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Internationalization of the Polish economy and its susceptibility to the global crisis after 2007

Abstract

The aim of this research is to look at how the recent economic crisis, which was so strong that its consequences are still apparent nearly six years later, impacted Poland, which has been resilient to it compared with other economies, and what role was played by Poland's internationalization or its openness. The approach involves a detailed analysis of not only such staple macroeconomic variables as gross domestic product and changes in the trade structure but also of such openness factors as shifts in inward foreign direct investment across industries and the changes (for example, employment and productivity) seen in multinational firms present in Poland. The main finding is that the openness of the Polish economy allowed it to rake in various benefits after 2007 while not being too exposed to the international arena (for example, membership in the euro zone). Thus, Poland showed a positive balance relating to the impacts on the Polish economy emerging from the crisis.

Key words: Poland, openness, economic crisis 2007

Introduction

Poland's situation was ripe for examination from the perspective of the effects of the recent global crisis with respect to the internationalization of the Polish economy.

First, Poland is one of the new members of the European Union (EU) referred to as the EU-12. As a result of its membership, the Polish economy has become more open to trade with its EU partners because easing trade is one of the staple objectives of the group. Membership also meant a free inflow and outflow of labor, one of the core factors of production next to land, capital, and entrepreneurial activity.

Second, Poland has been viewed by many investing countries, the United States for example, as an attractive destination for foreign direct investment (FDI). It is impor-

tant to note that investments are not only made in the manufacturing industry – which would suggest that Poland is seen as a strictly low-cost-of-production country – but also in other industries such as financial intermediation and the real estate, renting, and business activities industry.

Third, Poland's situation is unusual because it is an EU member but is not a member of its monetary union. In short, this opens the Polish economy to dangers associated with variations in the exchange rate that eventually impact the trade composition. But it also keeps Poland shielded from the spillovers associated with the effects of the recent global crisis on euro zone members such as Greece.

Information for this project was obtained from the database of the Organization for Economic Co-operation and Development (OECD) unless otherwise specified, and was collected for the period 2007 through 2011 when it was available (for example, data for FDI flows by industry was only available for 2007, 2008 and 2009). It is important to note this analysis is a retrospective one of limited (not equal across all series) data that is derived from the short-term nature of the explored phenomenon. Hence, the conclusions made throughout this work are of a short-term nature as it is not sound to make long-term conclusions on such short series.

The work is further divided into four parts. The first part will introduce the overall macroeconomic standing before the crisis and as the crisis begins. Next, the extent of the internationalization of the Polish economy and its change over the examined five years will be described in a detailed look at the composition and the measure, in terms of the Polish gross domestic product (GDP), exports and imports, inflows of FDI and the inward activity of multinational corporations. Third, other issues will be examined that pertain to the Polish economy and are relevant to the study of this topic, and last will be a summary of and conclusions to the findings.

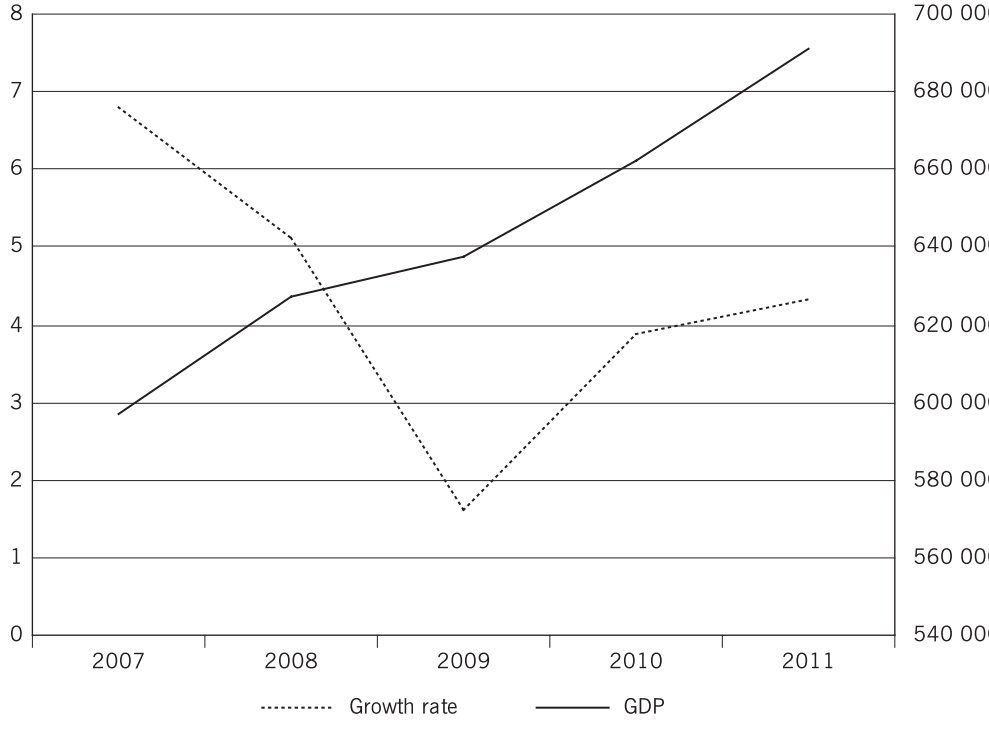
Macroeconomic profile of the economy in 2007–2011

This section contains an introduction of the overall macroeconomic conditions present in Poland over the five-year period under study. Starting with an introduction of the most aggregate measure, the GDP, the analysis looks at the determinants of the growth of the GDP from the demand perspective as well as the level of gross fixed capital formation. In the last part, this section will look at the international aspect of the Polish economy through trade and FDI, ending with additional macroeconomic indicators such as unemployment, inflation and the budget deficit. All of the indicators are reported in USD, constant prices, constant PPPs, OECD base year, millions as designated by the source.

Starting from 2007, the Polish GDP (Graph 1) continuously increased, from $596,758.9 million to $690,821.30 million in 2010. Notably, it is the growth of the GDP that shows the damage to the Polish economy due to the global crisis that originated in

the U.S. and is said to have been present in Europe since the fall of Lehman Brothers on 15 September 2008. Starting the examined time frame with an impressive 6.76% growth pace (annual), the trend decreased thereafter, reaching its lowest position of 1.63% in 2009, and eventually increasing again to 4.31% – a value almost 1% lower than that in 2008.

GRAPH 1. **Polish GDP (right-hand axis – units: USD, constant prices, constant PPPs, OECD base year, millions) and the growth of the Polish GDP (left-hand axis – units: percentages, annual)**



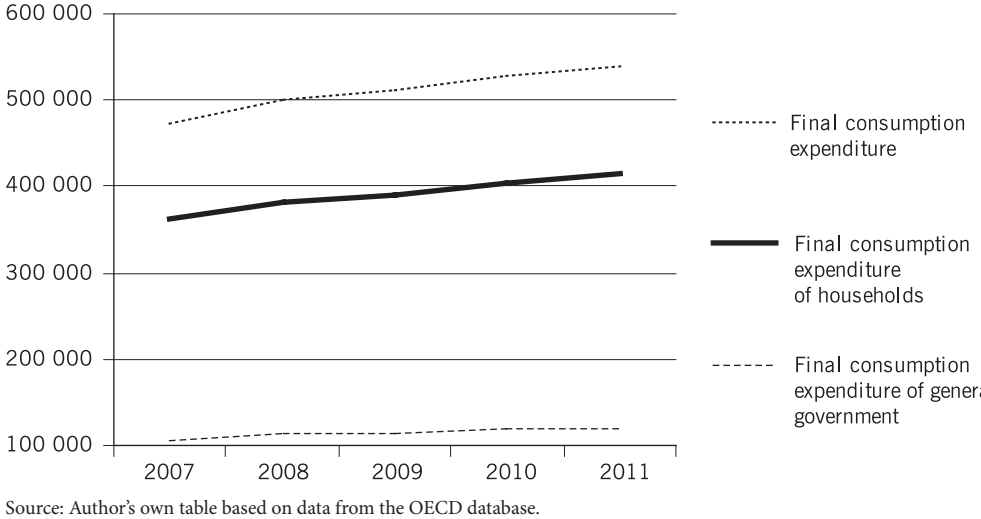
Source: Author's own table based on data from the OECD database.

Looking at the determinants of GDP from the demand perspective, it comes as no surprise that consumption is first in line. Interestingly, consumption, as measured by the final consumption expenditure OECD indicator (Graph 2), did not experience a decline in its aggregate value but there were declines in the rate of change. For example, from 2007 to 2008, the aggregate value increased from $471,954.37 million to $500,797.37 million, followed by a modest increase to $511,050.00 million a year later. Noting the final consumption expenditure of households (Graph 2), the growth rate de-

creased in subsequent years. The final consumption expenditure of general government (Graph 2) marked an impressive increase in the first two years in the analysis, from $104,559.16 million to $112,268.30 million, only to see a $2,407.96 million increase in 2009. Unlike the aggregate and the household expenditures, spending by the general government actually decreased in 2011 ($117,835.33 million) from 2010 ($119,411.38 million).

Based on the data analyzed above, it can be suggested that spending by the government in Poland is more impacted by the crisis than spending by households, as the latter group has seen decreases in the growth rate of its level but not in the level itself.

GRAPH 2. **Final consumption expenditure as an aggregate and separately of households and of general government (right-hand axis units: USD, constant prices, constant PPPs, OECD base year, millions)**



Source: Author's own table based on data from the OECD database.

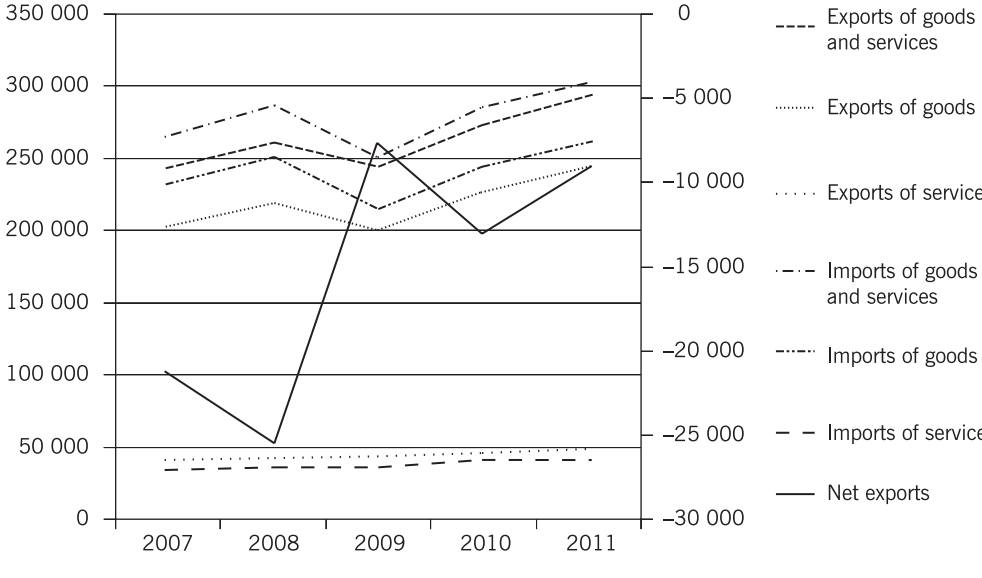
According to Piotr Maszczyk [2009:141], the role of investments in GDP increased to 22% at the end of 2007. The author lists four main reasons that contributed to the growth: first, the reduction of the cost of credit in 2006 which, second, increased its accessibility. The third contributor is the improved financial results for enterprises and fourth, benefits associated with EU membership. Unfortunately as the crisis spread in Europe, "Poland recorded a considerable drop in the rate at which investments grew in 2008 … [with] the prime factor the financial crisis … [and another] noteworthy factor … [the] significant slowdown in the inflow of FDI to Poland" [Maszczyk 2009:135–136]. These two factors are likewise responsible for the continuous drops in investment in subsequent years.

Net exports (Graph 3), expressed by the external balance of goods and services, showed interesting behavior. After the balance increased, in absolute value, from -$21,362.54 million (2007) to -$25,486.28 million (2008), it fell sharply in 2009 to -$7,616.49 million as values of exports and imports (analyzed later in this section) moved toward similar levels. With an increase to -$13,032.64 million in 2010, the net exports value in 2011 stood at -$9,107.89 million. Therefore, it can be hypothesized that in terms of achieving the smallest deficit in net exports, the global crisis was a positive event during which imports fell by more than exports.

The value of gross fixed capital formation rose sharply, reaching its first peak of $141,927.02 million in 2008. Capital formation then decreased to $139,604.76 million in 2010 (while still $10,000 million more than 2007). The second, and the overall, maximum of $150,844.03 million was recorded in the last of the analyzed years. This suggests a conclusion that gross fixed capital formation was impacted by the global crisis during the early years but was quick to recover.

With the exception of 2009, when the value of exports of goods and services (Graph 3) decreased to the level of 2007, the overall trend is upward, starting with $244,046.86 million in the first year and ending with $293,314.40 million in 2011. Exports of only goods

GRAPH 3. **Polish net exports[2] (right-hand axis), exports of goods and services, aggregate and separately, and imports of goods and services, aggregate and separately (left-hand axis) in USD, constant prices, constant PPPs, OECD base year, millions**



Source: Author's own table based on data from the OECD database.

followed the dip and the overall trend of the aggregate by falling to $200,369.73 million in 2009, barely above 2007 ($203,218.12 million). Overall, the value of exports of goods increased over the five-year period by $40,873.96 million. On the other hand, exports of services generally increased throughout the crisis, experiencing a fall only from 2008 to 2009 (followed by a large increase in 2010) relative to other changes between reported values.

The first conclusion to be drawn from analyzing exports of goods and services is that their value was impacted by the global crisis (most likely due to a decrease in demand abroad). Second, Polish exports are mainly goods, which explains the similarity of trends between this and the aggregate value. Third, exports of services were more robust during the global crisis as their value increased continuously.

In the parallel analysis for imports of goods and services (Graph 3), it is easy to see a similarity in the form of a dip in 2009 to $251,089.04 million from $286,740.36 million the previous year. The difference is that the value in 2010, although higher than in 2009, is still slightly lower than that of two years earlier. As in the case of exports, the imports of goods also followed the trend of the aggregate dipping to $214,788.21 million from $286,740.36 million, a significant drop. Unlike the exports of services, the imports of services did not enjoy a continuous increasing trend; value declined in 2009 (by $136.92 million) and again in 2010 (by $701.63 million).

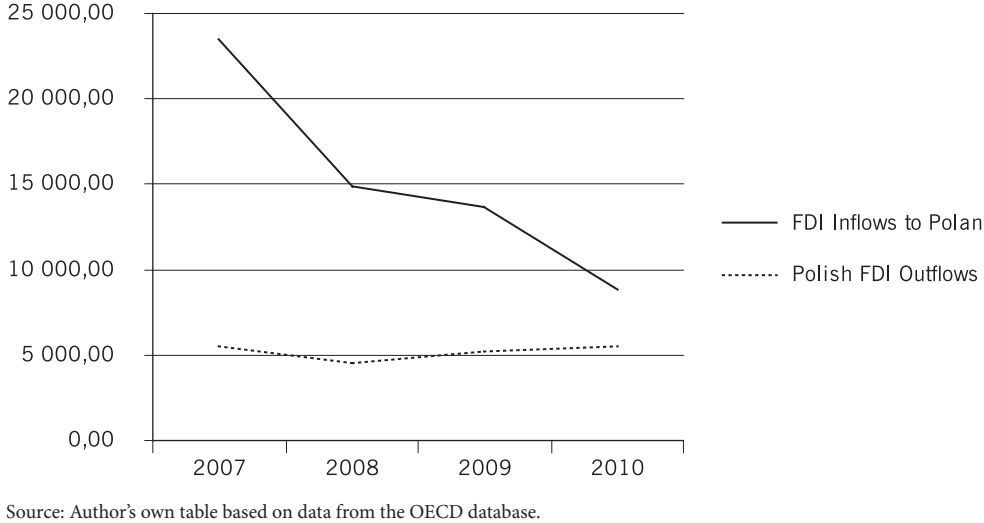
The main difference between Polish imports and exports is that exports recovered quicker than imports, which were more impacted by the global crisis.

Polish FDI outflows (Graph 4) in 2007 tended to concentrate around three areas: total services ($3,549.10 million), real estate, renting and business activities ($2,527.20 million), and manufacturing ($1,319.10 million), with the smallest positive value of just $1.70 million directed at hotels and restaurants. The total value of Polish outflows for this year was $5,476.60 million. In the following year, the aggregate value decreased to $4,494.20 million, suggesting that during the crisis, Polish investors tended to decrease their investments abroad and either place them in the home economy or withhold investment overall. There are a few changes in the magnitude of investments that need to be mentioned. First, the value of outflows decreased in the top three investment destinations of the previous year to $3,365.20 million, $707.40 million and $727 million respectively. Industries with significant increases in FDI outflows were trade and repairs (from $720.30 million to $1,387.50 million), financial intermediation (from $257 million to $1,140.30 million), and other services (from $25 million to $131.90 million). The last year for which individual industry data is available is 2009. In that year, the order of target industries returned to the order for 2007. For the manufacturing industry, the 2009 value rose above the 2007 value. The values for total services and real estate, renting, and business activities, although above the 2008 values, were still lower than those of the previous year. The total value for 2009 stood at $5,211.20 million. Despite the change in the trend to positive after a dip in 2008, it was only in 2010 that the value of Polish FDI outflows reached $5,496.55 million.

The conclusions that can be drawn here are that the Polish FDI outflows were sensitive to the crisis in the year it began, most likely resulting from the financial nature of the crisis itself, but that Polish FDI outflows were quick to reverse the dip, making the effect of the crisis short term.

Moving to FDI coming to Poland (Graph 4), in 2007, it was heavily concentrated in the total services industry, with inflows of $14,001.60 million. This was distantly followed by the manufacturing industry ($6,844.90 million) and real estate, renting, and business activities ($5,960.30 million). The total value for 2007 was $23,465 million. As the crisis settled into Europe, the flows associated with these industries decreased substantially the following year to $9,812.90 million, $2,282.10 million, and $3,915.40 million respectively. In some industries (for example, electricity, gas and water, and financial intermediation), there have been increases in flow in the examined year, 2008. Also, some flows turned negative, with the biggest decrease of negative $769.70 million reported in the transport, storage, and communication industry. Therefore, it is no surprise that the total value decreased substantially to $14,883.90 million. In 2009, the manufacturing industry regained some of the capital flow from abroad, reaching $4,749.60 million. At the same time, investors continued to move away from the total services industry and real estate, renting, and business activities ($6,438.80 million and $2,799.80 million respectively). Summed up, total FDI inflows to Poland continued to decrease ($13,698.10 million). In the last year for which data is available, 2010, the value of FDI inflows to Poland continued to fall, this time by a relatively big amount, $4,825.74 million, to just $8,872.36 million.

GRAPH 4. Foreign direct investment outflows from and inflows to Poland in USD, millions



Source: Author's own table based on data from the OECD database.

The prime conclusion from analyzing FDI coming to Poland is that it is much more impacted by the global crisis than by FDI outflows, especially when it appears there is no recovery in sight. When looking at industries, the values for inflows are as volatile as for outflows, but tend toward decreasing values, again suggesting no immediate recovery and a more profound negative impact due to the global crisis.

Poland's annual average unemployment rate, according to data collected by Eurostat, showed a decrease from 9.6% in 2007 to 7.1% the following year, contrary to expectations in a period of global crisis when business closings should produce more laid-off workers. The rate increased to 8.2%, 9.6%, and 9.7% in subsequent years. The inflation rate, measured as a percentage change on the same period of the previous year, saw its peak, 4.2%, in 2008, falling thereafter to 2.6% by 2010. We continue with an analysis of government expenditures and revenue and the resulting difference; all are measured in national currency (PLN), current prices, in millions. The former, as may be expected especially during a global crisis, rose continuously and steadily. Expenditures in 2007 stood at PLN 496,428 million, with the final 2011 value of PLN 664,078 million showing the high speed of growth. Total general government revenue fell below its expenditures throughout the period, increasing steadily from PLN 474,292 million in 2007 to PLN 587,068 million in 2008, with a dip in 2009. This yields a conclusion that Polish government revenue is more prone to be impacted by the global crisis than the expenditure side, with no additional expenditures being made as would be expected during a time of crisis. The latter may be explained by the fact that the Polish economy has not been as impacted by the crisis as other economies (for example the United States, where expansionary fiscal policy in the form of a bailout took place). Because of the dip in government revenue in 2009, the budget deficit nearly doubled to PLN 99,099 million (from PLN 46,925 million). With this significant increase at the start of the crisis, the deficit decreased to PLN 78,010 million (2011) after reaching its maximum of PLN 111,193 million (2010). Lastly, the government debt (according to Eurostat) expressed as a percentage of GDP has been steadily increasing from 45% to 56.3% with no apparent effect of the global crisis.

The extent of internationalization of the Polish economy and its susceptibility to the global crisis

The following section consists of two main parts. The first part will look at changes in international trade and how they influenced the domestic economic situation during the crisis. The indicators that will be looked at in this section come from the OECD database on the globalization trade indicators (for which the data for calculations is measured in constant prices, constant exchange rates, OECD base year 2000). The second part will look at how the level or the extent of internationalization via inward FDI is connected

with the probability and the extent of the Polish economy being subjected to the global crisis. Here more focus will be placed on the by-industry analysis of inward FDI as well as on the OECD globalization indicators relating to the activity of multinationals.

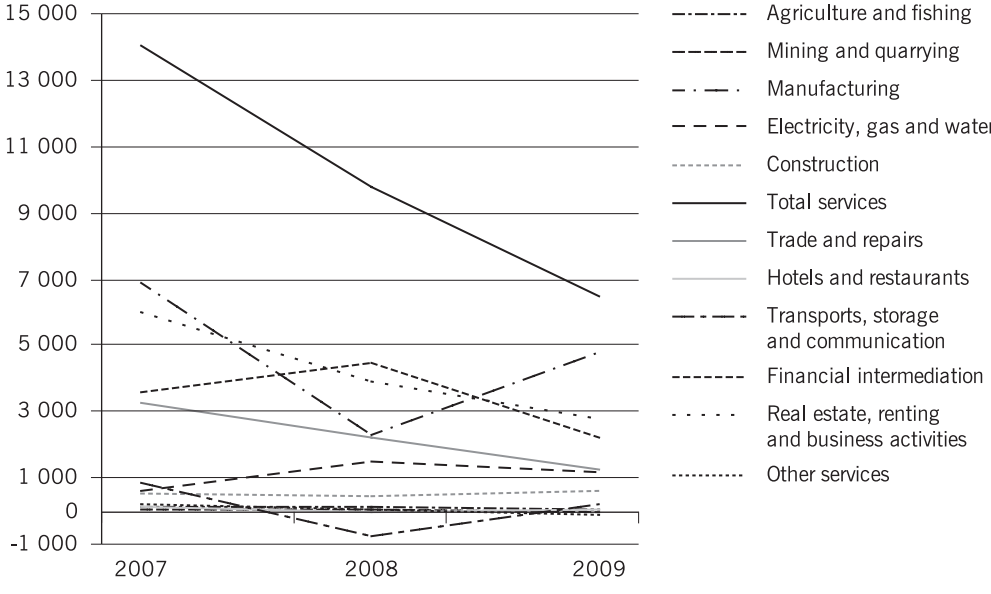
An economy that is more dependent on exports, or a foreign demand for its goods, should be subjected to greater harshness during a global crisis (which is expected to lower overall world demand) than an economy that is less dependent on exports. The overall trade-to-GDP-ratio[3] (total trade, multiplied later by 100% in order to reflect percentages) shows how impacted trade was by the recent global crisis. The change in the years 2007 and 2008 is positive. Yet, as the crisis set in Europe in mid-2008, that measure dips significantly from 84.82% (2008) to 75.27% (2009). The 2010 value of 80.09% shows some recovery but it still is below the figure for 2007, suggesting that the recovery is slower than the fall. Inspecting the overall trade-to-GDP ratio just for goods, we see the same trend as the ratio calculated from the aggregate value with an almost equal drop (9.41% for the trade of goods, 9.55% for total trade) in 2009. In line with other observations and resulting conclusions, the trade-to-GDP ratio for services shows that Poland is less open for trade in services than in goods, as the average ratio value is 12.83% compared with 67.92% for goods. Also, the ratio shows that Poland's "openness" declined earlier for services than for goods and had a stronger recovery. On average through the examined years, exports accounted for 40.88% of the Polish GDP. After reaching a level of 41.64% in 2008, the value decreased to 38.19%, rising again to 41.21% and 42.46% respectively in the next two years. Exploring these numbers, it is possible to say that during a global crisis, an economy sees a decrease in the importance of its exports in terms of percentage of GDP, confirming the hypothesis introduced at the beginning of this section.

By analyzing the data provided by OECD, it is possible to obtain further information on Polish exports by looking separately at the export propensity[4] for goods and the export propensity for services. Looking at goods initially, it is easy to see the same trend as is found in the overall export value. The figures shifted from 32.49% in 2007 to 33.31% in 2008, the maximum value, and then decreased to 29.97% (2009), recovering a bit to 32.05% in 2010, the last year for which data is available. When examining the propensity for services, a slightly different story is observed. First, as can be expected from the data in the previous section, services constituted a smaller portion of overall exports. Unlike goods, services declined from 6.55% in 2007 to 6.43% in 2008, but then rallied, rising to 6.45% and 6.61%, showing a full recovery and more as the 2010 value topped that of 2007 (which is not the case for goods).

The analysis of these indicators supports the conclusions drawn earlier when examining the raw data for exports and also shows that, in the case of propensity (or the dependence on demand from abroad), the services were more quickly affected by the global crisis and were also quicker to recover, with the recovery being more significant than in case of goods.

The presence of inward FDI (Graph 5) is said to have a positive impact on the host economy. FDI becomes a problem when the target economy becomes too dependent on it for its survival or even proper functioning because in a global crisis such as the one referred to in this work, investors may pull their capital to minimize risk or to keep more cash on hand.. The agricultural and fishing industry, which is at the lower end of FDI inflows, saw its FDI increase slightly in 2008 over the previous year, from $125.3 million to $137.4 million, only to take a devastating turn downwards to just $35.7 million in 2009. The mining and quarrying industry had a similar story, except FDI flows were continuously negative, decreasing from $69.8 million to negative $19.9 million in three years. The manufacturing industry, one of the biggest recipients of inward FDI among the examined industries, saw a dip in 2008, from $6,844.9 million the previous year to just $2,282.1 million and a significant recovery, nearly doubling in value in 2009. The electricity, gas and water industry duplicated the path of the agricultural and fishing industry in its inward FDI as its value nearly tripled between 2007 ($615.1 million) and 2008 ($1,523.5 million), only to end at nearly double the 2007 value in 2009 ($1,197.8 million). A small dip in 2008 in FDI directed at the construction industry was more than offset in the following year which reported a value of $590.4 million, slightly above the 2007 value of $567.6 million. The total services industry had the largest inward FDI values in each of the examined years but also suffered the largest loss in dollar value, as the continuous negative changes moved the value from $14,001.6 million to just $6,438.8 million. The trade and repairs industry suffered a similar decline in its inward FDI, from $3,269.2 million in 2007 to less than half that value, $1,232.9 million, in 2009. A decrease in investments was reported in the hotels and restaurants industry which posted a negative $27.7 million value in 2008, a significant figure not only because of the negative signs but also due to the extent of the change; the 2007 value equaled $150.3 million. Some recovery was observed in 2009 as inward FDI flows increased to $34.6 million. In terms of an absolute value, the largest negative value was observed in the transports, storage and communication industry, which saw an almost 200% decline, from $835.8 million (2007) to negative $769.7 million (2008), in FDI flows directed at it. The financial intermediation industry experienced an increase from 2007 ($3,596.4 million) to year 2008 ($4,431 million) in terms of its inward FDI. Given the nature of the crisis, it comes as no surprise that FDI directed at this industry declined by around half in 2009 ($2,243.8 million). The real estate, renting and business activities industry, one of the biggest targets of inward FDI, saw a continuous decline of $5,960.3 million, $3,915.4 million, and $2,799.8 million for 2007, 2008 and 2009 respectively. Lastly, other services reported the 2009 value of its inward FDI stood at negative $99.1 million as compared with $189.6 million in 2007. Overall, total inward FDI to Poland, described in more detail earlier in this work, decreased substantially from $23,465 million in 2007 to just $8,872.36 million in 2010.

GRAPH 5. **Inward foreign direct investment to Poland by industry in USD, millions**



Source: Author's own table based on data from the OECD database.

The first conclusion about the effect of FDI on the susceptibility of the Polish economy to the global crisis is that, assuming the changes described above are mainly the result of the recent crisis, none of the industries that enjoy inward FDI was left untouched. Second, with the exception of the electricity, gas, and water and the construction industries, all sectors were worse off in 2009 than they were two years earlier, with some industries (for example, the transport, storage and communication industry) starting to show recovery in the form of higher FDI flows a year after the crisis began in Europe.

In Poland, the three industries that had the highest number of multinational enterprises (world total except for the declaring country[5]) in 2008 were total services (sectors G to N with the exclusion of K) with 2,996 enterprises; manufacturing (2,596) and wholesale and retail trade, and repair of motor vehicles and motorcycles (1,628) as designated by the OECD statistical database. On the other side of the spectrum is the mining and quarrying industry with 25 enterprises. To sum up, in 2008 there were 5,980 multinational enterprises. In the following year, that aggregate number increased to 6,058 enterprises, as did the individual numbers for the two of the previously discussed industries (data for total services was not available) with 2,605 and 1,631 multinationals respectively.

Taking into consideration the limited amount of data, it can be seen that the number of multinational enterprises follows the overall trend apparent in the analyzed data, as 2009 recorded an increase in the number of examined enterprises.

Those companies employed 1,219,274 persons (number of persons employed, total activity, sectors B to N excluding K) with more than half (655,668 persons) working in the manufacturing industry. The other two largest industries by the number of multinationals – total services (sectors G to N, excluding K) and wholesale and retail trade, and repair of motor vehicles and motorcycles – had 503,002 and 294,118 persons working in them respectively in 2008. A year later, the latter industry increased employment to 302,162 while the manufacturing industry and the overall aggregate value experienced lower numbers of persons employed, 629,719 and 1,216,687 respectively.

The conclusion is that although the number of multinational enterprises increased in 2009, the number of persons employed decreased (203.89 persons employed per multinational in 2008 compared with 200.84 persons in 2009), suggesting that the companies shed workers as the demand for their products and services declined (a case parallel to the one seen in the U.S.).

Production value (total activity) increased from 2008 (PLN 536,153 million) to 2009 (PLN 544,652 million), with the manufacturing industry the largest contributor at PLN 348,311 million and PLN 351,015 million respectively. The second- and third-largest industries in terms of production value were total services (sectors G to N excluding K) and the wholesale trade, except for motor vehicles and motorcycles, with values of PLN 155,524 million and PLN 79,990 million in the first year and of PLN 80,538 million for the latter (data for the former is not available for 2009).

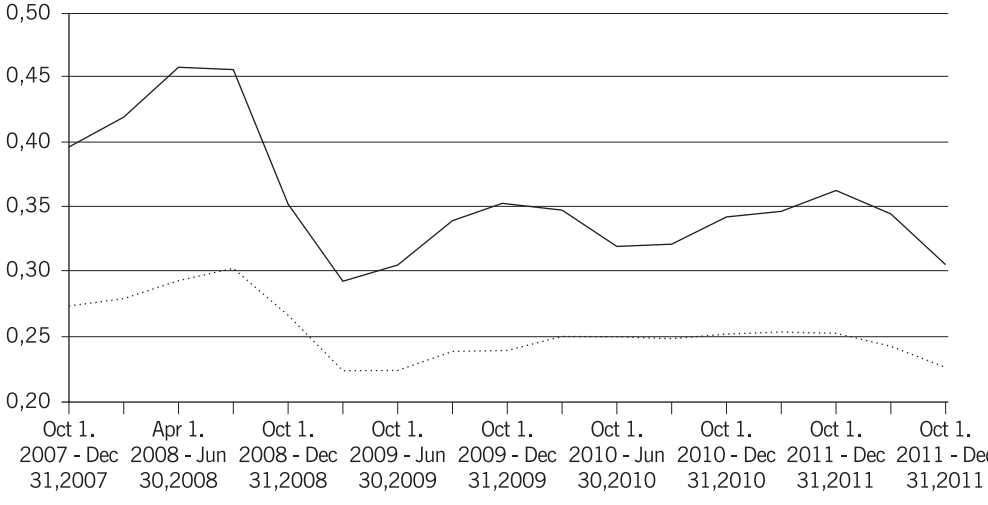
The conclusion is that the overall efficiency of each enterprise (production value divided by the number of enterprises) and the per-employee efficiency (production value divided by the number of persons employed) increased slightly from 2008 (89.6777 and 0.4397 respectively) to the following year (89.9062 and 0.4476).

The Influence of Other Determinants of the Susceptibility of the Polish Economy to the Global Crisis

We turn now to the important issue of the currency exchange changes that took place during the five-year period. As mentioned in the introduction, Poland is not a member of the eurozone; therefore, its exchange rate is unique as compared with other economies. In this section, the Polish zloty (PLN) will be compared with two major currencies, namely the euro and the American dollar. In both cases it will be the ratio (Graph 6) of the home currency to the foreign currency with increases in the ratio suggesting the strengthening, and a fall the weakening, of the zloty.

The expectation is that with a fall in the ratio, Polish exports should become more competitive due to the increased purchasing power of the foreign buyers that results from the weakening of the zloty.

GRAPH 6. Exchange rates of PLN to EUR and USD on quarterly basis from 1 October 2007 to 31 December 2011



Source: Author's own table based on data from the OANDA database.

Starting with the third quarter of 2008, both of the measured ratios registered significant declines, with the fall in the ratio concerning the zloty and the dollar more severe. The PLN/USD ratio moved from 0.42 to 0.35 and the PLN/EUR ratio edged from 0.28 to 0.27. Interestingly, in both cases the middle two quarters register increases in both measures, with the zloty/dollar ratio reaching 0.46 in the second quarter and the zloty/euro ratio reaching 0.30 in the third. This is in line with the previously discussed data on Polish exports of goods and services because 2008 is the year in which exports registered an increase to $261,254.09 million from $244,046.86 million the previous year. Throughout all of 2009, the ratios have been increasing (from 0.2924 to 0.3536 for the dollar and from 0.22 to 0.24 for the euro) suggesting that the zloty grew in value in the relation to the dollar and the euro. The parallel data for exports shows a significant dip ($243,462.54 million) in 2009. In 2010, Polish exports of goods and services jumped to $272,903.5 million, well above the value prior to the dip. At the same time, the PLN-to-USD ratio saw an overall decrease from 0.35 to 0.34 with values of 0.3189 and 0.3218 in between. Similarly, the middle two quarters of the ratio of zloty to euro saw some decline (from 0.2505 to 0.2497 and 0.2495 thereafter) with the value for the last quarter (0.2522) slightly above that for the first three months of the year. This justifies the hypothesis that most of the recovery seen in 2010 was attributed to trade denominated in dollars rather than euros.

In the last year of the analysis, both of the ratios declined in value, as the strengthening of the dollar to the zloty was greater than the fall in the Polish currency to the euro.

In the case of the former, the fall was initially interrupted by an increase in the second quarter, from 0.35 to 0.36. This was followed by two quarters of declines, to 0.34 and 0.30 respectively. In the case of the latter, the ratio had been steadily decreasing from 0.25 in the first quarter to 0.23 in the last one. This suggests that exports denominated in euros played a larger role in the change from 2010 to 2011 than they did for 2010.

After analyzing the changes in the exchange rate between the zloty and the two major currencies, the euro and the dollar, the changes in Polish exports of goods and trade, and the overall relationship between them, it is possible to say that the relationship fits the hypothesis that a weaker currency makes the home exports more competitive on the price level, thus increasing demand for them. Second, just as when analyzing net exports, the recent global crisis proved to be a positive factor as it led to a positive change in net exports that added to the Polish GDP. Therefore, it can be said that the level of internationalization, expressed here by exports, had a positive relationship with the health of the Polish economy during the recent global crisis.

As this topic is associated with Poland's membership in the European Union, the subject of European funds should be brought up. There are five funds[6] from which Poland is gathering benefits. They are: the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Guidance and Guarantee Fund, and the Financial Instrument for Fisheries Guidance.

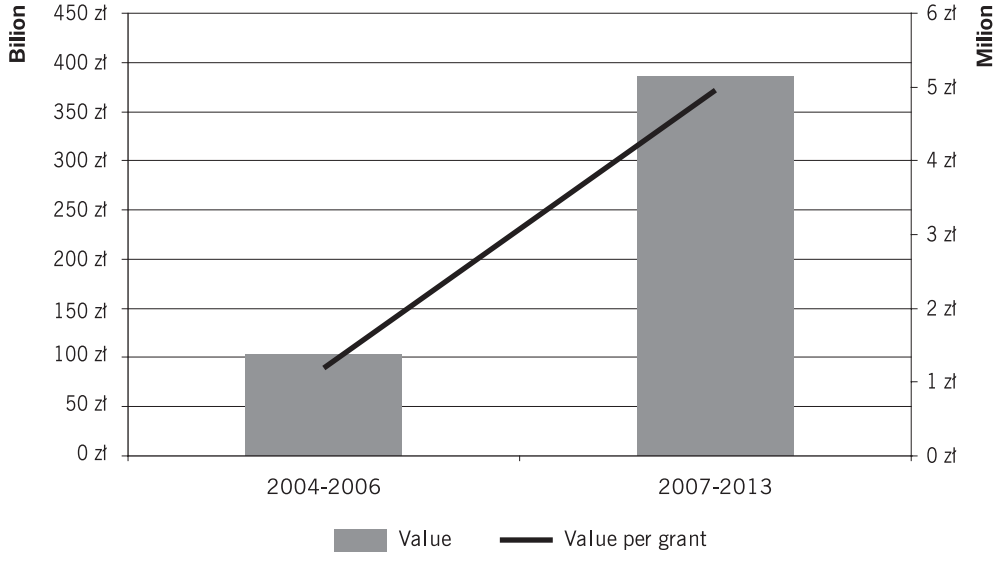
As can be seen in Graph 7, the cumulative value of EU grants for 2004 to 2006 (PLN 103,022,189,889.88) is barely one-third of the aggregate (PLN 384,902,216,590.92) of those investments made starting in the year in which the crisis began. A similar change can be seen when the value (PLN 1,162,047.58 per grant in 2004-2006 and PLN 4,914,481.83 per grant in 2007-2013) of those grants is adjusted for the (decreasing) number of assigned grants (88,656 in 2004-2006 and 78,320 in 2007-2013).

Clearly, due to the difference in timespans, any other comparison would be misleading. However, under the simple assumption that in each year the investments were the same throughout the period in terms of values and numbers, the aggregates can be adjusted to PLN 34,340,829,963.29 per year in 2004–2006 and PLN 54,986,030,941.56 per year in 2007–2013 (the number of grants adjusts to 29,522 and 11,188 respectively).

Based on a quick view of the original and adjusted data, the first conclusion is that despite the crisis, Poland saw increases in the aggregate, per grant and per year values of grants associated with the five EU funds. However, a negative change is seen when looking at the aggregate and the per-year number of grants. Cumulatively, the internationalization of Poland, in this case represented by membership in an international organization, proved to have a positive impact on the Polish economy as, regardless of struggles seen in other member countries, the inflow of investment from the collective increased, positively impacting the value of the Polish GDP.

With regard to the financial system and its health during the crisis, Oskar Kowalewski [2010:201] finds that "[p]aradoxically, the low level of development and lack of advanced

GRAPH 7. **The total values (left-hand axis,) and the values per grants (right-hand axis; PLN) from the European Union to Poland**



Source: http://www.mapadotacji.gov.pl/glowna,language,pl.

financial instruments may have been one of the reasons the Polish financial system managed to avoid a major financial crisis in 2007-2009". At the same time, the soundness and the confidence in the Polish financial system can be attributed to the limited presence and the impact of the world liquidity crisis due to a well-developed banking system and capital markets that were aided by the central bank, the National Bank of Poland, and the fact that in Poland "the government still has a large share in the banking sector … [and that] state-owned banks probably behaved counter-cyclically during the crisis" [Kowalewski 2011:237]. In summary, Kowalewski states that "the mixed financial system turned out to be a major competitive advantage of the Polish economy" [2011:237].

As far as the fiscal policy of Poland is concerned, the OECD found that "beyond the partly uncompensated tax cuts implemented since 2006 and the impact of automatic stabilizers, an anti-crisis plan worth about 0.7% of GDP was implemented, including such measures as co-financing of front-loaded investment related to EU funds [discussed earlier], allowing firms to temporarily accelerate the depreciation of certain assets and facilitating the tax deductibility of R&D spending … [as a part of] … a substantial fiscal expansion [that] helped to sustain activity in the 2008–09 downturn" [OECD 2010:4; OECD 2012:3].

Summary and Conclusions

Based on an analysis of the pentagon[7] consisting of "the main macroeconomic indicators taken into account in the comparative assessment of current economic conditions in a given country" [Matkowski, Rapacki, Próchniak 2010:31], the following can be stated.

It has been presented in this paper that the openness of the Polish economy to international business, be it exports and imports of goods and services, foreign direct investment, or the inward activity of the multinational enterprises, is significant in terms of the benefits derived from it but not as extensive as some other European or world economies, for example Germany or China. As a result, Poland is able to rake in the benefits of being an open economy while at the same time not allowing itself to be dependent on foreign demand (exports), production (imports), funding (foreign direct investment) or domestic economic activity (multinational enterprises).

The aggregate GDP of Poland rose continuously over the five-year period examined, growing from $596,758.90 million in 2007 to $690,821.30 million in 2011. Admittedly GDP growth did decline during the first full year of the global crisis in Europe, from 5.13% in 2008 to 1.63% in 2009, but the fall was short term and quickly reversed (3.87% in 2010, 4.31% in 2011), showing that further strain put on the partner economies (again, due to limited dependence) had a very limited impact on the Polish economy.

This conclusion is supported by the following summaries of trends and resulting findings presented in detail earlier in this work.

Changes in the structure of international trade, in terms of the extent of exports and imports, had been noted in 2009. When recognizing that net exports should positively factor into the GDP calculation, the smaller the trade deficit or the higher the trade surplus, the better for the examined economy. Following this mathematical relationship, the global crisis, assuming that it was the reason for the analyzed changes in net exports, had a positive impact on the Polish GDP as net exports decreased in 2009 to less than a third of their 2008 value, thus displacing less from the GDP. At the same time, declines in values in both of the components of trade were seen in trade in goods, whereas in terms of services a decline was seen only in the imports of services while exports of services increased without a break from 2007 on. It is also important to mention that exports and the domestic demand are mentioned as the "most important" among "a number of factors [that] saved the Polish economy from entering the path of recession facilitated investment" [Bil 2011:166].

Without a doubt, inward foreign direct investment played a positive role in the development of the Polish economy, whether through direct engagement or through various spillovers. Looking at the data, it is easy to see that Poland has been increasing its attractiveness as a host for those investments. Unfortunately, the biggest impact the recent

crisis had on the Polish economy is in the form of significantly decreasing inward FDI flows. Starting with an impressive aggregate total of $23,465 million in 2007, the value continued to drop annually to $8,872.36 million in 2010, or about a third of its high point. The toll of the global crisis was so severe that some industries (for example, the mining and quarrying industry) saw FDI inflows associated with them reaching negative values. As a result, it can be said that through the vehicle of decreasing FDI inflows, the global crisis had an impact on the Polish economy.

One way of seeing the extent of the harm done is to look at the ratios of inward FDI to that year's GDP. First, the ratio, even in 2007 when it was the highest, is rather small, at 0.04 (in other words, inward FDI to Poland in 2007 equals 3.93% of Polish GDP in that year). Second, as expected, the ratio decreased, falling to 0.02, 0.02 and 0.01 in the respective three consecutive years. Therefore, it can be suggested that although the impact of the global crisis on inflows of FDI to Poland was profound, the overall effect was not. In terms of the inward activity of multinational companies, the effect of the crisis was that it forced greater efficiency in terms of per enterprise and per employee, while downsizing their aggregate persons employed count. The effect on employment (a decrease in the total employed by multinationals of 2,587 persons), as compared with the overall size of the labor force, was small.

When looking at the effect of the global crisis on the Polish economy via changes in the exchange rate of the zloty against the euro and the dollar, it can be observed that the crisis had a positive impact on the Polish economy. During the crisis, investors fled to the two major currencies, especially the greenback, in search of a safe haven, thus increasing the demand for them and their value against the Polish currency. This allowed the Polish exports to become more price-competitive. As a result, the value of exports increased as the zloty depreciated.

Another factor rising from the internationalization of the Polish economy (in this case represented by its membership in the EU) during the examined years is the increasing amount of money (pre- versus during- and post-crisis) provided via European grants that, treated as investments, factored positively into Poland's GDP.

With regard to additional determinants of the susceptibility of the Polish economy to the global crisis, Marzenna Weresa [2010:329] sums it up by stating that the "flexible exchange rate of the Polish currency … and sound rules for supervision over the financial sector" were among the factors that contributed to shielding the Polish economy from the effects of the global economic downturn.

As has been shown by this research, the Polish economy was impacted by the recent global crisis by its internationalization, or rather its openness to it, but not by a significant amount. Adding to the argument is the fact that the overall benefits of internationalization highly outweigh the costs (here presented as an extended exposure to the crisis). As a result, the analysis found no basis on which to recommend any changes in the structure of the Polish economy in terms of its international status.

Notes

[1] The author is a recipient of the "Stypendia – dla nauki, dla rozwoju, dla Mazowsza" scholarship conducted by the Warsaw School of Economics and financed by the European Union (European Social Fund).

[2] The source of the data, OECD, refers to this measure that is calculated by subtracting imports of goods and services from exports of goods and services as the "External balance of goods and services." For the purpose of the analysis this term can be understood as, after slightly modifying the general definition of the term "balance of trade" as it is presented in books about economics (see for example: [Miller 2011:864]), the balance of trade in goods and services.

[3] This statistic is defined by the source as "the sum of exports and imports divided by GDP. This indicator measures a country's 'openness' or 'integration' in the world economy. It represents the combined weight of total trade in its economy, a measure of the degree of dependence of domestic producers on foreign markets and their trade orientation (for exports) and the degree of reliance of domestic demand on foreign supply of goods and services (for imports). The trade-to-GDP-ratio is often called the 'trade openness ratio'. However, the term openness to international competition may be somewhat misleading. In fact, a low ratio for a country does not necessarily imply high (tariff or non-tariff) obstacles to foreign trade, but may be due to the factors mentioned above, especially size and geographic remoteness from potential trading partners. For example, it is generally the case that exports and imports play a smaller role in large economies than they do in small economies. It should be noted that this indicator may also be expressed as average of exports and imports (not as the sum of both)".

[4] A statistic is defined by the source as: "the ratio between exports and GPD. It measures the share of total final demand from abroad and is thus a measure of the degree to which domestic producers depend on demand from outside their own country. When interpreted as a measure of international orientation and openness of an economy, it has to be kept in mind that, generally, exports and imports play a smaller role in large economies than they do in small economies".

[5] Statistics on this and other measures of the inward activity of multinationals are available only for two years; namely, 2008 and 2009. "The data refer to majority foreign-controlled firms employing more than 9 persons, where more than 50% of the capital is held by one non-resident. Indirectly foreign-controlled affiliates are included and multiple foreign control is considered" (OECD).

[6] Detailed information (i.e. location, values of individual parts) on each of the funds can be found at the following link: http://www.mapadotacji.gov.pl/glowna,language,pl

[7] Admittedly, the current account balance is not addressed directly but its components are taken under review individually in this work.

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