Romania

Systematic Country Diagnostic

Background Note

Trade

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# Acknowledgments

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# Executive summary

Romania’s trade-to-GDP ratio increased from 60.4 percent to 83.7 percent between 1996 and 2016,[[1]](#footnote-2) while its large trade and current account deficits have been reduced to less than 2 percent of GDP.

Romania successfully diversified it exports basket by switching from labor intensive low-technology sectors (like garments and footwear) to more advanced sectors (like automotive and machinery and electronic equipment). However, this structural transformation of the export basket slowed down after the financial crisis of 2008–2009.

After 2008–2009, export growth relied more on the intensive margin (that is, exports of the same products to the same markets) compared with the preceding decade, in which the extensive margin (that is, exports of new products or to new markets) accounted for almost half of export growth.

Romania improved the sophistication of its export basket by increasing its medium technology exports. However, increasing the share of high-tech exports remains a challenge.

Romania’s high technology exports have low quality relative to competitors, and exhibit lower survival rates. Quality improvements could be a key issue that would allow Romanian exporters to sustain and increase their exports of high technology goods.

# Background

1. **Romania’s openness to trade—measured as the share of imports and exports in GDP—significantly increased over the last two decades**. The ratio of trade openness increased from 60.4 percent to 83.7 percent between 1996 and 2016. In 1995–1996, Romania’s position below the red line in Figure 1 below indicates that it under-traded compared with countries having similar incomes per capita, and with some of the latest entrants into the EU (in blue in the graph below). In 2015–2016, Romania’s position on the red line indicates that the trade-to-GDP ratio is at the level expected from a country of its income per capita (Figure 2), but the difference in openness with latest entrants into the EU has increased, as the latter have become significantly more open to international trade with EU inclusion.

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| Figure 1. Trade/GDP Ratio, 1995–96 | Figure 2. Trade/GDP Ratio, 2015–16 |
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| Source: World Bank World Development Indicators |

1. **The share of exports of goods and services in GDP increased from 28 percent to 42 percent between 1996 and 2016**. The exports-to-GDP ratio showed a remarkable increase of 15 percentage points (from 27 percent to 42 percent) between 2009 and 2016 (Figure 3), while the import-to-GDP ratio remained stable for most of the last decade and a half (except during the global financial crisis period). The high current account deficits that averaged more than 10 percent of GDP a decade ago seem to be under control now, and averaged less than 2 percent of GDP since 2013 (Figure 4).

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| Figure 3. Exports and Imports of Goods and Services (percent of GDP) | Figure 4. Current Account (percent of GDP) |
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| Source: World Bank World Development Indicators |

1. **Romania’s exports underwent a significant change in terms of sectoral composition over the last decade.** Romania successfully diversified its exports basket by switching from labor intensive, low-technology sectors (like garments and footwear) to more advanced sectors (like automotive and machinery and electronic equipment) (Figure 5). However, this structural transformation of the export basket slowed down after the financial crisis of 2008–2009.

Figure 5. Market Share of Romania’s Exports, 1996–2016

Source: Author’s elaboration based on UN-COMTRADE

1. **Romania became more dependent on the EU as a destination for its exports—from 60 percent to 75 percent of total exports**—**over the last two decades,** while also increasing its share of exports to European countries that are not part of the EU. However, no other major region in the world accounts for more than 5 percent of Romania’s total exports (Figure 6).

Figure 6. Market Share of Romania’s Exports, 1996–2016

Source: Author’s elaboration based on UN-COMTRADE

1. **Services exports grew at an annualized rate of 13.9 percent per year between 1996 and 2013, with two modern services sectors** (business services and computer and information) accounting for most of the services export growth over this period (Table 1). Thus, exports of business and information and communication technology (ICT) services became the second and third leading services export sectors, respectively, and accounted for 42 percent of services exports in 2013.

Table 1. Romania: Services Exports, 1996–2013

|  |  |  |  |
| --- | --- | --- | --- |
|  | **1996** | **2013** | **CAGR, 1996–2013** |
|  | **US$ mill.** | **% total** | **US$ mill.** | **% total** |
| Transport | 573 | 37 | 5,022 | 35 | 13.6 |
| Other business services | 92 | 6 | 3,972 | 28 | 24.8 |
| Computer and information | 3 | 0 | 1,974 | 14 | 46.5 |
| Travel | 530 | 34 | 1,442 | 10 | 6.1 |
| Communications | 75 | 5 | 691 | 5 | 13.9 |
| Construction | 52 | 3 | 556 | 4 | 14.9 |
| Financial services | 53 | 3 | 292 | 2 | 10.6 |
| Insurance | 21 | 1 | 125 | 1 | 11.0 |
| Other | 166 | 11 | 282 | 2 | 3.2 |
| **Total** | **1,565** | **100** | **14,356** | **100** | **13.9** |
| Source: UNCTADNote: CAGR=compound annual growth rate. |

# Diversification and Export Growth

1. **Export concentration (in terms of both products and markets) does not seem to pose a substantial problem for Romania**. Romania significantly reduced the concentration of its export products (Figure 7) while maintaining a similar level of export market concentration (Figure 8) over the last decade. The concentration of export products (as measured by the Herfindahl index) dropped by about a third between 2006 and 2016, and is very similar to the level of Bulgaria, Czech Republic, and Croatia. Only Poland has a significantly lower export product concentration among comparator countries. In terms of market destinations, Romania has the third lowest concentration index among comparator countries after of Bulgaria and Croatia.

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| Figure 7. Herfindahl Index—Products | Figure 8. Herfindahl Index—Concentration |
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Source*:* Author’s elaboration based on UN-COMTRADE

1. **More than a third of export growth between 1996 and 2008 was due to the extensive margin, more specifically to the growth of exports of new products to existing markets**. After 2008, export growth has relied more on the intensive margin (that is, exports of the same products to the same markets) compared with 1996–2008 in which the extensive margin (that is, exports of new products or to new markets) accounted for almost half (47 percent) of export growth. In particular, the contribution of new export products to total export growth has declined from 44.5 percent in 1996–2008 to 4.7 percent in 2008–2016 (Figure 9).

Figure 9. Sources of Export Growth, 1996–2016: Intensive and Extensive Margins

Source: Author’s elaboration based on UN-COMTRADE

# Technological Content, Sophistication, and Quality

1. **The technological content of Romania’s exports improved over the last two decades due to an increase in medium technology exports (automobiles and auto parts) but the country struggled to increase its share of high technology exports**[[2]](#footnote-3). Medium technology goods increased their importance in Romania’s exports (from 23 percent to 46 percent between 1996 and 2016) and as a result their share in the export basket is now similar to most regional comparators (Figure 10). However, the importance of high-tech products in Romania’s exports still lags that of most comparators except for Bulgaria. Despite increasing in importance over the last two decades, high technology exports still represent less than 10 percent of total exports in Romania (Figure 11).

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| Figure 10. Technological Classification of Exports | Figure 11. Share of High Technology Exports |
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Source: Author’s elaboration based on UN-COMTRADE

1. **The sophistication of Romania’s exports, as measured by its income level of exports (EXPY[[3]](#footnote-4)), increased by almost 20 percent between 1996 and 2016**. This is the largest increase among comparator countries like Poland (12 percent), Croatia (10 percent), Czech Republic (8 percent), Slovakia (7 percent), and Bulgaria (−0.5 percent) during the same period. However, the increase in sophistication slowed down after 2008–2010. The increasing importance of mid-tech exports (mainly automobiles and auto parts) played an important role in the evolution of Romania’s EXPY as they replaced less sophisticated products (garments and textiles) as the top export sectors and allowed the country to narrow the ‘sophistication gap’ with countries like Poland, Czech Republic, and Slovakia (Figure 12).

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| Figure 12. Export Sophistication (EXPY), 1996–2016 |
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Source*:* Author’s elaboration based on UN-COMTRADE

1. **Preliminary evidence points to a relatively poor performance of the quality of high technology exports over the last decade in Romania (Figure 13)**. While medium technology sectors like automotive have been able to remain competitive and record significant quality increases (8.8 percent), the quality increase in high tech sectors like pharma (3.6 percent), electrical machinery (1.9 percent), and scientific instruments (1 percent) remains modest, and underperformed even low technology sectors like clothing (3.8 percent).

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| Figure 13. Percental Increase in Quality Index 1996-2010 |
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 Source: Author’s elaboration based on IMF’s Export Quality Database

# Survival Rates[[4]](#footnote-5)

1. **The overall survival rate of Romania’s exports is the third lowest among comparator countries, and only higher than Bulgaria and Croatia**. While less than half of Romania’s export relationships survive past the second year, only about a quarter survive up to ten years (Figure 14). However, there are significant differences in the survival rates depending on the technological level of exports in Romania. Low technology and resource-based products show a higher survival rate than medium and high technology products (Figure 15). The decline in relative quality in the latter could be one of the issues influencing this lower survival rate.

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| Figure 14. Export Relationships Survival Rates, 2006–2016 | Figure 15. Romania: Survival Rates by Technology Type, 2006–2016 |
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Source: Author’s elaboration based on UN-COMTRADE

# Annex. EXPY and Unit Value Calculations

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| 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 towards 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 these PRODY by the share that each good contributes to total exports. If butter makes up 15 per cent 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. |

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| Box 2. Measuring Relative Quality of Exports Using Highly Disaggregate Trade Data |
| We rely on the COMEXT database from EUROSTAT to characterize the relative unit values of exports to the EU from 1999 to 2009. As in Schott (2004), unit values were calculated simply as the quotient of general imports values and quantities. Within any 8-digit CN product for any given year, we then have a distribution of unit values of imports from the different source countries. For each good $i$ and exporting country $c$, in time year $t$, we generate a measure of relative quality $R$ as:$$R\_{itc}=\frac{u\_{itc}}{u\_{it}^{90}}$$Where $u\_{itc}$ denotes de unit value of the good and $u\_{it}^{90}$ denotes the value at the 90th percentile of the unit value distribution across countries for that product. $R\_{itc}$ denotes the relative quality of the country’s export of that good, i.e., quality relative to other countries exporting the same good.We calculated the relative quality of each product at the 8-digit CN level and then aggregated them at the 2-digit HS level using the 8-digit CN product shares within that specific HS 2-digit sector as weights. The resulting relative unit value can be thought of as a representative or average quality measure for these HS-2 sectors. |

1. Unless explicitly noted all the analysis in this note uses data reported by Romania and comparator countries to UN-COMTRADE. [↑](#footnote-ref-2)
2. Technological classification is based on: Lall, Sanjaya (2000). The Technological Structure and Performance of Developing Countries Manufactured Exports, 1985–98. Oxford Development Studies, Vol. 28, No. 3. [↑](#footnote-ref-3)
3. Sophistication is measured by a country’s EXPY as described in: R. Hausmann, J. Hwang and D. Rodrik (2007). "What you export matters," Journal of Economic Growth, vol. 12(1), pages 1–25, March. See Annex 4 for a brief description of EXPY. [↑](#footnote-ref-4)
4. This section is based on country-level data, and all references to survival rates should be understood as the probability that an existing export relationship with another country survives ‘x’ number of years (that is, the probability that exports of a particular product at 6–digit level from Romania to another country survives ‘x’ number of years). Although this analysis provides important indicative insights about export survival rates, ideally, we would like to calculate survival rates from firm-level data. However, firm level data was not available for this study. [↑](#footnote-ref-5)