

Kazakhstan: Trade Competitiveness and Diversification in the Global Value Chains Era

Author: Guillermo Arenas with comments from Ivailo Izvorski

Kazakhstan: International Trade and the Challenges of Export Diversification (P168927)

Macroeconomics, Trade, and Investment (MTI) Global Practice

Contents

1	Introduction	4
2	Trade Outcomes Analysis.....	7
2.1	Orientation and Growth.....	7
2.2	Export Diversification.....	10
2.3	Quality and sophistication	14
2.4	Survival.....	19
2.5	Summary of key findings.....	21
3	Measuring the changes in Kazakhstan’s Global Value Chain Participation	23
3.1	Measuring Export Value-Added in Kazakhstan.....	23
3.2	Kazakhstan’s Participation in Global Value Chain.....	28
3.3	Summary of key findings.....	32
	References	34

List of Figures

Figure 1. Trade Competitiveness Diagnostics Framework.....	6
Figure 2. Trade openness (percent of GDP)	7
Figure 3. FDI, net inflows 2006-17 (% of GDP).....	10
Figure 4. FDI by sector, 2014–2018 (accumulated, millions of US dollars)	10
Figure 5. Number exported products	11
Figure 6. Number of countries reached.....	11
Figure 7. HHI products	12
Figure 8. HHI markets	12
Figure 9. Share of top five products.....	12
Figure 10. Share of the top 5 markets	12
Figure 11. Share of sectoral exports by region, 2000-2018.....	13
Figure 12. Export growth decomposition, 2000-2018	14
Figure 13. Kazakhstan: Export technological classification.....	15
Figure 14. Export technological classification.....	15
Figure 15. Economic Complexity Index: peer economies	16
Figure 16. Kazakhstan Export Quality and distance to World Quality Frontier	17
Figure 17. Export quality by sector	17
Figure 18. Export Survival, Kazakhstan and comparators (2000-2018).....	20
Figure 19. Kazakhstan Export Survival, by Sectors (2000-2018).....	21
Figure 20. Kazakhstan Export Survival, by Destinations (2000-2018).....	21
Figure 21: Decomposition of Gross Exports in the Auto Industry	24
Figure 22. Annualized Growth of DVA in Exports (2005-2015).....	26
Figure 23. Contribution to DVA Growth by Sector (2005-2015).....	26
Figure 24. Direct and Indirect Contribution to DVA Growth by Sector, 2005-2015	27
Figure 25. Domestic Value Added Demand by Destination.....	28
Figure 26. Sources of Foreign Value Added in Exports	28
Figure 27. Forward Integration: Domestic Value Added in Third Country Exports (2005-2015)	29
Figure 28. Foreign Value Added in Gross Exports (2005-2015)	29
Figure 29. GVC Participation Index	30
Figure 30. Foreign value-added content of exports, 2005-2015	31
Figure 31. Domestic value added in foreign final demand (as percent of value added by industry), 2005-2015	31

1 Introduction

As a small economy, Kazakhstan’s growth and development prospects crucially depend on its increasing participation in international trade. Kazakhstan is dependent on hydrocarbon and other mineral exports and remains vulnerable to international price shocks. Strong economic growth during 2000-07 —boosted by rising oil prices and rapid domestic demand, including soaring investment—led to substantial real wage increases and a sharp decline in poverty. Since the global economic downturn, however, Kazakhstan’s economic growth has slowed markedly, from 10.2 percent on average in 2000-07 to 4.1 percent during 2008-17 and productivity increases have been nearly nil.

The report’s main messages on Kazakhstan’s trade performance are as follows:

- Kazakhstan’s international trade has declined as a share of GDP since 2000 and the country trades less than expected given its level of economic development.
- Kazakhstan’s exports are highly concentrated in natural resources. More than 90 percent of exports are accounted for by oil, natural gas, metals, and other minerals.
- Kazakhstan’s merchandise exports are largely focused on the four export destinations, the EU, China, the Eurasian Economic Union (EEU), and other CIS countries not members of the EEU.
- Kazakhstan receives slightly more FDI than countries with similar levels of GDP per capita and FDI is concentrated in the natural resource extraction and processing sector.
- During 2000-2018, 66 percent of export growth was explained by more sales of the same products to the same destinations and 34 percent was explained by sales of new product to old markets. Less than 1 percent of growth resulted from selling to new markets (either old or new products).
- Merchandise export quality declined between 1993 and 2014, the latest available data.
- Kazakhstan export survival is low and below that of most comparators. Manufacturing exports have the lowest survival rates among the main export products

Greater trade integration into global and regional value chains will be a powerful vehicle for raising Kazakhstan’s participation into the global economy, encouraging the reallocation of the factors of production, upgrading of productivity, and allowing the emergence of a more dynamic private sector.

Exporting exposes companies to competition in international markets that should help them improve their operations and production processes. Global value chains connect domestic firms with production networks that can potentially transmit frontier technologies and knowledge.

Kazakhstan has substantial obstacles to overcome to integrate more fully into the global economy:

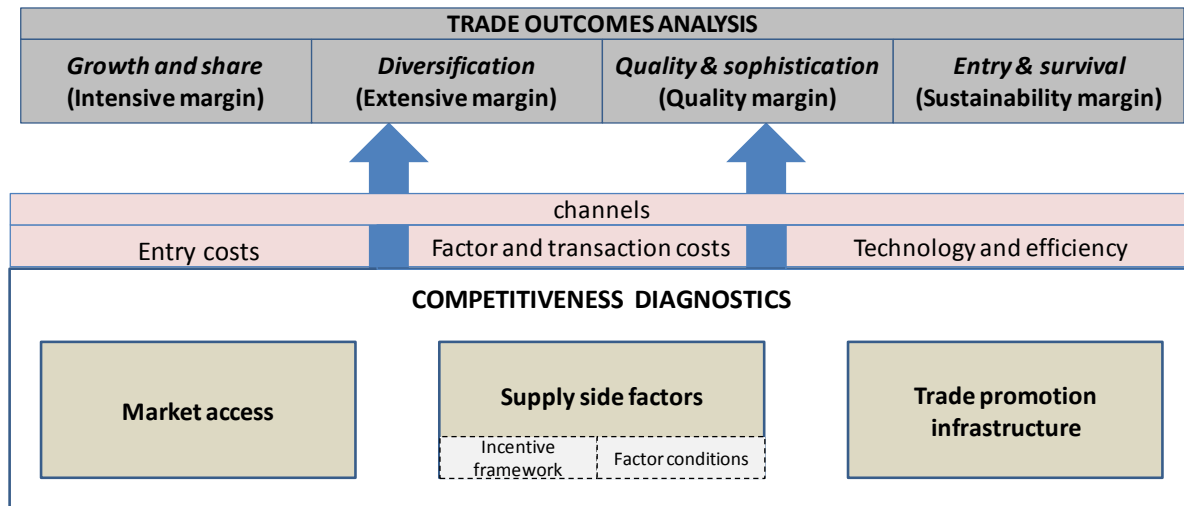
- Kazakhstan’s exports use dramatically less foreign inputs than a decade ago. This “backward linkage” is one of the lowest not only among manufacturing-oriented countries with similar levels of GDP per capita, but all relevant resource-rich economies.
- Foreign exporters use a substantial part of Kazakhstan’s exports in their products. This is due to Kazakhstan’s ability to integrate into the global economy on the basis of hydrocarbon exports – and little else.

- Tariffs are not everything in the context of international trade, but they are essential in Kazakhstan’s case. Kazakhstan would benefit from lower tariffs and a deeper type of integration that entails more openness to services and foreign investment. As a member of EEU, Kazakhstan cannot unilaterally reduce its tariffs.
- Kazakhstan can focus on unilaterally streamlining procedures in trade facilitation within the EEU and improving connectivity in transport and logistics. Effort to reduce trade costs need to be coupled with efforts to integrate more deeply with the world while reforms to the investment policy regime could help attract and retain FDI in key sectors with significant technology, training, and skills transfer.

This report provides an overview of Kazakhstan’s trade and trade competitiveness. The framework of analysis draws from the World Bank’s Trade Competitiveness Diagnostics (Reis and Farole 2012) as illustrated in Figure 1. This framework involves assessing trade performance along various dimensions that cumulatively form a comprehensive picture of the sustainable competitiveness of the export sector, including (i) the level, growth, and market share performance of existing exports (termed the “intensive margin”); (ii) the diversification of products and markets (“extensive margin”); (iii) the quality and sophistication of exports (“quality margin”); and (iv) the patterns of entry and survival of exporters (“sustainability margin”). Understanding a country’s relative performance (overall or at a sector level) on these various aspects of trade provides a summary of its competitiveness in global markets. But this is only half the story. To have a chance to improve competitiveness, it is necessary also to understand the main determinants of competitiveness, the factors that are most constraining, and the policy levers that might be pulled to overcome these constraints. This diagnostic framework provides a way to analyze determinants of trade competitiveness across three broad areas:

1. *Market access* focuses on the external trade policy environment that may facilitate or constrain exporters from entering and maintaining competitiveness in markets.
2. *Supply-side factors* cover a broad range of determinants, including governance, macro fiscal, trade, and domestic policies that establish the incentive framework faced by the private sector, as well as the factor inputs that determine competitiveness at the factory or farm gate.
3. *Trade promotion infrastructure* covers the range of interventions by government to address market failures (coordination challenges, asymmetric information, and so forth) and government failures that restrict export participation and performance, including traditional export promotion, special economic zones, industry coordination bodies, and standards regimes.

Figure 1. Trade Competitiveness Diagnostics Framework



Source: Reis and Farole (2012)

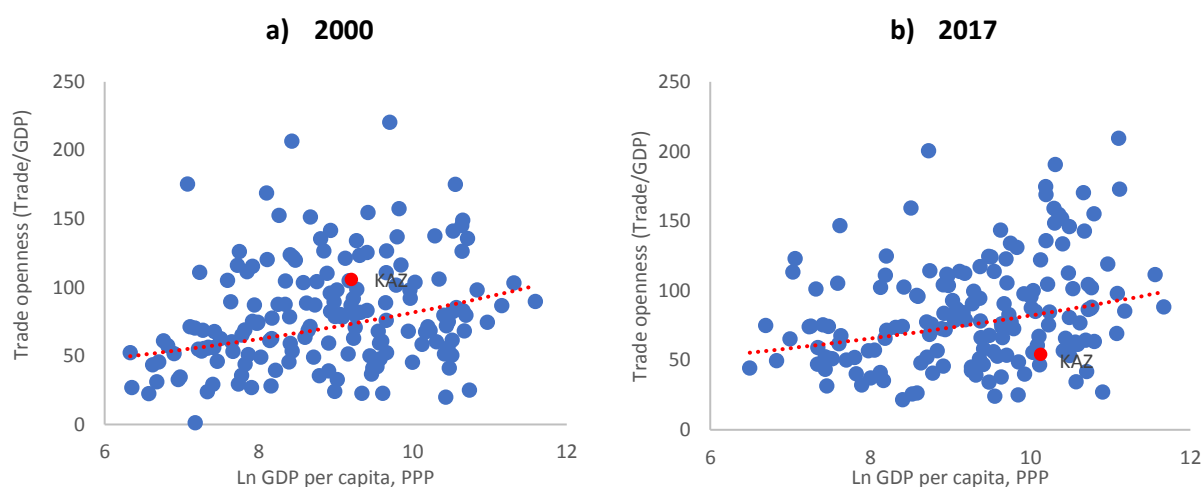
This report covers the first part of the Trade Competitiveness Diagnostics - namely, the Trade Outcomes Analysis – complemented with a preliminary analysis of trade in value-added data from the WTO-OECD Trade in Value-Added (TiVA) database that included Kazakhstan for the first time in December 2018. Policy recommendations derived from this analysis are intended to address horizontal issues. Deep dives at sector level or along value chains are needed to make sector-specific (vertical) recommendations. This note is structured in three chapters. Beside the introduction, the second chapter assesses export performance along four dimensions and provides a comprehensive picture of the sustainable competitiveness of the export sector: intensive margin, extensive margin, quality margin, and sustainability margin. The third chapter contains the trade in value-added analysis using the TiVA data for Kazakhstan.

2 Trade Outcomes Analysis

2.1 Orientation and Growth

Kazakhstan's international trade has declined as a share of its economy over the last two decades and the country trades less than expected given its level of economic development. Trade openness, as measured by the sum of exports and imports over GDP, is below that of countries with income per capita similar to that of Kazakhstan (Figure 2). The trade-to-GDP ratio declined since 2000 when it was almost double its current level (106 percent vs 54 percent) and the country traded more compared to its level of economic development (Figure 2, panel a). In 2017, Kazakhstan's international trade was lower than Mexico's (78 percent) and Azerbaijan's (90 percent) and almost as much as Russia's (47 percent) and Chile's (57 percent).

Figure 2. Trade openness (percent of GDP)



Source: World Development Indicators

Source: World Development Indicators

Export composition

Kazakhstan's exports are highly concentrated in natural resources. Principal exports include petroleum, natural gas, copper, ferro-alloys, zinc, products of iron, and steel. Wheat, the top agricultural export, accounted for 1.3 percent of exports in 2017. Compared to other exporters, Kazakhstan has relative specialization in these products. The index of revealed comparative advantage – the revealed degree of export specialization -- is above 2 for fuels, minerals and metals, and vegetable products above 1 in 2017.¹ Cereals as a prominent export is more recent and driven by the rapid increase in exports of wheat, which grew by about 10 percent per year during the period 2005–17.

¹ The RCA index estimates a country's specialization in an exported good relative to all other countries. The index is equal to the proportion of a country's exports in a sector divided by the proportion of world exports in the same sector. A comparative advantage is "revealed" if $RCA > 1$, as this shows a relative degree of specialization.

Imports in Kazakhstan are less concentrated than exports. No product category dominates. The largest imports by sector are machinery and equipment, which account for about a quarter of imports. Agriculture and food accounted for close to 12 percent of imports in 2017. The country is a net importer of agricultural products, with net agricultural imports of about \$1 billion. Notable exceptions are cereal products: the country exports over 50 times what it imports, driven by large exports of wheat and, to a lesser extent, barley.

Vegetable and foodstuff products were the only major export sectors that grew in recent years. The absolute value and share of vegetable and foodstuff products expanded between 2012 and 2018. These sectors were particularly dynamic during 2012–2018, exhibiting a compound annual growth rate of 10 percent and 3 percent, respectively. In contrast, the growth rate of traditionally important sectors such as oil and gas, metals, minerals, and cereals dropped significantly during the same period (Table 1).

Table 1. Exports by Sectors

Sector	Export value (millions of US dollars)			% of total exports			Growth (%)	
	2000	2012	2018	2000	2012	2018	2000-12	2012-18
Oil and gas	4,350	64,486	42,738	92.0	69.9	70.1	25.2	-6.6
Metals	56	13,960	8,822	1.2	15.1	14.5	58.3	-7.4
Minerals	137	7,489	4,084	2.9	8.1	6.7	39.5	-9.6
Cereals	85	2,314	1,762	1.8	2.5	2.9	31.7	-4.4
Vegetable	2	361	644	0.0	0.4	1.1	54.7	10.1
Foodstuffs	0	351	425	0.0	0.4	0.7	79.1	3.2
Other	98	3,317	2,470	2.1	3.6	4.1	34.2	-4.8
Total	4,729	92,279	60,944	100	100	100	28.1	-6.7

Source: Authors calculations with data from UN-COMTRADE

Trading partners

The structure of destinations of Kazakhstan’s merchandise exports changed significantly between 2000 and 2018. Export are focused on four traditional destinations, the EU, China, the Eurasian Economic Union (EEU), and the former CIS countries not members of the EEU. The EU increased its share of exports from 23 percent to 51 percent between 2000 and 2018. Table 2 reveals that, although the EEU is still a key destination for Kazakhstan’s exports, it was recently displaced from the second position by China. Imports are also very concentrated by partner, with Russia, the EU, and China accounting for most trade. Close to 40 percent of imports in Kazakhstan were sourced from Russia in 2018.

Table 2. Exports by main destinations, 2000 and 2018

Region	Export value (US\$ million)			% exports			growth	
	2000	2012	2018	2000	2012	2018	2000-12	2012-18
EU	1,083	46,479	31,036	22.9	50.4	50.9	36.8	-6.5
China	154	16,562	6,287	3.3	17.9	10.3	47.7	-14.9
EEU	799	7,562	5,892	16.9	8.2	9.7	20.6	-4.1
CIS*	58	2,276	2,411	1.2	2.5	4.0	35.7	1.0
ASEAN	32	40	1,128	0.7	0.0	1.9	1.8	74.5
USA	25	442	957	0.5	0.5	1.6	26.9	13.7
ROW	2,577	18,919	13,235	54.5	20.5	21.7	18.1	-5.8
Total	4,729	92,279	60,944	100	100	100	28.1	-6.7

Source: Authors calculations with data from UN-COMTRADE

Note: CIS* includes CIS countries that are not part of the EEU

Services

In terms of services, the most notable trend in the last two decades is the expansion of travel and transport services exports. Table 3 shows that travel services (tourism), which accounted for about a third of total services exports in 2018, posted the highest growth rates (8.3 percent) among services exports and increased in relative importance since 2008. Transport services, which account for more than half of services exports, also posted relatively high growth rates (5.9 percent) during this period. Conversely, modern services like finance (-18.3 percent), telecom (1.8 percent) and other business services (1.3 percent) posted negative or small growth rates, dragging the overall growth of services exports over the period².

Table 3. Services Exports by Sectors, 2000 and 2018

Sector	Value (US\$ million)		% exports		Growth 2008-18
	2008	2018	2008	2018	
Transport	2,246	3,981	56.3	56.7	5.9
Travel	1,012	2,255	25.4	32.1	8.3
Construction	18	22	0.5	0.3	2.0
Insurance and pension	83	78	2.1	1.1	-0.6
Financial	113	15	2.8	0.2	-18.3
Telecom, computer, and information	102	122	2.6	1.7	1.8
Other business services	407	462	10.2	6.6	1.3
Total	3,988	7,026	100	100	5.8

Source: Authors calculations with data from UNCTAD

² Serious problems with the banking sector in 2008 and 2015 might contributed to the declining performance of financial service exports.

Foreign Direct Investment

Kazakhstan receives substantial inflows of FDI (Figure 3) and FDI is concentrated in the natural resource extraction and processing sector. Coal, oil, and natural gas receive more than ten times as much FDI as any other sector (Figure 4) and accounted for an average of 33 percent of FDI between 2005 and 2017. In 2016, a single project expansion investment by Chevron and partners in the Tengiz oil field amounted to \$36.8 billion, or 91 percent of FDI. Investment in transport, logistics, and storage contributed only 1 percent of total FDI for the period 2014–2017 and was concentrated in sales, marketing, and support activities. The main sources of FDI flow were Netherlands, France, United States, China and Russia. Recently, significant commitment to greenfield projects were announced by Germany, China, Lithuania, and Azerbaijan, suggesting that proximity to major trade routes is important.

Figure 3. FDI, net inflows 2006-17 (% of GDP)

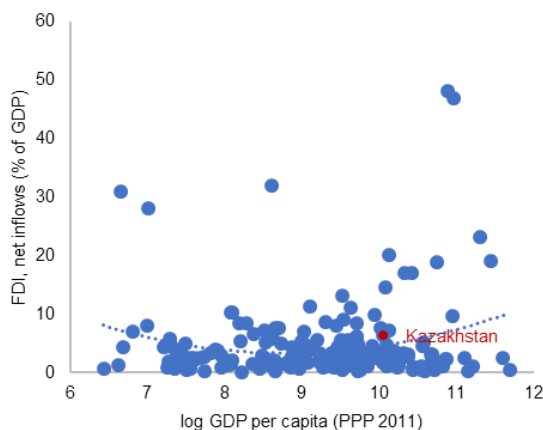
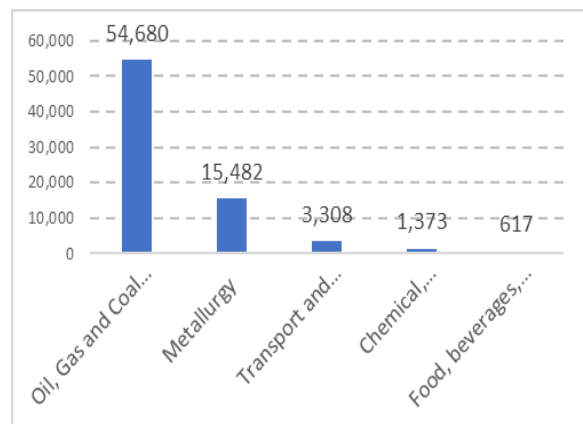


Figure 4. FDI by sector, 2014–2018 (accumulated, millions of US dollars)



Source: World Development Indicators

2.2 Export Diversification

Kazakhstan’s export structure, in which specific products like oil, gas, copper, and zinc, carry a heavy weight, is particularly vulnerable to shocks. As shown by Haddad et al. (2011), the effect of openness on output volatility, for example, depends on the degree to which a country’s export basket is diversified. This section looks at Kazakhstan’s performance in terms of diversification along the product and destination dimensions.

Kazakhstan’s level of diversification in terms of products exported and of destinations reached has increased since 2000. Figure 5 shows that the number of products exported by Kazakhstan has increased quite impressively but remains below most comparator countries except Azerbaijan. In 2018, for example, Kazakhstan exported 2,106 product varieties compared to 83 exported in 2000. Moreover, along the destination dimension, Kazakhstan has almost doubled the number of export markets served (Figure 6).

However, Kazakhstan only outperforms Azerbaijan in this regard and lags far behind the number of destinations reached by substantially larger economies such as Mexico, Indonesia, and Russia.

Figure 5. Number exported products

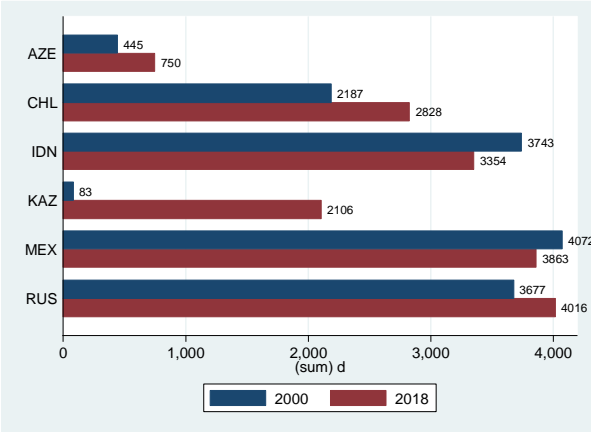
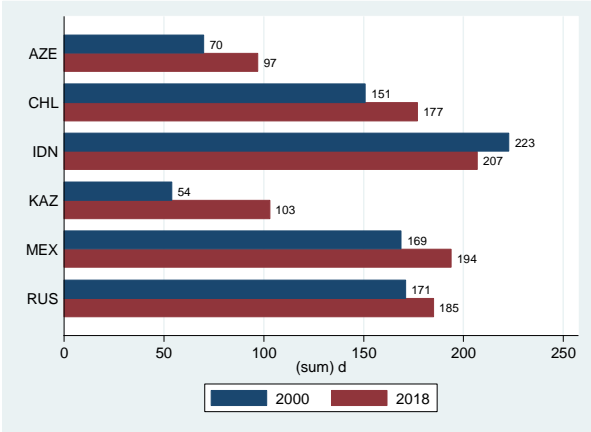


Figure 6. Number of countries reached

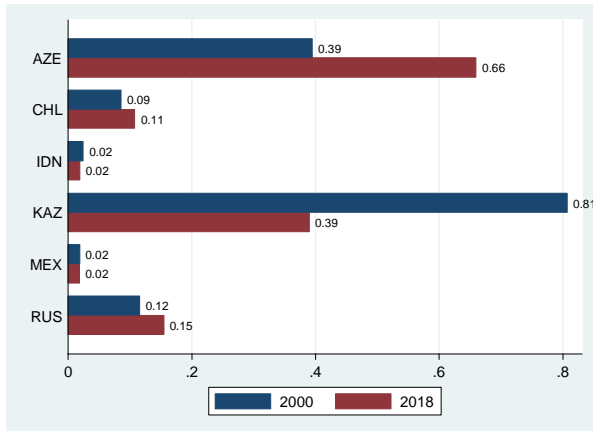


Source: Authors calculations based on data from UN-COMTRADE

While the number of products exported, and the destinations reached are useful to assess the extent to which a country is diversified, these indicators have limitations. Consider, for instance, two countries— one that exports to 100 destinations but only one of these markets concentrates 90 percent of total exports and another one that spreads its exports among 100 destinations with equal share. The former is much more concentrated than the latter. The Hirschman-Herfindahl Index (HHI) allows comparing export concentration of two or more countries that may be equal in terms of number of products (or markets) but may vary in terms of concentration.

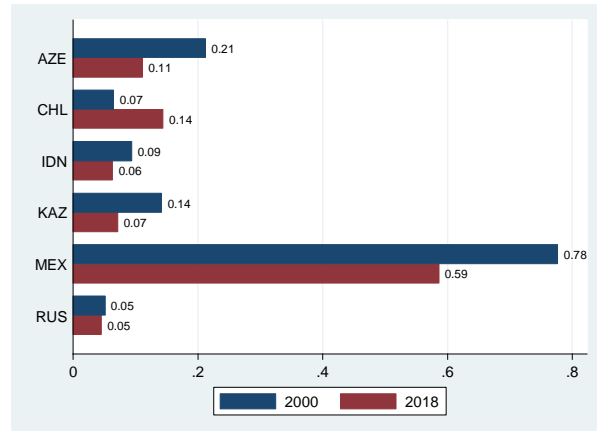
The concentration of Kazakhstan’s export basket has decreased along both the product and market dimension. Figure 7 shows that although concentration has decreased over the years, especially after the decline in international prices in 2013, Kazakhstan’s exports are still highly concentrated in terms of products. Kazakhstan outperforms only Azerbaijan among its peer countries which is significantly more concentrated in terms of export basket composition. The decrease in concentration appears to be a trend unique among all benchmark countries as most (except for Indonesia) increased their product concentration over this period. Kazakhstan’s diversification of exports across markets is not an issue (Figure 8).

Figure 7. HHI products



Source: Authors calculations based on data from UN-COMTRADE

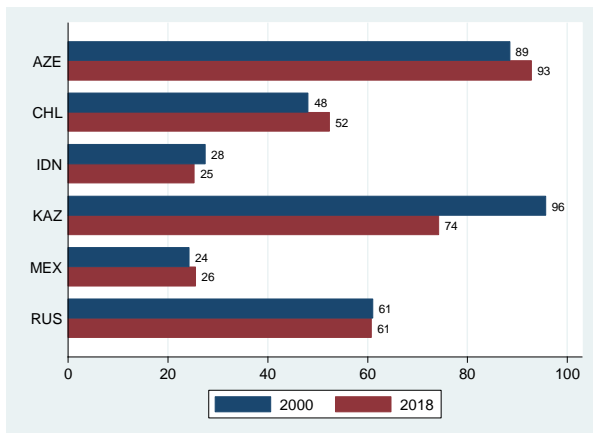
Figure 8. HHI markets



Source: Authors calculations based on data from UN-COMTRADE

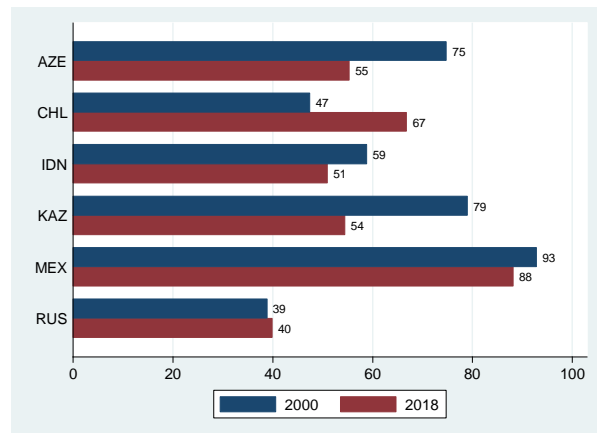
An alternative way to measure concentration is to look at the share of export value accounted for by the top five products exported or by the top five markets served. When compared with other resource rich countries, Kazakhstan’s export revenues are more concentrated in the top five products (at 6-digit HS classification), as can be seen in Figure 9. The top five export products accounted for 74 percent of export revenues in 2018. This is higher than any other benchmark country except Azerbaijan (93 percent). However, the comparison across periods reveals a decrease in concentration as Kazakhstan’s top five products accounted for 96 percent of the exports in 2000. Concentration also decreased when looking at the top five destinations. As Figure 10 shows, the top five markets absorbed 54 percent of export revenues in 2018 while they absorbed 79 percent in 2000.

Figure 9. Share of top five products



Source: Authors calculations based on data from UN-COMTRADE

Figure 10. Share of the top 5 markets

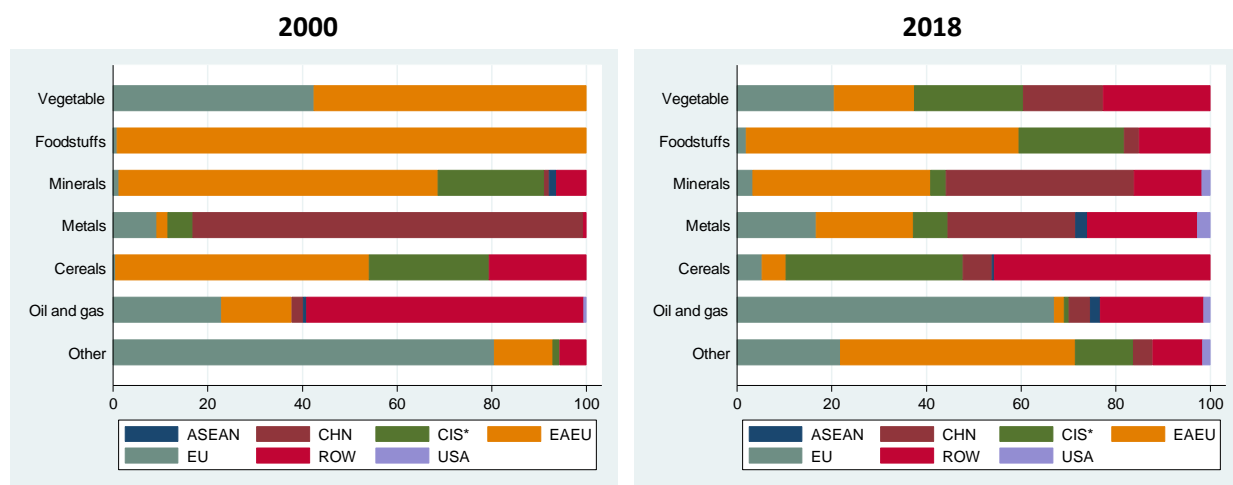


Source: Authors calculations based on data from UN-COMTRADE

Export Diversification by Sector

The process of destination diversification has reached most sectors although there are substantial differences in market reach. Figure 11 shows the evolution of export destinations by sector. Most export sectors with the exemption of oil and gas became more diversified in terms of destinations over the last two decades. The diversification of agricultural sectors (cereals, vegetable, and foodstuff) is particularly important as most exports used to reach mostly countries in the region but now reach a healthy mix of destinations with an increasing importance of non-traditional destinations (Rest of the World). Metals and mineral exports are also more diversified although still reliant on EEU and Chinese markets. Conversely, exports of oil and gas became more concentrated as the EU became the main export destination.

Figure 11. Share of sectoral exports by region, 2000-2018



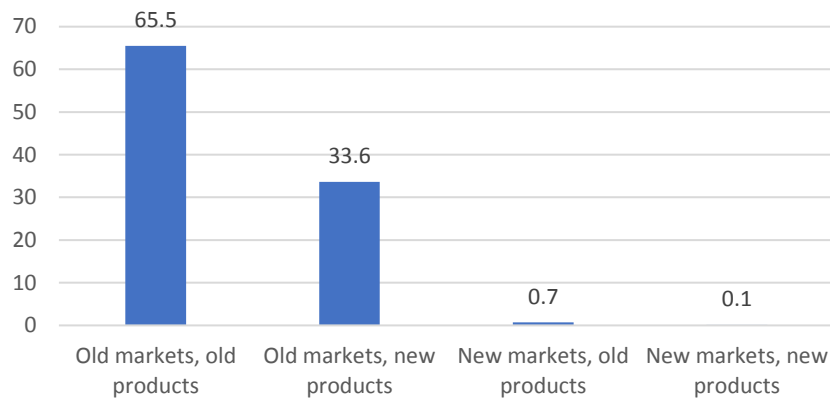
Source: Authors calculations based on data from UN-COMTRADE

Source: Authors calculations based on data from UN-COMTRADE

Intensive and Extensive Margins of Exports

Diversification along the product dimension has played an important role in Kazakhstan's export growth performance over the last two decades. Figure 12 shows Kazakhstan's export growth divided into the margins of trade for the 2000-2018 period. This division shows the portion of export growth explained by increased sales of the same products to the same markets (intensive margin of export growth) and the portion explained by increased sales of the same products to new markets, new products to the same markets, or new products to new markets (the latter three categories being the extensive margin of export growth). During 2000-2018, 66 percent of total export growth was explained by more sales of the same products to the same destinations and 34 percent was explained by sales of new product to old markets. More significantly, less than 1 percent of growth resulted from selling to new markets (either old or new products). The results confirm and complement previous findings. The count of export products by Kazakhstan's exporters increased substantially during the period under investigation, and this increase explains about a third of the export growth observed in recent years.

Figure 12. Export growth decomposition, 2000-2018



Source: Authors calculations based on data from UN-COMTRADE

2.3 Quality and sophistication

The goods that countries produce and how they produce them both matter for export-led development.

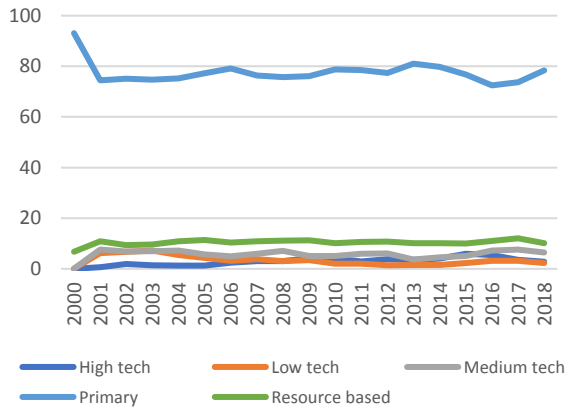
All else equal, goods that embody greater value added in terms of ingenuity, skills, and technology tend to fetch higher prices in world markets. Countries that produce goods that are more sophisticated than what their income levels suggests have higher rates of economic growth. Upgrading product quality, therefore, can be a source of both export and economic growth. This section assesses the ‘income’ and ‘factor’ contents of Kazakhstan’s exports to evaluate whether the country produces sophisticated and high-value-added goods.

Technological Classification

Primary products dominated Kazakhstan’s exports over the last two decades. Figure 13 shows the evolution of exports by categories of diverse technological levels using the Lall classification.³ Primary goods, which accounted for about 80 percent of exports during the last two decades, have dominated exports. In 2018, less than 10 percent of Kazakhstan’s exports fell in the mid-tech or high-tech category (6.8 percent and 2.8 percent, respectively) and their relative importance for the export basket has remained largely unchanged. By contrast, resource-based products increased their share of the country’s exports from less than 6.8 percent in 2000 to 11 percent in 2018. Figure 14 compares the technological sophistication of Kazakhstan’s versus other countries which shows dominance of primary goods in the total export (similar to Azerbaijan).

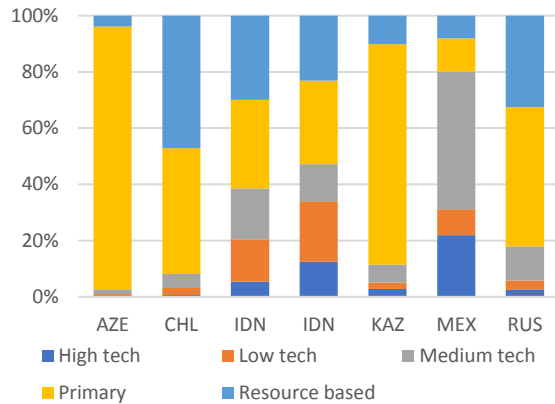
³ Lall, Sanjay. 2000. “The Technological Structure and Performance of Developing Country Manufactured Exports, 1985-98.” Oxford Development Studies. Vol 28: pp 337 – 369.

Figure 13. Kazakhstan: Export technological classification



Source: Authors calculations based on data from UN-COMTRADE

Figure 14. Export technological classification



Source: Authors calculations based on data from UN-COMTRADE

Sophistication

The Export Sophistication index measures the productivity associated with a country’s export basket.

As high-income countries’ exports tend to have higher technological content, export sophistication is also related to “income potential”; the measure generally captures whether products in a country’s export basket reflect export products from high-income or low-income economies.⁴

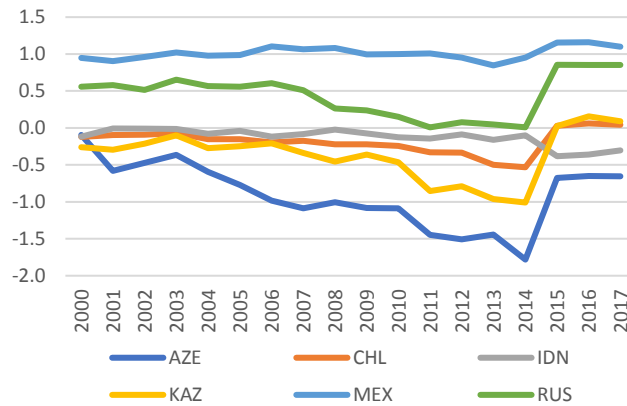
Kazakhstan’s exports appear to be more sophisticated than those of Azerbaijan and Indonesia and well below those of Mexico and Russia.

Kazakhstan lags peers in terms of export complexity, a holistic measure of the production characteristics of an economy.⁵ Economic complexity of Kazakhstan exports declined from 2000 along with the increase in commodity prices and share of petroleum products in exports. However, since the end in boom in international commodity prices in 2014, Kazakhstan’s exports have become more complex (Figure 15). Kazakhstan is primarily specialized in non-complex highly ubiquitous activities, such as oil, gas, and minerals. As such, developing specialization in more complex economic activities such as copper processing or the production of complex products derived from hydrocarbons like petrochemicals or fertilizers could help Kazakhstan break away from resource-driven exports.

⁴ Measures the productivity or sophistication level associated with a country’s export basket. Hausman Hidalgo, and Rodrik, who developed this indicator, concluded that it is not the amount of exports, but the technological content and sophistication of exports that matters for growth.

⁵ The Economic Complexity Index (ECI) of Hidalgo et al. (2009, 2012) provides a holistic measure of the production characteristics of an economy. The ECI contends that the knowledge accumulated in a country is expressed in the country’s industrial composition. The ECI combines metrics about the diversity of countries and the ubiquity of products to create measures of the relative complexity of a country’s exports. The ECI seeks to explain the knowledge accumulated in a country’s population (the networks that people form) expressed in the country’s industrial composition.

Figure 15. Economic Complexity Index: peer economies



Source: Authors calculations based on data from UN-COMTRADE

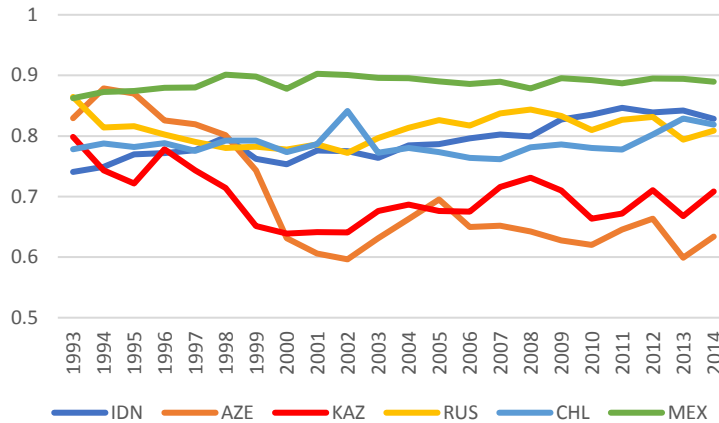
Export quality

Improving the quality of existing products can build on comparative advantages, raise productivity and hasten structural transformation (see Henn et al. 2013). Export quality upgrading is most successful with manufactured goods. The potential for upgrading varies with the length of a product’s quality ladder or the development path. Improvements to export quality reflect successful structural transformation, and sectors with long “quality ladders”, i.e. a significant potential for quality upgrading, hold most potential as evidence shows that quality tends to converge to the word “frontier”.

In Kazakhstan, merchandise export quality⁶ declined between 1993 and 2014. Prior to 1994, Kazakhstan’s unit value of exports was about average among its peers and higher than Chile’s or Indonesia’s, but unit values have steadily declined and are now of low-quality when compared to peers (see Figure 16– a value of 1 represents the world quality frontier). A decomposition of export quality by HS6 level products shows that Kazakhstan is specialized in a small set of activities compared to peer economies. Where Kazakhstan has high-quality products, comparator countries have also goods of equal or higher value, which means there is limited space for broad-based export quality upgrading.

⁶ The IMF export quality measure is constructed in the following manner. The methodology estimates quality based on unit values, but with few important adjustments. For any given product, the trade price (equivalently, unit value) is adjusted for exporter income per capita (meant to capture cross-country variations in production costs to proxy for capital versus labor intensive sectors). Second, the distance between importer-exporter are accounted for using gravity equations to accommodate selection bias i.e. composition of exports to more distant destinations are tilted towards higher-priced goods, because of higher shipping costs.

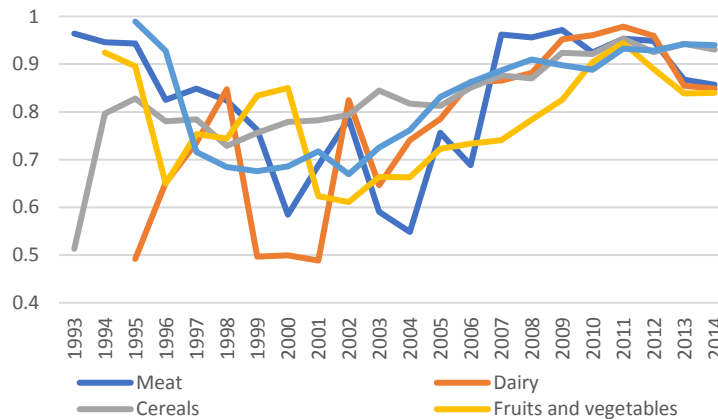
Figure 16. Kazakhstan Export Quality and distance to World Quality Frontier



Source: Authors calculations based on data from UN-COMTRADE

Although most exports did not show a marked quality upgrade, some agricultural and food products increased their quality in recent years. Figure 17 plots the IMF Quality Index values, which serve as a measure of relative quality for selected agricultural products including meat, dairy, cereals, beverages, and fruits and vegetables. While some of these products already had high quality levels in 1993-1994, most products experienced an increase in quality in the second part of the 2000s – especially compared with quality in the early 2000s. The fact that these key agricultural products have managed to regain or increase their quality levels shows the potential for these types of exports to play a larger role in export diversification.

Figure 17. Export quality by sector



Source: Authors calculations based on data from UN-COMTRADE

Box 1. Measuring Export Sophistication

Calculating export sophistication, denoted by EXPY, is a two-stage process. The first stage is to measure the income level associated with each product in the world, termed ‘PRODY’. The PRODY of a particular product is the GDP per capita of the typical country that exports that good. Typical GDP is calculated by weighting the GDP per capita of all countries exporting the good. The weight given to each country is based on ‘revealed comparative advantage’, defined as the share of its exports that comes from that good relative to the ‘average’ country. The PRODY for a single product is calculated by weighting the GDP per capita of all countries exporting that product. Therefore, a product that typically makes up a large percentage of a poor country’s export basket will have stronger weights toward poor countries’ GDP per capita. This will be less the case for a product that makes up a small percentage of a poor country’s exports but is a significant component of many rich countries’ export baskets.

The second stage is to measure the income associated with a country’s export basket as a whole; this is its EXPY. From the first stage, each product that a country exports will have a PRODY. The EXPY is calculated by weighting the PRODY by the share that each good contributes to total exports. If butter makes up 15 percent of a country’s exports, its PRODY will be given a weight of 0.15. Countries whose export baskets are made up of ‘rich-country goods’ will have a higher EXPY while export baskets made up of ‘poor-country goods’ will have a lower EXPY.

$$PRODY_k = \sum_j \left(\frac{x_{jk}}{X_j} \right) Y_j \quad \text{and} \quad EXPY_i = \sum_k \left(\frac{x_{ik}}{X_i} \right) PRODY_k$$

A shortcoming of PRODY, and thus of EXPY, is that it does not take into account the quality differences within exported products across countries. For example, exports of fully traceable fresh beef are likely to be highly more sophisticated than those of non-traceable beef. However, all beef exports are clustered together as a single product, assumed to be identical.

The concepts of PRODY and EXPY are, however, not free of criticism. PRODY of some products are counter-intuitively high suggesting sophistication in products merely because rich countries produce them: bacon and ham, for example, have a higher PRODY than internal combustion engines. Further, the quality of products varies (even if they all have an identical code at the HS 6-digit level) – cars from Country X may not be the same quality as cars from Country Y. When product quality is not taken into account, EXPY overestimates the importance of sophisticated products from low-income countries. Xu (2007) shows that once products at the HS 6-digit level are further divided by relative unit values, the structure of China’s exports is consistent with its level of development. This has led authors like Lederman and Maloney (2012) to point out that how a country produces an export matters more than what it produces. Seemingly high-tech products like computers can be produced in low-tech ways, and vice-versa.

Furthermore, because of fragmentation of production, while the final export of a sophisticated product might be from a low-income country, its contribution might have just been in the final assembly of high-value intermediate inputs made elsewhere. One should not, therefore, lose sight of the entire value chain and explore which stage of production creates and captures the greatest value. Even if computers are deemed not to be sophisticated because the final assembled package is exported from a low-income country, the innards could be highly skill-intensive possibly imported from richer countries. Koopman et al. (2008) estimate the foreign content in China’s

exports to be about 50 percent overall, and 80 percent in sophisticated products like electronic devices. In the well-known example of the iPod, an overwhelming share of the final assembled value of an iPod exported from China is captured by the creators of intellectual property, and not in the form of wages earned by the assemblers.

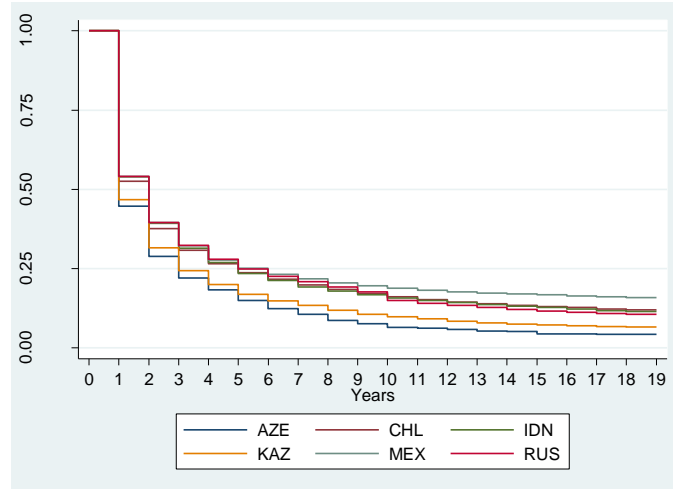
2.4 Survival

For countries to achieve fast export growth and diversification, both successful entry into export markets and survival of the established export flows are crucial. Exporting is an extremely perilous activity with most export relationships forged by developing countries not surviving more than a few years (Besedes and Prusa, 2004, and Brenton et al., 2010). This section employs a survival analysis over the period 2000-2018 to compute the probability that an export relationship (a product-country spell) in Kazakhstan survives for a given number of years⁷. Assessing the dynamics of export participation and survival is valuable for diagnosing the export competitiveness of a country. From a policy perspective, understanding the main challenges to export survival is key to promote growth and ensure diversification.

Kazakhstan export survival is low and below that of most comparators. Figure 18 shows that the probability of a Kazakh export relationship surviving past the first year is less than 50 percent, and the probability of maintaining that relationship for more than three years is less than 25 percent. Furthermore, ninety percent of Kazakh export flows disappear by their tenth year. In comparison, the export survival rate of most comparators is higher throughout the period of study. The probability that an export relationship from Russia, Mexico, Chile, and Indonesia survives after the first year is 54 percent after which it drops to 32 percent for survival past the third year (which is seven and eight percentage points higher than in Kazakhstan, respectively). The survival rate beyond the tenth year is 16 percent for Russia, Chile, and Indonesia, and slightly higher for Mexico (19 percent). After eighteen years, the survival rates for these comparators are more than twice of those observed in Kazakhstan (15.8 percent versus 6.3 percent). Only Azerbaijan is outperformed by Kazakhstan in terms of export survival.

⁷ The Kaplan–Meier estimates the survival function from life-time data and can be used to measure the length of time an export relationship remains active. A plot of the Kaplan–Meier estimate of the survival function is a series of horizontal steps of declining magnitude which, when a large enough sample is taken, approaches the true survival function for that population. An important advantage of the Kaplan–Meier curve is that the method can consider some types of censored data, particularly right-censoring, which occurs if an export relationship outlives the sample period under analysis.

Figure 18. Export Survival, Kazakhstan and comparators (2000-2018)

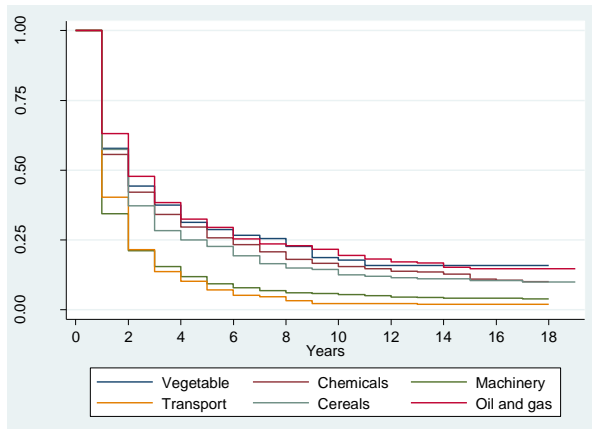


Source: Authors calculations based on data from UN-COMTRADE

Non-traditional manufacturing exports have the lowest survival rates among main export products. The two most important manufacturing exports unrelated to oil and gas, machinery and transport equipment, show significantly lower survival rates than the main exports sectors (Figure 19). Slightly more than a third of export relationships survive past the first year in machinery (40 percent) and transport equipment (35 percent) and less than five percent survive past the tenth year. In comparison, the one-year and ten-year survival rates for other main export sectors in Figure 19 are 57 and 15 percent, respectively, and 63 and 20 percent for the oil and gas sectors.

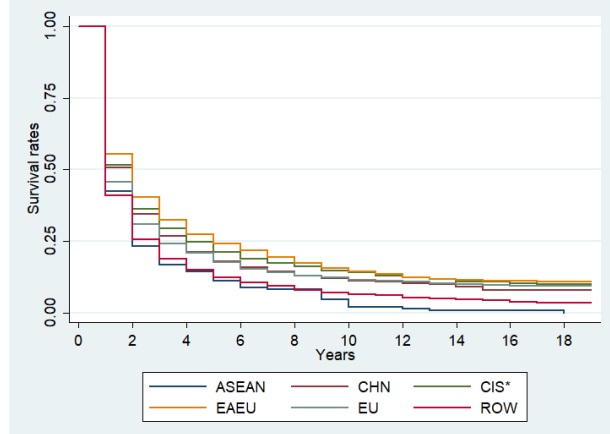
Exports have a much higher probability of survival to countries in the Eurasian Economic Union (EEU) or Commonwealth of Independent States (CIS) than to other more distant markets. Figure 20 compares survival rates of Kazakh exports to different groups of countries, including main export destinations like the EU, China, EEU, CIS, and ASEAN. The results show a statistically significant higher probability that an export relationship will survive if it is established with members of the Eurasian Economic Union or CIS. Indeed, the probability that exporting ties with other EEU or CIS countries last beyond a year is almost 55 percent while exports to China (50 percent), EU (46 percent), ASEAN (43 percent) and the rest of the world (41 percent) have significantly lower survival probability of being active past the first year. After ten years, survival rates for exports to EEU are almost fifty percent higher (15 percent) than those to China and EU (11 percent) and about three times higher than exports to ASEAN (3 percent) or the rest of the world (6 percent). After the EEU customs union took effect in 2010, one-year export survival rates significantly increased from 50 percent to 60 percent while the five-year survival rate jumped from 8 percent to 24 percent.

Figure 19. Kazakhstan Export Survival, by Sectors (2000-2018)



Source: Authors calculations based on data from UN-COMTRADE

Figure 20. Kazakhstan Export Survival, by Destinations (2000-2018)



Source: Authors calculations based on data from UN-COMTRADE

2.5 Summary of key findings

	<i>Intensive Margin</i>			<i>Extensive Margin</i>
	Orientation and Growth	Sophistication	Entry and Exit	Diversification
Policy objective	<i>“Increasing export value of existing products across markets, and to specific markets across products”</i>	<i>“Increasing unit values of existing export flows”</i>	<i>“Maintaining export relationships, and minimizing loss of export value”</i>	<i>“Increasing export value from new markets and new products”</i>
Major challenges in trade competitiveness	<ul style="list-style-type: none"> Exports concentrated in extractive industries and other low value-added sectors Prices are major drivers of export growth Significant trade deficit in 	<ul style="list-style-type: none"> Decreasing share of technological exports in total exports. Limited sophistication of exports. Low economic complexity of national production. 	<ul style="list-style-type: none"> Low survival of export relationships, especially in non-traditional products and in markets outside EEU and CIS. 	<ul style="list-style-type: none"> Concentration around fuel and mineral exports needs to be carefully considered. The concentration of the export basket around selected products is higher than in other countries of similar income level

	<p>non-fuel products</p> <ul style="list-style-type: none">• Untapped growth opportunities in the regional markets	<ul style="list-style-type: none">• Low export quality overall, although some agriculture exports have increased their quality lately		<ul style="list-style-type: none">• Reorientation of exports should not miss regional opportunities.• Intensify existing export relationships.
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3 Measuring the changes in Kazakhstan's Global Value Chain Participation

The rise of global value chains (GVCs) is one of the most important transformation in global trade and investment occurred in the last decades. Once concentrated among a few large economies, global flows of goods, services, and capital now reach an ever-larger number of economies worldwide. One of the most significant reasons behind this transformation in global trade and investment has been the rise of GVCs. Falling transport costs due to important innovations such as containerization, lower trade costs achieved both through a general reduction in tariffs worldwide (which went from an average of 13 percent in 1947 to almost 4 percent in the 2000s) and by the proliferation of bilateral and regional trade and investment agreements, the ICT revolution, the transition of China to a market economy and its export-led growth strategy, and trends in global business to outsource “non-core” business functions paired with a drive towards cutting costs on goods produced for export to international markets and home markets, have led to “second unbundling” of globalization in the 1990s and 2000s (Baldwin and Lopez-Gonzalez 2013).

Production processes have become increasingly fragmented due to the rise of GVCs. Internationally fragmented production is not new, but factories in developing countries have become full-fledged participants in international manufacturing networks. For decades, developing countries have imported parts from countries with more advanced technology, although generally only for the assembly of locally sold goods. The new characteristic of GVCs from a development perspective is that factories in developing countries, and primarily in Asia, have become full-fledged participants in international manufacturing production. They are no longer just importing parts for assembly for local sales. They are exporting parts and components used in some of the most sophisticated products on the planet (Taglioni and Winkler, 2015).

Increasing integration in GVCs is crucial for Kazakhstan. There are two main reasons for Kazakhstan to increase its integration into GVCs. First, in a new scenario of lower commodity prices, Kazakhstan needs to find other engines for export growth outside the agricultural and food sectors and, in the new global environment, participation in GVCs presents an opportunity for growth in non-commodity exports. By integrating into new GVCs in which the country does not currently participate or “deepening” its participation in those GVCs in which it does, Kazakhstan could find a way to start diversifying its export basket and find non-traditional sources of export growth. Second, by integrating into GVCs, Kazakhstani firms will gain exposure and access to international technologies and knowledge and will be forced to meet international standards - all of which can be sources of productivity growth. Thus, in the medium term, GVC-related investment would not only drive exports and create employment, but also support productivity upgrading by accessing global technologies, knowledge and standards.

3.1 Measuring Export Value-Added in Kazakhstan

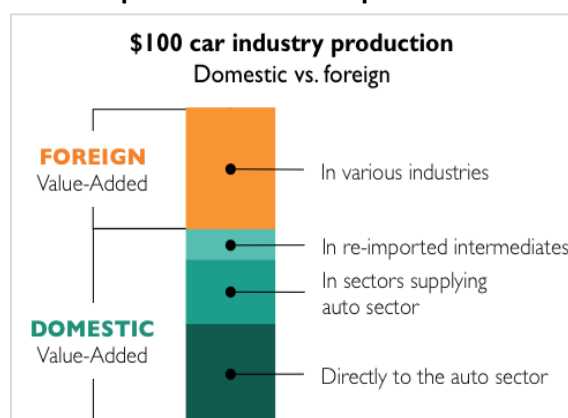
The composition and growth of domestic value added (DVA) over time takes a central role in a world dominated by the fragmentation of production. Analyzing trade on the basis of value added rather than

gross export flows more accurately accounts for a country’s economic relevance. Trade in value-added data trace the contribution to a country’s gross exports from inputs from abroad, generating estimates of exports in value-added terms; that is, the value of the economy’s goods and services that are embodied in its exports, after accounting for the use of imported intermediate goods and services inputs. Figure 21 exemplifies the decomposition of gross exports for the auto industry. Domestic value added consists of:

- i. Value added created in the auto industry (direct domestic value added),
- ii. Value added created in other sectors supplying the auto industry (indirect domestic value added), e-imported intermediates (which have been previously exported), and
- iii. Value added imported from abroad in terms of both intermediate inputs and services (foreign value added).

Indeed, what matters ultimately for a country is not gross exports (which may include a significant share of foreign value added via imported inputs) but the DVA embodied in gross exports and its growth over time. An increase in DVA embodied in gross exports over time signifies greater value addition within the country itself.

Figure 21: Decomposition of Gross Exports in the Auto Industry



Source: Taglioni and Winkler (2016) based on Baldwin and Lopez-Gonzales (2015).

The mining and metals sectors have traditionally dominated export value addition in Kazakhstan and maintained their relative importance in the export basket over the last decade. Kazakhstan’s domestic value added in exports recorded single digit growth (6.2 percent) between 2005 and 2015 while exhibiting some heterogeneity at the sector level. In terms of domestic value added, Kazakhstani exports are dominated by mining products (mainly petroleum and gas) which accounted for 66.1 percent of total DVA in exports in 2015 (down from 68.9 percent in 2005) and metal products which accounted for 18.6 percent of total DVA in exports in 2015 (down from 19.9 percent in 2005). DVA in these two key export sectors (5.8 percent and 5.5 percent, respectively) grew at slower rates than DVA in total exports (6.2 percent) during this period. Overall, DVA in exports of manufacturing goods grew by an annual rate of 6.9 percent (CAGR) although this average mask the performance of some individual industries. Domestic value added embodied in exports in chemicals sector – mainly fertilizers derived hydrocarbons - from grew at 9.2 percent (CAGR) and its relative importance increased from 5.5 percent to 7.3 percent of total DVA during

the same period. DVA in the rest of manufacturing industries – food and beverages (10.9 percent), machinery and electric equipment (6.8 percent), and transport equipment (10.1 percent) – grew at rates above the country’s average over the last decade.

Table 4: Domestic Value Added in Exports by Sector, 2005-2015

	Value (US\$ million)		% DVA in exports		CAGR, 05-15
	2005	2015	2005	2015	
Agriculture, forestry and fishing D01T03:	378	990	2.2	3.2	10.1
Mining and quarrying D05T09:	11,756	20,691	68.9	66.1	5.8
Manufacturing D10T33:	4,930	9,602	28.9	30.7	6.9
Basic and fabricated metals (D24T25)	3,396	5,826	19.9	18.6	5.5
Chemicals (D19T23)	946	2,288	5.5	7.3	9.2
Food, beverages and tobacco (D10T12)	299	841	1.8	2.7	10.9
Machinery and electrical equipment (D26T28)	156	302	0.9	1.0	6.8
Transport equipment (D29T30)	57	149	0.3	0.5	10.1
Total Goods	17,064	31,282	100.0	100.0	6.2

Source: Authors’ elaboration with data from TiVA database.

Domestic value addition recorded average annual growth rates of 6.2%, driven by mining and metals exports and by a lesser extent by the chemicals sector. Kazakhstan’s growth of domestic value added in exports (6.2 percent) was about average among comparators. Figure 22 shows the growth in DVA in exports between 2005 and 2015 during which the pace of DVA growth in Kazakhstan compares unfavorably to Southeast Asian countries that are highly integrated into GVCs like Vietnam (13.8 percent), Thailand (8.7 percent), and Indonesia (6.7 percent) but performs better than countries like Mexico (5.3 percent), Russia (4.1 percent) and Chile (4.1 percent). The mining, metals, and chemical sectors provided the largest contributions to DVA growth between 2005 and 2015 (Figure 23). Two upcoming sectors, agriculture and food and beverages, accounted for almost 10 percent of domestic value added created through exports over the same period.

Figure 22. Annualized Growth of DVA in Exports (2005-2015)

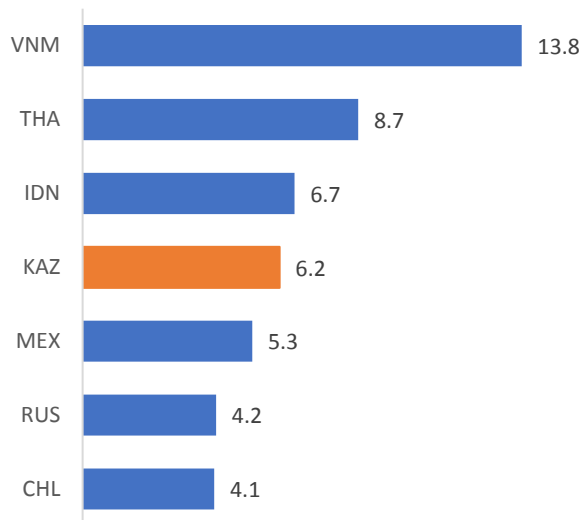
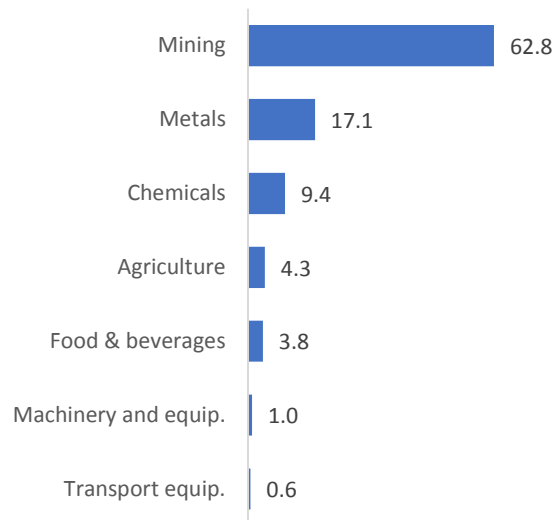


Figure 23. Contribution to DVA Growth by Sector (2005-2015)

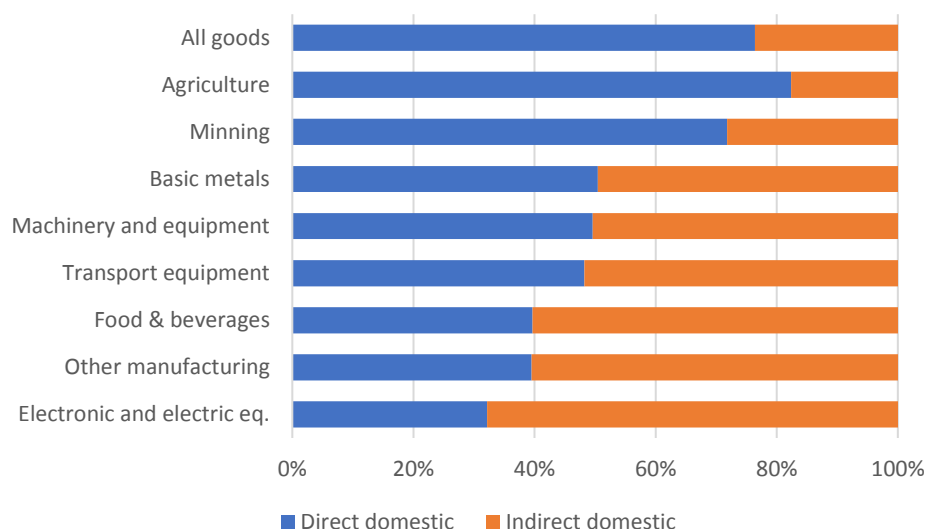


Source: Authors' elaboration with data from TiVA database.

The main source of contribution to domestic value added embodied in exports was the direct value added generated by exporters⁸. The contribution of direct value added from all merchandise exports was 76 percent of the total (Figure 24). Meanwhile, the value added generated through linkages to the export sector, i.e. by other domestic sectors supplying exports was equal to 24 percent. However, there are significant differences in the sources of DVA between the major exports sectors in Kazakhstan. While mining and agricultural sectors source a smaller share of DVA from other sectors (28 percent and 18 percent, respectively), export manufacturing industries on average source more than half of DVA from suppliers outside their own industry with some industries like food and beverages (60 percent), motor vehicles (52 percent), and electronic equipment (68 percent) sourcing a significant share of their DVA from other industries. These results highlight the fact that GVC integration could benefit not only exporters in these industries but also suppliers to the export sector.

⁸ Domestic value added in exports can also be decomposed into the direct value added a contribution within a sector, the indirect contribution of upstream sectors supplying to the sector, and re-imported intermediaries. The latter is excluded from the analysis in this section because it represents less than 0.1 percent of DVA in Kazakhstan.

Figure 24. Direct and Indirect Contribution to DVA Growth by Sector, 2005-2015

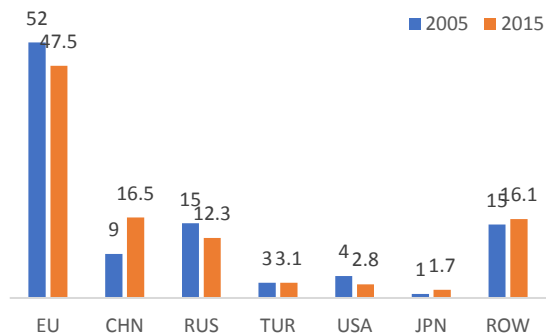


Source: Authors' elaboration with data from TiVA database

There are two main perspectives from which to analyze a country's relative position in GVCs: looking at the foreign value added imported to generate its exports, and at the domestic value added exported to be further used in other countries exports. In the first case, the buying perspective, the origin of foreign value added used in exports helps identify the potential source of technology and productivity spillovers (through intra-firm and arm's length transfer). Meanwhile, from a seller perspective, assessing the final destination of domestic value added is crucial to evaluate the degree of exposure to foreign demand shocks.

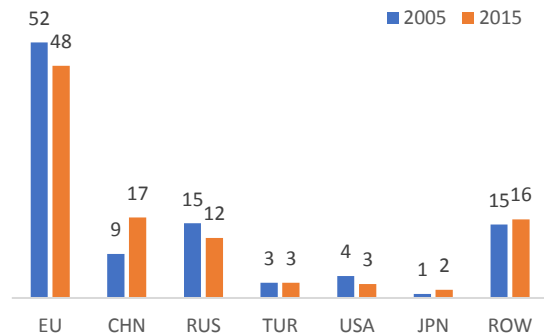
Kazakhstan has experienced diversification away from traditional sources of value added incorporated in its exports in favor of non-traditional sources. Despite the large importance of the EU and Russia as destinations for both DVA in exports and as suppliers of foreign value added to its exports, Kazakhstan seems to be diversifying its value-added exchanges, especially with China and countries outside the region. Figure 25 and Figure 26 show the structure of Kazakhstan's value-added exchanges with the world in 2005 and 2015 on the selling and buying side, respectively. During this period, China went from supplying 9 percent to 17 percent of foreign value added to Kazakhstani exports while Japan increased its same share from 1 percent to 1.7 percent, and the rest of the world (ROW) from 15 percent to 16.1 percent. On the buying side, China went from representing 7.1 percent to 10.6 percent of Kazakhstani DVA in exports while the rest of the world (ROW) increased its participation from 15 percent to 16.1 percent.

Figure 25. Domestic Value Added Demand by Destination



Source: Authors' elaboration with data from TiVA database

Figure 26. Sources of Foreign Value Added in Exports



Source: Authors' elaboration with data from TiVA database

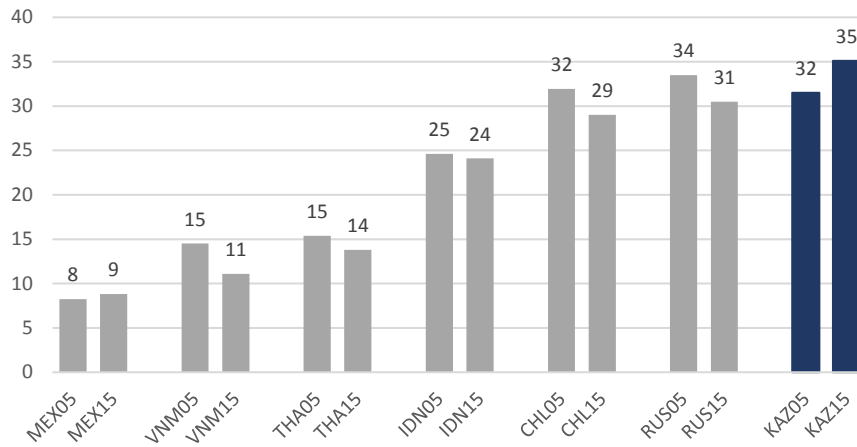
3.2 Kazakhstan's Participation in Global Value Chain

A country's level of participation in GVCs can in part be assessed based on both its forward and backward integration. *Forward integration*, or indirect value added (IVA), refers to a country's share of value added embodied in other countries' exports – i.e. producing intermediates that you export to other countries, who will then add further value and export them as finished products or further stage intermediates. *Backward integration*, or foreign value added (FVA), is the share of foreign value added in embodied in a country's exports – i.e. intermediate inputs and services imported from other countries that you then add value to and export as finished products or further stage intermediates. A greater dependency on foreign inputs for domestic exports is a common trait of most economies over the past decades, given the emergence of increasingly complex and fragmented international production networks. The ability to participate in GVCs depends as much on a country's capacity to efficiently import world-class inputs, technology and know-how, as their capacity to export. Within a GVC, imports are essentially inputs into exports, and thus countries cannot become major exporters without first becoming successful importers of intermediate inputs.

Kazakhstan is substantially forward integrated into other countries' exports because of its raw materials. Such integration is not a measure of sophistication but rather of Kazakhstan's ability to integrate into the global economy based on its dominant asset, natural resources (Figure 27).

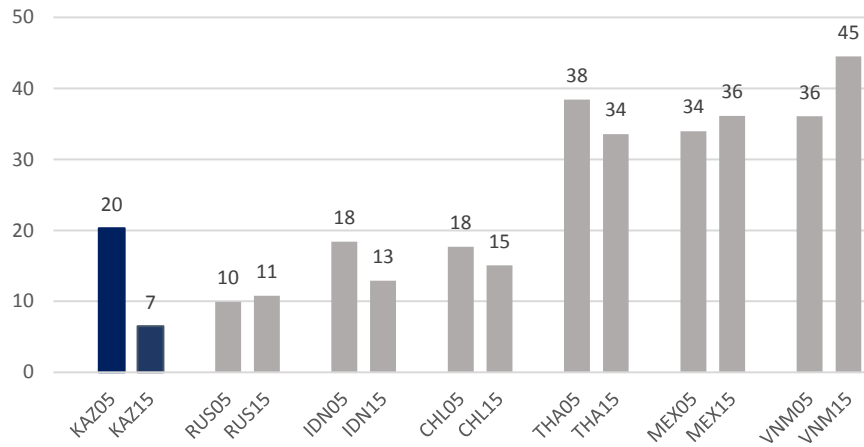
By contrast, Kazakhstan's backward integration into GVCs is weak because of the low use of foreign value added in its exports. Machinery and equipment to extract raw materials do use imported machinery and that accounts for the presence of backward linkages (Figure 28). The share of foreign value added in Kazakhstan's exports has dropped almost three times since 2000 and is well-below that in resource-rich comparators such as Russia and Indonesia and less than a fifth of the levels in countries highly integrated into GVCs like Mexico, Thailand, or Vietnam.

Figure 27. Forward Integration: Domestic Value Added in Third Country Exports (2005-2015)



Source: Authors' elaboration with data from TiVA database

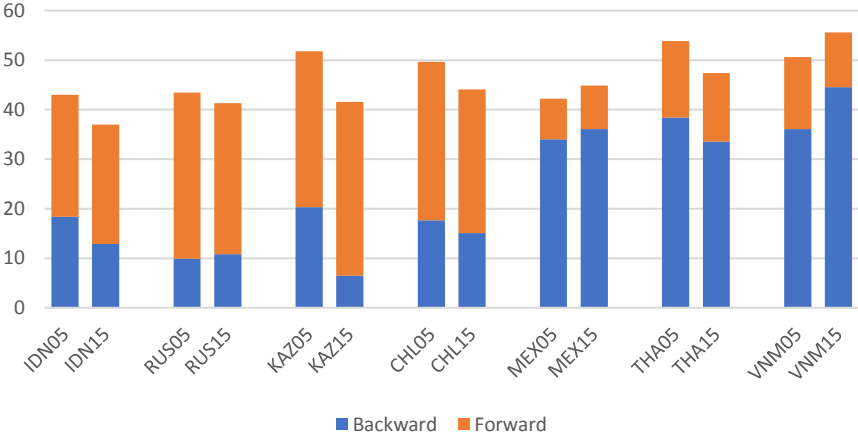
Figure 28. Foreign Value Added in Gross Exports (2005-2015)



Source: Authors' elaboration with data from TiVA database

Kazakhstan’s participation in GVCs is the lowest among comparators. The GVC participation index combines the measures of forward and backward integration⁹, indicating the extent to which a country participates in vertically integrated production. The higher the foreign value added in gross exports and the higher the value of inputs exported to third countries and used in their exports, the higher the participation value (Koopman et al. 2010). The decomposition of the GVC participation index into its upstream and downstream component is consistent with Kazakhstan having a high participation in GVCs as a supplier of primary and intermediate inputs and its low use of imported inputs for its exports. Countries that are more integrated into GVCs like Vietnam, Thailand, and Mexico show higher levels of participation and higher levels of participation through upstream linkages – which reflect a high use of imports in their exports.

Figure 29. GVC Participation Index

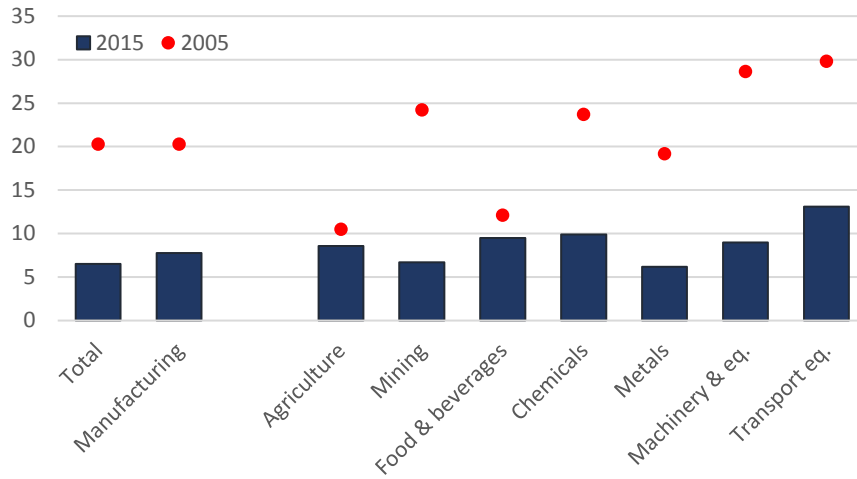


Source: Authors’ elaboration with data from TiVA database

In major industries, the foreign content of Kazakhstan’s exports steadily declined over the last decade The share of exports that is accounted by imported value added, a key measure of GVC integration, dropped from 20.3 percent to 6.5 percent in Kazakhstan between 2005 and 2015 (Figure 30). Although the decline in GVC integration is also seen at the global level in recent years, the decrease in use of foreign inputs is spread among almost all industries in Kazakhstan and may reflect a higher relative trade cost (transport, logistics, tariff structure, and non-tariff measures) of Kazakhstan.

⁹ The index combines FVA and IVA, both as a share of gross exports

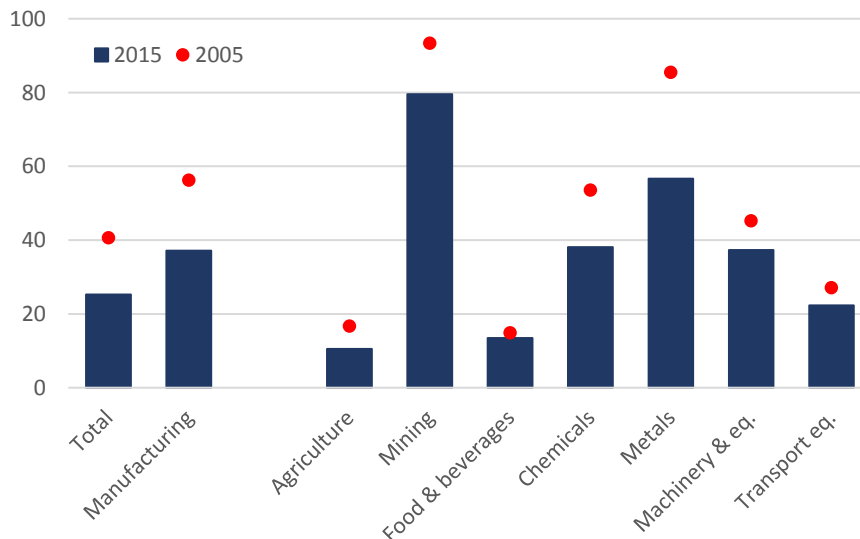
Figure 30. Foreign value-added content of exports, 2005-2015



Source: Authors calculations based on data from TiVA database

Production also became less reliant on consumption abroad. The share of domestic value added that was driven by consumption abroad declined from 40.6 percent to 25.3 percent in the last decade, although with a less pronounced drop in the manufacturing sector that saw its reliance on foreign demand drop from 56 percent to 37 percent. While this significant increase in the importance of the domestic market for manufacturing sectors reflect the growing size of internal market, it is also consistent with a general loss of export competitiveness that pushed domestic firms to forego export markets as a growth diversification strategy.

Figure 31. Domestic value added in foreign final demand (as percent of value added by industry), 2005-2015



Source: Authors calculations based on data from TiVA database

Kazakhstan integration into the EEU resulted in a significant increase in tariffs. In 2008, before joining the CU, Kazakhstan maintained an average tariff significantly below the level it adopted via the CET. By the time Kazakhstan joined the CU, it converged to the higher MFN tariffs nearly double on average, in line with Russian tariffs at the time. Not only has Kazakhstan increased average tariffs since 2008 but the highest increases have been for tariffs related to capital and intermediated goods. Tariffs for capital goods more than tripled and tariffs for intermediates went up by 16 percent from 2008 to 2017. Imports of capital goods and intermediate inputs with lower tariffs will likely increase the efficiency and profitability of firms and the country's export competitiveness.

3.3 Summary of key findings

The share of exports in GDP declined over the last decade in Kazakhstan while the exports basket remains concentrated in hydrocarbon and mineral exports. The ratio of international trade to GDP has declined since 2000 and the country trades less than expected given its level of economic development. Kazakhstan is dependent on hydrocarbon and mineral exports and remains vulnerable to international price shocks. More than 90 percent of exports are accounted for by oil, natural gas, metals and other minerals.

Kazakhstan's exports show low levels of economic complexity and average quality. Kazakhstan is primarily specialized in non-complex highly ubiquitous activities, such as oil, gas, and minerals. As such, developing specialization in more complex economic activities such as copper processing or the production of complex products derived from hydrocarbons like petrochemicals or fertilizers could help Kazakhstan break away from resource-driven exports. Merchandise export quality declined between 1993 and 2014. Prior to 1994, Kazakhstan's unit value of exports about average among its peers and higher than Chile's or Indonesia's, but unit values have steadily declined and are now of low-quality when compared to peers.

Export growth has relied on the same products with low levels of export survival compounding the lack of export diversification. Two thirds of export growth over the last decade was explained by more sales of the same products to the same destinations with less than 1 percent of growth resulted from selling to new markets (either old or new products). Kazakhstan export survival is low and below that of most comparators. Manufacturing exports have the lowest survival rates among the main export products.

The evaluation of Kazakhstan's connection with Global Value Chains (GVCs) found a declining participation in this type of trade in the last decade. Kazakhstan's exports use less foreign inputs than a decade ago with the decline both significant in terms of exports value-added (from 20 percent to 7 percent) and shared across all industries. Domestic production also became less reliant on foreign demand (from 41 percent to 25 percent) and more reliant on domestic demand over the last decade. These trends are consistent with reduced openness to international trade and a general loss of export competitiveness that curbed domestic firms' ability to export.

Kazakhstan exporters are using fewer imported inputs than a decade ago even though their use is necessary for participation in GVCs. In a world in which 80 percent of trade happens within international production networks, export competitiveness is increasingly dependent on efficient sourcing of imported intermediate inputs and services, as well as the ability to attract and retain FDI. Kazakhstan's firms need

access to intermediate inputs from any supplier in the world that offers the best value for money ratio in order to remain competitive in GVCs.

Kazakhstan would benefit from lower tariffs and a deeper type of integration that entails more openness to services and foreign investment. As a member of EEU, Kazakhstan cannot unilaterally reduce its tariffs. However, it can unilaterally streamline procedures in trade facilitation and improve connectivity in transport and logistics. Effort to reduce trade costs need to be coupled with efforts to integrate more deeply with the world while reforms to the investment policy regime could help attract and retain FDI in key sectors with significant technology, training, and skills transfer.

References

- Baldwin, R., & Lopez-Gonzalez, J. (2015). Supply-chain trade: A portrait of global patterns and several testable hypotheses. *The World Economy*, 38(11), 1682-1721.
- Besedes, T., & Prusa, T. J. (2004). Surviving the US import market: The role of product differentiation (No. w10319). National Bureau of Economic Research.
- Brenton, P., Saborowski, C., & Von Uexkull, E. (2010). What explains the low survival rate of developing country export flows? *The World Bank Economic Review*, 24(3), 474-499.
- Haddad, M., Harrison, A., & Hausman, C. (2011). Decomposing the great trade collapse: Products, prices, and quantities in the 2008–2009 crisis. The World Bank.
- Henn, C., Papageorgiou, C., Romero, J. M., & Spatafora, N. (2017). Export quality in advanced and developing economies: evidence from a new data set. The World Bank.
- Koopman, R., Powers, W., Wang, Z., & Wei, S. J. (2010). Give credit where credit is due: Tracing value added in global production chains (No. w16426). National Bureau of Economic Research.
- Reis, J. G., & Farole, T. (2012). Trade competitiveness diagnostic toolkit. The World Bank.
- Taglioni, D., & Winkler, D. (2016). Making global value chains work for development. The World Bank.
- WTO-OECD (2018). Trade in Value-Added Database. Geneva: WTO