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## **INFLUENCE OF EFFECTS OF THE LAST WORLD FINANCIAL AND ECONOMIC CRISIS ON THE PERSPECTIVE OF KNOWLEDGE-BASED ECONOMY DEVELOPMENT IN POLAND**

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**Summary:** The objective of the article is answering a question for opportunities to use the economic success of Poland, which resisted to the last global crisis, in order to accelerate the development processes in our state. In the first part of the paper the author focuses on the reasons of the crisis, its course and sources of the Poland's success. Then, the author characterizes the macroeconomic surrounding favorable to the knowledge-based economy and presents the directions of engagement of Polish authorities in the process of construction of national competitive advantage based on innovations.

**Keywords:** financial and economic crisis, macroeconomic conditionings of knowledge-based economy, national competitive advantage, internationalization of R&D.

### **1. Introduction**

Economic development related to civilization progress is based on a technological advantage. In turn, in order to develop the advantage there are necessary relevant institutional frameworks and among them cultural and psychological factors favourable for the effective use of intangible assets in economic activity. Also the shape of the economic policy is substantial as it may enhance the acceleration of development process or, on the contrary, stop reforms<sup>1</sup>. To play a significant role in the global economy in the future Poland must learn how to convert its previously few economic successes into a source of permanent competitive advantages. The objective of this article is the assessment whether the macroeconomic situation of Poland in the face of the global crisis may strengthen out state in terms of the knowledge-based economy.

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<sup>1</sup> K. Piech, *Wiedza i innowacje w rozwoju gospodarczym: w kierunku pomiaru i współczesnej roli państwa*, Instytut Wiedzy i Innowacji, Warszawa 2009, p. 128.

## 2. Circumstances of occurrence and course of the last global financial crisis vs. Polish situation

Last financial and economic crisis was launched by a split of the speculative bubble on the real property market and the collapse of the mortgage register market *subprime* in the United States in the second half of 2007. Nevertheless, the reasons of the crisis are more complicated and both, macro and micro economic phenomena may be blamed (see Table 1).

Splitting of the speculative bubble on the real property market in the United States and the rapid decrease in prices on the market which simultaneously meant the decrease in the value of sureties for debt securities related to the real property market, affected the decrease in prices of these papers and related derivative instruments, most of all *CDO (Collateral Debt Obligations)*. The escalation of the crisis occurred when the investment bank – Lehman Brothers – collapsed in September 2008. Many researchers and commentators recognize this incident as the beginning of the world financial crisis since the bankruptcy of one of the oldest and largest investments banks in the USA proved the weight of the problem to the world and stimulated aversion to the risk. Consequently, financial markets stopped to operate effectively. One may conclude that from the moment of the Lehman Brothers' collapse the effects of the financial crisis on the real situation of the world economy were more and more clear. Economies of the Euro zone were wounded by the crisis via two channels: a real property market channel on which, like in the USA, speculative balloon was pumped out (e.g. Spain, Ireland, France) and a foreign trade channel in case of economies characterized by the large dependence of economic growth on the external demand – Germany<sup>2</sup>. The crisis intensified and proved serious troubles of some of Euro zone members in the field of public finances and Greece is a good example. Middle and East Europe states belong to the group of states seriously suffering from the world crisis. Different effect of the recession on the economies of this region was caused by such factors as openness of the economies or share of credits in consumption and investments<sup>3</sup>.

Relatively low meaning of the aforementioned factors in Polish economy made that Poland – as the sole state in the region and the sole state of the European Union – maintained the economic growth even if its scale was lower. At the beginning the irregularities on financial markets caused a significantly worse mood of investors. Consequently, in the middle of 2008, the situation reversed the previous appreciation trend of Polish Zloty (PLN). On the one hand a significant depreciation of PLN in the second half of 2008 and at the beginning of 2009 caused the increase in value of debt

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<sup>2</sup> *Polska wobec światowego kryzysu gospodarczego*, Narodowy Bank Polski, Warszawa, wrzesień 2009, p. 11.

<sup>3</sup> *Analiza sytuacji gospodarczej w krajach Europy Środkowej i Wschodniej*, Narodowy Bank Polski, Instytut Ekonomiczny, Biuro Gospodarki Światowej i Europejskiej Integracji Gospodarczej, Warszawa, grudzień 2009, p. 6.

**Table 1.** Reasons of occurrence and spreading of the last financial and economic crisis

Macroeconomic factors	Microeconomic factors
<ul style="list-style-type: none"> <li>• growing – during the last decade – the scale of global unbalances (from one side significant surplus of savings in growing economies with a simultaneous poorly developed system of financial allocation hampering their investing, on the other hand, too low saving rate in developed states),</li> <li>• relatively long period of keeping the interest rate at a very low level, both in USA and in other developed states which resulted in substantial growth in tendency to incur debts for consumption and investment purposes as well as for the needs of speculation,</li> <li>• incorrect economic policy, in particular in the field of control over financial markets (most of all – no reaction of the state to a regularly growing gap between the real state of the economy and financial markets).</li> </ul>	<ul style="list-style-type: none"> <li>• development of derivative instruments which may be used not only to secure a risk but they may be also used for speculation purposes, and insufficient education of most of market participants, lack of understanding of such instruments (complexity and scale of emission of derivative instruments strengthened difficulties in terms of assessment of the quality and risk of such instruments which might result in high ratings of the instruments),</li> <li>• too schematic, mathematic approach to the issue of rating and assessment of the risk related to the instruments management which frequently generated an impression of minimal risk as a result of underestimation and result of transfer of the risk to other market participants,</li> <li>• more liberal credit policy of the banks, which became open to clients with very low credit ability, called <i>NINJA (no-income, no-job, no-assets)</i>,</li> <li>• bad management of financial institutions and incorrect owner's control over persons responsible for this field (most of all – motivation systems for managing boards of financial institutions establishing priority on high returns on capital in short term),</li> <li>• serious rise of the financial lever (in many cases over the level 50:1 - result of acceptance of growing index of relation of debts to equity by financial institutions,</li> <li>• psychological conditionings, usually typical of states before a crisis, such as: excessive optimism, even recklessness of the financial markets participants, increase in tendency of herd instinct, pressure on high and quick profits and consequently, tendency to excessive risk which was not observed before,</li> <li>• psychological tendencies characteristic of a crisis state such as: no trust or large restriction on the trust, growing pessimism and its extreme forms, even a fear and panic deriving from uncertainty).</li> </ul>

Source: own elaboration on the basis of: *Poliska wobec światowego kryzysu gospodarczego*, Narodowy Bank Polski, Warszawa, wrzesień 2009, p. 4-8; *Dylematy kształtowania struktury kapitału w przedsiębiorstwie. Wnioski z konferencji*, red. K. Kreczmańska-Gigol, opracowanie naukowe z serii *Przedsiębiorczość*, Szkoła Główna Handlowa w Warszawie, Warszawa 2009, p. 21-25; J. Klebaniuk, *Psychologiczne aspekty kryzysu finansowego*, [in:] *Rynki finansowe w warunkach kryzysu*, ed. M. Kalimowski, CeDeWu, Warszawa 2009, p. 62-67; R. Kusy, *Toksyczne instrumenty finansowe jako przyczyna kryzysu finansowego*, [in:] *Globalny kryzys finansowy a polska gospodarka*, red. W. Małecki, Vizja Press & IT, Warszawa 2009, p. 113, 119-120 and 130-131; Ch. Goodhart, *Kryzys finansowy i przyszłość systemu finansowego*, [in:] *Zeszyty BRE Bank-CASE Nr 100*, red. E. Balcercowicz, CASE – Centrum Analiz Społeczno-Ekonomicznych – Fundacja Naukowa, Warszawa 2009, p. 12-13.

in foreign currencies and exposed enterprises – which concluded contracts to options under unfavourable terms and conditions – to losses. On the other hand the weakening of our national currency affected positively the dynamics of the net export as the most significant factor of Polish economic growth in 2009 (Poland has more significant decrease in import than export – among others – owing to lower price competitiveness of imported goods arising from substantial depreciation of Polish Zloty). The most serious decrease in economic activity in Poland occurred in the first quarter of 2009 when real GDP growth amounted to 0,8% compared to the analogous period of the previous year. However, the economic growth was observed in following quarters of 2009, accordingly: 1.1% y/y, 1.7% y/y and 3.1% y/y (GDP unlevelled at seasons)<sup>4</sup>. From the fourth quarter of 2008 to the end of the third quarter of 2009, the economic growth was negatively affected by gross accumulation that is a category which – between the fourth quarter of 2006 and the fourth quarter of 2007 – significantly affected a substantial increase in the real GDP in Poland. Adjusting of enterprises to lower business activity was mirrored mostly due to noticeable reduction on the inventories, which, in turn, resulted in a negative contribution of the inventories to the increase in GDP. A large role – in terms of the maintenance of the growing GDP tendency in Poland in the period under examination – was played by the largest in the region growth in individual consumption. The expenditures of households were increasing despite worsening situation on the labour market and restrictions on access to loans and credits. However, the most significant factor of the economic growth in Poland in 2009, like in other states of the region, was the net export. One may notice a few factors which affected this situation: the decrease in volume of inventories, aforementioned depreciation of Polish Zloty and the implementation – by some states of the European Union – of subsidies to purchasers of new cars (e.g. in Germany), due to which Poland obtain profits because of so called: *free rider effect*. Moreover, lower decrease in export from Poland was an effect of its structure as consumption goods are of more significant meaning, characterized by relatively lower alteration in dynamics and demand<sup>5</sup>. Lower exposition to external shocks due to lower share of the export in GDP compared to other states of the region as well as lower decrease in credit campaign, in particular compared to Baltic states, Bulgaria and Romania, are some circumstances which enabled Poland to continue the economic growth despite recession tendencies characterizing the surroundings.

Better results of the Polish bank sector in the background of the developed states are related to its approach to traditional deposit & credit activity and relatively low engagement in financial instruments operations<sup>6</sup>. Problems of Polish financial and non-financial institutions with so called toxic financial instruments were generally

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<sup>4</sup> GUS; [http://www.stat.gov.pl/cps/rde/xbcr/gus/PUBL\\_rn\\_produkcyjny\\_bruttp\\_IV\\_kw\\_2009.xls](http://www.stat.gov.pl/cps/rde/xbcr/gus/PUBL_rn_produkcyjny_bruttp_IV_kw_2009.xls) (as of 02.03.2010).

<sup>5</sup> *Analiza sytuacji...*, p. 33.

<sup>6</sup> *Raport o stabilności systemu finansowego*, red. P. Szpunar, Narodowy Bank Polski, Warszawa, grudzień 2009, p. 27.

limited to some derivative instruments securing the currency exchange risk (mainly currency options and *CIRS – Currency Interest Rate Swap*)<sup>7</sup>. Also fears arising from the fact that banks in Poland constitute a part of international financial system appeared to be exaggerated. Against the forecasts, parent companies did not suspend finances for daughter companies and they did not consume their profits on the scale which was presented in black scenarios in Poland. Other factor which affected the success of Poland struggling against the last world economic crisis was relatively serious – as it turned out – the flexibility of the labour market. The feature of Polish labour market observed during the global crisis turned out to be so unexpected because it occurred in real life and it did not arise from the Labour Code. A significant role was also played by better absorption of the Union's funds and other favourable circumstances such as the fact that exactly in that period Poland intensified efforts in the field of infrastructural investments with reference to the preparations to Europe Football Championship which will take place in Poland in 2012. As regards economic policy, it seems that the government, National Bank of Poland and Finances Control Commission did not make any serious mistakes and put pressure on solutions favourable from the bank sector's safety point of view.

In the context of the last economic crisis a fiscal policy and the perspectives of the shape of situation of the public finances are significant. The developed states overcame the crisis but paid a price in a form of gigantic debts which must be repaid in the future. Therefore, one may expect strengthening of competition for capital between developed and growing states. It seems that, as a result of unprecedented intervention of central banks and governments, the problems were only postponed since the financial crisis is converting into world fiscal crisis and threat of global inflation becomes more and more real.

### **3. Macro-economic conditionings for the development of the knowledge-based economy vs. the case of Poland**

Together with the growing meaning of knowledge in the contemporary world scientists decided on the examination of principles of operation of economies basing their competitive advantage on intangible assets. Apart from very general definitions in the literature there appear detailed terms focusing on the features which must characterize an economy in order to recognize it as an economy based on knowledge. Prof. A. Koźmiński pays attention to the following conditionings characterizing the knowledge-based economy in macro scale<sup>8</sup>:

- high percentage of GDP allocated for education, scientific research, intellectual services as well as information products & services and communication services

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<sup>7</sup> R. Kusy, *Toksyczne instrumenty finansowe jako przyczyna kryzysu finansowego*, [in:] *Globalny kryzys finansowy a polska gospodarka*, red. W. Małecki, Vizja Press & IT, Warszawa 2009, p. 126.

<sup>8</sup> A.K. Koźmiński, *Jak zbudować gospodarkę opartą na wiedzy?*, [in:] *Rozwój polskiej gospodarki – perspektywy i uwarunkowania*, red. G.W. Kołodko, Wydawnictwo Wyższej Szkoły Przedsiębiorczości i Zarządzania im. L. Koźmińskiego, Warszawa 2002, p. 157-158.

(co-financing of such expenditures from public resources and private resources, with the significant advantage of the private ones),

- well-developed infrastructure, in particular information structure (it is important that together with regular development of a dominating sector of an economy of high added value, basing its competitive advantage on innovations, traditional sectors become more knowledge-absorptive and they use modern information & communication technologies),
- high level of transaction safety and mutual trust among entities operating on a market which arises from legal system and effective system of legal regulations execution,
- solid macroeconomic basis (it applies – among others – to low inflation rate and public finances balance).

From among the fields of state's activity in terms of building the foundations for knowledge-based economy and fields of support, one may indicate<sup>9</sup>:

- provision of finances from public resources for the needs of innovative undertakings on a level warranting the occurrence of a threshold effect,
- stimulation of a demand for innovations by means of the public procurement system,
- provision of personnel for modern economy (it refers to education provided for future employees in the sector of knowledge, but also to the transformation of social awareness in terms of knowledge issue in the contemporary world, stimulation of pro-innovative approaches among entrepreneurs),
- warranting of the intellectual property protection,
- warranting of freedom of the private sector,
- provision of relevant coordination mechanism with consideration given to a high number and diversity of entities operating under the knowledge-based economy concept at the level: central, regional and local, as well as in terms of macro and micro economy,
- care for observance of fair competition rules on the market.

Despite growing national awareness of meaning of technological progress in the contemporary world, Poland still cannot be classified as the economy which competitive advantage is based on knowledge. M.E. Porter's theory is worth mentioning here as it regards construction of national competitive advantage. The position of a state-innovator is – according to this theory – attained at the third stage of construction of competitive advantage. Such an economy focuses on the manufacture of knowledge-consuming goods with limited share of raw-material, work and capital consuming goods which dominate at Porter's in case of two previous states characteristic of developing states and states under transformation<sup>10</sup>.

<sup>9</sup> K. Kuźniar, *Rola państwa w tworzeniu gospodarki opartej na wiedzy*, [in:] *Zarządzanie kapitałem ludzkim w gospodarce*, red. D. Kopycińska, Wydawnictwo Print Group, Szczecin 2007, p. 44.

<sup>10</sup> M.E. Porter, *The Competitive Advantage of Nations*, Macmillan, London 1998, p. 545-560.



Economies, which are at the second stage and which aim is to evaluate to the third stage, hope for diffusion of the progress and they put special pressure on the development of absorption and adaptation skills. Poland is an example of such an economy. Nevertheless, one must take into consideration the fact that the transfer of knowledge from external sources is related to the risk of depending on foreign providers of technology if learning from innovators is not effective enough to result in a gradual but noticeable increase in the scope of innovative autonomy of a receiving state. The ability for a quick and flexible adjusting to new conditionings and competitive advantages depends mostly on: quality of economic system, efficiency of the market mechanism, mobility of production input, accumulating of capital, society qualification level, technology development level, intensity of competition and economic policy<sup>11</sup>. A state's economic development should not be considered as a process of macroeconomic stability (although this feature is significant), but as a complicated process of conversion of institutional surrounding, alteration of competition rules and economic cooperation as well as obtaining of understanding, acceptance, even promotion of such alterations by a society<sup>12</sup>. Selection of a form of technology transfer depends on needs and specificity of a particular receiving enterprise. Particular forms play a significant role in the process of liquidation of a development 'gap' between states. There is a predominant opinion among researchers that the most effective form of technology transfer is posed by direct investments which enable an effective reduction on the 'gap' in all fields: production, market and management<sup>13</sup>. The most desired form of presence of a foreign investor in a state learning from innovators and aspiring to the name of knowledge-based economy is the commence of research & development works (R&D). This type of investments is the most stable which is a result of the fact that probability and opportunities for transfer of such an activity to other state are much lower than in case of production business activity. Among basic reasons of the internationalization of R&D are: availability of highly qualified specialists, relatively low costs of their employment, presence of great universities, support provided by domestic and local authorities and geographical localization of a host-state. Profits from the internationalization of R&D as well as expenditures are mutual (see Table 2).

Poland resisted to the world crisis. However, when giving consideration to Greece's public finances and the effect of the Greek crisis on the situation of the entire Euro zone, one may expect subsequent hazards to the macroeconomic stability of Poland. So far, macroeconomic situation of Poland in the background of the entire

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<sup>11</sup> W. Bieńkowski, J.W. Bossak, *Międzynarodowa zdolność konkurencyjna kraju i przedsiębiorstw. Wyzwania dla Polski na progu XXI wieku*, Szkoła Główna Handlowa w Warszawie, Warszawa 2004, p. 52.

<sup>12</sup> Ibidem, p. 65.

<sup>13</sup> S. Umiński, *Znaczenie zagranicznych inwestycji bezpośrednich dla transferu technologii do Polski*, Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 2002, p. 57-58.

**Table 2.** Potential implications of R&D internationalization by TNCs (*transnational corporations*)

	Potential benefits	Potential costs
Home country	<ul style="list-style-type: none"> <li>• improved overall R&amp;D efficiency,</li> <li>• reverse technology transfers and spillovers,</li> <li>• market expansion effects.</li> </ul>	<ul style="list-style-type: none"> <li>• „hollowing out” of domestic R&amp;D base,</li> <li>• disappearance of certain R&amp;D jobs,</li> <li>• technology leakage.</li> </ul>
Host country	<ul style="list-style-type: none"> <li>• improved structure and performance of the NIS (<i>national innovation system</i>),</li> <li>• contribution to human resource development (R&amp;D employment, training, support to higher education, reverse brain drain effects),</li> <li>• knowledge spillovers,</li> <li>• contributions to industrial upgrading.</li> </ul>	<ul style="list-style-type: none"> <li>• downsizing of existing local R&amp;D or losing control of technology,</li> <li>• unfair compensation for locally developed intellectual property,</li> <li>• crowding out in the labour market, potential harm to basic research,</li> <li>• technology leakage,</li> <li>• race to the bottom and unethical behaviour.</li> </ul>

Source: *World Investment Report 2005. Transnational Corporations and the Internationalization of R&D*, UNCTAD, New York and Geneva 2005, p. 180.

European Union under the crisis has resulted in the promotion of our economy on an international scale based on solid foundations. The improvement of our credibility should be used when trying to attract next foreign investors to Poland, in particular those interested in R&D internationalization, which would enable long-term effective joining Polish work force and competitive advantages of global corporations. On the one hand the last world crisis is partially an opportunity for Poland, on the other the business activity on an international scale is run under heavily restricted trust and Polish institutional & legal system is not perceived in the world as a system warranting high transactional safety. Therefore, Poland needs the intensification of efforts to continue reforms and lay foundations for knowledge-based economy which is a way to reach a source of economic and civilization bonuses.

#### 4. Conclusion

After the last global crisis Poland was rated by many commentators as a successful economy. However, the financial crisis is already being converted into fiscal crisis and our economy will have to face hazards arising from this situation. Apart from the care for the creation of traditional rationales for development, mainly macroeconomic, Poland must enhance efforts to provide conditions for the development of national competitiveness based on innovations. Among long-term priorities of Polish “economic economy” one should enumerate: subsequent modernization of traditional sectors, development of the infrastructure – in particular – information one, operations promoting improvement of institutional and legal system as well as national marketing oriented to quick use of opportunities to promote Poland in the world as an attractive localization of innovations and R&D activities.



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### WPŁYW SKUTKÓW OSTATNIEGO ŚWIATOWEGO KRYZYSU FINANSOWEGO I GOSPODARCZEGO NA PERSPEKTYWY ROZWOJU GOSPODARKI OPARTEJ NA WIEDZY W POLSCE

**Streszczenie:** Celem artykułu jest próba odpowiedzi na pytanie o możliwości wykorzystania sukcesu gospodarczego Polski, która oparła się ostatniemu globalnemu kryzysowi, na rzecz przyspieszenia procesów rozwojowych w naszym kraju. W pierwszej części opracowania autorka koncentruje się na przyczynach kryzysu, jego przebiegu oraz źródłach sukcesu Polski. Następnie charakteryzuje otoczenie makroekonomiczne, sprzyjające rozwojowi gospodarki opartej na wiedzy i wskazuje kierunki zaangażowania polskich władz w procesie budowania narodowej przewagi konkurencyjnej opartej na innowacjach.