.015)	(0.021)	(0.022)	(0.019)	(0.025)
RTA depth x 75th pct	0.102***			0.102***		
	(0.017)			(0.021)		
RTA depth x 90th pct		0.028			0.031	
		(0.020)			(0.025)	
RTA depth x GVC			0.147***			0.161***
			(0.021)			(0.025)
Ln(tariff+1)				-0.663***	-0.682***	-0.703***
				(0.119)	(0.120)	(0.118)
Fixed Effects						
Sector	Yes	Yes	Yes	Yes	Yes	Yes
Firm-Year	Yes	Yes	Yes	Yes	Yes	Yes
Observations	94,255	94,255	94,255	69,024	69,024	69,024

Notes: Ordinary least square estimates, destination-year cluster standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

3.5 Policy recommendations

While deep trade agreements have contributed to boosting exports of domestic firms, these are asymmetric for larger firms and the manufacturing sector as a result of the efficient reallocation of resources towards more productive firms. The deeper agreements that North Macedonia has signed in recent years have helped increase exports and facilitate entry into new

markets for domestic companies, as well as promote their participation in GVCs. However, evidence shows that large firms have benefited more from the RTAs than others. Since smaller- and medium-sized enterprises are less productive, deep RTAs are likely to reallocate resources to larger and more efficient producers. As a result, small and medium enterprises will require supportive policies to thrive in the new environment as it is more difficult for them to adjust. The analysis does not rule out the possibility that some small productive firms have taken advantage of RTAs. Finally, while manufacturing firms have benefited from RTAs, firms in the agricultural sector have not unleashed the potential to improve export performance in this sector.

For North Macedonia to take full advantage of deep RTAs, several policies can help build the right environment:

- **Review and assess the impact of deep RTAs by deepening existing RTAs and broadening the range of RTAs to unlock new market access.** North Macedonia should focus on maintaining its open trade policy and expanding it further as needed based on impact assessments and estimates of the trade potential of existing and new RTAs.
- **Deep RTAs must be accompanied by a set of domestic policies that allow companies to benefit from them, both in terms of size and in terms of sectors.** Creating the right environment to improve the productivity of domestic firms can unlock the benefits expected from deeper RTAs with all of North Macedonia's trading partners. This requires a more efficient allocation of existing resources and a series of horizontal measures that can support the diversification of the economy as a whole, for example, in the areas of governance, education, infrastructure, and trade openness. Evidence[52] finds that horizontal policies are positively corelated with sophisticated, complex manufacturing exports, and to a lesser extent to services. Measures in deep RTAs support those domestic reforms.
- **New opportunities need to be explored at the sectoral level, predominantly in the agricultural and services sectors.** The current food crisis resulting from the war in Ukraine is putting pressure on agricultural products, including staple foods. North Macedonia has yet to exploit its agricultural potential by increasing productivity in the agricultural sector and using RTAs to benefit from foreign markets. In the services sector, the ICT industry has the potential to grow and create more sustainable and better paid jobs while it can be shielded from global crises, such as COVID-19. However, the growth of the services sector, in particular ICT sector, also requires a skilled labor force and must be accompanied with complementary policy reforms that can improve human capital skills. Deep RTA can support the reforms needed to make North Macedonia a more attractive destination as firms reorganize their value chains amid geopolitical and other risks that emerged in recent times.

[52] Salinas et al. (2021)

4. Cost-Effectiveness of North Macedonia's State Aid in Technological Industrial Development Zones

This chapter evaluates the costs and benefits of state aid given to firms in North Macedonia's TIDZs. The analysis uses micro-level data and simulations to analyze the costs of tax exemptions offered to firms that joined the TIDZs. To explore the potential benefits from state aid, this chapter makes use of "return on investment" (ROI) analysis and propensity score matching (PSM) regressions to reflect on TIDZ firms' decisions to invest and scale up performance (for example, in terms of sales, employment, and exports). In this way, the country addresses the need to increase the transparency of state aid provision[53].

In 2007, North Macedonia developed the "Invest in Macedonia" policy. This featured a range of tax incentives and other subsidies to attract foreign companies to invest in the newly created TIDZs in the country. While this policy was seen to increase FDI flowing into the country, it also sparked a major discussion around state aid to the private sector in North Macedonia, and whether the large amount of tax relief given to foreign firms was a cost-effective way to spend government resources.

When a new government administration came into power in 2017, it introduced a pro-transparency position towards state aid granted to the private sector. The Plan for Economic Growth was adopted in 2017 as a large state aid program to level the playing field for both foreign and domestic firms. It also publicly revealed the amounts of the subsidies given to multinational corporations in the industrial zones, as a step towards higher levels of transparency of state aid provision. [54] As part of this initiative, the Government of North Macedonia also had the intention to evaluate the costs and benefits of state aid given to firms in the TIDZs.

Firms in TIDZs are few but very significant for the wider economy. Until 2020, 32 firms have joined the TIDZ, and 28 firms received tax exemptions that same year. These firms represent more than one-fourth of total imports and more than one-third of exports in value per year. By

[53] The World Bank (2020) indicates the need to increase transparency of state aid provisions: "sometimes data is lacking because of little inclination of Government institutions to present results, that potentially costed state budgets significantly, while the incentives did not achieve significant effects." The report also presents a base of indicators for evaluating state aid: "the effects of state aid are usually evaluated in terms of the effects it has on job creation, firms' competitiveness, firms export growth, industrial production indexes."
[54] Petreski, 2022.

2020, they also accounted for roughly 3 percent of employment and 5 percent of total assets in the country.

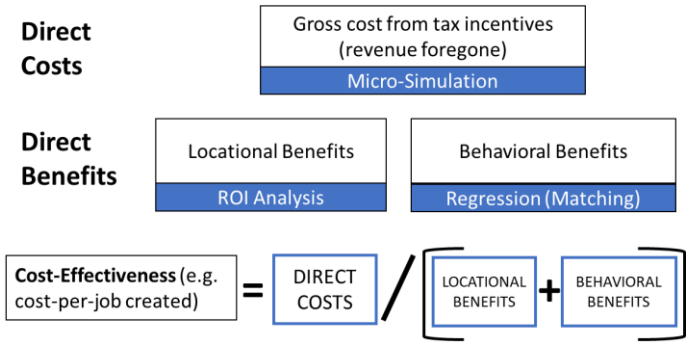
However, the total cost of tax incentives provided to firms in the TIDZs is significant and growing. This makes up a large and increasing share of tax revenue, increasing from 1.3 percent in 2011 to about 5 percent of total tax revenue from 2017 onwards. However, these tax incentives have helped boost profitability for only 16 percent of firms located in the TIDZ. Although this 16 percent represents only 5 firms in the TIDZ, they add up to 28.4 percent of all exports and 2.8 percent of all investments throughout the research period.[55] Further, as investigated below, while the tax incentives are very costly in terms of jobs created, they seem more beneficial for attracting investment and exports. The marginal firms' tax expenditure per job-year is approximately $17,000, which is relatively costly—at roughly three times an annual manufacturing wage. In contrast, each dollar in tax incentives is found to lead to an additional $20 in investment and $38 in exports, suggesting strong economic returns.

Shifting to a more performance-based system of tax credits can better assist new firms. At the same time, it also helps improve tax incentives' cost-effectiveness. TIDZ policy has successfully attracted large firms that make the economy more integrated to the GVCs (reaching 42 percent of exports in 2020 and 27.9 percent of imports in value). However, incentives offered to firms in the special zones could be improved by linking the benefits to a specific government objective, such as, for example, employment growth, skills training, growth in knowledge-intensive investment, or facilitating supply linkages.

The research methodologies used micro data to assess tax incentives. Thanks to the collaboration with North Macedonia's authorities that provided access to firm level data, it was possible to proceed with the methodology through the following steps: (i) micro-simulations to look at the overall costs of tax incentives; (ii) ROI analysis to assess incentives that may have encouraged firms to locate and invest in TIDZs; (iii) propensity score matching regression analysis to understand if there are behavioral benefits to settling at a TIDZ; (iv) assessment of the impact that incentives may have had on TIDZ firms' employment, exports, and investment; and (v) a cost-benefit analysis of incentives (Figure 43). This methodology allowed us to measure the current tax position of firms using observed data and compare it to the potential tax liability in the case of not receiving the incentives.

[55] When custom duties forgone are not considered, it is possible to observe that the number of firms that become profitable is reduced to four. Therefore, the additional firm that becomes profitable thanks to the custom incentives has a large impact on the economy as a whole. Furthermore, if we consider the four firms that become profitable thanks to the incentives (marginal firms), they account for up to 2.8 percent of all exports and 0.2 percent of all investment over the entire period.

Figure 43: Research Methodology for Assessing the Impact of North Macedonia's TIDZ



Source: Authors elaborations.

4.1 Historical performance of North Macedonia's TIDZs

Before reaching a decade from its independence, North Macedonia recognized the need to become a destination for greenfield FDI. In early 2000s, the government of North Macedonia started to develop a proactive investment attraction strategy. A public program of investment incentives and investment facilitating institution was established in 2003, and the implementation proceeded in earnest from 2007 onwards. The strategy helped to sustain FDI inflows, which have gone up significantly since mid-2000 but have been volatile**.** One of the main programs in the investment attraction strategy was the creation of Technological Industrial Development Zones (TIDZs), which hosted most of greenfield projects. FDI into North Macedonia hovered at around 40 percent of GDP for 2007-2017 according to the World Bank (2018).

North Macedonia's TIDZs are a type of SEZ, which have become an increasingly popular instrument to promote economic development globally. Countries promoting zones have sought to stimulate economic growth both within and outside the zone. Within the zone, states aim to attract investment that will lead to the attraction of new firms and jobs and facilitate skills and technology transfers. Outside the zone, states aim to generate synergies, networks, and knowledge spillovers to foster additional economic activity.

SEZs generally provide three types of benefits: infrastructure, incentives, and regulatory simplification. They include (a) infrastructure, such as serviced land, factory shells, and utilities; (b) tax incentives, including access to imported inputs free of tariffs and duties and reduced or eliminated corporate income and value-added taxes; and (c) regulatory simplification, such as streamlined regulatory procedures, investor aftercare, and efficient Customs Administration. Because in many developing countries public infrastructure is undersupplied by the private sector and highly expensive to construct, these countries may create public goods by directly investing in a specific location's infrastructure or by stimulating infrastructure investments by foreign or domestic firms.[56]

[56] Farole, 2011.

However, the global record on SEZs has been mixed. In some parts of the world, the SEZ model has delivered spectacularly, playing a catalytic role in growth and structural transformation.[57] However, SEZ programs in other regions did not yield the expected results, where SEZs have either failed to attract investors or have attracted investors that took advantage of the associated tax breaks without delivering substantial employment or export gains.[58] In such cases, SEZs have had a limited impact on investment, exports, or employment generation.

North Macedonia uses its TIDZ to stimulate the country's investment and export generation. More specifically, they aim to "*accelerate the economic development by attracting foreign and domestic capital intended for the development of new technologies and their application in the national economy, to increase the competitiveness, and to increase the employment level.*"[59] The initiative was launched in 2008, with the promulgation of the first law concerning TIDZs; by 2022, the number of zones created across the country reached 15 locations, as shown in Figure 44.

Figure 44: Technological-Industrial Development Zones in North Macedonia

Source: Invest North Macedonia (2022)

There are relatively few firms present in the TIDZ, but the number has been increasing. While in 2013 there were only eight firms active in the TIDZ, this went up to 29 by 2020 (Figure 45). In

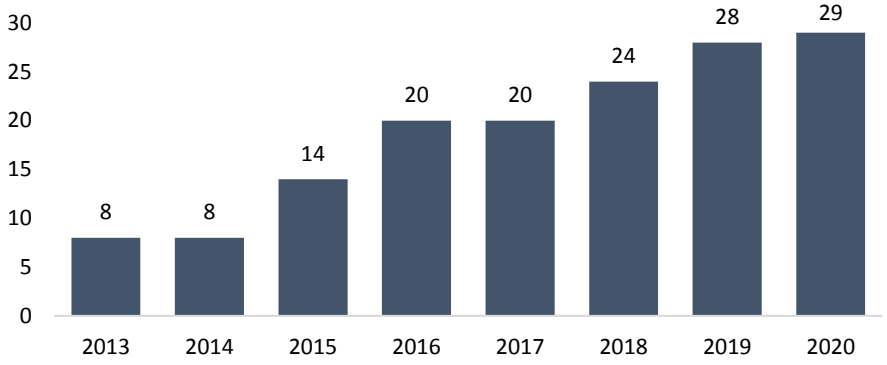
[57] Examples of this include China, the Republic of Korea, Malaysia, Singapore, and Taiwan, among other Asian economies that have managed to use SEZs as platforms for developing export-oriented manufacturing (Jeong and Zeng 2016). In the Middle East and North Africa, countries, such as Egypt, Morocco, and the United Arab Emirates have successfully used SEZs to catalyze the diversification of their exports (World Bank 2020).

[58] World Bank 2020; Qiang and Liu and Steenbergen 2021.

[59] Government of North Macedonia (2018)

total, only 32 firms have been in North Macedonia's TIDZs. So far, three firms have left the TIDZ (tax database) before 2020.[60]

Figure 45: Total Number of Firms in the TIDZs, 2013–20



Source: Authors' calculations using North Macedonia administrative data.

The TIDZ also has a strong clustering of manufacturing industries (Table 16). When establishing the TIDZ, the government envisaged that the TIDZs would stimulate production activities in the ICT area, scientific research activity, and new technologies with high environmental standards (for which additional benefits were envisaged). Yet, in practice, the TIDZs have a make-up that more closely resembles a conventional industrial park. Most firms focus on the manufacturing of motor vehicles, which account for 47 percent for the period 2013–20. Within other industries observed, it is possible to highlight the manufacture of computer, electronic, and optical products, and textile production, among others. Besides transport, there are currently no service sector firms (such as IT companies) present in the TIDZs.

Table 16: Industrial Breakdown of TIDZ Firms, 2013–20[61]

Industry division of TIDZ firms	Freq.	Percent
Manufacture of food products	1	3
Textile production	3	9
Manufacture of basic pharmaceutical products	1	3
Manufacture of rubber and plastic products	3	9
Manufacture of other non-metallic mineral products	1	3

[60] For this research, we assume a firm belonging to a TIDZ for a given year if it meets two conditions: (i) the date of joining a TIDZ; we consider a firm as part of a TIDZ starting the year it entered a zone, regardless of whether it joined in December; (ii) since there is no information on the date a firm leaves a TIDZ, we assume it has left a zone in a given year if we do not observe activity in the Central Registry. In other words, it could be possible that a firm leaves a TIDZ and stays in the country, observing movements in the Central Registry; yet we believe such cases are marginal and out of the scope of this research.

[61] When considering the number of firms by sector, we noticed that two firms changed sector classification throughout the period of research, and we allowed double counting to present the level of sector diversification observed in the sample.

Manufacture of computer, electronic and optical products	4	12
Manufacture of electrical equipment	3	9
Manufacture of machinery and equipment	1	3
Manufacture of motor vehicles, trailers, and semi-trailers	16	47
Land transport and pipeline transport	1	3
Total	**34**	**100**

Source: Authors' calculations using North Macedonia administrative data.

While there are relatively few firms in the TIDZs, they are critical for North Macedonia's overall economy (Table 17). The firms in the TIDZs are highly integrated into global markets and observe significant levels of trade. For the period 2013–20, they account for an average of almost a quarter of North Macedonia's total goods imports, and more than a third of total exports. During this period, these firms also made up an average of 8.3 percent of domestic sales. TIDZ firms also observed a rapid rise in employment—increasing from 1,832 workers in 2013 to 12,332 workers in 2020, a staggering six-fold growth. Investment performance is also relevant to the economy. The firms with active tax incentives in the TIDZs represented, 4 percent of total assets owned by firms in North Macedonia, on average for 2013–20. The average value of total assets by firm was $56.7 million and it decreased since 2018. In sum, firms in the TIDZ are much more integrated into the global markets than the average firm in North Macedonia, and amount to a substantial share of national trade volumes. They hire a large share of workers per firm on average and make up a considerable percentage of sales and investment in the country.

Table 17: Economic Performance of Firms in TIDZs, 2013–20

	2013	2014	2015	2016	2017	2018	2019	2020
Total number of firms								
Number of active firms in TIDZ	8	8	14	20	20	24	28	29
Imports								
Number of importing firms in TIDZ	8	7	12	16	19	21	25	27
Value of imports of TIDZ firms (USD Billion)	0.9	1.1	1.3	1.4	1.7	1.9	2.1	1.8
Share of North Macedonia's goods imports	14.9%	18.5%	21.1%	23.3%	26.2%	27.3%	29.6%	27.9%
Exports								
Number of exporting firms in TIDZ	7	7	12	15	18	21	23	26
Value of exports of TIDZ firms (USD Billion)	0.9	1.3	1.5	1.6	1.9	2.1	2.2	2.0
Share of North Macedonia's goods exports	24.3%	30.8%	34.7%	37.7%	39.7%	41.9%	42.3%	42.0%
Sales								
Value of sales of firms in TIDZ (USD Billion)	0.8	1.2	1.4	1.4	1.6	1.9	1.9	1.7
Share of North Macedonia's sales	4.4%	6.5%	7.8%	8.5%	9.0%	10.2%	10.4%	9.8%
Employment								

Number of employees in TIDZ (Thousands)	1.8	3.2	4.1	6.4	9.7	11.8	12.8	12.3
Share of North Macedonia's employment	0.5%	0.9%	1.1%	1.7%	2.5%	3.0%	3.2%	3.2%
Assets								
Value of assets of firms in TIDZ (USD Billion)	0.6	0.6	0.8	0.9	1.2	1.3	1.3	1.1
Share of North Macedonia's assets	2.1%	2.5%	3.2%	3.9%	4.8%	5.4%	5.3%	4.6%

Source: Authors' calculations using North Macedonia administrative data.

4.2 Overall cost of tax incentives is high

There are four types of tax incentives offered by North Macedonia TIDZs that we cover in this analysis. Annex 1 describes tax incentives. To evaluate the TIDZs' cost of offered incentives, it is critical to identify tax incentives (tax instruments that deviate from the national benchmark) that firms have used and to which extent. There are four tax incentives that represent a relevant volume of costs:

1. **Corporate income tax (CIT) exemption:** refers to a tax rule that reduces the statutory CIT rate of 10 percent for a period of 10 years to zero percent for all firms in TIDZs.
2. **Personal income tax (PIT) exemption:** refers to a tax rule that reduces the statutory PIT rate of 10 percent in North Macedonia to zero percent for people working at TIDZs.
3. **Social security contributions (SSC) exemption:** The law sets the minimal base for payment of social security contributions on salary and bonuses.[62] For this analysis, we assume that firms in TIDZs are not paying SSC for a period of 10 years.
4. **Import Duties Exemptions:** import duties differ significantly by products and partner countries. According to WTO, the average tariff applied for imports in North Macedonia is a rate of 7.1 percent.[63] In the case of non-agricultural products, the average tariff is 6.7 percent, and 39.7 percent of all imports are duty-free. In the case of the firms in TIDZs, they are granted custom exemptions, provided that imports are not released in free circulation and that they are not intended for end consumption.

The total value of each of the tax incentives listed above was estimated by utilizing each firm's historical tax return data and using a micro-simulation to estimate their hypothetical tax liability *without* such tax incentives. To calculate the direct cost of tax incentives, we rely on the revenue foregone method (IMF, OECD, UN and World Bank 2015). For more details regarding the methodology applied in the microsimulations, see Box 4 and Annex 1.

[62] The current level of the compulsory social contributions on gross wage is: (i) pension and disability insurance: 18.8 percent; (ii) health insurance: 7.5 percent; (iii) employment insurance: 1.2 percent; and (iv) additional health insurance: 0.5 percent.

[63] The average corresponds to the simple average of final bound duties excluding unbound tariff lines, in line with the methodology of the WTO: https://www.wto.org/english/res_e/statis_e/daily_update_e/tariff_profiles/TariffProfileTechnicalNotes_E.htm

Box 4: Estimating tax revenue using micro-data

We rely on **the revenue foregone method** (IMF, OECD, UN and World Bank 2015). This is a calculation of the static revenue loss incurred by introducing a tax incentive, assuming everything else remains unchanged. It makes use of an ex-post calculation that captures the difference between the revenue raised by the *benchmark* (conventional) rate and the case in which the tax incentive is introduced into the tax system. This method does not consider interactions with other tax incentives or behavioral effects on taxpayers. Separate micro-simulations were conducted for all the different tax incentives and customs duty exemptions to identify firms' theoretical tax liability without any tax incentives. For North Macedonia's TIDZ tax incentives regime, we make the following assumptions in our calculations:

1. **Import Duties Exemptions:** firms in TIDZs are granted custom exemptions, provided that imports are not released in free circulation and that they are not intended for end consumption.
2. **Corporate income tax (CIT) exemption:** reduction of the statutory CIT rate of 10 percent for a period of 10 years to zero percent.
3. **Personal income tax (PIT) exemption:** reduction of the statutory PIT rate of 10 percent in North Macedonia to zero percent for people working at TIDZs.
4. **Social security contributions (SSC) exemption:** We assume that firms in TIDZs are not paying SSC for a period of 10 years.[64]

Example calculation of the import duty exemption: A firm imports US$1 million in plastic tubing, which usually has a 15% import duty on it, but is exempted from customs duties in the TIDZ. The tax expenditure associated with this incentive equals: (CIF amount * benchmark rate) – current customs duty = (US$1 million * 0.15) – (US$1 million x 0) = US$ 150,000. To obtain each item's benchmark rate, we used a de facto method that considers each item and import partner separately, and identifies the modal customs duty rate charged each year (i.e. the value that appears most often). Any TIDZ firm paying less than this benchmark rate for their import duty is considered to receive a custom exemption on that specific item.

Example calculation of the CIT exemption: A firm in country A has a total taxable profit of US$90 million. It benefits from a tax holiday (a 0% reduced corporate income tax rate), rather than the conventional 10% rate. The tax expenditure associated with this incentive equals: (Taxable Profits × Benchmark Rate) − (Taxable Profits × Discount Rate) = (US$90 million × 0.30) − (US$90 million × 0) = US$27 million.

As with any simulation, the inevitable need to make certain assumption also provide limitations to the analysis that could lead to a possible under- or over-estimation of costs.

[64] While the law does not formally provide exemptions for social security contributions, state aid intensity could also be determined by wage costs for newly created jobs and there were support programs that complement what was offered to firms investing in the country. Based on the consolidated version of the TIDZ law, firms could receive up to 50 percent of approved investment costs or wage costs. Also, there was a program called "Macedonia employs" for the private sector that allowed for social security contributions exemptions. Many TIDZ firms do appear to enjoy SSC exemptions, as evidenced by newspaper articles. See for example: Faktor (2016): https://faktor.mk/stranski-investicii-povekje-shteta-odoshto-polza; Slobodna Evropa (2017): https://www.slobodnaevropa.mk/a/28345318.html; and Faktor (2019) https://faktor.mk/drzavata-trie-race-kje-se-opari-i-od-drugi-tirz-ovci. We therefore chose to include this as one of the broader tax incentives.

Potential **sources of underestimation** of tax revenue losses:

- *Additional discretionary incentives:* The government of North Macedonia can agree, through a direct contract, to provide additional tax incentives to firms. As evidenced by newspaper articles (see footnote 50), such additional benefits may include exemptions for social security contributions, free infrastructure, money for the construction of facilities, employee training and wage subsidies. If this is the case, then our estimates may be underestimating the overall cost of tax incentives provided.

Potential **sources of overestimation** of tax revenue losses:

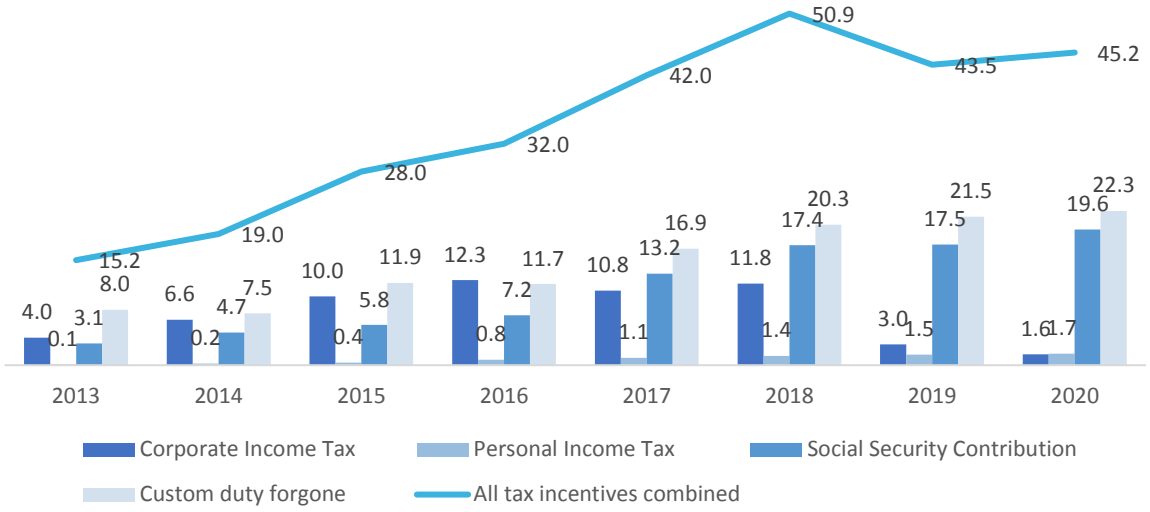
- *Social security contributions exemptions:* There may be firms that are not receiving this incentive or that have received it for a shorter period of time, and so the calculations may be erroneously ascribe the incentives to them and overestimate the tax revenue losses. For this reason, Annex 1 provides an overview of tax revenue losses associated with each individual tax type (and so readers could see the tax revenue losses without SSC exemptions).
- *Demand shifting:* The incentives may reduce the cost of the transactions faced by the firm. Thus, under a scenario without the stimulus, a firm may have had a lower level of demand (hiring, importing, etc).[65] Because the revenue foregone method does not account for behavioral dynamics, it may overestimate the total revenue foregone.
- *Profit shifting:* Multinational f*irms have* an incentive to shift *profit* from their other global affiliates into any location with tax holidays. This would therefore artificially inflate the total profits in-country (and so the total exempted taxes), and thereby overestimates the tax revenue losses.

The direct cost of North Macedonia's tax incentives is considerable, and rapidly growing (**Error! Reference source not found.** and Annex 1 which provides a definition of direct costs). There is a clear upward trend in the amount offered in exemptions, going up from $15.2 million in 2013 and reaching $45.2 million in 2020. The customs duty makes up roughly half of the cost of all tax incentives between 2013 and 2020. The total cost of foregone customs duties increased from $7 million in 2011 to $22.3 million in 2020, a more than fivefold increase. A second trend is observed with the rise of SSC exemptions, which offer the second-largest share of exemptions (rising from 13 percent of all costs in 2011 up to 43 percent in 2020). A third pattern relates to a surprising dynamic in corporate income tax exemptions. While these made up almost one-third of the total cost of tax incentives up to 2018, since then multiple firms "graduated" out of tax holiday benefits, thereby leading to a drop in the cost of CIT exemptions in 2019 and 2020.[66]

[65] The final result depends on the elasticity of the demand and supply for workers and other inputs.

[66] Firms are exempt from paying the statutory rate of 10 percent CIT for a period of 10 years. For the analysis in this document, we have considered this aspect, and had measured the cost of tax incentives, taking into consideration the graduation of firms from this incentive.

Figure 46: Cost of All Tax Incentives Combined, in US$ millions

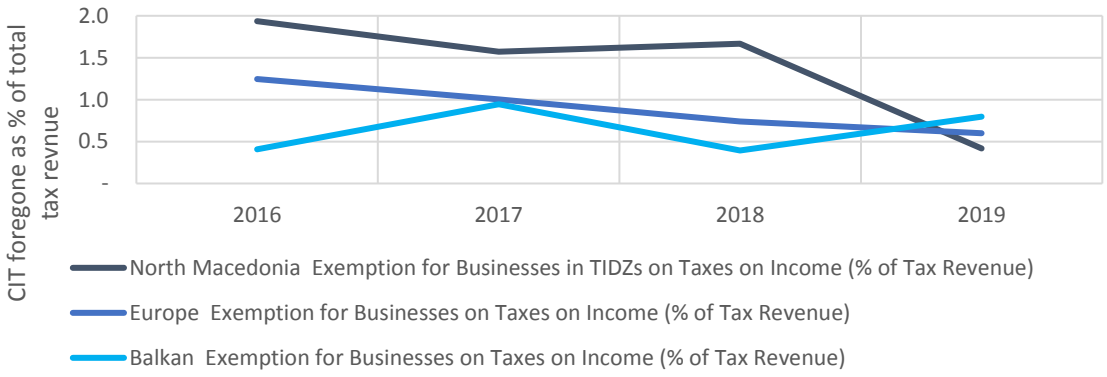


Source: Authors' calculations using North Macedonia administrative data.

Box 5: Revenue forgone as percentage of tax revenue

The Global Tax Expenditure Database (GTED) provides timely and consistent information on preferential tax treatments such as exemptions, deductions, credits, deferrals, and reduced tax rates that governments implement worldwide to promote different policy goals. Furthermore, with the provided information, it estimates the tax forgone of several tax categories for more than 100 countries.

Figure 47: CIT forgone as percentage of tax revenue, 2016-2019



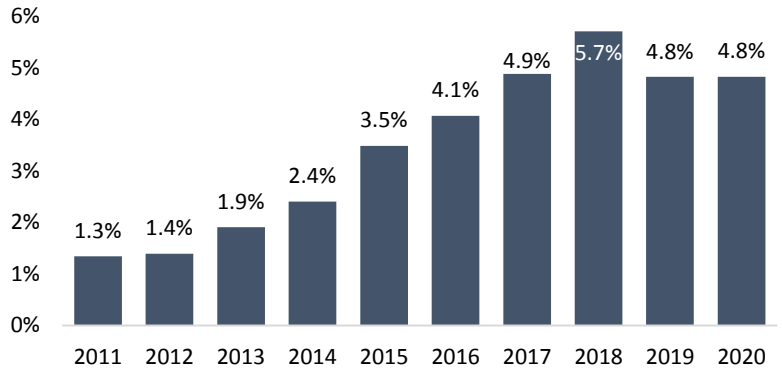
Source: Authors' calculations using North Macedonia administrative data, and GTED data for European and Balkan countries.

On average, North Macedonia observes a higher level of CIT tax forgone compared to Balkan and European countries. Figure 47 presents the level of forgone revenue of exemptions for business on

income.[67] North Macedonia presents a higher level of CIT forgone to total tax revenue offered to firms in TIDZs. The figure for North Macedonia observes a decreasing trend, mainly due to the fact that firms in TIDZs graduate from this incentive after ten years.

A more worrying dynamic is that the overall cost of tax incentives is also growing significantly as a share of tax revenue (Figure 48). The overall cost of tax incentives in the TIDZs has increased from 1.3 percent in 2011 to a peak of 5.7 percent in 2018. For the years 2019 and 2020, the share of total tax revenues drops slightly, but is still elevated at 4.8 percent. These figures are very high compared to most other countries' tax incentives regimes (where the costs usually range between 1-3 percent of tax revenue—see Box 5 for details).[68] The Government of North Macedonia should pay close attention to these overall, particularly when tax revenue has been in decline due to the Covid-19 pandemic.[69]

Figure 48: Cost of Tax Incentives as a Share of Total Tax Revenue, 2013–20



Source: Authors' calculations using North Macedonia administrative data.

Customs duty and CIT exemptions are the biggest contributors to the rising cost of tax incentives. A breakdown by tax type (Figure 49) shows that customs duty exemptions have the main weight in increasing tax expenditure for TIDZ incentives (panel A). The share of foregone duties over the total duties paid more than doubled during the period of research, peaking at 12.8 percent in 2020. In contrast, the CIT exemption initially showed a growing trend, but after

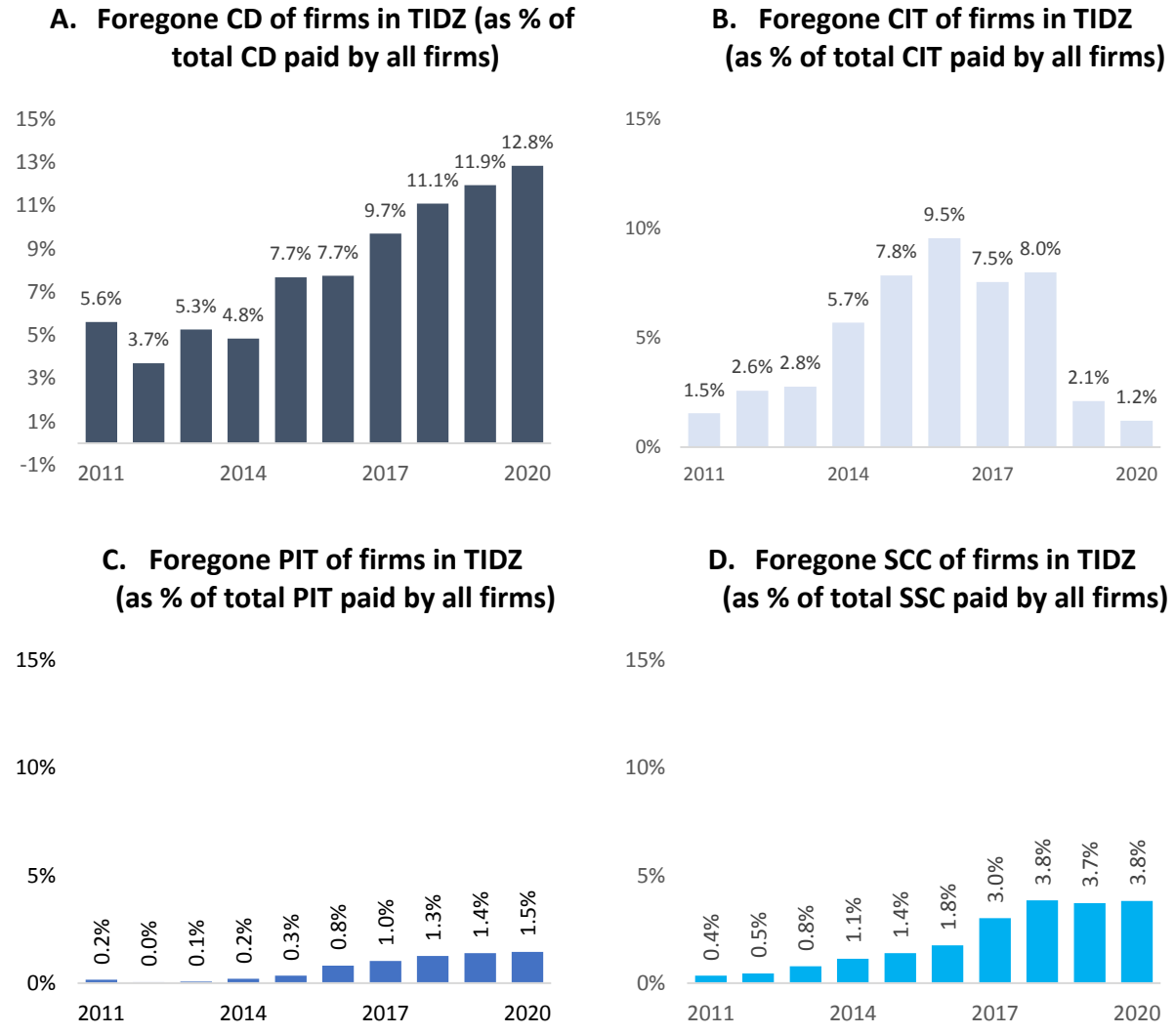
[67] The list of countries considered in Europe is the following: Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Slovakia, Spain, Sweden, Ukraine, and United Kingdom. The list of Balkan countries used in this analysis is the following: Albania, Bulgaria, Greece, and North Macedonia.

[68] Author's calculation based on statistics available at Global Tax Expenditure Database.

[69] According to the Press Conference by the Ministry of Finance on April 6 of 2020, prior to Covid-19, in macro-fiscal terms, the Republic of North Macedonia was considered a moderately indebted country compared to the EU countries. Although the hit from the pandemic on the revenue side of the state budget was expected, North Macedonia experienced a sharp revenue decline in March 2020 mainly due to the measures intended to slow down the spread of Covid-19: tax revenues declined by 11% in March: 17% drop in VAT revenues, 11% in excise revenues and 11% in profit tax revenues.

reaching 9.5 percent as a share of all CIT paid in 2016, there is a steep fall to 1.2 percent in 2020 (panel B). The reason for this decline is the expiration of the tax holiday after 10 years. Foregone revenue has also increased for PIT (panel C) and SSC (panel D) but stayed at a more modest share of tax revenues. In sum, we observe a substantial increase in costs for three of the four tax incentives, creating pressure in the tax cost of the incentives, with a consistently important relevance in absolute and relative values of foregone customs duties.

Figure 49: Cost of Tax Incentives as a Share of Tax Revenue across Tax Bases (2013–20)



Source: Authors' calculations using North Macedonia administrative data.

4.3 Tax incentives impact return on investments only for a handful of large firms

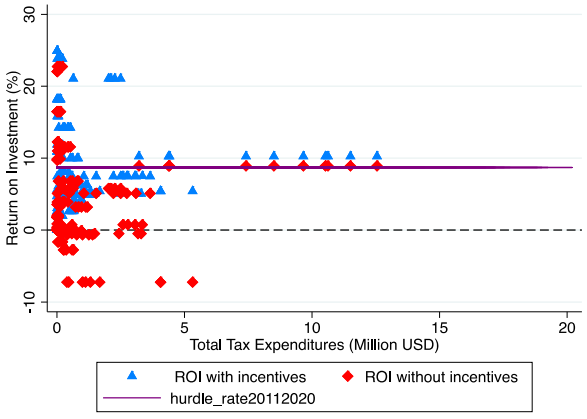
This section presents the analysis of the impact of tax incentives offered in TIDZs; in particular how they have helped improve firms' overall long-term returns to investment. Annex 2 presents the methodologies used to properly account for all the effects of tax incentives on firm ROI. As a general rule, tax incentives are considered effective if they ensure that a company becomes profitable in the long run when they would be unprofitable without tax incentives[70]. The profitability is defined as exceeding a specific "investment hurdle" rate related to investment. Because most firms are in the same or related sectors, they may have a similar notion of profitability, allowing us to use the investment hurdle rates to compare firms.

Tax incentives impact firms' ROI, but only a handful of those firms reached a return above what the market is offering. The results of the simulation are presented in Figure 50, where we consider each firm's long-run average ROI on the y-axis and the long-run total tax expenditure per sector in millions of US dollars on the x-axis. Panel A considers only CIT, PIT, and SSC exemptions where the ROIs before and after the incentive lay close to each other, indicating that the three incentives together only marginally change the performance of the investment. Panel B also includes custom duty exemptions into the analysis. Here we observe a wider difference between the two ROI scenarios, indicating that this incentive substantially impacts the ROI.

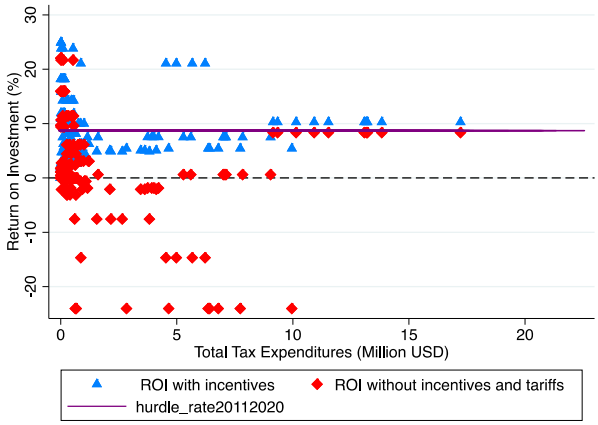
[70] The ROI analysis is performed under four different hurdle rate scenarios with the objective to confirm its robustness under different scenarios and to control for the differences in moment firms joined the TIDZs. The first one is the base scenario, where we calculated the average hurdle rate for the period 2011-2020. The second scenario is a higher than the average hurdle rate in 0.5 percentage points. The third scenario is a lower than the base hurdle rate in 0.5 percentage points. Finally, to confirm the robustness of the results considering the different time frames of firms in the TIDZs, we calculated a particular hurdle rate that adjust to the firm's investment. In simple words, we calculated an idiosyncratic inflation and lending rate for each firm in the TIDZ.

Figure 50: ROI for Firms in TIDZs—with and without tax incentives

A. Scenario 1 (CIT, PIT and SSC Exemptions)



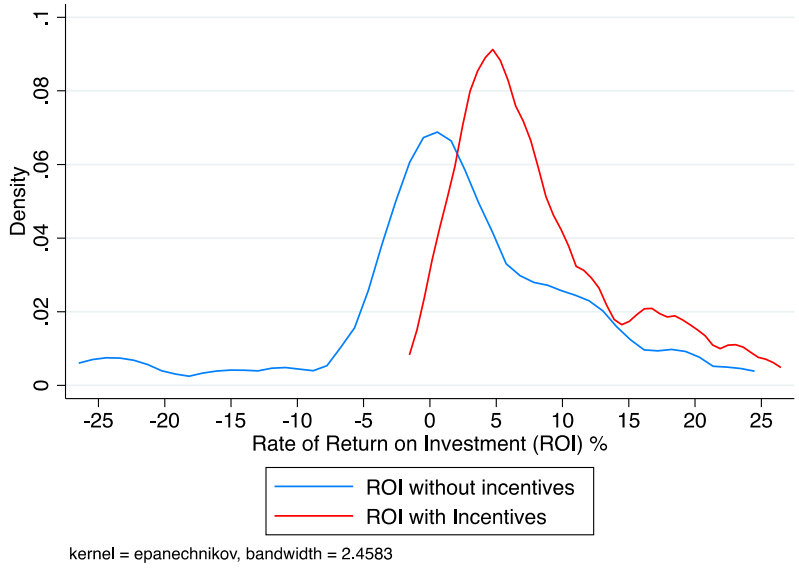
B. Scenario 2 (CIT, PIT, SSC and CD Exemptions)



Source: Authors' calculations using North Macedonia administrative data.

Tax incentives make unprofitable firms more profitable. Figure 51 presents the Kernel density distribution of ROI with and without the four tax incentives. A long tail to the left before incentives means a strong presence of negative returns. However, once the tax incentives are accounted for, the distribution moves to the right, suggesting that incentives are effective in moving the median ROI from 1.2 percent before tax incentives to 5.9 percent after tax incentives.

Figure 51: Kernel Density Distribution of ROI with and without Tax Incentives



Source: Authors' calculations using North Macedonia administrative data.

Only 16 percent of firms in the TIDZs have turned from losses to profits thanks to tax incentives, as the remaining firms are still in the low returns zone even with tax incentives or are highly

profitable even without tax incentives. Table 18 shows that about 59 percent of the firms in the TIDZs are unprofitable even with tax incentives, while only about 13 percent of the firms become profitable thanks to the tax incentives, while the remaining 28 percent are profitable with or without tax incentives. This means that the tax incentives enabled only four firms in scenario 1 to move from losses to positive returns. Likewise, if we consider custom duty exemptions, the impact on the ROI improves with five firms becoming profitable under scenario 2.

Table 18: Effectiveness of Tax Expenditures—Number of Firms and Share, 2011–20

	Unviable investment		Redundant incentives		Marginal firms	
	#	%	#	%	#	%
ROI Scenario 1 (CIT, Personal Income tax and SSC)	19	59	9	28	**4**	**13**
ROI Scenario 2 (CIT, Personal Income tax, SSC, Custom Duty)	19	59	8	25	**5**	**16**

Source: Authors' calculations using North Macedonia administrative data.

Around 53 percent of tax expenditure is found to go to firms whose investment decision is more likely to have been affected by incentives (Table 19). The tax incentives appear to shift TIDZ firms' ROI greatly. Furthermore, CIT and customs duty exemptions strongly impact these firms: with CIT exemption tolling USD69 million (86.5 percent of all foregone CIT in TIDZs); followed by custom duty exemptions, with an amount of USD58 million, or 43.5 percent of all foregone duties in TIDZs.

An additional 46 percent go to firms with low ROIs. This may occur, for example, when firms have a positive ROI after receiving the incentives but a negative ROI otherwise. We find that 11 firms would have a negative return without the incentives. The most relevant incentive in absolute value is customs duties, receiving 55.5 percent of all foregone duties in TIDZs.

Only a minor amount of all tax incentives goes to firms that already have a high ROI (Table 19). In this case, incentives for redundant investment amount to USD5 million and only represent 2 percent of all tax costs. The most relevant incentive for firms in this category is SSC exemption, totaling USD2.5 million for 2011–20.

Table 19: Effectiveness of Tax Incentives (CIT, PIT, SSC, Custom Duty) for TIDZ Firms, Cumulative US$ Millions and Share for 2011–20

Tax Incentives	Total	Unviable investment		Redundant incentives		Marginal firms	
	USD Million	USD Million	%	USD Million	%	USD Million	%
Corporate Income Tax	80	9.7	12.2	1.0	1.3	69	86.5
Personal Income Tax	7	4.9	67.4	0.3	3.6	2	28.9
Social Security Contributions	97	56.6	58.5	2.5	2.6	38	39.0
Custom duties	133	73.9	55.5	1.2	0.9	58	43.5
All Tax Incentives	**317**	**145.1**	**46**	**5.0**	**2**	**166.7**	**53**

Source: Authors' calculations using North Macedonia administrative data.

4.4 The incentives' impact on firms return on investment is positive, but final results are mixed

Compared to similar firms in North Macedonia, **companies moving into the TIDZs are associated with higher performance in exports and investment in assets. Still, we do not observe any significant impact on sales, wages, employment, and imports.** Table 20[71] suggests firms moving into the TIDZ show a positive and statistically significant increase in their total assets (investment). In addition, it also shows that moving into the TIDZ is associated with a substantial level of exports, due to the export-oriented nature of the TIDZ firms. Nonetheless, it does not appear to make any significant difference on any other outcome variables, such as sales, wages, employment numbers, or imports.

Table 20: Higher Rates of Investment and Trade of Firms in TIDZ–PSM and Lagged Regressions

VARIABLES	(1) Ln(sales) (2 lags)	(2) Ln(wages) (2 lags)	(3) Ln(employment) (2 lags)	(5) Ln(total assets) (2 lags)	(4) Ln(imports) (2 lags)	(6) Ln(exports) (2 lags)
TIDZ_treat	-0.278	0.0716	0.240	1.501***	0.0672	3.926***
	(0.793)	(0.376)	(0.279)	(0.379)	(0.388)	(1.164)
Constant	18.37***	16.37***	4.095***	18.41***	19.53***	10.03***
	(0.526)	(0.226)	(0.190)	(0.247)	(0.284)	(0.795)
Observations	196	226	228	196	246	246
R-squared	0.001	0.000	0.003	0.075	0.000	0.045

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Source: Authors' calculations using North Macedonia administrative data. Note: The results are based on a naive PSM regressions that is lagged by two periods.

However, firms joining TIDZs have not shown changes in their trajectory of sales, wages, assets, or trade (that is, no behavioral impact). Furthermore, after running the regressions[72] as presented in Table 21 below[73], we do not observe that the effect of joining the TIDZ is significant on any of the outcome variables (sales, wages, employment, assets, imports, or exports). In other words, while the previous regression shows that TIDZ firms may have more assets and exports,

[71] We perform a naïve PSM (Annex 3 provides detailed methodology) regression that is lagged by two periods. Given that firms have different dates on which they joined the TIDZs, we solve this issue by comparing the results of each key variable within two lags. In this way, we compare similar firms outside of TIDZs and firms that joined one, confirming if they present different characteristics.

[72] The characteristics of the firms in TIDZs are very particular. The first-difference estimation and firm fixed effects aim to capture any residual bias from the characteristics of these firms.

[73] In table 19, it is possible to observe the results of the PSM and diff-in-diff regressions. Difference in differences (diff-in-diff) is a non-experimental statistical technique used to estimate treatment effects by comparing the change (difference) in the differences in observed outcomes between treatment and control groups, across pre-treatment and post-treatment periods. In the regressions there are included firm fixed effects to control for the strong differences in the firms' characteristics and the characteristics in the different periods they joined the TIDZs.

we do not find any significant evidence of a behavioral impact that the TIDZ may have on firms. Finally, the regression does not show evidence that suggests the TIDZs have any major behavioral benefit for firms.

Table 21: No Evidence of Behavioral Impact—PSM and Diff-in-Diff Regressions

VARIABLES	(1) Ln(sales) (diff.)	(2) Ln(wages) (diff.)	(3) Ln(employment) (diff.)	(5) Ln(total assets) (diff.)	(4) Ln(imports) (diff.)	(6) Ln(exports) (diff.)
TIDZ_treat	0.122	1.318	1.318	0.414	-0.412	5.810
	(0.671)	(1.435)	(1.607)	(0.590)	(0.248)	(6.624)
Firms fixed effects	yes	yes	yes	yes	yes	yes
Constant	0.156***	0.0590	-0.0308	-0.0444	0.220	-0.284
	(9.54e-07)					
Observations	248	274	274	288	238	288
R-squared	0.794	0.664	0.426	0.687	0.637	0.498

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Source: Authors' calculations using North Macedonia administrative data.

The incentives offered in TIDZs have attracted large firms with higher investment rates and trade compared to the local firms. Furthermore, these firms have become central to the economy of North Macedonia, given their large share in the total levels of investment, trade, and employment. However, given the evidence presented in Table 21, the incentives have not created an environment that fosters higher levels of investment, trade, or employment, than the firms would have performed otherwise. In simple words, we expect these firms to have behaved similarly either in the TIDZ, outside of the TIDZ in North Macedonia, or in a location in a different country.

4.5 Tax incentives attract new investments

The cost-benefit analysis is estimated by using the above analysis on ROI and assuming that only those jobs in beneficiary firms whose ROI is close to the threshold rate (marginal firms) have a reasonable likelihood of being created due to the incentives. A similar logic is applied to analyzing the cost-benefit on investment and exports.

Tax expenditure per job-year created stands at $17,000, which is relatively costly at about three times the price of an annual manufacturing wage. Table 22 shows that marginal firms have created a total of 19,000 jobs in a 10-year period, while the total cost for these jobs reached $317 million (the cost of tax expenditure for the TIDZ as a whole). It is difficult to compare this to other

countries' international assessments of cost-per-job.[74] Instead, a common heuristic used is to contrast the cost-per-job-year to a country's annual gross wages (that is, the cost of the government directly employing such workers). This is approximately $6,100 per annum in manufacturing between 2011–22.[75] Given that the cost-per-job-year is about 2.8 times a worker's annual wages, tax incentives do not appear to be cost-effective in stimulating employment growth in North Macedonia. These figures become less appealing if we consider that for this analysis, we only included one of the four benefits offered to investors in TIDZs (see box 4).

In contrast, tax incentives do appear relatively cost-effective in attracting new investment. For each US dollar granted in tax incentives, firms are found to invest an additional $20. Table 22 shows that marginal firms have performed more than $6.6 billion in investment for 2011–20. The investment of marginal firms is considerably higher, observing almost three times more total investment compared to the rest of the firms in the TIDZs. Furthermore, the impact of marginal firms (firms that move from unprofitable to profitable) is sizable in the economy at large, adding up to 2.8 percent of all investment throughout the research period.

Tax incentives also effectively generated exports, with each US dollar spent on tax incentives resulting in $37.90 in exports. This result shows a high impact in increasing exports, with $12 billion for the period analyzed. Furthermore, the value of exports of marginal firms (that that move from unprofitable to profitable) more than doubles the exports of the rest of the firms in TIDZs, and if we observe the total values for the country, these five marginal firms reach a staggering 28.4 percent of the total exports for 2011–20.

Table 22: Cost Analysis–Cost Per Job, Investment, and Exports Generated, 2011–20

	Effect of CIT, PIT, SSC Incentives, and Customs Duty Exemption			
	Total	Unviable	Redundant	Marginal
Total tax expenditure (US$ millions)	317	145.1	5.0	166.7
Employment (US$ thousands)	64	43	1	19
Cost per Job (US$ thousands)	**17**			
Investment* (US$ billions)	9	2.0	0.2	6.6
Cost per $1 in investment generated	**20.7**			
Exports (US$ billions)	15	2.7	0.1	12.0
Cost per $1 in exports generated	**37.9**			

Source: Authors' calculations using North Macedonia administrative data.

[74] It is difficult to compare cost-benefit assessments of tax incentives across countries because (1) the tax incentives are defined in relation to the benchmark tax rates, which differ across countries, (2) the size of overall costs and benefits themselves are often a function of the economy's income level, and (3) cost-benefit assessments are often confidential, so that underlying data for cross-country comparison is either unavailable or unpublishable.

[75] State Statistical Office, Republic of North Macedonia, 2022.

4.6 Policy recommendations

This chapter has considered the costs and benefits of North Macedonia's state aid in TIDZs. We used disaggregated micro-level data and simulations to analyze the costs of tax exemptions offered to the firms that joined the TIDZs. At a second level, the report uses an ROI analysis to understand if the incentives offered have encouraged firms to invest in the zones. This analysis covers locational benefits, which are location-specific, market features, and/or factors of production that enable a firm to achieve an improved financial outcome at TIDZs from providing the same product or service compared to the same location without the tax incentives. Afterwards, to understand if there are behavioral benefits to settling at a TIDZ, we have performed PSM regressions to see if there is an impact on employment, exports, and investment, among other key aspects.

Firms in TIDZs are few in numbers but very significant for the wider economy. Until 2020, only 32 firms have joined the TIDZs, and 28 firms received tax exemptions that same year. However, firms in TIDZs are extremely important for North Macedonia's economy, capturing more than one-fourth of total imports and more than one-third of exports in value per year. By 2020, they also accounted for roughly 3 percent of employment and 5 percent of total assets in the country.

The total cost of tax incentives provided to firms in the TIDZs is significant and growing. The government provides generous subsidies to TIDZ firms in terms of exemptions on CIT, PIT, SSC, and import duties. This makes up a large and growing share of tax revenue, increasing from 1.3 percent in 2011 to about 5 percent of total tax revenue from 2017 onwards.

Tax incentives have helped to sufficiently boost profitability for only a handful of firms located in the TIDZs—defined as "marginal" firms. The ROI analysis suggests that while tax incentives helped raise the profitability of most TIDZ firms, the majority still experienced ROIs that were below the investment hurdle rate and so may exit the market in the medium term. Tax incentives were only considered critical in the case of five firms (16 percent of firms), which depended on these subsidies to become financially viable in the medium term. However, these five firms were also very large and so jointly accounted for more than 50 percent of the cumulative tax expenditures in the TIDZs. Although the incentive impacts a handful of firms, these five companies are the most important in the special zones, representing 28.4 percent of all exports and 2.8 percent of all investment in North Macedonia for 2011–20.

There is no evidence of a "behavioral" benefit from TIDZ tax incentives, or in other words, the firms joining TIDZs have not shown changes in their trajectory of sales, wages, assets, or trade. Using PSM regression analysis, we do not see a major shift in the behaviors of firms as they enter the TIDZs compared to that of other comparable firms. As such, the tax incentives' effect on firms in the TIDZs is limited to locational benefits only. In simple words, these firms are expected to have behaved similarly either in the TIDZs, elsewhere in North Macedonia, or at a location in a different country.

While tax incentives are very costly in terms of jobs created, they seem more beneficial for attracting investment and exports. Tax expenditure-per-job-year created by the marginal firms is relatively costly—at roughly three times an annual manufacturing wage (this is a conservative measure).[76] In contrast, each dollar in tax incentives is found to lead to an additional $20 in investment and $38 in exports—observing that the firms in TIDZs represent a large share of the investment and exports of the country and suggesting very strong economic returns.

Policy implications and recommendations stemming from this analysis are the following:

- **Revise the tax exemptions in line with the EU acquis.** Policy regarding special economic zones (SEZs) should be targeted and time-limited and continuous, rather than broad in terms of scope and geography. Expanding the benefits associated with SEZs is not consistent with the EU *acquis* and creates an unfair competition for local exporters of similar products (see Box 6 for details). Similarly, SEZs are not compliant with the WTO Agreement on Subsidies and Countervailing Measures. Additionally, the state aid registry would boost transparency and allow the proper evaluation of state aid results.

Box 6: European Commission's assessment of North Macedonia's state aid policy

The ERP assessment has increased its criticism to the model of state aid administration and provides views on the possibility of improvement. "Rather than tackling the underlying structural challenges and business environment issues, the government's flagship policy to attract FDI and improve domestic firms' competitiveness relies on providing various forms of State-aid to businesses. Rather than improving business performance, those State aid schemes **have a distortive effect on the market**. Based on the Law on Financial Support of Investments, support is provided to companies **without a clear policy objective**. Furthermore, the law has certain features that are problematic in view of the EU acquis on State aid. The recently adopted Law on Strategic Investments, aims to support so-called strategic projects, **lacks policy elaboration and implementing regulations**. **There is an urgent need to develop a comprehensive and transparent registry of State aid and to create a more effective State aid notification system**. More action is needed to **monitor these schemes' cost-effectiveness** and their impact on competitiveness, to ensure coordination of different programmes, and to strengthen the capacity of the Competition Agency and of the institutions providing State aid."

The European Commission—North Macedonia 2021 Report underlines the following: "*EU rules also set out a system of State aid control. Governments are only allowed to grant State aid if restrictive conditions are met, with a view to preventing distortion of competition (see article 107 TFEU of EU Acquis).* While the legislative framework remains broadly harmonised with EU rules, the implementing legislation covering state aid needs to be amended.

Source: European Commission – North Macedonia 2021 Report and North Macedonia 2020 ERP Assessment.

[76] We considered CIT and PIT exemptions, SSC incentives, and customs duty exemption for the cost-benefit analysis. However, firms in TIDZs also receive: (i) up to €500.000, granted towards building costs; (ii) land in a TIDZ under a long-term lease for up to 99 years; and (iii) exemption from the liability for submitting a guarantee as collateral for any customs arrears. Thus, the final expenditure-per-job is expected to be higher.

- **Conduct a follow-up analysis on the TIDZs' effect to reduce market failures, stimulate agglomeration, and contribute to FDI spillovers.**[77] TIDZs are extremely important for North Macedonia's trade, capturing a large share of its imports and exports. To better understand the role of TIDZs, it would be important to consider if they may have further helped to reduce other market failures (for example, through regulatory simplification or the provision of infrastructure). To further extend the benefits from the TIDZs, efforts could be placed on stimulating agglomeration (especially in the automotive sector, which makes up about half of all firms). More analysis could also go into reviewing whether TIDZs are hurting linkages (for example, by offering multinational enterprises (MNEs) access to duty-free imports and barriers to domestic trade) or creating a links between local firms.
- **Continue to monitor the large and rising costs associated with tax incentives.** The total cost of tax incentives is significant and growing from 2017 onwards. These tax incentives offer a direct form of state aid that should be carefully managed and reviewed. The government of North Macedonia should produce annual reports on the costs of tax incentives (ideally annexed to the national budget). In addition, it should offer a more thorough review of incentives every three years (including a review of which incentives to possibly add or abolish).
- **Explore shifting away from tax holidays towards a more performance-based system of tax credits to make tax incentives more cost-effective and improve their behavioural benefits.** While the analysis showed that some firms may have located in TIDZs due to tax incentives, there is no evidence that they contributed to any behavioural impact. A likely reason for this is that North Macedonia relies extensively on profit-based tax incentives (through 10-year tax holidays). This gives away tax revenue to the firms who need it least (profitable firms) while not stimulating the performance of incumbent firms. Shifting to a more performance-based system of tax credits can better assist new firms, while also help to improve the cost-effectiveness of tax incentives by linking the amount of benefits to a specific government objective. Given the significant drop in unemployment, labor shortages, and the government's intention to move from a development strategy based on cheap labour to more advanced manufacturing and a knowledge-based economy, PIT and SSC exemptions are no longer relevant and should be replaced with performance-based incentives to promote skills upgrading, R&D, innovation, compliance with ESG and technical standards. They can be applied in some form to keep certain high-skill sectors (e.g., ICT) globally competitive, but should not be limited to FDI only.

[77] The World Bank (2018) suggests that "upstream linkages of firms in the TIDZs with domestic firms are limited and that most TIDZ firms have both high imports and high exports, in line with the findings of this report. Also, World Bank (2008) finds limited productivity spillovers to domestic firms. Integration into the value chains of productive firms within the TIDZ could be a lucrative opportunity for domestic firms and could encourage further productivity growth. A better understanding of the linkages between FDI-supported and domestic firms and how they contribute to productivity growth in domestic firms is critical for accurately assessing the current FDI promotion strategy."

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Annex 1: Definition of tax incentives and direct costs of tax incentives

Defining tax expenditures can be challenging since tax systems strongly differ across countries. However, we can define expenditure as *"all tax measures that deviate from an established benchmark tax system"* (Baar and Chandler 2017). Examples of tax expenditures include tax exemptions, allowances, credits, lower tax rates, and tax payment deferrals (ICAS 2009.). Tax incentives constitute a sub-set of tax expenditure. These "*are departures from the benchmark system that are granted only to those investors or investments that satisfy the prescribed conditions"*. (Easson and Zolt 2002.) To determine which tax expenditures count as tax incentives, the analysis relies on three main criteria (IFC 2014.). Only count as tax incentives:

- Parts of the country's tax code that offer tax benefits to a **subset of taxpayers** that qualify according to a targeted criterion or set of criteria. In this case, the requirements needed to join a TIDZ.
- Incentives **designed to induce a change in economic activity** in firms.
- Incentives which depart from the **national tax system.**

To calculate the direct cost of tax incentives, we rely on the revenue foregone method (IMF, OECD, UN and World Bank 2015). This is a calculation of the static revenue loss incurred by introducing a tax incentive, assuming everything else remains unchanged. It makes use of an ex-post calculation that captures the difference between the revenue raised by the benchmark and the case in which the tax incentive is introduced into the tax system. For example, a tax credit that reduces tax liability by $100, given current behavior, would involve a tax expenditure of $100. This is the most popular method of calculating tax expenditure as it uses simple accounting principles, usually based on tax returns (or documents provided to customs).

This method does not consider interactions with other tax incentives or behavioral effects on taxpayers. For North Macedonia, separate micro-simulations were conducted for all the different tax incentives and customs duty exemptions to identify firms' theoretical tax liability without any tax incentives. For CIT, SSC and PIT, we conducted a micro-simulation that considered a firm's total tax liability without any tax exemptions, assuming no behavioral responses (see Box 4).

The incentives offered to firms joining TIDZs, and covered in this report, are the following:

- Tax exemptions for up to 10 years of corporate income tax, personal income tax, value-added, and custom duties for goods, raw materials, equipment, and machines.
- Social Security Contributions (SSC) exemption for newly created jobs.
- Up to €500.000 is granted as an incentive towards building costs depending on the value of the investment and the number of employees.
- Land in a TIDZ in North Macedonia is available under a long-term lease for a period of up to 99 years.

- Investors in TIDZs who operate in these areas are exempt from the liability for the submission of a guarantee as collateral for any customs arrears.

State aid intensity also varied based on the size of the firm and/or the size/type of the investment.

Other incentives offered to firms in TIDZs:

The full list of benefits available to firms investing in the TIDZ was agreed via direct contracts.

Table 23: Cost of All Tax Incentives in TIDZs, 2011–20

Type of Tax Incentives	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
In USD Million										
Corporate Income Tax	2.7	3.8	4.0	6.6	10.0	12.3	10.8	11.8	3.0	1.6
Social Security Contribution	1.5	1.8	3.1	4.7	5.8	7.2	13.2	17.4	17.5	19.6
Personal Income Tax	0.2	0.1	0.1	0.2	0.4	0.8	1.1	1.4	1.5	1.7
Custom duty forgone	7.0	5.7	8.0	7.5	11.9	11.7	16.9	20.3	21.5	22.3
All tax incentives combined	**11.3**	**11.4**	**15.2**	**19.0**	**28.0**	**32.0**	**42.0**	**50.9**	**43.5**	**45.2**
As share of total tax incentives in TIDZ (%)										
Corporate Income Tax	24%	33%	26%	35%	36%	38%	26%	23%	7%	4%
Social Security Contribution	13%	16%	21%	25%	21%	22%	32%	34%	40%	43%
Personal Income Tax	2%	1%	0%	1%	1%	2%	3%	3%	3%	4%
Custom duty forgone	62%	50%	53%	39%	42%	37%	40%	40%	49%	49%
All tax incentives combined	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: Authors' calculations using North Macedonia administrative data.

Annex 2: Return on Investment Analysis and its limitations

Return on Investment (ROI) analysis is used to properly account for all the effects of tax incentives on firm profitability. The first step in this analysis is to properly account for all the effects of tax incentives on firm profitability within and across years. To do so, a separate, dynamic micro-simulation of all tax incentives combined was conducted. The sample is restricted to only firms with data on their total fixed assets and included them in the analysis for the period the CIT and PIT exemptions were active; that is, up to 10 years. As a second step, we examine which tax incentives have been most relevant

For a firm's long-run ROI,[78] the hurdle rate is defined as the lending rate plus inflation. For the period 2011-2020, this amounts to 8.7 percent.[79] A robustness analysis[80] finds that under different hurdle rate definitions, the results were consistent. Given the relevance of Custom Duty exemption, we have worked under two scenarios. The first one, or ROI scenario 1, only considers three of the tax incentives analyzed (CIT, Personal Income Tax, and SSC). The second scenario, or ROI scenario 2, takes into account all the incentives covered in this section (CIT, Personal Income Tax, SSC and Custom Duty).

Finally, we also explore for which firms tax incentives are redundant. Redundancy is defined as incentives given to those firms that are sufficiently profitable without the tax incentives. For example, if a firm's ROI without tax incentives would far exceed the hurdle rate, they would likely have invested regardless of such incentives. In sum, by comparing a firm's ROI with and without tax incentives, we can identify how incentives improve a firm's profitability. Companies whose long-run returns remain unprofitable even with incentives, or are already profitable without incentives, are less likely to be affected by incentives. From this, three types of effects that tax incentives can have on a firm's behavior are defined (Figure 52):

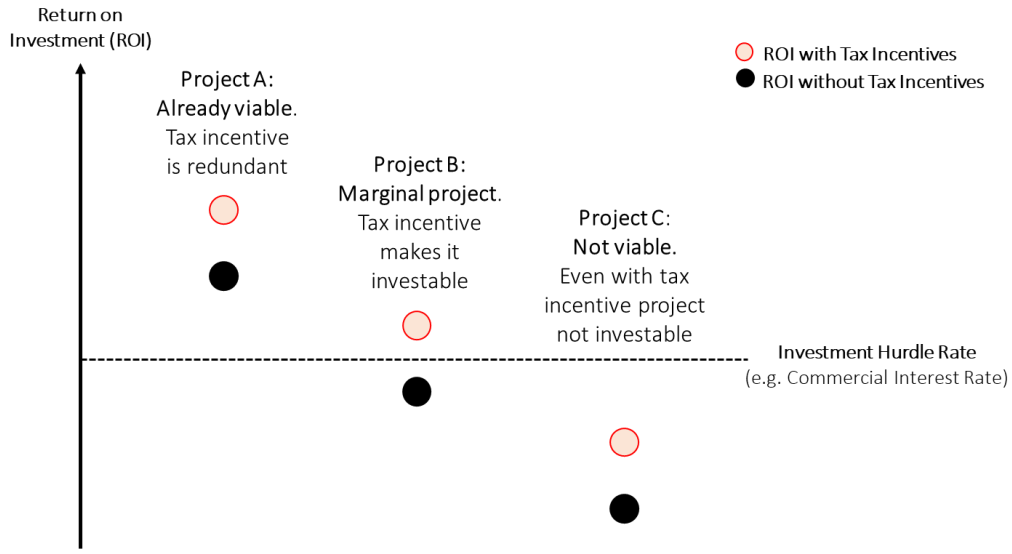
1. **Redundant incentives**—Firms that would be highly profitable (ROI > Hurdle Rate) even without tax incentives. For these firms, tax incentives are likely redundant.
2. **Marginal firms**—Firms that shift from being insufficiently profitable (ROI < Hurdle Rate) to profitable, making this firm financially viable (and tax incentives effective).
3. **Unviable investment**—Firms that are unprofitable even with tax incentives. This is defined here as firms with an ROI of the Hurdle Rate with current tax incentives.

[78] ROI definition: $\frac{Net\ Income}{Sales} \times \frac{Sales}{Total\ Assets}$

[79] Authors' calculations using World Development Indicators

[80] The ROI analysis is performed under four different hurdle rate scenarios. The first one is the base scenario, where we calculated the average hurdle rate for the period 2011-2020. The second scenario is a higher than the average hurdle rate in 0.5 percentage points. The third scenario is a lower than the base hurdle rate in 0.5 percentage points. Finally, we calculated a particular hurdle rate that adjust to the firm's investment. In simple words, we calculated the average inflation and lending rate for the periods we observe the firm in the TIDZ.

Figure 52: Firm Profitability and Investors' Location Decisions



Source: Kronfol and Steenbergen (2020).

Return on Investment Limitations. The accuracy of the ROI relies in strong part on the way in which a specific long-run hurdle rate determines firms' locational investment decisions. However, there may be reasons why the currently used hurdle may not be appropriate for firms. For example, the hurdle rate could be too high, because MNEs may have access to cheaper capital than is presented in the country (and so their cost of capital falls below the domestic lending rate). Alternatively, the hurdle rate may be too low, as MNEs often have more ambitious internal ROI requirements that is not based on minimum absolute profitability but their opportunity cost of capital (due to their ability to re-locate investment to higher profit opportunities). Lastly, the ROI may also be unrelated to their investment decisions if an MNE engages in internal profit-shifting (so that they could reduce their profits in one location to reduce their tax liability in another location). To explore these potentials, we conducted sensitivity tests that performed the ROI analysis under a range of different hurdle rate scenarios, and the results were reasonably robust. That said, the approach is still assumptions-driven, and so (in absence of more detailed data on expected ROIs from firms) only provides an initial approximation of the effect of tax incentives on locational dynamics.

Annex 3: Methodology for Calculating PSM

The assessment of the impact of a program requires a model of causal inference. This is because a program's effect can be understood only in relation to not participating in the program. Thus, the program's impact can be assessed only if we know what would have happened without such an intervention. In simple words, we would need to compare the outcomes of the same firm under two scenarios, one in which the firm joins the program and a second scenario where it does not.

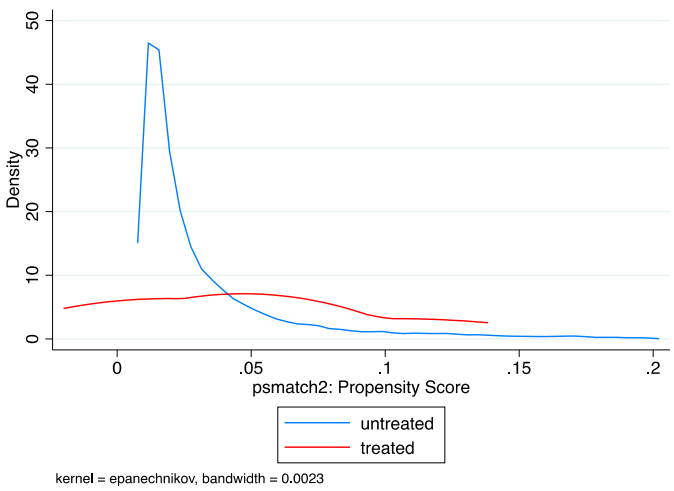
Thus, the propensity score matching is used to compare the TIDZ firms to a comparable set of firms. The problem faced in real life is that it is impossible to observe the value of the outcomes for the same individual under two mutually exclusive states of nature (intervention and non-intervention). To solve this, evaluation methods are considered for dealing with this *missing data* problem. If the intervention is limited to a subset of the population, many methods suggest turning to non-exposed units (non-participants) searching for the missing information. In the case of this analysis, we have used PSM to solve this issue.[81]

For matching to be feasible, there must be individuals in the comparison group with the same values of the covariates as the participant of interest. This requires an overlap in the distribution of observables between the treated and the comparison groups. Therefore, it is recommended to restrict matching and estimate the treatment effect on the region of common support. This implies using only non-participants whose propensity scores overlap with those of the participants.

Matching the firms is challenging. First, we had censored data since the dataset started in 2011, and the TIDZs were enacted in 2008. Another case we observed is that a firm's history started at the same year they joined the TIDZ. When we looked at the overlap pre-treatment, we realized that the matching did not perform well since the characteristics of the firms in the TIDZs are rare for new companies. To address these challenges, we decided to look for similar firms to the ones in the TIDZs and see if there are differences in the performance of their firms. The analysis finds that companies in TIDZs have characteristics that significantly differ from the average firm of North Macedonia. Figure 53 of Kernel density of the support firms, shows the limited similarities of the firms in TIDZs and the rest. These firms are bigger, have higher assets, and trade more, setting them apart, as seen in the previous sections. However, we did find a common support area of overlap for a subset of firms. This allows us to perform the PSM; in other words, we found non-participants that matched.

[81] See annex for the methodological details and the limitations of the analysis.

Figure 53: Overlay of Kernel Density Distributions of Propensity Scores for Firms in Common Support



Source: Authors' calculations using North Macedonia administrative data.

Theoretical background of PSM

PSM pairs observations based on the conditional probability of participation. Wooldridge (2002) explains PSM as follows:

1. Select a propensity score at random.
2. Find two units from the population at large with the same score.
3. Let one participate in the program and the other one not.

We can use the outcome of the non-participant firm as a proxy for the outcome it would have experienced had it not joined the program. We followed Sianesi (2001) basic steps to implementing PSM in practice. This is possible since we have the following data:

- A binary dummy variable identifying participants and non-participants.
- The outcome to be evaluated.
- A set of covariates.

Then, we estimated propensity scores on the covariates using logit regressions on the initial firm value of sales, imports, exports, average wages, a firm's industry and their private-sector status. From this, we retrieved a predicted values of each firm (a propensity of being located in the TIDZ). Second, we paired each participant in TIDZs with some group of comparable non-participants (based on propensity scores). Finally, we estimated the counterfactual outcome of each participant as the weighted outcomes of its neighbors in the comparison group.

The robustness of the PSM analysis relies on the ability to identify a reliable control group (based on observable characteristics that collectively alleviate any omitted variable bias), and to

accurately monitor the firm performance over time. A potential limitation of this work is that there may be unobservable characteristics that are not controlled for. We try to control for this by using firm fixed effects (thereby providing a relatively conservative estimation). Another challenge lies with the missing data that prevent us to properly identify a pre-TIDZ trend that is necessary to observe the parallel trend of the treatment group (TIDZ firms) and control group (other, comparable firms). In some instances, this is not available because the firms move directly into the TIDZ. We control for this by using first-differences to consider growth rates across the firms' time horizon. However, this limitation still prevents us from fully confirming the parallel trend assumption, and so the PSM-DID results should be interpreted with caution.