

POLICY RESEARCH WORKING PAPER

5225

# Estimating the Import Content of Argentine Exports

*Paloma Anós-Casero*  
*Bernardo Díaz de Astarloa*

The World Bank  
Latin America and the Caribbean Region  
Economic Policy Sector  
March 2010



## Abstract

Despite recent efforts toward collecting evidence of vertical specialization for developed economies, scarce work has been dedicated to developing economies and to Argentina, in particular. The key contribution of this paper is to provide comparable estimates of vertical specialization as reflected in the imported content of

exports in Argentina. Drawing on the 1997 input-output matrix for Argentina, the authors estimate that the imported content of the country's exports is about 14.5 percent of total exports, lower than for other emerging economies. They also provide estimates of imported content for more disaggregated product categories.

---

This paper—a product of the Economic Policy Sector, Latin America and the Caribbean Region—is part of a larger effort in the department to gain a deeper understanding of the main trade patterns of LAC countries. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. The author may be contacted at [panoscasero@worldbank.org](mailto:panoscasero@worldbank.org).

*The Policy Research Working Paper Series disseminates the findings of work in progress to encourage the exchange of ideas about development issues. An objective of the series is to get the findings out quickly, even if the presentations are less than fully polished. The papers carry the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the views of the International Bank for Reconstruction and Development/World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent.*

# **Estimating the Import Content of Argentine Exports**

Paloma Anós-Casero  
Bernardo Díaz de Astarloa

# 1 Introduction

The increase in vertical specialization is changing the patterns of trade across the globe, as reflected in the location of production, trade flows and wages. Vertical specialization can be defined broadly as “the interconnectedness of production processes in a vertical trading chain that stretches across many countries, with each country specializing in particular stages of a good’s production sequence”, to put it in the terms of Hummels et al. (2001), and has been alternatively labeled as, to name a few, “outsourcing”, “fragmentation” or “intra-product specialization” in the international trade literature.

Despite some efforts towards collecting evidence of vertical specialization in advanced (mainly OECD) economies, there is little evidence of vertical specialization for developing economies. While Hummels et al. (2001) report results for Australia, Canada, Denmark, France, Germany, Japan, Italy, Netherlands, United Kingdom, United States, Ireland, Korea, Mexico and Taiwan for several years, Breda et al. (2008) replicate the exercise for Belgium, France, Germany, Italy, Netherlands, Spain and United Kingdom. This paper contributes to the existing literature in an attempt to narrow this gap providing comparable evidence of the level of vertical specialization in Argentina in 1997.

We will focus on a particular aspect of disintegrated production processes, namely, one that looks at imported goods and services used as inputs in the production of export goods and services. In this sense, the imported content of exports comprises a narrow concept of this phenomenon. Following this approach to vertical specialization, Hummels et al. (2001) develop a measure of vertical specialization based on data from input-output tables, which measures imported inputs embodied in goods that are exported. Here we follow the same approach and apply their methodology to measure vertical specialization in Argentina for 1997. We use the 1997 input-output tables for Argentina, compiled by the National Institute of Statistics and Census (INDEC). We estimate the imported content of Argentine exports for 17 aggregate sectors of economic activity and for the country as a whole, as well as some other related indicators. To our knowledge, this is the first study to perform such an exercise applying a comparable methodology using data for Argentina or any South American country.

The paper is organized as follows. In section 2 we outline the estimation methodology. Section 3 briefly describes the data and presents the results. Section 4 concludes with some final remarks.

# 2 Methodology

We follow Hummels et al. (2001) in their measures of vertical specialization (VS). For country  $k$  and sector  $i$  a first measure of VS can be defined as follows:

$$(1) \quad \mathbf{VS}_{ki} = [(\text{imported intermediates})/\text{gross output}] \cdot \text{exports}.$$

Note that this measure can be interpreted as foreign value-added embodied in exports. It provides a dollar value for the imported input content of exports. Note, also, that (1) could result in under or over-estimation of the *actual* imported input content of exports. If a sector produces more than one good, and it happens that one of the goods that is exported uses no imported intermediate inputs, then actual VS would be lower than the one calculated using (1).

It is useful to also calculate the imported intermediate content of exports as a share of total exports for the country as a whole:

$$(2) \quad \text{VS share of total exports} \equiv \text{VS}_k / X_k = \sum_i \text{VS}_{ki} / \sum_i X_{ki},$$

where  $\mathbf{X}$  denotes exports. Using matrix notation, calculation of (2) for country  $k$  is

$$(3) \quad \text{VS share of total exports} \equiv \text{VS}_k / X_k = \mathbf{m}\mathbf{X} / X_k,$$

where  $\mathbf{m}$  is a  $1 \times n$  vector of imported coefficients,  $\mathbf{X}$  is a  $n \times 1$  vector of exports,  $n$  is the number of sectors and  $X_k$  is the sum of exports across the  $n$  sectors. Each component  $m_i$  of vector  $\mathbf{m}$  denotes the imported inputs of sector  $i$  used to produce one unit of gross output. Note from (1) and (2) that the VS share of total exports for each sector  $i$  of economic activity turns out to be the imported intermediates' share of domestic output (also denoted "import coefficient").

As can be inferred from (3), this calculation provides an indicator of the *direct* content of imported inputs. Instead, input-output tables allow us to calculate the value of imported inputs used *directly* and *indirectly* in the production of an exported good. That is, an imported input is allowed to circulate through several stages of domestic (intermediate) production before finally being incorporated in a final exported good. A preferred measure for the imported intermediate content of exports as a share of total exports for country  $k$  is, thus,

$$(4) \quad \text{VS share of total exports} \equiv \text{VS}_k / X_k = \mathbf{m}[\mathbf{I} - \mathbf{A}^D]^{-1} \mathbf{X} / X_k,$$

where  $\mathbf{I}$  is an  $n \times n$  identity matrix and  $\mathbf{A}^D$  is the  $n \times n$  domestic technical coefficients matrix. The  $[\mathbf{I} - \mathbf{A}^D]^{-1}$  matrix is the direct and indirect coefficients matrix well known from Leontief's input-output analysis. Note that, as was noted above, (4) has the same inconvenience regarding potential biases in calculating the amount of vertical specialization. We use specification (4) for obtaining our results of imported content of exports<sup>1</sup>.

---

<sup>1</sup> Results using specification (3) are available upon request.

### 3 Results

We use the 1997 input-output tables for the Argentine economy produced by the National Institute for Statistics and Census (INDEC), publicly available at the Institute's official website. In particular, we have data for 124 production activities, corresponding to 17 sectors of economic activities, which can be in turn aggregated into 4 broad aggregates: Agriculture, Mining, Manufacturing and Services. Data is used at basic prices, that is, not including taxes net of subsidies, trade and transportation margins or customs expenditures.

Table 1 summarizes our results for broad aggregates. As could be expected, manufacturing has the highest imported content at 18.45 percent of total exports, followed by agriculture, with 7.9 percent of imported content<sup>2</sup>. For the country as a whole, the imported intermediate content of total exports amounts to 14.46 percent of total exports (US\$ 4.02 billion). This compares to 32.0 for Mexico in 1997, around one third for Ireland, Korea and Taiwan in 1990 and 19.8 for a group of 10 OECD countries in 1990 (see Hummels et al. 2001). For European countries in 1995, Breda et al. (2008) report 24.4 for Italy, 21.5 for Germany, 20.5 for France, 27.5 for Spain, 41.5 for Belgium and 33.8 for Netherlands.

Furthermore, Table 2 disaggregates the exercise into 17 sectors of economic activities<sup>3</sup>. Note that now it is 'Postal and telecommunications services' that follows manufacturing with 10.3 percent of imported content of exports, being the sector with the highest imported content as a share of exports in the 'Services' aggregate.

The 1997 input-output tables for Argentina also include data on imports and production at the product level for 195 groups of products<sup>4</sup>. Using this information, we first focus on the structure of imports for manufacturing sectors. It is informative to look at which products are imported by those sectors whose (indirect) import content is higher. Figure 1 shows manufacturing sectors ordered by their import content as a share of exports. 'Motor vehicles' is the manufacturing sector with a highest imported content (45.5 percent). For those manufacturing sectors which show an imported content above 25 percent, we present the ten most imported products, given by their share on each sector's total imports. Table 3 presents the results. Two key features arise from inspecting Table 3. In the first place, imports are concentrated in a few products, as in all but one manufacturing sector the ten most imported products account for more than 90 percent of total imports. Secondly, as could be expected, the structure of these manufacturing sectors reflects a considerable amount of intra-industry trade. For instance, for the sector 'Motor vehicles' 25.0 and 22.1 percent of imports correspond to 'Motor vehicles, trailer

---

<sup>2</sup> Manufacturing is also the sector with the highest imported content for every country in the Breda et al. (2008) sample. However, for the countries in their study, manufacturing shows significantly higher values, that range from 23.7 for France to 49.9 for Belgium (all 1995 figures).

<sup>3</sup> The disaggregation comes in the 'services' aggregate, which is broken down into 14 different sectors.

<sup>4</sup> The "product" classification is being used quite arbitrarily here, as the 1997 input-output tables do not follow any international classification (or at least it is not indicated in the methodology report). In any case, it is the most disaggregated category presented in the 1997 input-output tables.

cars; their parts, pieces and accessories' and 'Bodyworks (including cabs) for motor vehicles; trailer cars; their parts, pieces and accessories', respectively.

Finally, we study the import content of domestic production at the product level. For the 195 products we have data on total imports, imported intermediates, total supply, (domestic) production value and exports. Using this information we calculate, for product  $j$ , the following indicators:

- (5)  $IM_j = \text{imported intermediates}/(\text{production value} + \text{total imports})$ ,
- (6)  $TM_j = \text{total imports}/(\text{production value} + \text{total imports})$ ,
- (7)  $VS_j = (\text{imported intermediates}/\text{production value}) \cdot \text{exports}$ .

Note, as before, that for each product  $j$ , the VS share of total exports as calculated in (2) can be obtained from (7), and reduces to the imported intermediates' share of domestic production (here called production value). Particularly, computing this indicator for some products gives values above 100 percent. Although at first sight this might seem odd, values above 100 percent might arise if, for some products, domestic production is not enough to meet intermediate requirements for the production of other goods. Naturally, this is indicative of the specialization pattern of the Argentine economy. Instead,  $IM_j$  will always give values between 0 and 100 percent.

Table 4 shows the results of computing (5), (6) and the VS share of exports for each product. As expected, many of the products with a high value for IM correspond to products that could be considered capital goods (i.e. engines, valves, electrical components). Also, some minerals (especially iron) and chemical products show a high share of intermediate imports.

## 4 Conclusion

Understanding the extent of vertical specialization in developing countries can be helpful for understanding the capabilities and limitations of export promotion and exporting booms in these countries. In this paper we have gone one step in this direction in providing an estimate of the extent of vertical specialization in Argentina in 1997.

Our results indicate that vertically specialized trade as indicated by the imported content of exports represented 14.5 percent of total exports in 1997. This figure is lower than similar estimates for developed economies in 1990 and 1995 that can be found in the related literature. We have found that manufacturing accounts for the largest share of imported content of exports, which accords with patterns observed in other economies. Moreover, for this broad aggregate, we find that imports are concentrated in a few product categories and are consistent with a high degree of intra-industry trade. At a more disaggregated level, imported intermediates as a share of production and imports are considerably high in product categories that can be associated with capital goods and the mining sector.

Before concluding, we offer a warning against incorrect interpretation of the results. The data used in this paper comes from the 1997 input-output tables for the Argentine economy. Therefore, our estimates should not be taken as representing the

*current* structure of trade or nature of vertical specialization in Argentina. Structural changes in the industrial sector after the 1990s and widespread changes in relative prices after the devaluation of the Argentine peso in 2001 have most likely affected trade patterns and surely have modified technical coefficients in the input-output matrix. All in all, our figures are nevertheless useful for means of assessing trade patterns in Argentina in the 1990s and for comparing with other economies in the same period.

We believe that further research in updating input-output matrices and extending estimates to other developing economies should give a clearer picture of the nature of vertical specialization and be useful for designing policies related to foreign markets.

## References

- Hummels, D., Ishii, J. and Kei-Mu Yi (2001). "The nature and growth of vertical specialization in world trade", *Journal of International Economics*, 54 (2001), 75-96.
- Breda, E., Cappariello, R. and R. Zizza (2008). "Vertical specialization in Europe: evidence from the import content of exports", Banca D'Italia Working Paper, No. 682, August.



Table 1  
Imported intermediate content of exports for broad aggregates

Sector	Imported content (US\$ million)	Total exports (US\$ million)	Imported content of exports (%)
Agriculture	289.7	3,665.1	7.90
Mining	94.6	2,311.5	4.09
Manufacturing	3487.8	18,908.3	18.45
Services	146.3	2,907.7	5.03
<b>Total</b>	<b>4,018.4</b>	<b>27,792.6</b>	<b>14.46</b>

Table 2  
Imported intermediate content of exports for selected sectors of economic activity

Sector	Imported content (US\$ million)	Total exports (US\$ million)	Imported content of exports (%)
Agriculture	289.7	3,665.1	7.90
Mining	94.6	2,311.5	4.09
Manufactures	3,487.8	18,908.3	18.45
Electricity, gas and water supply	0.8	11.3	6.85
Construction	0.6	7.9	7.69
Wholesale trade	29.9	791.9	3.77
Retail trade	0.0	0.0	-
Hotels and restaurants	0.0	0.0	-
Transportation and storage	81.2	1,641.5	4.95
Postal and telecommunication services	26.9	261.4	10.30
Financial intermediation	1.4	78.8	1.84
Real estate, enterprise and rental activities	1.0	24.0	4.18
Public administration, defense and compulsory social security plans	0.3	10.9	2.30
Education	0.0	0.0	-
Health	0.0	0.0	-
Other community, social or personal services	4.2	80.0	5.29
Domestic service	0.0	0.0	-

**Table 3**  
Imports per product for selected manufacturing sectors as a percent of total imports\*

<b>Motor vehicles</b>	
Motor vehicles, trailer cars; their parts, pieces and accessories	25.0
Engines and turbines and their parts	22.5
Bodyworks (including cabs) for motor vehicles; trailer cars; their parts, pieces and accessories	22.1
Other processed metal products	7.7
Tires and inner tubes, made of rubber	4.9
Other electrical equipment, its part and pieces	4.6
Other rubber products	1.8
Insulated strings and wires; optical fiber wires	1.5
Products produced with textile materials	1.2
Other machines for general use, their parts and pieces	1.0
Cumulated	92.3
<b>Radio and TV receivers</b>	
Parts and pieces for broadcasting devices and radio and television receivers, radar devices for radio navigation or radio waves remote control devices	45.5
Valves and electronic tubes; electrical components; their parts and pieces	44.3
Other products made of plastic	2.1
Insulated strings and wires; optical fiber wires	2.1
Other processed metal products	0.8
Gadgets for domestic use, their parts and pieces	0.8
Devices for electrical control or electricity distribution, and their parts and pieces	0.8
Financial intermediation services	0.7
Products for packaging, made of plastic	0.5
Other electrical equipment, its part and pieces	0.4
Cumulated	98.1
<b>Fertilizers and pesticides</b>	
Basic organic chemical products, basic inorganic chemical products n.i.e., chemical products n.i.e.	52.9
Fertilizers and pesticide	41.3
Gasoline, gas oil, fuel oil and other fuels, other refined and prepared oil products n.i.e.	2.6
Non-tangible non-financial assets	1.1
Non-ferrous metals minerals and concentrates (except uranium and thorium minerals and concentrates)	0.7
Pharmaceutical products	0.5
Other mineral non metal products n.i.e.	0.2
Extracts from ink, tannin and its derivatives; coloring products n.i.e.	0.1
Artificial, synthetic rubber and its mixtures, and analogue natural rubbers	0.1
Insurance and pensions services	0.1
Cumulated	99.6
<b>Office and computer science machinery</b>	
Computer science machinery and their parts, pieces and accessories	99.3
Valves and electronic tubes; electrical components; their parts and pieces	0.3
Laminated products, stretched or bent, made of iron or steel	0.1
Paper pulp, paper and cardboard	0.1
Insurance and pensions services	0.0
Glass and glass products	0.0
Paint and varnish, connected products; artistic painting colors, ink	0.0
Insulated strings and wires; optical fiber wires	0.0
Other electrical equipment, its part and pieces	0.0
Other machines for general use, their parts and pieces	0.0
Cumulated	99.9

\* First ten most imported products by manufacturing sectors that have an indirect import content of exports above 25 percent.

Table 3 (cont.)  
Imports per product for selected manufacturing sectors as a percent of total imports\*

<b>Tubes and radio, TV and telephony transmitters</b>	
Valves and electronic tubes; electrical components; their parts and pieces	83.4
Parts and pieces for broadcasting devices and radio and television receivers, radar devices for radio navigation or radio waves remote control devices	5.3
Devices for electrical control or electricity distribution, and their parts and pieces	3.1
Insulated strings and wires; optical fiber wires	3.0
Computer science machinery and their parts, pieces and accessories	1.6
Other processed metal products	0.8
Plastic in primary forms	0.3
Non-tangible non-financial assets	0.3
Storage batteries, batteries and primary batteries, and their parts and pieces	0.3
Other machines for general use, their parts and pieces	0.3
Cumulated	98.3
<b>Synthetic manufactured fibers</b>	
Basic organic chemical products, basic inorganic chemical products n.i.e., chemical products n.i.e.	48.0
Plastic in primary forms	23.7
Manufactured textile fibers	20.8
Paper pulp, paper and cardboard	1.9
Machinery for textiles production, garments and leather products, and its parts and pieces	1.2
Glass and glass products	1.0
Extracts from ink, tannin and its derivatives; coloring products n.i.e.	0.4
Other processed metal products	0.4
Threads and textile fiber threads	0.3
Artificial, synthetic rubber and its mixtures, and analogue natural rubbers	0.2
Cumulated	98.0
<b>Other chemical products</b>	
Basic organic chemical products, basic inorganic chemical products n.i.e., chemical products n.i.e.	68.4
Plastic in primary forms	10.6
Gasoline, gas oil, fuel oil and other fuels, other refined and prepared oil products n.i.e.	6.8
Fertilizers and pesticide	1.7
Pharmaceutical products	1.6
Extracts from ink, tannin and its derivatives; coloring products n.i.e.	1.1
Paper pulp, paper and cardboard	1.0
Artificial, synthetic rubber and its mixtures, and analogue natural rubbers	1.0
Non-tangible non-financial assets	0.9
Plastic materials semi-manufactures	0.7
Cumulated	93.9
<b>Motorcycles, bicycles and other means of transport</b>	
Other transport equipment, its part and pieces	72.4
Tires and inner tubes, made of rubber	8.7
Engines and turbines and their parts	7.3
Other electrical equipment, its part and pieces	5.7
Other processed metal products	2.4
Rail clips, gears, transmission devices and their parts and pieces	0.8
Common precious metals and metals plated with precious metals; copper, aluminum, nickel, lead, zinc, tin, non processed, their products and alloys; other non ferrous metals and their manufactures	0.4
Other machines for general use, their parts and pieces	0.3
Plastic in primary forms	0.2
Products for packaging, made of plastic	0.2
Cumulated	98.4

\* First ten most imported products by manufacturing sectors that have an indirect import content of exports above 25 percent.

Table 3 (cont.)  
Imports per product for selected manufacturing sectors as a percent of total imports\*

<b>Tires, and tires repairs</b>	
Natural rubbers	34.1
Artificial, synthetic rubber and its mixtures, and analogue natural rubbers	19.5
Tires and inner tubes, made of rubber	12.0
Basic organic chemical products, basic inorganic chemical products n.i.e., chemical products n.i.e.	12.0
Manufactured textile fibers	9.3
Other processed metal products	5.4
Other rubber products	2.4
Other machinery for special use, its parts and pieces	1.3
Laminated products, stretched or bent, made of iron or steel	0.6
Financial intermediation services	0.6
Cumulated	97.2
<b>Basic chemistry</b>	
Basic organic chemical products, basic inorganic chemical products n.i.e., chemical products n.i.e.	56.6
Gasoline, gas oil, fuel oil and other fuels, other refined and prepared oil products n.i.e.	22.1
Fertilizers and pesticide	6.1
Extracts from ink, tannin and its derivatives; coloring products n.i.e.	2.7
Pharmaceutical products	2.1
Non-tangible non-financial assets	1.3
Common precious metals and metals plated with precious metals; copper, aluminum, nickel, lead, zinc, tin, non processed, their products and alloys; other non ferrous metals and their manufactures	1.2
Paper pulp, paper and cardboard	0.9
Pumps, compressors, hydraulic engines and pneumatic power engines, valves and their parts and pieces	0.8
Chemical minerals and mineral fertilizers	0.8
Cumulated	94.7
<b>Insulated strings and wires</b>	
Common precious metals and metals plated with precious metals; copper, aluminum, nickel, lead, zinc, tin, non processed, their products and alloys; other non ferrous metals and their manufactures	70.0
Devices for electrical control or electricity distribution, and their parts and pieces	9.1
Plastic in primary forms	8.7
Insulated strings and wires; optical fiber wires	8.7
Basic organic chemical products, basic inorganic chemical products n.i.e., chemical products n.i.e.	0.8
Plastic materials semi-manufactures	0.6
Products for packaging, made of plastic	0.3
Other processed metal products	0.3
Paint and varnish, connected products; artistic painting colors, ink	0.2
Valves and electronic tubes; electrical components; their parts and pieces	0.2
Cumulated	98.7

\* First ten most imported products by manufacturing sectors that have an indirect import content of exports above 25 percent.

**Table 4**  
**Indicators of import content of production at the product level (in %)\***

Product	IM	TM	VS share of exports
Iron minerals and concentrates, except toasted iron pyrites	98.5	98.4	6,136.3
Parts and pieces for broadcasting devices and radio and television receivers, radar devices for radio navigation or radio waves remote control devices	90.7	93.4	1,375.9
Non-tangible non-financial assets	89.0	89.0	813.0
Natural rubbers	69.3	69.3	225.5
Boilers generating water vapor (except hot water boilers for central heating) and their parts and pieces	68.3	71.0	235.0
Valves and electronic tubes; electrical components; their parts and pieces	68.2	75.2	275.1
Other aquatic products	65.6	66.0	192.9
Coal and peat	62.5	62.4	166.3
Equipment for elevation and handling and its parts and pieces	61.1	61.1	156.9
Devices for electrical control or electricity distribution, and their parts and pieces	57.7	57.4	135.4
Rail clips, gears, transmission devices and their parts and pieces	54.5	54.7	120.3
Engines and turbines and their parts	53.9	61.2	138.9
Line access services; line access provision services; press agencies services; library and files services	49.1	49.1	96.6
Common iron and steel	46.0	42.9	80.6
Bodyworks (including cabs) for motor vehicles; trailer cars; their parts, pieces and accessories	41.7	47.6	79.6
Basic organic chemical products, basic inorganic chemical products n.i.e., chemical products n.i.e.	39.1	39.4	64.5
Other electrical equipment, its part and pieces	36.6	61.5	95.1
Artificial, synthetic rubber and its mixtures, and analogue natural rubbers	35.6	35.6	55.2
Manufactured textile fibers	34.0	34.0	51.6
Plastic in primary forms'	33.8	33.8	51.0
Extracts from ink, tannin and its derivatives; coloring products n.i.e.	33.5	33.4	50.3
Drinkable plants and spices	31.3	36.0	48.9
Other mineral non metal products n.i.e.	30.9	31.0	44.8
Fertilizers and pesticide	30.4	30.9	44.0
Tires and inner tubes, made of rubber	29.3	32.6	43.4
Common precious metals and metals plated with precious metals; copper, aluminum, nickel, lead, zinc, tin, non processed, their products and alloys; other non ferrous metals and their manufactures	25.1	25.3	33.6
Insulated strings and wires; optical fiber wires	24.2	24.2	31.9
Ovens and burners for domestic use and their parts and pieces	23.0	73.0	85.4
Machinery for the metallurgical industry and its parts and pieces	22.3	95.5	497.2
Arms, ammunition, their parts and pieces	21.3	29.6	30.3
Optical instruments, and photographic devices and equipment, and their parts, pieces and accessories	19.9	61.8	52.1
Computer science machinery and their parts, pieces and accessories	19.6	76.3	83.1
Precious and semi-precious stones; frost; pumice stone; natural abrasives; other minerals	18.2	18.2	22.3
Paper pulp, paper and cardboard	18.2	19.7	22.6
Prefabricated buildings	18.0	22.1	23.1
Electrical, incandescent or discharge lamps; arch lamps, equipment for electrical lighting; their parts and pieces	17.4	26.4	23.6
Pumps, compressors, hydraulic engines and pneumatic power engines, valves and their parts and pieces	17.2	48.7	33.5
Storage batteries, batteries and primary batteries, and their parts and pieces	16.8	34.9	25.8
Food industry and tobacco wastes	15.9	15.9	18.9
Other processed metal products	15.1	20.8	19.1
Fabrics	15.1	15.5	17.9
Non-ferrous metals minerals and concentrates (except uranium and thorium minerals and concentrates)	14.7	14.7	17.2

\* Products not produced domestically were omitted from the table.

Table 4 (cont.)  
Indicators of import content of production at the product level (in %)\*

Product	IM	TM	VS share of exports
Machines for mining, construction and quarries exploitation, their parts and pieces	14.6	80.5	74.9
Office and accounting machines and their parts, pieces and accessories	14.5	96.6	422.6
Other rubber products	14.5	31.0	21.0
Electrical engines, generators and transformers, their parts and pieces	14.2	54.1	30.9
Plastic materials semi-manufactures	13.7	13.7	15.9
Paint and varnish, connected products; artistic painting colors, ink	13.5	13.3	15.5
Machinery for textiles production, garments and leather products, and its parts and pieces	13.4	91.6	158.8
Sawed or cut wood	13.2	13.2	15.2
Glass and glass products	13.0	17.1	15.6
Metal wastes	12.7	12.7	14.6
Other transport equipment, its part and pieces	12.3	45.3	22.4
Laminated products, stretched or bent, made of iron or steel	12.2	12.2	13.9
Structural metal products and their parts	12.2	12.2	13.9
Pharmaceutical products	10.7	18.8	13.2
Products produced with textile materials	10.6	18.4	12.9
Locomotives and railways and streetcars material, and their parts and pieces	10.4	41.5	17.8
Stamps, checkbooks, bank notes, advertising material, engraving and other papers	9.6	11.7	10.9
Refractory and non refractory ceramics products for non structural use	9.2	9.2	10.1
Devices and instruments for measuring, verification, analysis, navigating and other means, except optical instruments; instruments for the control of industrial processes, and their parts, pieces and accessories	8.9	63.8	24.7
Chemical minerals and mineral fertilizers	8.6	8.6	9.4
Other forestry products (including vegetable coal)	8.5	9.1	9.4
Other machines for general use, their parts and pieces	8.4	41.5	14.4
Other machinery for special use, its parts and pieces	8.3	83.1	49.3
Threads and textile fiber threads	7.9	8.3	8.6
Motor vehicles, trailer cars; their parts, pieces and accessories	7.4	30.6	10.7
Discontinuous manufactured textile fibers, produced for spinning	7.2	7.2	7.8
Electric energy, except distribution services	7.1	7.1	7.6
Insurance and pensions services	7.0	9.1	7.1
Stone for construction and sculpture and its manufactures	6.9	7.1	7.5
Cocoa, chocolate and patisserie products with sugar	6.8	12.7	7.8
Other manufactured products n.i.e.	6.7	24.7	8.9
Tool machines, their parts, pieces and accessories	6.4	61.6	16.7
Pottery products for non-structural use	6.4	18.6	7.8
Gasoline, gas oil, fuel oil and other fuels, other refined and prepared oil products n.i.e.	6.2	6.2	6.6
Wood products	6.2	6.9	6.6
Petroleum jelly, wax and analogue products; oil or oil from bituminous minerals waste	5.7	5.7	6.0
Complementary and auxiliary transport services	5.5	5.5	5.8
Preparations for feeding animals	5.4	5.4	5.7
Other products made of plastic	5.4	15.8	6.4
Seeds and oilseeds	5.4	5.4	5.7
Non metal wastes	5.0	5.0	5.3
Products for packaging, made of plastic	5.0	5.2	5.2
Magnetic tapes and records for hearing or audiovisual equipment; cards with magnetic strips or chips	4.5	44.4	8.2
Professional, scientific and technical services; excludes advertising services	4.4	4.4	4.6
Clay	4.1	4.1	4.3
Crude oil and natural gas	3.8	3.8	4.0
Stone for construction and sculpture	3.5	3.5	3.6
Watches, their parts and pieces	3.3	81.4	17.9
Cement, lime and plaster	3.3	2.0	3.4
Machines for producing food, beverages and tobacco, their parts and pieces	3.2	27.6	4.5
Live plants; flowers; flower and fruit seeds; vegetable seeds	3.1	3.8	3.2

\* Products not produced domestically were omitted from the table.

Table 4 (cont.)  
Indicators of import content of production at the product level (in %)\*

Product	IM	TM	VS share of exports
Register book, accounting books, notebooks, letters and other desktop products (paper or cardboard made); printing plates and other printing products	2.9	3.0	2.9
Vegetable crude matter	2.5	2.5	2.6
Agricultural or forest machines, their parts and pieces	2.4	32.3	3.5
Wood wool; wood flour; chips	2.1	2.1	2.1
Telecommunications services	2.1	2.1	2.1
Entertainment, cultural and sport services	2.1	2.1	2.1
Beer and lager	2.0	5.2	2.2
Cereals	2.0	2.0	2.0
Financial intermediation services	1.9	1.9	1.9
Food products n.i.e.	1.6	5.2	1.7
Furniture and vehicle seats	1.4	5.0	1.5
Cured or tanned leather; artificial or regenerated leather	1.4	1.4	1.4
Animal and vegetable oils and fat	1.3	1.9	1.3
Fine, cured or tanned furs, and artificial furs; products produced with these furs (except toiletries)	1.3	2.5	1.3
Sand, pebbles, gravel, smashed stone, natural asphalt	1.2	1.2	1.2
Milling products; starch; sugar and sugar syrups	1.0	2.0	1.0
Equipment and machinery renting services with or without a buying option	1.0	1.0	1.0
Gadgets for domestic use, their parts and pieces	0.9	22.8	1.2
Aircrafts and spacecrafts, their parts and pieces	0.8	75.6	3.2
Soap, mixtures for cleaning, perfumes and dressing room preparations	0.8	10.6	0.9
Concrete, cement and plaster products	0.7	0.7	0.7
Oil gas and other gaseous hydrocarbons	0.7	0.7	0.7
Common salt and pure sodium chloride; seawater	0.6	0.6	0.6
Processed or canned fruits and nuts	0.6	8.5	0.7
Non-processed wood	0.6	0.6	0.6
Other animal products	0.6	0.8	0.6
Plaster; melting limestone; limestone and other calcareous stones usually used in the production of cement	0.5	0.5	0.5
Mail and courier services	0.5	0.5	0.5
Natural textile fibers prepared for spinning	0.4	0.4	0.4
Processed and canned vegetables	0.4	9.7	0.4
Jewelry and related products; musical instruments; sport products; toys and games	0.3	50.4	0.6
Sugar	0.3	2.8	0.3
Fruits and nuts	0.2	9.4	0.2
Live animals	0.2	0.3	0.2
Commercial services, wholesale	0.1	0.1	0.1
Dairy products	0.1	1.4	0.1
Suitcases, handbags and similar products; saddler products; other leather products	0.1	12.7	0.1
Processed and canned fish	0.1	6.6	0.1
Cotton; oilseeds cakes; seeds and oilseeds flour; vegetable wax	0.1	0.1	0.1
Constructions and construction services	0.0	0.0	0.0
Alcoholic beverages n.i.e.	0.0	14.3	0.0
Vegetables	0.0	0.9	0.0
Garments, except furs	0.0	5.7	0.0
Meat and meat products	0.0	2.5	0.0
Wines	0.0	0.9	0.0
Radio and television transmitters and electrical devices for wire telephony and telegraphy; their parts, pieces and accessories	0.0	64.9	0.0
Medical and surgical devices and orthopedic devices	0.0	56.4	0.0
Ships; vessels for sports and entertainment	0.0	49.9	0.0
Radio and television receivers; devices for recording or reproducing sound or television signals; microphones, amplifiers, loudspeakers, etc; receivers for radio telephony and radio telegraphy	0.0	38.0	0.0
Register book, accounting books, notebooks, letters and other desktop products (paper or cardboard made); printing plates and other printing products	2.9	3.0	2.9
Vegetable crude matter	2.5	2.5	2.6

\* Products not produced domestically were omitted from the table.

Table 4 (cont.)  
Indicators of import content of production at the product level (in %)\*

Product	IM	TM	VS share of exports
Iron, steel or aluminum containers, tanks and cisterns	0.0	7.1	0.0
Cargo transport services	0.0	2.5	0.0
Passengers transportation services	0.0	2.4	0.0
Footwear	0.0	1.8	0.0
Books, brochures, pamphlets (except advertising material); printed maps; printed or manuscript scores	0.0	1.4	0.0
Crustaceans, non-frozen; oysters, other aquatic invertebrates, live, chilled or frozen.	0.0	1.4	0.0
Newspapers, magazines and periodic publications	0.0	0.4	0.0
Fruit and vegetable juices	0.0	0.3	0.0
Fish, live, chilled or frozen	0.0	0.2	0.0
Macaroni, noodles and analogue floury products	0.0	0.0	0.0
Bakery products	0.0	0.0	0.0
Tobacco products	0.0	0.0	0.0
Non-alcoholic beverages; bottled mineral water	0.0	0.0	0.0
Parts of footwear, insoles and analogue products;	0.0	0.0	0.0
Non-processed tobacco	0.0	0.0	0.0
Plants used in sugar production	0.0	0.0	0.0
Commercial services, retail	0.0	0.0	0.0
Accommodation services	0.0	0.0	0.0
Food supply services; beverages supply services, for use in the premises	0.0	0.0	0.0
Pipe transport services	0.0	0.0	0.0
Electricity provision and distribution services	0.0	0.0	0.0
Gas distribution (by pipes) services	0.0	0.0	0.0
Water distribution (by pipes) services	0.0	0.0	0.0
Financial intermediation auxiliary services	0.0	0.0	0.0
Insurance and pensions auxiliary services	0.0	0.0	0.0
Real estate services related to owned or rented property	0.0	0.0	0.0
Real estate services by contract or commissions	0.0	0.0	0.0
Other products renting services with or without a buying option	0.0	0.0	0.0
Research and development services	0.0	0.0	0.0
Advertising services	0.0	0.0	0.0
Positioning and personnel provision agencies' services; investigation and security services; cleaning services; packaging services; other auxiliary services	0.0	0.0	0.0
Production services by means of basic contractors and commission agents of manufactures; installation services (except construction)	0.0	0.0	0.0
Services related to agriculture, hunting, forestry and fishing	0.0	0.0	0.0
Services related to mining and services related to the provision of electricity, gas and water	0.0	0.0	0.0
Maintenance and repairing services	0.0	0.0	0.0
Government administrative and community services	0.0	0.0	0.0
Social security administrative services	0.0	0.0	0.0
Teaching services	0.0	0.0	0.0
Human health services	0.0	0.0	0.0
Veterinarian services	0.0	0.0	0.0
Social services	0.0	0.0	0.0
Sewer system services; waste disposal services	0.0	0.0	0.0
Services provided by commercial, employers and professional organizations	0.0	0.0	0.0
Services provided by labor unions	0.0	0.0	0.0
Service provided by other associations	0.0	0.0	0.0
Cleaning, washing and dry cleaning services	0.0	0.0	0.0
Beauty treatment and physical well-being services	0.0	7.1	0.0
Undertaker's, cremation and burial services	0.0	2.5	0.0
Other diverse services	0.0	2.4	0.0
Domestic services	0.0	1.8	0.0
Iron, steel or aluminum containers, tanks and cisterns	0.0	1.4	0.0

\* Products not produced domestically were omitted from the table.



Figure 1  
Imported content as a share of exports for manufacturing sectors of economic activity

