

MALGORZATA FRONCZEK

University of Economics in Katowice

**TRENDS IN THE POLISH FOREIGN TRADE
AND THE IMPORT PENETRATION RATE OF THE POLISH MARKET
IN YEARS 1995–2008**

Introduction

Foreign trade is one of the major factors contributing to an economic growth. Generally, international trade turnover allows the import of modern technologies both as licenses, patents or know-how and as finished goods. The import provides goods and services which cannot be produced internally due to the lack or insufficient supply of raw materials. On the other hand, the export increases GDP generated in the country, which positively affects employment levels and personal incomes.

The political transformation, initiated in 1989, allowed our country to join international trade processes, while the increased liberalization of trading conditions on a regional (within the European Union) and global (WTO) scale stimulated Poland's foreign trade turnover. The paper aims to discuss the changes in the value and structure of Poland's foreign trade both in terms of geographical areas and particular industries, with emphasis being put on the import penetration rate of the Polish market. The data used in the analysis come for the Central Statistical Office of Poland. They comprise foreign trade figures by geographical areas, export and import figures according to the Polish Classification of Goods and Services (PKWiU), sales in industry and sales in agriculture. Due to the accessibility of comparable data the analysis comprises the years of 1995–2008.

1. Foreign trade figures in Poland in 1995–2008

In these years, there was a dynamic growth in foreign trade in our country. Between 1995 and 2008 exports rose from USD 22.9 billion to over USD 170 billion. At the same time, imports increased from USD 29 billion to USD 210 billion.

In this period of time, Poland's balance of trade was negative. It went up from USD 6.1 billion in 1995 to USD 38 billion in 2008. Detailed export and import figures for Poland and its balance of trade at current prices are presented in Table 1.

Table 1

Polish foreign trade, 1995–2008 (USD million; current prices)

Year	Export	Import	Balance
1995	22,894.9	29,049.7	-6,154.7
2000	31,651.3	48,940.2	-17,288.9
2005	89,378.1	101,538.8	-12,160.7
2006	109,584.1	125,645.3	-16,061.2
2007	138,785.0	164,172.5	-25,387.5
2008	171,859.9	210,478.5	-38,618.6

Source: *Yearbook of Foreign Trade Statistics*, Central Statistical Office, Warszawa 1996–2009.

2. The level of import penetration of the Polish market by geographical areas

The geographical composition of Poland's foreign trade was analyzed in the breakdown into three groups of countries: developed countries, developing countries and Central and East European countries.¹ The EC/EU countries and EFTA countries were distinguished in the group of developed countries.

The data concerning the geographical structure of exports are shown in Table 2, whereas the data on the geographical structure of imports – in Table 3.

¹ The composition that was adopted for particular subsections in respective years was in agreement with the actual situation.

Additionally, Table 3 presents the rates of import penetration of the Polish market by commodities originating from particular groups of countries.

The most important markets for Polish goods are the markets of developed countries. In 1995 their share in Polish exports accounted for 75% and it increased to over 83% in the analysed period of time. The buyers of our products are mainly the EU countries. Their markets received over 75% of goods exported by Poland.

Central and East European countries rank second, although they have lost in importance as Poland's trade partners. In years 1995–2003 their share in Poland's exports accounted for approx. 15–20%. Since 2004 it has further decreased to about 10%.

Table 2

Polish exports by groups of countries, 1995–2008 (%)

	1995	2000	2005	2006	2007	2008
Developed countries	75.0	76.3	83.6	83.2	84.1	83.0
Of which:						
EU	70.0	69.9	77.2	77.4	78.9	77.8
EFTA	1.6	1.9	3.0	2.8	2.6	2.5
CEEC*	17.3	17.3	10.0	10.7	9.9	10.3
Developing countries	7.7	6.3	6.4	6.1	6.1	6.7

*CEEC – Central and East European Countries.

Source: as of Table 1.

Polish imports are similar to Polish exports in terms of their geographical composition. The developed countries provide about 70% of imported goods and as much as 68% come from the European Union countries.

In 1995 imported goods satisfied a little more than 25% of domestic demand, whereas in 2008 this rate was significantly higher and reached almost 46%. In 2008 the goods coming from developed countries supplied nearly 32% of Poland's demand, with a 28% rate of market penetration by the goods originating from the European Union.

The share of Central and East European countries in Polish imports fell from 15% in 1995 to about 11% in 2008. The goods coming from these countries satisfied 5–6% of our domestic demand.

Table 3

Polish import and import penetration rates by groups of countries, 1995–2008 (%)

	1995		2000		2005		2008	
	Share in import	IP*	Share in import	IP*	Share in import	IP*	Share in import	IP*
Developed countries	74.3	18.6	70.9	25.3	73.3	30.8	69.3	31.8
Of which:								
EU	64.6	16.2	61.2	21.8	65.6	27.5	61.9	28.4
EFTA	3.1	0.8	2.2	0.8	2.7	1.1	2.4	1.1
CEEC*	15.4	3.9	18.5	6.6	11.6	4.9	11.6	5.3
Developing countries	10.3	2.6	10.6	3.8	15.1	6.4	19.1	8.8
Total	100.0	25.1	100.0	35.7	100.0	42.0	100.0	45.9

* The share of imports in supplying the domestic demand; $IP = IM / (Pp - EX + IM)$ where: IP – import penetration rate; IM – import; Pp – sales in industry, sales in agriculture; EX – export; the calculations took into account sales in industry and sales in agriculture jointly.

Source: *Yearbook of Foreign Trade Statistics...*, 1996–2009; *Yearbook of Industry Statistics* Central Statistical Office, Warszawa, 1996–2009; own calculations.

The data presented in Tables 2 and 3 indicate a growing role of developing countries as suppliers for the Polish market. Their share in our exports has remained relatively stable at 6–7%, whereas their share in imports rose from 10% in 1995 to 19% in 2008. It is also interesting to analyze the level of import penetration of our market by goods coming from this group of countries. In 1995 they satisfied 2.6% of Poland's demand, while in 2008 the figure was as high as 9%. This appears to have been caused by the dynamic economic growth in South-East Asia, particularly in China.

3. The import penetration rate of the Polish market by groups of industrial goods

Poland's foreign trade is strongly dominated by industrial goods (detailed figures are shown in Table 4). In 1995 they amounted to 97% of all exported goods and almost 95% of goods imported to our country. Moreover, the majority of them (89.8% and 85.6% respectively) were industrial manufactured goods.

In 2008 their share was even higher and accounted for over 98% of total exports (85.5% are industrial manufactured goods). In the same period, the share of agriculture, forestry and fishing decreased from 3% to 1.6% in exports and from 5% to 2.5% in imports.

Table 4

Structure of the Polish foreign trade turnover by PKWiU subsection, 1995–2008 (%)

PKWiU subsection	Subsections*	1995		2000		2005		2008	
		Share in EX	Share in IM	Share in EX	Share in IM	Share in EX	Share in IM	Share in EX	Share in IM
01–05	Agriculture, forestry, fish	3.0	5.1	1.5	2.9	1.9	2.5	1.6	2.5
	Industry total. of which:	97.0	94.9	98.5	97.1	98.1	97.5	98.4	97.5
10–14	Mining	6.4	8.9	2.8	9.8	2.0	8.9	1.0	8.7
15–37	Manufacturing Of which:	89.8	85.6	95.0	87.0	95.2	88.2	96.8	85.5
15–16	Food, beverages, tobacco	8.4	6.5	7.2	4.2	8.4	4.7	8.7	5.0
17–18	Textiles, textile products	12.5	8.5	8.7	6.0	4.4	4.8	3.4	3.9
19	Leather, leather products	1.6	1.1	1.4	1.1	0.7	1.1	0.5	0.9
20	Wood, wood products	4.0	0.6	3.5	0.8	2.8	0.9	2.2	0.8
21–22	Pulp, paper, recorded media	2.4	4.7	3.3	3.7	3.2	3.1	2.9	2.5
23	Coke, refined petroleum products, nuclear fuel	2.1	2.0	2.2	2.0	2.7	3.2	2.9	3.1
24	Chemicals	8.2	14.2	6.6	13.2	6.2	13.3	7.0	12.1
25	Rubber and plastik products	2.2	4.2	3.5	4.3	4.7	4.6	5.0	4.1
26	Other non-metallic mineral products	2.8	2.3	2.4	2.2	2.4	1.5	2.2	1.5
27–28	Basic metals and fabricated metal products	17.1	7.7	13.4	8.7	12.4	11.1	13.5	11.4
29	Machinery and equipment, n.e.c.	5.9	12.9	6.5	11.4	8.4	11.2	8.8	10.4
30–33	Electrical and optical equipment	6.1	12.6	10.5	15.6	11.0	14.4	13.9	15.1
34–35	Transport equipment	10.0	6.6	18.2	12.1	21.1	12.4	20.2	12.8
36–7	Other manufactured goods, n.e.c.	6.4	1.8	7.6	1.8	6.9	1.7	5.7	1.7
40–41	Other goods	0.8	0.4	0.8	0.4	0.9	0.3	0.6	3.2
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Subsections by PKWiU 1997 in years 1995–2000. PKWiU 2004 in years 2004–2008.

IM – import; EX – eksport.

Source: as of Table 1; own calculations.

In the years 1995–2008 the share of mining in exports significantly decreased from 6.4% to about 1%, whereas its share in import remained stable at about 9%.

The detailed analysis of the figures in Table 4 shows that in years 1995–2008 the composition of Poland's foreign trade by industries changed significantly. The changes particularly affected the trade in industrial manufactured goods. In 1995 metals and fabricated metal products ranked first (17.1%), textiles and textile products (12.5%) – second, and transport equipment – third (10%). In 2008 transport equipment became the most important export good (20.2%), followed by electrical and optical equipment (13.9%), and metals and fabricated metal products (13.5%).

The composition of imports also changed. In 1995 the largest share were chemicals (14.2%), followed by machinery and equipment, including machinery for the production and use of mechanical power (except for aircraft, vehicle and cycle engines), agricultural and forestry machinery, machine tools, domestic appliances (their total share in imports amounted to almost 13%). The third important item on the list of imported goods was electrical and optical equipment, the share of which was 12.6%. In the following years, these goods held a dominant share in the Polish import market. In 2008 their share amounted to as much as 15%. In the years 1995–2008 transport equipment gained in importance in our imports. At the beginning, it constituted about 6.6% of Polish imports, whereas in 2008 it reached nearly 13% and ranked second among imported goods. On the other hand, chemicals, which in 1995 constituted the largest share in imports, ranked only third (12.1%) in 2008.

Table 5 shows the import penetration rates of the Polish market by commodity groups. The calculations were based on foreign trade figures according to the Polish Classification of Products and Services (PKWiU)² and the data on sales in industry according to the Polish Classification of Activity (PKD).³ The analysis was limited to the largest component of Polish exports and imports, i.e. industrial

² Resolution of the Council of Ministers as of 18 March 1997 on the Polish Classification of Products and Services, "Journal of Laws" 1997, No. 42, item 264; Resolution of the Council of Ministers as of 6 April 2004 on the Polish Classification of Products and Services, "Journal of Laws" 2004, No. 89, item 844; Resolution of the Council of Ministers as of 29 October 2008 on the Polish Classification of Products and Services, "Journal of Laws" 2008, No. 207, item 1293.

³ Resolution of the Council of Ministers as of 7 October 1997 on the Polish Classification of Activity, "Journal of Laws" 1997, No. 128, item 829; Resolution of the Council of Ministers as of 20 January 2004 on the Polish Classification of Activity, "Journal of Laws" 2004, No. 33, item 289; Resolution of the Council of Ministers as of 24 December 2007 on the Polish Classification of Activity, "Journal of Laws" 2007, No. 251, item 1885.

goods. For comparison purposes. Table 5 also shows figures on sales in industry by commodity groups.

Table 5

The import penetration rates and sales in industry in Poland by PKWiU subsections in years 1995–2008 (%)

PKWiU subsection	Subsections*	1995		2000		2005		2008	
		Pp	IP	Pp	IP	Pp	IP	Pp	IP
10–14	Mining	8.0	28.1	5.5	47.2	5.0	50.2	4.8	51.5
15–37	Manufacturing Of which:	82.0	28.6	84.3	39.7	84.5	47.9	85.6	51.0
15–16	Food, beverages, tobacco	19.8	9.4	19.0	9.8	17.7	13.5	16.0	17.9
17–18	Textiles, textile products	5.2	50.9	3.7	67.1	2.6	74.3	2.0	79.9
19	Leather, leather products	1.1	31.3	0.7	59.7	0.4	90.6	0.4	77.2
20	Wood, wood products	2.8	8.0	3.2	13.0	3.0	19.5	2.8	19.3
21–22	Pulp, paper, recorded media	4.9	23.9	5.5	26.3	5.0	28.7	4.5	29.4
23	Coke, refined petroleum products, nuclear fuel	4.1	13.5	5.3	15.5	4.6	30.2	6.0	26.0
24	Chemicals	6.8	45.1	5.7	59.9	5.9	64.9	5.4	72.9
25	Rubber and plastik products	3.2	31.4	3.8	39.7	4.9	42.4	4.8	44.9
26	Other non-metallic mineral products	3.7	17.8	4.6	19.3	3.9	19.6	4.5	18.6
27–28	Basic metals and fabricated metal products	10.4	25.3	9.6	39.4	10.1	51.0	11.7	50.9
29	Machinery and equipment, n.e.c.	5.6	46.6	4.6	64.5	5.4	73.6	6.2	69.8
30–33	Electrical and optical equipment	5.0	50.1	6.0	68.9	6.2	80.0	6.5	93.8
34–35	Transport equipment	5.9	34.6	8.6	60.5	10.4	77.2	10.6	78.3
36–37	Other manufactured goods, n.e.c.	3.4	20.4	4.0	30.9	4.3	36.2	4.0	37.6
40–41	Other goods	10.0	0.1	10.1	0.2	10.5	0.4	9.6	1.6
	Total	100.0	26.0	100.0	37.0	100.0	43.5	100.0	47.5

Pp – sold production of industry; IP – import penetration rate.

Source: as of Table 1; own calculations.

In years 1998–2008 the import penetration rate of the industrial goods market rose from the average of 26% to 47.5%. This means that almost half of domestic demand for industrial goods is satisfied by imported products.

Poland's domestic demand appears to be the most dependent on imports in the segment of electrical and optical equipment (in 2008 the import penetration rate reached 93.8%, so imports satisfied almost the entire domestic demand for such products). This does not mean, however, that such goods are not produced in Poland. In 2008 sales in industry came to PLN 61.2 billion.⁴ Yet, an overwhelming majority was sold abroad. Exports of these goods reached PLN 56.3 billion (92% of sales in industry).⁵

Textiles and textile products are in a very similar situation, as their import penetration rate reached almost 80% in 2008. In the same year, sales in industry amounted to PLN 18.8 billion, but the majority of those sales were export (74%).⁶ accordingly, domestic demand was primarily supplied with imported products.

Transport equipment is another group of goods the demand for which is mainly satisfied with imports. The rate was 34.6% in 1995 and it rose up to 78.3% in 2008. Similarly to the two previously discussed groups, internal production supplied only a fraction of domestic demand, since as much as 82% of transport equipment produced in our country was exported.⁷ Additionally, this tendency was strengthened by a positive balance of trade in this group of products.⁸

Imports play the least significant role in supplying our domestic demand for such products as foods, beverages, non-metallic products (glass; ceramics; cement, plaster, lime and related products; concrete; ornamental stones), wood and wood products, coke and refined petroleum products, paper, pulp, recorded media. In all these groups of commodities the import penetration rate increased in years 1995–2008, but in 2008 it did not exceed 30% in any of them.

⁴ Value in current prices; *Statistical Yearbook of Industry – Poland*, Central Statistical Office, Warszawa 2009.

⁵ *Ibidem*.

⁶ Value in current prices. Own calculations based on *ibidem*; *Yearbook of Foreign Trade Statistic*, Central Statistical Office, Warszawa 2009.

⁷ *Ibidem*.

⁸ *Yearbook of Foreign Trade Statistic...*, 2009.

Conclusions

In years 1995–2008 there was a very dynamic growth in foreign trade turnover. Exports and imports calculated at current prices increased sevenfold.

The geographical composition of Poland's international trade did not change significantly in these years. The structure of exports remained almost unchanged, while the structure of imports did evolve more substantially. Major partners have been and still remain developed countries, in particular the European Union countries. Imports from these countries supply over 28% of our total domestic demand. On the other hand, the share of developing countries in Poland's total import has gradually been growing. The goods that they export to Poland supply almost 9% of our domestic demand. This might, as it has been mentioned earlier, be a result of the expansion of South-East Asian economies. This issue, however, would have to be researched more thoroughly.

In 1995 Poland's most important exports were metals and fabricated metal products, textiles, clothing, transport equipment, foods, beverages. Thirteen years later we mainly exported transport equipment (including passenger cars), electrical and optical equipment, metals and fabricated metal products. At the beginning of the analysed period of time Poland imported chemicals, machinery and equipment (except for engines), domestic appliances, machine tools, machinery for agriculture and forestry, electrical and optical equipment (including computers and medical equipment). In 2008 major imports were all types of machinery and equipment and transport equipment.

The data analysis and calculations indicate that Polish demand for industrial goods is, to a considerable extent, supplied by imported goods. The import penetration rate is on average about 47.5%. The average, however, does not reflect the real situation reliably. The average deviation is $d = 33$, which means that values observed in reality differ from the average by ± 33 percentage point.⁹

In particular groups of goods the situation varies greatly. Imported products supply a large proportion of domestic demand for such goods as electrical and optical equipment, textiles and textile products, transport equipment, leather and leather products, chemicals. The high import penetration rate seems to indicate here that domestically produced goods do not meet the needs and preferences of buyers (due to their specifications, technical parameters, prices, quality, etc.).

⁹ Own calculations based on M. Sobczyk, *Statistics*, Wydawnictwo Naukowe PWN, Warszawa 2001, p. 46 and the following ones.

The Polish market is the least dependent on imports of foods, beverages, non-metallic products, wood and wood products, coke and refined petroleum products.

The high import penetration rate seems to be correlated with the share of a particular commodity group in foreign trade turnover. In the case of the goods that top the list of imported and exported products, the import penetration rate does, in fact, assume values higher than average. On the other hand, it is close to average with, for example, products of the mining industry, the share of which in imports and exports is small, or metals and metal products, the share of which in Poland's foreign trade is significantly higher.¹⁰ This, however, would require in-depth research.

References

- Yearbook of Foreign Trade Statistics*, Central Statistical Office, Warszawa 1996–2009.
- Statistical Yearbook of Industry – Poland*, Central Statistical Office, Warszawa 1996–2009.
- Resolution of the Council of Ministers as of 7 October 1997 on the Polish Classification of Activity “Journal of Laws” 1997, No. 128, item 829.
- Resolution of the Council of Ministers as of 18 March 1997 on the Polish Classification of Products and Services, “Journal of Laws” 1997, No. 42, item 264.
- Resolution of the Council of Ministers as of 20 January 2004 on the Polish Classification of Activity, “Journal of Laws” 2004, No. 33, item 289.
- Resolution of the Council of Ministers as of 24 December 2007 on the Polish Classification of Activity, “Journal of Laws” 2007, No. 251, item 1885.
- Resolution of the Council of Ministers as of 29 October 2008 on the Polish Classification of Products and Services, “Journal of Laws” 2008, No. 207, item 1293.
- Resolution of the Council of Ministers as of 6 April 2004 on the Polish Classification of Products and Services, “Journal of Laws” 2004, No. 89, item 844.
- Sobczyk M., *Statistics*, Wydawnictwo Naukowe PWN, Warszawa 2001.

¹⁰ The correlation between the import penetration rate and the share of particular goods in foreign trade is 0.48 for exports (the correlation is average) and 0.65 for imports (which is interpreted as a distinct correlation); own calculations based on *ibidem*, p. 206 and the following ones.

**TENDENCJE W POLSKIM HANDLU ZAGRANICZNYM
I WSKAŹNIK PENETRACJI IMPORTOWEJ POLSKIEGO RYNKU
W LATACH 1995–2008**

Streszczenie

Celem artykułu jest prezentacja zmian jakie pojawiły się w wartości i strukturze handlu zagranicznego Polski pomiędzy 1995 a 2008 rokiem. Podjęto w nim także próbę przeanalizowania poziomu penetracji polskiego rynku przez importowane produkty w układzie geograficznym oraz według grup towarowych.

Pierwsza część pracy zawiera krótką charakterystykę kształtowania się sytuacji w polskim handlu zagranicznym w badanym okresie. Uwzględniono w niej zmianę wartości eksportu oraz importu oraz saldo bilansu handlowego naszego kraju. W drugiej części zaprezentowano strukturę geograficzną polskiej wymiany towarowej z zagranicą, a także poziom penetracji naszego rynku przez importowane produkty według trzech grup krajów: rozwiniętych, rozwijających się i Europy Środkowo-Wschodniej. Trzecia część przedstawia ogólną strukturę towarową polskiego handlu zagranicznego i kształtowanie się wskaźnika penetracji importowej polskiego rynku według grup towarów przemysłowych, które stanowią zdecydowaną większość naszych obrotów. Ostatnią częścią pracy jest podsumowanie, zawierające syntetyczne wnioski.

Thumaczenie Małgorzata Fronczak

