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Iwona Pawlas

University of Economics in Katowice

TRADE RELATIONS BETWEEN POLAND AND ASIAN ECONOMIES FROM 2006 TO 2008

Abstract: A rise in the intensity of trade, capital and technological relations between subjects from different parts of the world can be seen as both a sign of and a result of internationalization and globalization. Asian economies represent an important group of subjects of the processes. Poland is an active participant of internationalization and globalization as well. Poland's involvement in the world economy has resulted from political, economic and social changes introduced in late 1980s and the beginning of the 1990s. In the case of the Polish economy, however, a strong regionalization of relations is observed. Especially Poland's trade relations concentrate in Europe. Obviously it does not mean the absence of such cooperation between Poland and Asian economies. The paper aims at analyzing the development of trade relations between Poland and Asian partners from 2006 to 2008.

Key words: exports, imports, Asia, China, revealed comparative advantage, intra-industry trade.

1. Introduction

Asia is considered a highly dynamic continent. Its position in contemporary world economy has changed enormously over the last few decades. Many economists believe that the 21st century will belong to Asian economies. Some of them have already started developing global strategies, as they have not been satisfied with being just the place of economic activity for companies from other parts of the world.

The process of Poland's economy opening initiated by political and economic changes introduced in 1989 has resulted in gradual creation of close ties between Poland and other subjects of the world economy. It seems quite natural that European countries are the most important partners for Poland. Poland's accession to the European Union further strengthened its really strong trade relations with European economies. Trade cooperation with Asian economies is not so big. Imports from Asian economies constitutes 17.8% of Polish total imports, and exports to Asian countries amounts to 4.3% of Poland's total exports.

The aim of the paper is to analyse the development of trade relations between Poland and Asian economies from 2006 to 2008. The crucial trade partners for

Poland from among Asian economies have been determined. A commodity pattern of Poland's trade with China was studied. In order to describe the character of relations between Poland and China revealed comparative advantage indicator and intra-industry trade indicator were used.

2. The significance of trade with Asia

The value of Polish total exports increased from 109.6 billion USD in 2006 to 171.9 billion USD in 2008. At the same time Poland's total imports rose from 125.6 billion USD to 210.5 billion USD. Thus, deficit in Polish trade more than doubled achieving the amount of more than 38.6 billion USD in 2008. A huge part of the deficit results from the imbalance in Poland's trade relations with Asian economies. In 2006 Poland exported goods worth just 4.7 billion USD and imported commodities worth as much as 20 billion USD. In 2007 Polish exports to Asia amounted to 5.2 billion USD and imports from Asia equalled almost 30 billion USD. In 2008 Poland exported goods worth 7.4 billion USD and imported goods worth 37.5 billion USD (Table 1). From 2006 to 2008 the share of Asian economies in Poland's imports increased from 15.8 to 17.8% of Polish total imports. At the same time the share of Poland's exports to Asian partners did not change – it represented 4.3% of Polish total exports.

Economy		2006	2007	2008
World	Imports	125 645.3	164 172.5	210 478.5
	Exports	109 584.1	138 784.9	171 859.9
	Balance	-16 061.2	-25 387.5	-38 618.6
Asia	Imports	19 977.6	26 924.3	37 465.2
	Exports	4 712.1	5 273.8	7 390.0
	Balance	-15 265.5	-21 650.5	-30 075.2

Source: Rocznik statystyczny handlu zagranicznego 2007, GUS, Warszawa 2007; Rocznik statystyczny handlu zagranicznego 2008, GUS, Warszawa 2008; Rocznik statystyczny handlu zagranicznego 2009, GUS, Warszawa 2009.

Data concerning geographical pattern of Polish trade with Asian economies were presented in Table 2. One can observe a considerable concentration of trade. Just a few economies do count here. As far as imports from Asia is concerned the following trade partners should be mentioned: China, South Korea, Japan and Turkey. Imports from China amounted to 6.1% of Poland's total imports in 2006 and to as much as 8.1% in 2008. That means 38.4% and 45.5% of Poland's trade with Asian countries respectively. The share of South Korea in Polish imports rose from 2.3 to

2.5% of Poland's total imports. Japanese goods reflected 1.7% of goods imported by Poland in 2006 and 2.1% of Polish imports in 2008. Imports from Turkey accounted for 1.3% in the analysed period of time. In the case of exports the situation is quite similar; again a huge concentration must be stressed. More than 40% of Polish exports to Asia went to just two countries: Turkey (1% of Polish total exports and 23% of Polish exports to Asia), China (0.8% of Polish total exports and 18.6% of Polish exports to Asia).

Table 2. Asian economies as Poland's trade partners from 2006 to 2008 (per cent of Poland's total exports and imports)

Economy	Item	2006	2007	2008
Asia	Imports	15.9	1.4	17.8
	Exports	4.3	3.8	4.3
China	Imports	6.1	7.1	8.1
	Exports	0.7	0.7	0.8
India	Imports	0.4	0.4	0.5
	Exports	0.2	0.1	0.2
Indonesia	Imports	0.3	0.3	0.3
	Exports	0.0	0.1	0.0
Japan	Imports	1.7	1.9	2.1
	Exports	0.2	0.2	0.2
Kazakhstan	Imports	0.2	0.2	0.2
	Exports	0.3	0.3	0.3
South Korea	Imports	2.3	2.3	2.5
	Exports	0.2	0.2	0.2
Malaysia	Imports	0.4	0.4	0.3
	Exports	0.1	0.1	0.1
Thailand	Imports	0.3	0.3	0.4
	Exports	0.1	0.1	0.1
Taiwan	Imports	1.0	0.7	0.6
	Exports	0.1	0.1	0.0
Turkey	Imports	1.3	1.3	1.2
	Exports	1.2	1.1	1.0
Vietnam	Imports	0.2	0.2	0.3
	Exports	0.1	0.0	0.1

Source: Rocznik...2007; Rocznik...2008; Rocznik...2009.

Due to the fact that China is the most important Asian trade partner for Poland a more detailed analysis of relations with China was made in the next part of the paper.

3. China as Poland's trade partner

The value of Poland's exports to China constitutes just 7.6% of Polish imports from this country. It results in an enormous trade deficit in Polish trade with China. The deficit amounted to 6.94 billion USD in 2006, 10.77 billion USD in 2007 and more than 15.5 billion USD in 2008. It accounted for more than 40% of Poland's total trade deficit in 2008 (see Table 3).

Item	2006	2007	2008	
Imports	7 711 682	11 753 417	16 797 908	
Exports	762 595	986 458	1 278 423	
Balance	-6 949 087	-10 766 959	-15 519 485	

Table 3. Poland's trade with China (thousand USD)

Source: Rocznik... 2007; Rocznik... 2008; Rocznik... 2009.

Tables 4 and 5 present commodity pattern of Polish trade with China. With respect to imports from China three sections are crucial according to CN: section XVI – machinery and mechanical appliances, electrical and electro-technical equipment, section XI – textiles and textile articles and section XX – miscellaneous manufactured articles including toys and furniture. Machinery and mechanical appliances, electrical and electrotechnical equipment constitute more than 52% of Polish imports from China. The share of textiles and textile articles in Polish imports from China is 10-11%, and the one of toys and furniture – 7%. Thus the abovementioned three commodity sections reflect almost 70% of what Poland imports from China.

The analysis of commodity pattern of Polish exports to the Chinese market brought a similar result. A strong concentration was observed again. In this case four commodity sections are the leaders: section XV – base metals and articles thereof, section XVI – machinery and mechanical appliances, electrical and electrotechnical equipment, section VI – products of the chemical industry, and section V – mineral products. The number one is section XV; the share of base metals and articles thereof constitutes 40% of Polish exports to China. The second place with more than 20%

¹ Polish government is well aware of the need to increase Polish exports to China in order to reduce trade deficit with this country. That is why the government supports Polish exporters with some financial instruments including export loans. See: W. Pawlak, *Poland Is Open to the East*, www.mg.gov. pl/NR/rdonlyres/.../WPawlak PolishMarket 070808.pdf (accessed 30.04.2010).

² Poland is not the only country with such a huge deficit in trade with China. The situation of the U.S. is similar. Trade deficit with China accounts for almost half of the U.S. deficit. See: G. Azam, China in global trade, *The Financial Express* 2010, Vol. 18, No. 246, April 6th, http://www.thefinancial-express-bd.com/more.php?news id=96925&date=2010-04-06 (accessed 30.04.2010).

Table 4. Commodity pattern of Poland's imports from and exports to China by CN sections (thousand USD)

CN	Imports			Exports		
section	2006	2007	2008	2006	2007	2008
I	144 948	169 697	282 326	20 988	20 108	14 411
II	64 002	88 672	104 524	2 320	3 908	3 753
III	684	-	_	15	-	_
IV	32 897	74 393	70 983	5 262	2 892	3 029
V	35 022	47 285	84 817	16 828	41 824	62 275
VI	209 185	295 608	429 567	151 164	206 205	139 945
VII	191 107	359 128	427 965	27 323	26 303	39 288
VIII	157 152	211 642	305 308	1 237	793	3 549
IX	41 152	67 550	92 507	3 005	1 816	2 630
X	49 556	81 207	109 635	12 566	17 307	15 440
XI	817 388	1 222 116	1 849 436	3 592	5 524	6 318
XII	285 009	357 677	488 486	1	3	247
XIII	187 397	328 424	384 858	10 710	9 056	46 866
XIV	33 187	43 324	68 253	197	246	6 382
XV	571 823	1 212 637	1 376 832	359 199	334 614	506 192
XVI	3 958 686	5 796 963	8 765 353	122 928	255 533	290 447
XVII	155 797	289 872	497 276	9 654	22 877	49 955
XVIII	218 893	223 360	306 704	4 629	10 355	22 645
XIX	1 975	4 326	8 503	0	1	0
XX	555 088	878 419	1 143 309	5 247	26 729	64 820
XXI	735	854	778	5 732	360	178
Total	7 711 682	11 753 417	16 797 908	762 595	986 458	1 278 423

I – live animals, animal products; II – vegetable products; III – fats and oils; IV – prepared foodstuffs; V – mineral products; VI – products of the chemical industry; VII – plastics and rubber and articles thereof; VIII – raw hides and skins, articles thereof; IX – wood and articles of wood; X – pulp of wood, paper, paperboard and articles thereof; XI – textiles and textile articles; XII – footwear, headwear and articles thereof; XIII – articles of stone, ceramic products, glass; XIV – pearls, precious stones and metals, articles thereof; XV – base metals and articles thereof; XVI – machinery and mechanical appliances, electric engines equipment; XVIII – transport equipment; XVIII – optical, photographic, measuring, checking instruments; XIX – arms and ammunition; XX – miscellaneous manufactured articles (furniture, toys); XXI – works of art, collectors' pieces and antiques.

Source: Rocznik... 2007; Rocznik... 2008; Rocznik... 2009.

is taken by section XVI. Products of chemical industry were responsible for around 20% in 2006 and 2007 but the year 2008 brought a considerable fall down to 11%. A different tendency was observed with respect to section V – mineral products; they

accounted for only 25 of Polish exports to China in 2006 and for as much as 4% in 2007 and 2008.

Table 5. Commodity pattern of Poland's imports from and exports to China by CN sections (%)

CNI section		Imports Exports			Exports	
CN section	2006	2007	2008	2006	2007	2008
I	1.88	1.44	1.68	2.75	2.04	1.13
II	0.83	0.75	0.62	0.30	0.40	0.29
III	0.01	_	_	0.00	_	_
IV	0.43	0.63	0.42	0.69	0.29	0.24
V	0.45	0.40	0.50	2.21	4.24	4.87
VI	2.71	2.52	2.56	19.82	20.90	10.95
VII	2.48	3.06	2.55	3.58	2.67	3.07
VIII	2.04	1.80	1.82	0.16	0.08	0.28
IX	0.53	0.57	0.55	0.39	0.18	0.21
X	0.64	0.69	0.65	1.65	1.75	1.21
XI	10.60	10.40	11.01	0.47	0.56	0.49
XII	3.70	3.04	2.91	0.00	0.00	0.02
XIII	2.43	2.79	2.29	1.40	0.92	3.67
XIV	0.43	0.37	0.41	0.03	0.02	0.50
XV	7.42	10.32	8.20	47.10	33.92	39.60
XVI	51.33	49.32	52.18	16.12	25.90	22.72
XVII	2.02	2.47	2.96	1.27	2.32	3.91
XVIII	2.84	1.90	1.83	0.61	1.05	1.77
XIX	0.03	0.04	0.05	0.00	0.00	0.00
XX	7.20	7.47	6.81	0.69	2.71	5.07
XXI	0.01%	0.01	0.00	0.75	0.04	0.01
Total	100.00	100.00	100.00	100.00	100.00	100.00

Source: own calculations.

The list of the most important Chinese commodities imported to Poland embraces: computers, cell phones, components for TV cameras, digital photo and video cameras, mp3 players, dictaphones, modems, other computer parts and accessories, electronic components for audiovisual equipment, hard disc drives. And the list of ten biggest companies importing goods from China consists of eight importers of electronic equipment, one importer of textiles and textile products and one importer of lighting devices.³

³ A. Ratajczyk, China in Poland, *The Warsaw Voice*, 23 February 2010.

In order to analyse the character of Poland's trade with China the following two indices have been used:

- revealed comparative advantage indicator (RCA),
- intra-industry trade indicator (IIT).
 - B. Balassa formulated RCA indicator as follows:

$$RCA_{iy} = \frac{\frac{Ex_{iy}}{\sum Ex_{iy}}}{\frac{Im_{iy}}{\sum Im_{iy}}},$$

where: i – commodity section; y – trade partner; Ex – exports; Im – imports.

If the RCA indicator is bigger than one, one may assume that a country enjoys a favourable position in trade (i.e. gains comparative advantage).⁴

Intra-industry trade is considered an important tendency in international trade in the 21st century. That is why the analysis of the intensity of intra-industry trade between Poland and China has been included in the present work. It is believed that intensive intra-industry trade stimulates economic development of the economies.⁵ H.G. Grubel and P.J. Lloyd's method has been adopted. IIT indicator is formulated in the following way:⁶

$$IIT_{i} = \frac{(Ex_{i} + Im_{i}) - |Ex_{i} - Im_{i}|}{(Ex_{i} + Im_{i})} \cdot 100 = [1 - \frac{|Ex_{i} - Im_{i}|}{(Ex_{i} + Im_{i})}] \cdot 100,$$

where: i – commodity section; Ex – exports; Im – imports.

IIT ranges from 0 to 100. If IIT is close to 100, intensive intra-industry trade is observed. IIT close to 0 means intensive inter-industry specialisation.⁷

The results of the analysis with the application of the above described indicators have been presented in Table 6. Poland achieved comparative advantage in trade with China in the following commodity sections: section V – mineral products, section VI – products of chemical industry, section X – pulp of wood, paper, paperboard

⁴ B. Balassa, Trade liberalization and 'Revealed Comparative advantage', *The Manchester School of Economic and Social Studies* 1965, Vol. 33. See also: K. Budzowski, S. Wydymus (eds.), *Handel zagraniczny: metody, problemy, tendencje*, Akademia Ekonomiczna w Krakowie, Kraków 1999, part I, p. 10.

⁵ E. Czarny, *Teoria i praktyka handlu wewnątrzgałęziowego*, Warszawa 2002, p. 21. See also: T. Rynarzewski (ed.), *Teoria handlu międzynarodowego a współczesna gospodarka światowa*, Akademia Ekonomiczna w Poznaniu, Poznań 2004, p. 101.

⁶ I. Pawlas, H. Tendera-Właszczuk, *Poland's Economy Competitiveness with Respect to the Integration with the European Union*, Warsaw University Centre for Europe, Warsaw 1999, p. 49.

A. Budnikowski, *Międzynarodowe stosunki gospodarcze*, PWE, Warszawa 2003, pp. 105-106.

and articles thereof, section XV – base metals and articles thereof. Unfortunately all mentioned sections are raw materials intensive ones.

Trade between Poland and China can be described as inter-industry cooperation. In almost all CN sections the value of IIT was really low in the analysed period of time. One can observe only one exception here, i.e. the situation in section V – mineral products, where IIT increased from 65 in 2006 to 84 in 2008. In the case of two further sections, namely section VI – products of chemical industry and section XV – base metals and articles thereof, a downward tendency was noted – IIT amounted to as much as 83 and 77 in 2006 but in 2007 and 2008 its value fell to 50.

Table 6. Revealed Comparative Advantage (RCA) and intensity of intra-industry trade (IIT) in trade with China

CN section	RCA			IIT		
	2006	2007	2008	2006	2007	2008
I	1.4642	1.4118	0.6707	25.30	21.19	9.71
II	0.3666	0.5251	0.4718	7.00	8.44	6.93
III	0.2218			4.29		
IV	1.6175	0.4632	0.5607	27.58	7.48	8.19
V	4.8590	10.5387	9.6474	64.91	93.87	84.67
VI	7.3076	8.3113	4.2806	83.90	82.18	49.15
VII	1.4458	0.8727	1.2062	25.02	13.65	16.82
VIII	0.0796	0.0446	0.1527	1.56	0.75	2.30
IX	0.7384	0.3203	0.3736	13.61	5.24	5.53
X	2.5642	2.5393	1.8505	40.46	35.14	24.69
XI	0.0444	0.0539	0.0449	0.88	0.90	0.68
XII	0.0000	0.0001	0.0066	0.00	0.00	0.10
XIII	0.5779	0.3285	1.6001	10.81	5.37	21.71
XIV	0.0600	0.0677	1.2286	1.18	1.13	17.10
XV	6.3523	3.2878	4.8308	77.16	43.25	53.76
XVI	0.3140	0.5252	0.4354	6.02	8.44	6.41
XVII	0.6266	0.9403	1.3200	11.67	14.63	18.26
XVIII	0.2139	0.5524	0.9701	4.14	8.86	13.75
XIX	0.0000	0.0028	0.0000	0.00	0.05	0.00
XX	0.0956	0.3625	0.7449	1.87	5.91	10.73
XXI	78.8631	5.0226	3.0062	22.73	59.31	37.24

Source: own calculations.

It is hard to anticipate the future development of trade relations between Poland and China due to economic crisis 2009. On the one hand Poland should try to expand

its exports to China in order to reduce the existing trade deficit and Chinese companies do see opportunities for cooperation with Poland. On the other hand, however, the crisis may adversely affect the plans at least for some time.⁸

4. Conclusion

Globalization of trade has resulted in an increase of trade relations between Poland and Asia, even though European economies remain the most important trade partners for Poland. A much more intensive imports from Asia is observed than exports to this part of the world: 18% of goods imported to Poland come from Asia while less than 5% of Polish exportables go to Asian markets. That is why a huge and rising trade deficit in Polish trade with Asia is observed.

China is the crucial Asian trade partner for Poland. China accounts for 8% of Polish total imports and 45.5% of Polish imports from Asia. Polish exports to China represent 0.8% of total Poland's exports and more than 18% of its exports to Asian markets.

Poland sells raw materials intensive goods (metals, mineral products, chemicals) as well as machinery and mechanical equipment on the Chinese market. Polish imports from China concentrates on electric and electronic equipment, clothing and lighting devices. The analysis of commodity pattern of Poland–China relations proved the existence of intensive inter-industry trade. The only exception was section V – mineral products, where intra-industry specialization was observed. Poland achieved comparative advantage in trade with China in four sections characterized by a high level of raw materials intensity: mineral products, products of chemical industry, pulp of wood, paper, paperboard and articles thereof and base metals and articles thereof.

Further expansion of Chinese goods on the Polish market is likely. It will be partly connected with Chinese direct investment in Poland. Investment activity of China in Europe has already started. Poland as a member state of the European Union and quite stable economy at the time of global crisis will attract Chinese investors. One should remember that import of capital is connected with the import of goods. Therefore it will not be easy to limit the scale of Poland's trade deficit with China. Promotion of Polish goods in China and stimulating the activity of Polish exporters on the Chinese market with the implementation of financial and non-financial instruments by the government is recommended. EXPO 2010 in Shanghai was a good opportunity for a promotional activity of Poland, Polish regions, cities as well as Polish companies in China. The Polish Pavilion was opened on May 1, 2010.9 The potential of Chinese

Financial crisis may hamper expected increase in Poland-China trade, *People's Daily Online* 6 March 2009, http://english.peopledaily.com.cn/90001/90776/90883/6608187.html (accessed 30.04.2010).

 $^{^{9}}$ http://www.expo2010.com.pl/#/en/news/dd0083bb59e70ac0ea2d4b6f51c2b04c (accessed 2.05.2010).

market is enormous. That is why Poland should try to develop its export activity in China offering not only raw materials intensive goods. The Chinese market of investment goods seems to be a good choice here.

Obviously Poland's trade relations with Asia cannot be limited to China alone. Other economies of the region – like India – are also worth considering by Polish exporting companies.

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RELACJE HANDLOWE POLSKI Z KRAJAMI AZJATYCKIMI W LATACH 2006-2008

Streszczenie: Przejawem oraz efektem procesów internacjonalizacji oraz globalizacji jest wzrost intensywności powiązań handlowych, kapitałowych i technologicznych między podmiotami z różnych części świata. Ważnym podmiotem tych procesów są gospodarki azjatyckie. Polska również aktywnie uczestniczy w tych procesach, co jest w dużej mierze rezultatem uruchomionych na przełomie lat 80. i 90. XX w. przemian politycznych, ekonomicznych oraz społecznych. Jednak w przypadku polskiej gospodarki występuje duży stopień regionalizacji powiązań, zwłaszcza relacji handlowych, i ich wyraźna koncentracja w Europie. Nie oznacza to jednakże braku takowych stosunków między Polską a krajami azjatyckimi. Celem artykułu jest przedstawienie gospodarek azjatyckich jako partnerów handlowych Polski.