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Ladies and Gentlemen,

It seems that the world economy is gradually overcoming the crisis which touched it. In some countries the process is faster and in others slower. In Poland, the management of the economy in crisis has been, and is, particularly effective, especially in comparison to other EU countries, thanks to, but not only because of, an efficient economic policy.

Some of the Polish experience on anti-crisis economic policy we present in the second issue of our ‘Journal of Management and Financial Sciences’. This number includes the research undertaken by the staff of the College of Management and Finance at Warsaw School of Economics. We are delighted to be able to share with you these experiences, hoping that they will contribute to the development of economic thought.

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1. Introduction

Poland’s successful five years of European Union membership was a period of integration in which this country made substantial progress in its move towards nominal convergence. The data in tables 1–5 show that in the years 2005–2008 public debt never topped 48% of GDP; the budget deficit was under 3% of GDP in 2005 and 2007, as both inflation and long-term interest rates decreased over those years and, by mid-2008, the złoty strengthened considerably against the euro. Poland’s per capita GDP increased in relation to the EU average from 50.6% in 2004 to 57.1% in 2008 (Eurostat 2009). The boost came from the fast growth of the Polish economy, at an average 5.3% of GDP year-on-year, in that period (Eurostat 2009), the dynamic growth of exports as EU markets opened to Polish goods and services, their rising competitiveness in price and quality, the growing inflow of EU assistance funds and inward investment, as well as the upsurge in domestic investment and consumption.

The world crisis unsettled the process of positive changes, bringing the Polish economy, as well as its main trading partners, to a slowdown. As the crisis deepened in 2009, more disturbances were noted in the real sphere proving increasingly hazardous to the Polish economy’s internal and external balance. This study of developments that are important to the monetary integration with the euro area deals mainly with the impact of the crisis on Poland’s ability to meet the convergence criteria, based on data released in the latest publications of the National Bank of Poland (NBP), the Polish Ministry of Finance, the European Commission, and from selected publications on the subject.

2. The 2007–2009 political debate in Poland on euro zone accession – quicker or later?

Poland’s coalition government of the Civic Platform (PO) and the Polish People’s Party (PSL), which took over in 2007, said they wanted Poland to join the euro zone as early as possible. One reason for them to come forward with that political
declaration was the backing the coalition parties got from their voters on that particular matter: Polish farmers liked the direct payments and euro transfers they got from EU funds, while many PO voters thought the adoption of the euro benefits would outweigh the costs. The main opposition party, Law and Justice (PiS), declared themselves in favour of Poland biding its time in introducing the euro, that a good time would be, say somewhere around 2020, because the Polish economy just needed more time to brace itself to real EU economic standards (in particular to catch up with the EU average of per capita GDP and to raise its infrastructure development to a higher level).

The first official declaration of Poland being ready to join the euro area in 2011 came from Prime Minister Tusk in September 2008. The Ministry of Finance and the National Bank of Poland then announced Poland would be ready to introduce the euro in 2012. In October 2008, the Polish government signed a paper called “The Roadmap for Poland’s Euro Adoption”, a policy outline prepared by the Ministry of Finance in consultation with the NBP (MF 2008a), which set mid-2009 as the term for including the Polish currency in the ERM II¹, and 1 January 2012 as the date of Poland’s entry into the euro zone. An April 2009 update of the document, though, showed there were strings attached. In particular, the exchange rate of the zloty continued to be volatile, which alone delayed the inclusion of the zloty in the ERM II to a later term, even though that did not rule out adoption of the euro in 2012 (MF 2009a, p. 11). Government officials later gave to understand that Poland may eventually settle to the idea of euro adoption after 2012.

Earlier declarations by government officials raised the temperature in the political debate, in which PiS insisted on a referendum on the term for euro adoption. President Kaczyński voiced the same demand, and in further critical comments regarding the term of adoption of the euro he warned that national sovereignty may be compromised should Poland forfeit its autonomous monetary policy, especially that at a time excessive risks coming with Poland’s premature entry in the ERM II would have to be braved amidst a crisis with unemployment rising and growth held back (Kaczyński 2009, p. 18). The Polish government meanwhile called upon the opposition to sort out a uniform position with the coalition regarding the term of euro adoption pointing out that continuing differences between the main political forces (and also between the Ministry of Finance and the Central Bank) only nurtured speculation on the zloty rate and

¹ ERM II (Exchange Rate Mechanism 2) – an exchange intervention mechanism to stabilise currency rates. Following ERM II entry Poland will be obliged to ensure that for a period of at least 2 years the fluctuations of the national currency exchange rate against the euro must remain within the normal fluctuation margins around the central rate.
helped its excessive depreciation against other currencies. In polemics opponents charged that while PiS was in power they had failed to open the process of Poland’s accession to the euro zone, at a time the Polish economy was growing strongly in the years 2005–2007. In 2008, the ruling coalition did not even agree with PiS on amendments that would have to be made to the Constitution of the Republic of Poland to provide for the euro, a move the European Commission suggested Poland should make.

Initially sharp differences between the Ministry of Finance and the NBP regarding the conditions and terms of ERM II entry lost their momentum with time. The two institutions eventually agreed, in March 2009, that two conditions for the adoption of the euro in Poland should include both the consent of all the political forces to make changes to the Constitution and the stabilisation of financial markets (Lipiński 2009). That meant the terms adopted in the above-mentioned roadmap were bound to be delayed. Thereafter the tone of political debate in Poland subsided to some extent as well.

3. Expert debate on benefits and costs of euro adoption

A February 2009 “Report on the full participation of the Republic of Poland in the third stage of the Economic and Monetary Union” (NBP 2009) recapitulated the one and a half years of expert debate and research work involving most academic centres in Poland, social partners and foreign partners in co-operation with the NBP. Compared to the previous report (NBP 2004), the latest one supplied more extensive analysis of the benefits and costs of Poland’s accession to the euro area. Both reports presented findings of analytical work to determine the possible impact of entry on GDP, investment and trade, and ways the euro zone entry may affect macroeconomic stability, specifically in a lowering of interest rates and transaction costs. The cost aspect, in turn, focused on potential adverse consequences likely to follow from the abandonment of a national monetary policy, inflationary pressure, developments on the labour market, and limited shock absorption possibilities. The NBP Report of 2004 and 2009 showed both that, in long-term development, the replacement of the złoty by the euro was going to generate additional growth of the Polish GDP. Since several research projects recapped in the last report were completed in mid-2008, a supplement produced in January–February 2009 was appended with a description of the mechanism of the crisis and its consequences for Poland likely to undercut

2 In the first stage from July 2007 to July 2008, the report notes, when the bubble burst to shake up the subprime mortgage market in the USA, a liquidity and confidence crisis ensued touching off a
some of the substantial benefits to follow from euro adoption. With its main trading partners struggling in the financial crisis and recession, Poland should expect investment and trade to contract, exchange rates continue to destabilise, and endeavours to meet the Maastricht criteria burdened with high risk and huge costs. Along with the work on the Report, a scholarly debate was under way in Poland to weigh the pros and cons of euro adoption, and also whether Poland should go it slower (Glapiński 2009) or faster (Graj 2009). An expert study prepared for the Chancellery of the President of the Republic of Poland (Domański, Kazimierczak, Żyżyński, Marczewski 2008) was considered a major contribution to the debate.

3.1. GDP and investment growth

The NBP Report of 2004 predicted that GDP could drop by 0.3% to 0.5% in the first three years of the euro in Poland, for example because of dropping enterprise competitiveness following an excessive appreciation of the domestic currency. In the following years, GDP could grow, and over a longer term, say by 2030, GDP could be 5.6%–11.8% higher than its level Poland would be likely to achieve should it remain outside the euro area (NBP 2004 p. 8). Investment could grow by 13.6% to 28.3% at the same time, with growth of inward investment attributable to the introduction of the euro could generate an extra 1% increase of GDP should Poland join the euro area in 2007.

The NBP Report of 2009 in turn predicted total GDP growth in Poland attributable to the euro adoption could reach, in a secular trend, 7.5% (the yearly average GDP growth rate was to grow 0.7 percentage points owing to euro adoption), the best part of that growth to come in the first decade of participation in the euro zone (NBP 2009 p. 393–394). However, those simulations were made without taking into account the worsening world economic crisis from mid-2008.

The strongly differing growth rates of EU countries in the years 1999–2003 showed Finland, Spain, Ireland and Portugal were the main beneficiaries of participation in the Economic and Monetary Union in the third stage of monetary integration, each with growth rates above the EU average. These countries could make good some of the ground they had lost to the bigger and better-off countries speculative outflow of capital from the USA which led to an appreciation of the złoty, among other things in the second stage from August 2008 to October 2008. As stock markets collapsed across the world and assets were sold off capital started to come back the USA leading to an depreciation of the złoty. In the third stage from November 2008 to December 2008, the crisis continued to worsen, interest rates being cut; in the fourth stage, to January 2009, production and trade both slumped, with many countries resorting government intervention measures.
like Germany, which were growing less fast (Remsperger 1999 p. 11), and in 2003 went through recession. Countries in the Economic and Monetary Union area managed in those years not only to maintain low prices of money in real terms (1.5%) but also price stability with inflation at 1.7% year on year, which they were able to maintain despite redoubled oil prices.

In contrast to fears voiced by some of the smaller countries, the European Central Bank’s monetary policy turned out to have been least advantageous for Germany, which while reporting the highest interest rate (3%) and lowest inflation (under 1%) of all member countries in 1999, had attained a GDP growth of just 1% compared with the 2.2% average of the Economic and Monetary Union. That was because interest rate cuts did not really invigorate the economy in countries with low GDP growth rates, unlike countries with above-average growth rates where such measures gave the economy strong impulses.

The situation again now is that EU countries report different rates of growth, the difference to the previous one being the adverse impact of the world crisis and the deep recession. Data available for 2008 and many forecasts for 2009 show the economy is slowing down more visibly, say, in Ireland, Finland, Germany or the Netherlands (from –8% to –4.8% of GDP) than it is in Poland.

Early in 2009 the Polish government conceded that GDP growth may slow down to 1.7% GDP in 2009. Subsequent figures indicated the slowdown may even be stronger, albeit official GUS [Central Statistical Office] statistics showed GDP had grown 0.8% in the first quarter of 2009 from the same period the year before. European Commission estimates of Polish GDP growth in 2009 ranged from 2% to an adverse –1.4% (CEU 2009 p. 2) (CEC 2009 p. 95), as the World Bank, Fitch Ratings and the International Monetary Fund lowered their end of March 2009 forecasts of 2009 GDP growth for Poland to 0.5%, 0.0% and –0.7%, respectively.

The factor behind those predictions was the shrinking demand on Polish exports to the euro area, which had fallen into recession. A March 2009 forecast from the German government resulted in Germany’s GDP dropping 2.3%, and a Commerzbank estimate put the reduction even at 7% and predicted the downward tendency to hold on in 2010 as well (Commerzbank 2009). In the first quarter 2009 Germany’s GDP dropped –6.9% from the first quarter of 2008, as the entire euro zone GDP decrease was –4.8%, the drops in the Baltic countries reaching into double digit figures, at a time while the Polish GDP grew 1.9%, which by itself did not mean the trend would hold on through the remaining quarters in 2009 (Eurostat 2009b).

ECB forecasts of March 2009 predicted GDP growth in the euro zone to shrink in the years 2009–2010 by –3.3% and by –0.7%, respectively, which meant
the Polish economy stood a good chance of growing faster, or slowing less strongly, than the economies in the euro zone. In that situation, until such time as the Polish and the euro zone cycles have equalised domestic monetary policy could probably give the Polish economy more efficient impulses to growth than the ECB’s monetary policy, which would very likely prove unsuitable in the Polish case because it was designed to address the deeper recession in the euro area.

Interest rates in Poland may have to be higher than in the euro area, to hold back possible inflationary pressures at home and to keep the Polish market very attractive to short- and long-term capital influx. So, in view of the depth of recession in the euro zone it appears the date of euro entry should be synchronised both with the Polish economy returning to growth higher than in 2009 and to the EU recovering from the recession. In such conditions Poland will find it easier to meet the convergence criteria and to achieve financial stability.

3.2. The debate about convergence: real, structural and nominal
This debate is essentially about the question whether meeting the nominal convergence criteria is a sufficient condition for early integration with the euro zone, or should nominal convergence be preceded by structural convergence³ and real convergence⁴, or should these processes unfold in parallel, and if so, at what pace?

In the Polish debate, calls for the earliest possible accession to the euro zone were heard way back in 2001, and even a unilateral step-by-step “euroisation” was demanded (Bratkowski, Rostowski 2001 p. 64). That particular position, just as the NBP 2004 report, was based on the assumption that a sufficient condition of integration with the euro zone is for Poland to meet nominal convergence criteria and that subsequent structural adjustments after an initial two-year-plus slowdown of growth will make it easier for the Polish economy to accelerate in conditions of full monetary integration.

³ Structural convergence consists in making adjustments to the structure of our own economy to the structures of the partner economies, to attain in effect substitutability of exchange. It is measured by indicators of production and exchange structure which makes it possible, e.g., to compare the proportion of products of technology industries, of new economics, etc., which renders benefits/losses comparative in inter-industry trading. In the process of reform, support of the Polish economy’s structural substitutability vis-à-vis the trade partners becomes a decisive factor. Structural convergence further involves modernization of the material structure of the economy and strengthening the competitive capacity of the financial sector.

⁴ Real convergence criteria are indicative of the equalization of real levels between economies through indicators such as per capita GDP, export, consumption, productivity, investment outlays, etc., which describe the status of the real sphere in comparative international statistics. It follows from such statistics, for example, that around thirty years will be needed for Poland to close the distance to countries in the Economic and Monetary Union.
However, other authors studying exchange policy implications and risks connected with European integration (Lutkowski 2004, Pluciński 2004, Sławiński 2004) argued that nominal convergence should be preceded by structural and real convergence. The same position essentially, well described perhaps as the relative real cohesion principle, was advanced in the expert study for the Chancellery of the President of the Republic of Poland of 2008.

Studies of the structural convergence process before 2002 (Pluciński 2004) showed the Polish economy met the substitutability criterion neither from the demand side (as measured by the per capita GDP level) nor from the supply side (as measured by the degree of similarity to research and technology development) to leading EU economies, nor did it draw comparative benefits in intra-industry trade in techno-intensive product ranges.

In 1998–2002, Poland went through a negative process in that respect and the technology gap actually widened. That showed in the low technology substitution level in commodity exchange, which barred Poland from drawing the expected benefits. Intra-industry exchanges developing between Poland and EU countries involved substitutable products of lower quality and price, which meant comparative losses for Poland. The implication was that Poland should not join the Economic and Monetary Union before completing a pro-export and pro-innovative restructuring, which would improve the competitiveness of the economy, in particular the exports.

An important condition of beneficial exchange with trade partners is to secure for yourself comparative advantages, which reinforce competitiveness of the economy. In Poland, such advantages include cheaper labour, lower prices of fixed assets used as production inputs, including real property and lower prices of non-tradable goods, which makes it possible for the country to keep the cost-of-living at a lower level, and so relatively higher real earnings, even though wage levels are lower than in Western Europe (Ryć 2006 p. 19).

Other research findings showed that competitiveness and profitability indicators of Polish exports to EU countries, even though worse than in 2005, was above the average for the years 1998–2002 (Przystupa 2005 p. 262). Further studies showed the Polish economy to be increasingly competitive 2002–2004, a period in which the terms of trade indicator kept roughly around the base level and showed no visible propensity to change (Marczewski 2005 p. 157). That would generally indicate that the above-mentioned downturn in 1998–2002 had not only been halted but that exchange effectiveness improved to a certain extent in comparison with the previous period.

The latest analyses of structural competitiveness of Poland’s trade with EU countries by industry in 2002–2006 indicate that Poland managed to slowly
improve its competitive position on the common market, but mainly in traditional ranges of low-processed goods and modest technology. That Poland’s position did improve could also be seen in the fact that techno-intensive goods made already 1/3 of Polish exports to EU markets in 2006 (Pluciński 2007 p. 67). Still, high-tech products accounted for a mere 4.6% of Polish exports in 2006. If high-tech industries are to be a decisive force behind the process of real accommodation to EU markets Poland shall have to embark on a high-tech development strategy, and thereby meet the criteria of real convergence.

All that showed that Poland can draw comparative benefits, or avoid major loss, in driving intra-industry exchange with foreign trade partners.

However, Poland shall have to launch such a development policy that will secure a standing improvement of its competitive power and comparative benefits in exchange. This should make it possible for Poland to maintain the GDP share of expenditure on research and development, innovation, education and science, at least at a level close to the EU averages, over a length of time. That would then also be a sufficient condition for euro zone accession in respect of real convergence. In such conditions Poland would see its per capita GDP grow faster and its distance to the EU average shrink.

3.3. Convergence of business cycles and growth exchange trade

In Mundell’s optimum currency area model, convergence of business cycles is a condition of any efficient uniform monetary policy for all countries of the area, and the risk of asymmetric shocks is smaller where the economies of the common area are stronger tied to one another.

In the light of the NBP Report 2009, the Polish economy came off relatively well in terms of convergence of business cycles against the backdrop of new member countries and peripheral economies. Austrian central bank experts found in 2005 that the business cycle in our part of Europe is synchronised to some extent with the cycle in Western Europe (Lutkowski 2006 p. 12). In Poland and the euro zone alike, the correlation coefficient for GDP change is high, revolving around 0.7 in recent years, that for industrial production change around 0.6, which in itself is further evidence of the relatively close synchronisation between the business cycles (Rosati 2007). The Polish economy and the EU economies are thus becoming increasingly similar in their respective sector structures, by their openness and strength of mutual trade links.

The confirmed convergence of business cycles in Poland and its partners in the EU (despite the short-lived divergence observed in 2009) implies that in a medium term, until its comparative advantages have been exhausted, Poland will be able to draw benefits in trade with EU countries. Exactly how large such
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benefits are going to be will depend both on the pace of implementing a national pro-innovative policy and on the impact of pro-cycle weak demand shocks on the Polish economy amidst the recession spreading in Europe and the world from 2008. One factor likely to work to Poland’s disadvantage in that situation will be its structure of production. It is unlike those of euro zone countries in the sense that agriculture, mining, quarrying, as well as uncompetitive manufacturing industries which are generally sensitive to asymmetric shocks make up large proportions in it.

The research findings in the NBP Report 2009 indicate that the adoption of a common currency may in the long run (also depending on the conditions of entry) increase trade to the tune of several percent (e.g., following the stabilisation of exchange rates, lowered risk and transaction costs), in comparison to a situation of keeping the national currency in place, with imports probably growing faster than exports in the first 5 years following euro zone entry, and exports even contracting at the same time (NBP 2009 p. 115). It should be clear that the afore-mentioned forecasts of deep recession in EU countries in the years 2009–2010 are likely to effect trade volumes adversely. Other comparative analyses of imports and exports in the euro zone and in the world in 2002–2008 in turn show that the introduction of a uniform currency hardly affected the development of international trade, which depended heavily on world business prospects. Export and import in the euro zone at the same time increased by 35% and 38%, respectively, less than trade with countries outside the euro zone, for those rates were, respectively, 40% and 50% (Lachowicz 2008 p. 9). Such findings support the view that, if it holds true for Poland, the “Rose effect” is fairly weak or non-existent. Still, entry into a common currency area tends to stir the development of trade, which reinforces convergence of the cycles, a situation where the advantages of common currency (exchange rate stability, lower transaction costs) come to light. Such benefits further stimulate trade between countries in a common currency area. However, the risk of asymmetric shock is still there, and it is worse for countries that do not fully meet the convergence criteria. The risk of shock may also be bigger for economies specialised in industries sensitive to shocks specific to the region (Krugman 1993 p. 260).

The convergence of cycles and the growing trade with the euro zone underpin hopes that when it has entered the euro zone Poland will see its trade with countries in the Economic and Monetary Union continue to grow. In the present crisis, such growth is unlikely to begin before a recovery sets in. Benefits from the exchange will depend on how efficient the adjustment mechanisms applied

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5 A. Rose (Rose 2000) estimates that a currency union increases bilateral trade between countries by 30% from the moment a common currency is adopted.
will be as an alternative to the country’s own interest and exchange rate policies. Fiscal policy, as the prime tool of financial stability and convergence criteria, is the most important of such mechanisms. It is also important to ensure before the euro adoption that structural policies, specifically recommendations of the Lisbon strategy in its educational and innovative dimensions, are advanced so the country can draw the best benefits from its presence in the common currency area. The above-mentioned NBP Reports refer in that connection to lower transaction costs and various micro- and macroeconomic risks (including exchange rate risks and asymmetric shocks). In such conditions the Polish economy would obtain broader access to capital markets, more capital would flow into Poland, interest rates would go down and credit would be easier to obtain, enterprises would speed restructuring, and competitiveness would improve.

3.4. The debate about the złoty exchange rate

The exchange rate of the Polish złoty against foreign currencies, liquid in Poland from 2000, by mid-2008 impeded speculative attacks which helped strengthen the appreciation of the Polish currency. The Polish exchange policy strategy in the years 2005–2006 pushed forward the process of structural and real convergence. As mentioned before, beneficial changes took place in export structure and levels following an influx of investment in production. Poland’s current account balance came close to equilibrium, proof that the real exchange rate was close to the fundamental of current account equilibrium.

In 2005, the złoty to euro equilibrium rate estimates for the years 1998–2003/2004 were from 4.13 to 4.38 under the purchasing-power parity (PPP) model; compared with 4.52 under the current account equilibrium (macroeconomic balance) model, and 4.25 according to the fundamental equilibrium exchange rate (FEER) (Przystupa 2005a p. 170). These estimates determine the normative value of the real equilibrium exchange rate taking into account various criteria should be updated constantly, not least in the context of other estimation models, that of behavioural equilibrium exchange rate (BEER), and the FEER model which both imply that the process of real convergence is significant for the development of the exchange rate of the złoty (Rubaszek 2009).

For Poland to join the ERM II mechanism at a beneficial conversion rate the country will have to take precedent actions to ensure adjustments to the equilibrium exchange rate market through intervention currency, and during the time of participation in the ERM II to take the right revaluation decisions to adjust the central exchange rate.

Comparison to the above estimates, especially to the current account equilibrium model, shows that appreciation of the złoty in the years 2005–2008
was excessive and led to a growth, from 2007, of the current account deficit, which in 2008 was a huge 5.5% of GDP (MF 2009b). Adoption of a central exchange rate close to its level of July 2008, when the zloty appreciation peaked at PLN 2.02 for the US dollar and PLN 3.2 for the euro, would expose the Polish economy to a serious hazard of losing competitiveness and would worsen the external non-equilibrium. Although conversion of Polish wages, savings and social transfers and per capita GDP at such a rate of the zloty against the euro would bring them much closer to EU averages, the forfeited competitiveness of the Polish economy would soon slow down production, increase unemployment, lead up to an inflationary collapse of growth, and trigger off divergence processes which could wipe out all preceding improvements.

In light of the above, point I.7. in the above-mentioned expert study prepared for the Chancellery of the President calls for comments. Nothing indicates, the authors of the study hold in point I.7., that a possible “reasonably higher” exchange rate was bad for business, because that enforces pro-effectiveness behaviour at the same time. The authors of the study seem to defend an over-valued exchange rate, which is the correct thing to do in the long run in conditions of a resource equilibrium, i.e., where there is external equilibrium, standards of living and prices are approximately the same at home and abroad, so it might result in a strengthening of the real exchange rate of the zloty by as much as 100% over several decades. However, in the medium term, and especially in the next few years, balance of trade equilibrium can only be achieved by weakening the zloty, and that means embracing an undervalued exchange rate for the Polish currency, which was not spelt out in the theses of the expert study. If the exchange rate of the zloty as such is needed for the euro zone entry could be kept at a level just close to the above-mentioned levels of July 2008, the current account deficit would very likely continue to worsen and that in turn would add to the instability of the economy.

Two problems that continue to work from mid-2008 include the containment of fluctuations of the liquid rate of the zloty and the strengthening of its stability. A slump of the zloty exchange rate eventually by several tens of percent which began in August 2008 and lasted to March 2009, despite the Polish government’s previous incidental interventions on currency markets in defence of the zloty. The strength of the crisis and speculation for devaluation showed that the liquid exchange rate of the zloty was not a good weapon against destabilisation. It was also clear that the market of the zloty is shallow and easy to destabilise (it accounts for something like 0.2% of the world currency markets). One American bank even conceded they had effectively pressed for a devaluation of the zloty, which they were able to do with just several tens of million of US dollars.
It follows that in conditions of deep crisis on world financial markets in a short time the liquid exchange rate could not defend the Polish economy against losses that might be inflicted on it mainly by external shocks. With the depreciation of the złoty, which was beneficial to Polish exports, Polish sales faced difficulties in Western Europe as a result of the financial crisis and recession there. At the same time some Polish exporters suffered losses the Polish Financial Supervision Commission (KNF) estimated in February 2009 to total around PLN 9 bn under high risk option contracts concluded with banks before August 2008 to hedge against excessive appreciation of the złoty (rp.pl 2009). The vehement depreciation of the złoty which lasted until February 2008 brought several exporters to bankruptcy. However, after some stabilisation set in, the weak złoty was beneficial to export industries, which at the same time scored some successes. With the weakened rate of the złoty, goods and service purchases by foreigners grew in Poland as well.

These facts show that in conditions of crisis-based uncertainty a strengthening of the złoty before the right time might actually provoke speculative attacks on the currency. So, it appears a good idea what the authors of the expert study put forward in point V.2 saying that the exchange rate should be kept liquid as long as possible to guard against the impact of the possible shocks. It should be remembered, however, that the depth of currency fluctuation depends on parameters such as changes in GDP level, budget deficit and public debt, prices of goods and services, nominal and real interest rates, current account balance, currency of preference in wealth accumulation, the political situation and perception of various types of risk by currency market participants, specifically stability of the national economy. This goes to show that a more rigid exchange rate of the złoty should be introduced when the above parameters will be beneficial to the Polish economy.

4. Meeting the nominal convergence criteria in a time of crisis

The previously described deterioration of the macroeconomic situation in Poland linked to the world crisis is unwelcome news for Poland in its keen commitment to meet the tax and monetary convergence criteria within the co-ordinated economic policy of the EU.

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6 Budget deficit not bigger than 3% GDP and public debt not bigger than 60% GDP, and the additional criterion of legislative compliance of the national the central bank and its relation to the European System of Central Banks (ESCB) and the European Central Bank (ECB).

7 The rate of inflation should not exceed by more than 1.5 percentage points the average rate of inflation in the three EU countries where inflation is the lowest; nominal long-term interest rates should not exceed by more than 2 percentage points the average long-term rate in three EU countries where long-term interest rates are the lowest; exchange rate fluctuations of the domestic currency must in a period of 2 years keep within a normal range of fluctuations around the central exchange rate.
4.1. The public debt and budget deficit criterion

In the first Convergence Programme of April 2004 (MF 2004), the only criterion Poland did meet at the time was what was called general government debt, meaning the debt of the central and local government sector, which was at 45.9% of GDP, and that particular criterion was met all the time throughout 2004–2008.

In the eighth edition of the Convergence Programme of December 2008 (MF 2008b), the increased general government debt and deficit in comparison to the previous programmes projected for the years 2008–2010 were still at levels beneath EC forecasts, but under EU reference values. This is confirmed in the EC forecasts in Figure 1, where a possible rise of public debt to 59.7% GDP is envisaged for 2010.

As the Polish economy growth slows in 2009, public debt may top 50% of GDP. Once public debt has moved up into the 50%–55% GDP bracket, a prudential intervention procedure, i.e., statutory limits on the debt to GDP ratio, will be applied automatically. The limits effectively forestall the budget deficit to budget earnings ratio rising above its 2009 level in the draft budget bill approved by the Council of Ministers for 2010. This ratio as adopted for the year 2010 would set an upper limit on the deficit to the earnings ratio in budgets local government units may adopt for 2010. Should the debt climb over 55% GDP in 2010, the prudential intervention procedure in 2011 would be even tougher, which would additionally slow GDP growth in Poland in the years 2011–2012.

**Figure 1. Central and local government sector debt, % of GDP, in 2005–2010* (OPF outside the sector, reference value 60% GDP)**

*For 2009–2010, EC forecast of May 2009; for 2008, Central Statistical Office data show the debt was at 47.1% of GDP.

In a situation of slow growth or recession, that procedure if applied would curb possibilities to stimulate effective demand through increased public spending.

If public debt over the years does not go beyond the 60% GDP level in 2009–2010, the stability of internal equilibrium in Poland should not be in danger. So, as seen from the data in Figure 1, the criterion of general government debt, or indebtedness of the central and local government sector, may be met.

In 2004, the EU Council opened the excessive budget deficit procedure against Poland after the general government budget gap unexpectedly topped 3% of GDP and the other criteria were not met. The recommendation in that case was for Poland to continue implementation of a public spending reorganisation and restriction Programme (the Hausner Plan) and to use any possibly higher than projected earnings into a reduction of deficit and containing the debt from growing further.

In the years 2005–2008, the financial situation of the Polish state was generally stable.

The data in Figure 2 shows the deficit criterion was met in 2007, budget deficit dropped to around 2% of GDP and continued at a low level through to mid-2008. In that situation the EU Council lifted the excessive budget deficit procedure it opened against Poland in 2004. The low budget deficit and public debt forecasts for the years 2009–2010 Ministry of Finance published in its seventh and eighth Convergence Programmes (MF 2008), (MF 2008b) in March and December 2008 proved dramatically discrepant with the actual deficit level in 2008 and the EC forecasts (cf. Figure 2), according to which the budget deficit in the years 2009–2010 may reach, respectively, as much as –6.6% GDP and –7.3% GDP, way above the EU reference value of 3% of GDP, if the adverse external and internal situation is assumed to hold on then.

Following the release in April 2009 of the actual budget deficit in 2008 to have been at –3.9% GDP, and since it appeared to grow further, the EC opened the excessive deficit procedure against Poland in May 2009 (EC 2009). According to the EC, the growth of budget deficit in Poland in 2008 was stirred by lowered social security contributions, increased tax relief tools for families, and more generous old-age pensions and social transfer indexation.

With the economic growth slowdown, budget expenditure and income were some 10% lower than planned, and part of the spending (e.g., military expenditure) turned out to have been higher, which led to the significant budget deficit growth in 2008. Structural deficit in 2008 grew for that reason to as much as 5.3% GDP, according to the EC estimate (CEC 2009 p. 95), compared with the Ministry of Finance predicted 2.6% of GDP. Moreover, the impact of cyclicity on the budget was stronger
than assumed in the December 2008 Convergence Programme, which explains why the estimates in it differed strongly from the real figures reported for 2009.

**Figure 2. Central and local government sector deficit, % of GDP, in 2005–2010* (OPF outside the sector, reference value = 3% GDP)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Deficit % GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>-2.9</td>
</tr>
<tr>
<td>2006</td>
<td>-3.8</td>
</tr>
<tr>
<td>2007</td>
<td>-2</td>
</tr>
<tr>
<td>2008</td>
<td>-3.9</td>
</tr>
<tr>
<td>2009</td>
<td>-6.6</td>
</tr>
<tr>
<td>2010</td>
<td>-7.3</td>
</tr>
</tbody>
</table>


In its quarterly information of March 2009 the Ministry of Finance said budget income growth was already negative towards the end of 2008, the State Treasury debt grew significantly by 13.6% on its 2007 figure, and in January 2009 budget expenditure increased by 37.5% as earnings just by 22.15% from the same period of 2008 (MF 2009). In the same month foreign debt payments grew the strongest, to as much as 19.8% of the figure for the year. A sharp increase of budget deficit was reported in March 2009, when it hit 55.5% of the figure for the year. In June 2009, the Ministry of Finance said the budget deficit in 2009 was going to grow to 4.6% GDP (MF 2009b). That put the Polish government before a sensitive political dilemma: whether to press on in order to meet the budget criterion in the following years which would necessarily involve unpopular spending cuts, especially of fixed expenses, various tax increases and following the euro adoption timetable, or else to prolong the move towards a balanced public finance system and so to delay the euro run-up timetable?

### 4.2. The price stability and long-term interest rate criterion

In the latter half of 2005, Poland met the inflation and long-term interest rate criteria, which were then beneath EU reference values. For the first time ever in 2006, Poland was listed among 3 EU countries with the most stable prices.
The same tendency held on in 2007, especially in the former half of the year. As energy source prices continued to rise and the crisis appeared imminent in 2008, HICP inflation rose to 4.3%, which meant Poland no longer met the price stability criterion (Figure 3).

The present crisis may affect inflation in Poland in two ways. If the slowdown in Poland matches that which was forecast for EU countries, inflation rates will be much the same everywhere. Should the recession affecting the EU prove deeper than the Polish slowdown (and if 3 EU countries report above-average low HICP rates), then the reference value for inflation drops to a level below the Polish one. The figures in Figure 3 show this is the scenario both the ECB and the EC envisage for Poland in 2009. In that forecast, inflation in Poland may not be lower or equal to the EU reference value before 2010.

**Figure 3. Stability of prices in Poland HICP inflation 12-month moving average rate, in %, 2006–2010* (compared with EU reference values of partial yearly results, in %)**

![Figure 3](image)


The data in Figure 3 shows that the easing inflationary pressure in Poland until 2006 (when it was at approximately 2% p.a.) helped push down the long-term interest rate and keep it beneath the reference value level until 2008.

The data in Figure 4 shows that Poland met the long-term interest rate criterion already in 2005, a consequence of the low inflation. Even though inflation in Poland was higher than the EU reference value in 2008, Poland’s long-term interest rate in that year was still below the EU reference value. However, later
in 2008 the disparity between the ECB and the NBP interest rates widened considerably, to 2.5 percentage points, due to interest rates dropping faster in the euro zone than in Poland (NBP 2009 p. 367). Should such disparity hold for some time, the long-term interest rate might rise above the EU reference value.

Figure 4. Long-term interest rates – 10-year bond yield in Poland in 2004–2008 (secondary market, to EU reference values, for partial yearly results, in%)

That was what happened to Spain and Ireland in 2008, as well as in Portugal and Greece, where internal and external stability worsened. These countries early in 2009 had ratings lowered in comparison to the biggest EU countries, their bonds bore higher interest than, e.g., German bonds, by 160 to 300 basis points, while interest on Polish bonds was even higher than that (NBP 2009 p. 354–355).

The cases of the above-mentioned countries vindicate the contention that internal and external stability depends above all on domestic macroeconomic policy, and in particular on the effectiveness of tax and structural policies. The euro zone, where a common monetary and exchange rate policy is conducted, does favour growth yet does protect economies neither from overheating nor recession, but can still ensure stabilisation of currency and perhaps lower interest Treasury bonds than those in countries outside the euro zone.

4.3. The exchange rate criterion

The mean yearly exchange rates of the złoty to the euro presented in Figure 5 show that in the years 2004–2008 the exchange rate basically never moved outside the ±15% deviation band. From 2004 it underwent appreciation from the previous
year, by what amounted to 12.5% in 2005, 3.3% in 2006, 5% in 2007, and 14% by July 2008. So the exchange rate of the złoty emerged from the first phase of the crisis of 2007–2008 strengthened by 19% or so, which weakened the dynamics and competitiveness of Polish exports. The appreciation of the złoty stimulated what is called “carry trade” and attracted capital inflow mainly from American markets.

**Figure 5. The złoty exchange rate to the euro (average yearly values)**

![Bar chart showing the złoty exchange rate to the euro from 2004 to 2008](image)


That tendency reversed in August 2008 with the crisis entering its second phase. By February 2009, the złoty had weakened against the euro to PLN 4.9, or by some 40%, which confirmed that Poland failed to meet the exchange rate criterion. The exchange rate of the złoty is too volatile monthly, quarterly, and yearly, as is borne out by ERV (Exchange Rate Variation) indicators of the European Central Bank. A vehement outflow of capital from emerging markets and a “repatriation rally” mainly of American capital contributed to the depreciation of the złoty at the same time. In March 2009, the złoty began to recover slightly, and in April and May 2009 its rate was around PLN 4.5 to the euro.

### 4.4. ERM II entry in conditions of crisis

The ERM II currency rate mechanism is intended to speed convergence of member countries that did not participate in the first edition of the European Monetary System of 1979, which established a currency stabilisation area in Community member countries. For countries in the ERM II, their ability to maintain their

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8 European Monetary System – which involved the introduction in 1979 of the ecu (European Currency Unit, a basket currency calculated as a weighted average of the value of its component currencies
exchange rates within a ±15% fluctuation band is a test of economic stability and efficient national policies. EU countries want to ascertain that when they are to make a decision on whether or not to admit the candidate country should be allowed to enter the euro zone as a new participant. The government of the candidate country seeking entry in the ERM II, which initially may fail to meet exactly the convergence criteria, has to demonstrate that the applicant country will be able to pass such test at least after 2 years and that the economic conditions, i.e., stable development and a balanced monetary policy, no major tensions and limited currency intervention, will all be met.

In the next few years Poland will strongly depend on the afore-mentioned conditions of GDP and trade growth for stability of development. A review of those conditions implies that Poland is going to feel the pinch of crisis and recession, yet see its GDP drop less strongly than other EU countries. However, no significant progress should be expected in the years 2009–2010, and that not only in nominal convergence but indeed in real convergence as well.

The policy Poland has pursued up to now has had a beneficial effect on the nominal convergence process so far, which reduced the disparity of interest rates and raised the opinion of financial markets on the złoty as a currency related to the euro (Sławiński 2008). As a result, the volatility of the złoty rate to the euro decreased in the years 2005–2007. As Poland is going to abandon, in the future, the conduct of monetary and exchange policy on its own, fiscal policy in particular gains strongly in importance. Where the budget deficit is high fiscal policy is not that efficient; e.g., a 1% drop of GDP at a 3% GDP budget deficit would, as a result of automatic stabilisers, entail a GDP drop of 0.5%, to 3.5% GDP. That would run counter to restrictions of the Stability and Growth Pact and mean that fiscal policy in such situations would tend to drive up cyclicity. In conditions of a budget surplus or equilibrium budget (in the last named case, e.g., a drop of GDP by 6% would result in a deficit of 3% GDP), on the other hand, fiscal policy could operate towards a rise of deficit to 3% GDP and have a cycle-braking effect.

Analyses of the present situation and EC forecasts show that the tense condition of public finance is likely to prevent Poland from attaining budget equilibrium by the year 2011.

So, a date of ERM II entry should only be set when Poland stands a good chance of lowering the budget deficit down to a level under 3% of GDP, and in future getting the budget in balance, for in such conditions Poland is able to take
anti-cycle fiscal measures (tax cuts, transfer increases) to forestall a GDP drop. Another suggested move is to apply measures likely to hold back the growth of the debt to GDP ratio (Wasilewska-Trenkner 2005 p. 11).

Otherwise Poland may have no way of holding back the deficit from growing (as a cycle-braking measure) and will run a risk of recession and being punished with sanctions in the form of suspended transfers and financial penalties for deviating from the assumptions of the Stability and Growth Pact.

The moment of Poland’s ERM II entry should depend on when the financial markets reach a satisfactory degree of confidence in the Polish economy’s stability (Sławiński 2004 p. 80). Ireland and Slovakia are two cases in point. No speculative attacks on the stability of their currencies occurred during their ERM test time, because the situation of the two countries gave no reason to worry about their current account balance or budget. Poland now is relatively wealthy in EC eyes when it comes to the anticipated stability in the years 2009–2011. Among three groups of EU countries arranged in an order from those best performing in that respect Poland is in group two, together with Germany, the Netherlands and the Czech Republic (Kotecki 2009).

Poland’s ERM II entry must be preceded by two decisions regarding the central exchange rate and conversion rate. The central exchange rate, i.e., the rate at which the złoty is linked to the euro, is set in consultation with countries in the euro zone. In conditions of crisis and exchange instability not of the złoty alone but of other currencies in Central and Eastern Europe it would be difficult to determine the central exchange rate at a time the market rates deviate widely from long-term exchange rate equilibrium and when that causes major disturbances. Interest rates higher in Poland than in the EU were clearly geared to holding back inflation, and its possible lowering would weaken the złoty even more. Repeated government intervention, in turn, could prompt speculators to venture more attacks on the złoty. Besides that, endeavours in crisis conditions to set a central exchange rate and to enter the ERM II would be officially opposed by the ECB and ECOFIN, both of which declared before that amidst great capital fluctuation and economic shock in a country a decision to join ERM II would be premature.

In the first half of 2009, the fluctuating rate approximately PLN 4.5 to the euro was good for exports; at such rates the shocks were cushioned reasonably well. Likewise beneficial were European funds and foreign investment converted at such rates, which helped Poland present itself as an attractive place to invest capital. In the short term, such an exchange rate, while less beneficial, is acceptable to importers, consumers and the State Treasury to service Poland’s indebtedness. However, should the Polish government negotiate the ERM II entry in 2009 at so badly undervalued a rate, Poland would probably have to pay a high price. At
a time many EU countries run huge deficits the main decision-makers may not be enthusiastic to admit yet another country with a worsening budget deficit to the euro zone, or else they may wish to make the conditions for Poland more difficult as well. The last-named scenario may involve a more rigorous approach to meeting nominal convergence criteria and/or demanding that Poland set the central exchange rate of the zloty at an overvalued level way off from current market quotations. That, in conditions of a slowdown of growth and recession anticipated for Poland, would be bad policy for the economy. Poland would therefore be well-advised to wait a few or several months more and, with foreign demand flagging, to take advantage of the competitive advantage of exporters and the good profitability of the zloty, and following a longer-term stabilisation of the market rate of the zloty around the level of PLN 4 to the euro, to negotiate such a central exchange rate. In Poland, this is what both the opposition and the ruling coalition say they want, but no agreement in parliament is in sight on the issue of constitutional amendments (which is necessary for the legal criterion to be met), which weakens the exchange rate of the zloty and adds to the instability of the Polish currency. This lack of agreement is also a barrier to Poland’s ERM II entry in the opinion both of EU countries and of the EC.

When the situation has stabilised it will be possible to try to agree a central exchange rate.

If the tendency of a somewhat undervalued exchange rate market, i.e., just above PLN 4 for the euro, held in the future and its fluctuations kept inside the ±15% band, the EU authorities could perhaps be persuaded to an exchange rate conversion on the basis of a stable current market rate perhaps. Historically, from Poland’s EU accession the market rate deviated from the current real exchange rate equilibrium by less than 5% (NBP 2009 p. 209).

With the other convergence criteria met, such an exchange rate would reward the Polish economy with a competitiveness premium, and even a possible appreciation of the zloty in the outgoing phase of participation in the ERM II is unlikely to do much damage to it. Given that equilibrium rate estimates seem to move around PLN 4 to the euro, the conversion rate should also be adopted to that value.

It should be clear that once the exchange rate of the zloty is adopted with a vast excessive reserve for competitiveness, that is to say, if the zloty is strongly undervalued, the Polish economy is going to encounter some serious hazards.

Spain, when it adopted a relatively low rate for peseta to euro reconversion, experienced that. They gave Spanish enterprises a comfortable competitiveness reserve, which was not “devoured” by increased inflation. Exports and GDP alike grew as a result. However, the accelerated inflation of 2008 undercut Spain’s
competitiveness, and the ECB policy failed to protect Spain (or Ireland) against economic overheating. The same policy did not help in Portugal or Greece either, as they sought to strengthen their internal and external stability, which perhaps shows that participation in the euro zone by itself does not automatically guard a country against a crisis of public finance.

5. Meeting the convergence criteria in a time of crisis: recapitulation

5.1. The general government debt criterion

Forecasts show that this criterion, which reflects the indebtedness of the central and local government sector, may be met in the years 2009–2010, even if economic growth should slow down considerably. A reversal of the depreciation tendency of the zloty, which began in March 2009, may slightly reduce expenditure on foreign debt service costs, and so may weaken the risk to its growth and the risk of internal and external balance destabilisation. If general government debt increases by 50% in 2009, prudential measure procedures will be started in 2010. Should the budget deficit top 55% of GDP in that year, even tougher prudential measures will be applied in 2011. The net effect will be a further drop in GDP growth.

5.2. The general government deficit criterion

Budget deficit forecasts by the Polish government and the EC for the years 2009–2010 stretch between 4.6% GDP and 7% GDP. Should an excessive deficit procedure again be opened against Poland, it will mean a necessary reduction of expenditure and a need to finding possibilities of increasing budget earnings. That will curtail possibilities for Poland to stop the slowdown of the Polish economy, and should stability further deteriorate, Poland may see its ERM II entry in 2009 barred. Should the Polish GDP and if the budget deficit displays a downward tendency in 2010, that may signal a possibility for Poland to join the ERM II, say in 2010. That depends on implementing efficient domestic fiscal policy and on crisis tendencies subsiding across the world.

5.3. The price stability criterion

This criterion was not met in Poland in 2008. Should they in 2009–2010 affect EU countries deeper than the slowdown does Poland (and above-average very low HICP inflation are reported by 3 EU countries), then the reference value for inflation drops to a level that may be lower than that reported for Poland. ECB and EC forecasts say Poland will not meet the price stability criterion in 2009, which will be lower than, or equal to, the EU reference value in 2010 only.
In that situation, ERM II entry would appear to make sense when Poland will be able to attain in the years 2010–2011 an inflation target such that will at least be convergent with the EU reference value.

5.4. The long-term interest rate criterion

Poland met this criterion in 2008. Late in 2008 disparity between the ECB and the NBP interest rates was up to 2.5 percentage points, meaning that interest in the euro zone was decreasing faster than in Poland. Should this disparity continue, and unless Poland manages to lower inflation, Poland faces a risk that long-term interest rate exceed the EU reference value. In that situation, ERM II entry would appear to make sense when long-term rate is likely to drop to a level convergent with the EU reference value in the years 2010–2011. That will depend primarily on the degree of convergence of the HICP inflation rate with the EU reference value in the years 2010–2011.

5.5. The exchange rate criterion

Poland does not meet this criterion, as the exchange rate of the złoty is very volatile. The 19% appreciation of the złoty rate from July 2007 to July 2008 and its 40% depreciation from August 2008 to February 2009 demonstrated the shallowness of the złoty market and its propensity to destabilise. The fluctuation of the złoty rate is large enough to make Poland’s ERM II entry impossible. The exchange rate of the złoty can be stabilised, on the one hand, provided that financial markets continue to stabilise, and, on the other, that foreign investors take a positive view of Poland and its macroeconomic foundations and arrive with capital. The slight strengthening of the złoty rate to the euro noted in March 2009 would show that investors tend to look more positively on Poland than on other EU countries in Central and Eastern Europe. If that tendency continues to hold in 2009, and the volatility of the złoty exchange rate again keeps within a narrow band of acceptable fluctuation, Poland may be able to enter the ERM II in 2010. One of the most important parameters for entry is that the central exchange rate should be adopted at a level close to the market, which should have a competitiveness reserve anticipating the natural appreciation of the złoty before a final exchange rate is determined for conversion – this at a level which would maintain the right competitiveness level and productivity growth for the economy. To this end a compromise will have to be achieved with the EC and with EU countries, which are probably going to want the Polish exchange rate to be generally in the overvalued band. Such an exchange rate is furthermore close to Polish society’s expectations regarding a possible beneficial conversion rate of the złoty to the euro of the value of income and assets. Existing
estimates of exchange equilibrium for the złoty to the euro (from 4.13 to 4.52) and which are constantly being updated to match equilibrium parity models for purchasing power, current account and fundamental exchange rate (and other possible models) should be a foundation of decisions, specifically intervention, in determining a conversion rate that ensures equilibrium in the economy at the time of ERM II entry and an a precise revaluation parity while Poland stays in the ERM II system.

6. Entry in the ERM II and the euro zone: recapitulation

Poland’s accession to the euro zone and full participation in the Economic and Monetary Union is one of the most important strategic goals paving the way to economic development and raising Poland’s position in Europe. A number of benefits speak for that, among them a lowering of macro- and microeconomic risks of economic activity (including the cushioning of the impact of asymmetric shocks and lowered transaction costs and rate fluctuation risks), wider access to capital markets, specifically an increased inflow of capital, interest rate cuts and easier credit, accelerating enterprise restructuring and improving competitiveness. Staying outside the euro zone, whose importance as a world currency is growing, may in the long run strengthen disintegrative tendencies in the EU, which would be detrimental to the Polish economy. However, as Poland failed to meet 4 criteria in 2008, namely budget deficit, price stability, currency rate (and legal convergence), and as it grapples with continued tensions and destabilisation of the złoty exchange rate in 2009, it would be pointless for Poland to enter the ERM II in 2009. If Poland can meet the nominal convergence criteria and establish stability in the years 2010–2011, despite the adverse impact of the world crisis, then ERM II entry can be planned, e.g., for the year 2010, and euro adoption for 2013, i.e., early on as the EU opens a new financial perspective for the years 2013–2020. The ERM II entry should be effected on conditions that guarantee not only a brief stay in the ERM II system but also the maintenance of long-term stability after adopting the euro. This implies it is necessary not only to stabilise public finances but also to push forward strongly real convergence, including the provision of R&D expenditure convergent with EU indicators, improvement competitiveness, education and infrastructure. It is also necessary to achieve a compromise with the political opposition to put through a change of the Polish constitution and to finally adopt the euro in Poland. If Poland’s political elite prove unable to work out a compromise on that matter the decision will be deferred until after the next general election and Poland’s progress to monetary integration with the euro zone will lengthen.
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**Impulse response to monetary policy shocks at the level of industry**

1. **Introduction**

The correct understanding of the impulse transmission of monetary policy is an essential reason for much research in a number of economies, see e.g. Mojon and Peersman, 2001. In the literature there are many methodological approaches to the research conducted by the impact of the Central Bank on the economy. On the one hand, there are approaches based on business data at a high level of aggregation (at the level of national accounts). On the other hand, much research utilises disaggregated data (often based on the information at a business entity level), in order to better understand the power and period of impact of particular channels of transmission mechanism, see e.g. Gertler and Gilchrist, 1994). Obviously, it should be kept in mind that it is difficult to compare the results of research based on both of these trends. For example, it may be difficult to answer the question if the entities responses are observed at a microeconomic level and transform into significant reactions of macroeconomic aggregates.

This present paper, based on the achievements of developing literature on the subject, attempts to analyse the mechanism of the transmission of using data in specific sectors of the Polish industrial economy. Such an approach enables us to better understand the structure of economical responses to impulses (shocks) generated by the Central Bank. The legitimacy of this sort of analysis elaboration seems especially essential within the context of recent events in the world economy, which may have important effects on corporate financing opportunities in different industries. In particular, within currently observed conditions, the response of some companies to changes to the extent of the restrictiveness of monetary policy may depend on the structure of financing. In this connection, the analysis of response to monetary policy shocks in individual areas are combined with the selected balance structure factors connected with dominant ways of financing business. In conclusion the summary is a suggestion of further possible research development.

The present study has the following structure: Firstly, it presents the research methodology, then the analysis of monetaray policy mechanisms in Poland
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based on vector autoregression models (VAR). In primary place it shows the results of the model using the traditional specification based on aggregated data. Next, the model is extended by the variables illustrating the level of production in individual sections of industrial processing. The results obtained from the extended model version enabled the analysis, presented in a further part of the text, of differentiated responses to monetary policy shocks on the part of companies in different business areas. In the conclusion, the paper presents a list of responses at the disaggregated level, together with selected indicators of balance structure in individual sections. The most important conclusions derived from the research are mentioned in the conclusion given in the final part of the paper.

2. Methodology

There exists more and more literature aimed at analysing the impact of monetary policy on the economy (see e.g. the review presented by Christiano et al., 1999). Within the research many alternative methodological approaches have been proposed. This paper concentrates on the empirical research based on vector autoregression (VAR) models.

The fundamental question in the analyses of monetary policy effects is how to define and identify the monetary policy shock. There seems to be a consensus (e.g. Christiano et al., 1999) that changes in the value of an instrument used by monetary policy makers may be decomposed into two components. Primarily, the systematic (endogenous) response to developments in the economy observed by policy makers. Such an endogenous response is often interpreted in terms of “reaction function” of the monetary authority, based on an “information set” consisting of variables observed by policy makers. The other component is the true shock – a part that cannot be explained in terms of systematic responses to economic conditions. The reaction of the economy to such a shock (i.e. non-systematic component of the changes in monetary policy instruments) is usually of greatest interest to a researcher. By definition, the exogenous monetary policy shock is orthogonal to variables in a policy makers’ information set. This non-systematic component can be interpreted as an exogenous decision of the policy makers. Since this shock (“exogenous decision”) is orthogonal to the publicly known policy makers’ information set, it constitutes a surprise for the agents in the economy and might be a basis for the decisions not anticipated before (e.g. change in investment or consumption).

To correctly estimate monetary policy shocks one needs to identify variables that form the information set of policy makers, since the decisions regarding
changes in the value of a monetary policy instrument is conditioned to the variables from this set. Therefore, in an estimated system of equations the variables can be divided into three groups. The first group are the information set: the variables for which current values are observed by the monetary authority and taken into account when changing the monetary policy instrument. The second group includes the monetary policy instruments. For the central banks using direct inflation targeting strategy (as e.g. the National Bank of Poland) these are short-term interest rates. The final group consists of variables that are observed by the policy makers with some lag. Thus, the current values of the third group variables do not directly influence monetary policy instruments.

A possible way of conducting an empirical analysis on this subject is by using vector autoregression (VAR) models. If we denote a vector of analysed variables values at time $t$ by $Z_t$, by $B$ a matrix of parametres to be estimated and by $u_t$ a vector of error terms, we can denote a VAR model as:

$$Z_t = B_1 Z_{t-1} + \ldots + B_q Z_{t-q} + u_t.$$  

Such a specification is not enough to identify the structural shocks since the elements of $u_t$ may, in general, result from all the fundamental shocks (Christiano et al., 1999). But it is possible to recover the fundamental shocks of interest by imposing some additional structure on $u_t$. It is possible to group variables as presented above. Let us assume that the relationship between residuals $u_t$ and fundamental (structural) shocks $\epsilon_t$ is specified by matrix $A$ as:

$$Au_t = \epsilon_t.$$  

Now it is necessary to impose enough restrictions on matrix $A$ to make the whole estimated system identifiable One of the possibilities is a recursiveness assumption, equivalent to the variable grouping described above. In such a case the identification is obtained by using the Cholesky decomposition, with the correct ordering of variables. In this approach, variables that are placed before the monetary policy instrument (usually a short-term interest rate) are assumed to enter the information set of the policy maker into their contemporaneous value. On the other hand, variables placed after the monetary policy instrument are observed by policy-makers with a lag.

Once the monetary policy shock is identified, its impact on other variables can be analysed. The standard way of presenting the results is the impulse response function. It is customary to apply a standard deviation shock. This paper focuses on the reaction of other variables to shocks generated by monetary
policy, although the analysis of shocks stemming from other sources can also be considered.

3. Analysis of transmission mechanism based on VAR models

This chapter deals with econometric analysis based on the methodology presented above, using estimated VAR models.

In the first place, the results presented will refer to the specification based exclusively on highly aggregated data, commonly used in literature. In order to obtain comparability with the specifications presented in the later part of the text, the model based on monthly data has been built. The index of industrial output was chosen as a variable representing the level of business activity. The price level is traditionally represented by the CPI index. The decision to choose this index is due to the fact that the inflationary goal is determined by the Monetary Policy Council in terms of CPI inflation, thus it should be the category in the decision makers’ reaction function. Variable illustrating changes in the rate of restrictiveness of monetary policy is a monthly average value of 1-month WIBOR on the interbank market. The model uses also the nominal effective exchange rate index\(^1\). Data referring to the industrial production index as well as price level were subject to the seasonal adjustment procedure. All variables except for WIBOR rate were logarithmed. The VAR model was built for levels of variables defined in this way\(^2\). Such an approach to the model construction was used, e.g. by Peersman and Smets (2001).

The final version of the VAR model was estimated on the basis of the data from January 1999 to September 2008. This means that the sample used for estimation refers to a fairly homogenous period of the strategy of the direct inflationary goal followed by the Monetary Policy Council with no monetary interventions\(^3\). The comparison of characteristics of different model versions showed that using 3 lags of variables is optimal, based on information criteria.

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1 The assumption was used that the effective rate index growth means the appreciation of the zloty.
2 The literature often points to the appropriateness of additional use of raw materials price index (as an exogenic variable) in order to eliminate the effect of price puzzle. Due to a relatively small and statistically insignificant scale of this effect in the constructed model, the final version presented does take this index into account. Including raw materials price index did not change quality conclusions in comparison with the presented version.
3 Attempts to estimate the model in relation to the sample beginning earlier did not lead to unstable results. It may result among others from the impact of structural changes in the economy, which occurred then with great intensity.
of a number of delays and analysis of auto-correlation tests or heteroskedasticity of remainders.

Further results are based on estimated the VAR model, which uses the Cholesky decomposition in order to identify shocks with the following ordering of variables: industrial output, CPI index, WIBOR 1M rate and nominal effective exchange rate index. Figures 1 to 4 present the functions of response to impulse (deviation – in relation to the lack shock – of the graph of a given variable as a result of shock) as a result of the shock of a given variable of one standard deviation. The functions of response are presented together with confidence brackets of +/- 2 width from the standard deviation. The time axis presents months from the impulse (shock) occurrence.

The results show that the model results are in conformity with the economic intuition. In particular, there was a statistically significant response of industrial output to interest rate shock. Price level response to the monetary impulse occurs with a substantial lag. An important role of exchange rate channel in the mechanism of transmission in Poland was also confirmed.

The obtained VAR model retains the most important characteristics found in the theory of economics in relation to the mechanism of monetary policy impulse transmission. Nominal exchange rate shock, which can be identified with growth in monetary policy restrictiveness, leads to the decline in the volume of industrial output (in comparison with the situation when the shock does not occur) and with a certain delay of price decline. Unexpected growth in the short term interest rate leads to the appreciation of the exchange rate.

In turn, the appreciative exchange rate shock results in a slowdown of the economy measured with the level of industrial output and the decline in the level of prices. According to the model, the exogenic appreciative exchange rate shock leads to lowering short term interest rates, which suggests that the Monetary Policy Council can rely on its decision on the general perception of the level of restrictiveness – considering both internal (interest rate) and external (exchange rate) price of the domestic currency.

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4 A study to discuss the result of research on transmission mechanism in Poland (for shorter time series, compared with the present paper) based on VAR models is e.g. Łyziak and orhers (2008).
Figure 1. Functions of reactions to impulse of industrial output

Source: own material.

Figure 2. Functions of reaction to price level (CPI)

Source: own material.
Figure 3. Functions of reaction to impulse of WIBOR1M interest rate

Source: own material.

Figure 4. Functions of reaction to impulse of nominal effective exchange rate

Source: own material.
On the basis of the model presented above, a number of extended models were built, inspired by the work by Dedol and Lippi (2005). The extension consisted of adding an additional variable to the VAR model presented above. The additional variable used in the model was the output index for successive industrial processing sections. Thus, a number of new VAR models were obtained, the only difference being the additional chosen index of industrial processing section.

According to the research problem put forward at the beginning, the analysis made referred to the response of output of individual sections to the monetary policy shock\(^5\). Due to the limited scope of the present paper, only selected results can be presented.

For each analysed extended model, there was an analysis of the function of response to the impulse, with particular attention paid to the shock of these variables which are significant from a running monetary policy point of view, (i.e. interest rate and exchange rate). Closer analysis will be carried out in relation to the functions of response to the impulse in the section of a relatively large share in the industrial processing output. Table 1 presents the most important data and obtained results.

<table>
<thead>
<tr>
<th>Table 1. Selected data for models in the extended version (in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Share of industrial processing output</strong></td>
</tr>
<tr>
<td>Industrial processing</td>
</tr>
<tr>
<td>Production of foodstuffs and drinks</td>
</tr>
<tr>
<td>Production of tobacco products</td>
</tr>
<tr>
<td>textiles</td>
</tr>
<tr>
<td>Production of clothes and fur products</td>
</tr>
<tr>
<td>Production of tanned skins and products made from them</td>
</tr>
<tr>
<td>Production of wood and products made of wood, straw and wicker</td>
</tr>
</tbody>
</table>

\(^5\) Because of similar results in extended models of functions described above and the limited scope of the paper, functions of reactions discussed before are not repeated. In the Cholesky decomposition an additional variable was placed as last in order. The analysis of other approaches to shock identification, e.g. the ones suggested by Raddatz i Rigobon (2003), will be the subject of further research.
continued Table 1

<table>
<thead>
<tr>
<th>Product Description</th>
<th>Share of industrial processing output</th>
<th>Minimal value of function of reaction to exchange rate impulse</th>
<th>Minimal value of function of reaction to interest rate impulse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production of fibrous pulp and paper</td>
<td>2.3</td>
<td>-1.14</td>
<td>-0.85</td>
</tr>
<tr>
<td>Publishing business: printing and reproduction of recorded carriers of information</td>
<td>2.9</td>
<td>-0.77</td>
<td>-0.44</td>
</tr>
<tr>
<td>Production of coke and products of oil refinery</td>
<td>6.0</td>
<td>-1.59</td>
<td>-0.24</td>
</tr>
<tr>
<td>Production of chemicals</td>
<td>6.5</td>
<td>-1.02</td>
<td>-0.62</td>
</tr>
<tr>
<td>Production of rubber and plastic products</td>
<td>5.8</td>
<td>-1.24</td>
<td>-1.17</td>
</tr>
<tr>
<td>Production from remaining non-metal raw materials</td>
<td>5.2</td>
<td>-1.51</td>
<td>-0.90</td>
</tr>
<tr>
<td>Production of metals</td>
<td>5.4</td>
<td>-1.20</td>
<td>-0.82</td>
</tr>
<tr>
<td>Production of products made from metals</td>
<td>8.0</td>
<td>-0.99</td>
<td>-0.98</td>
</tr>
<tr>
<td>Production of machines and appliances</td>
<td>6.6</td>
<td>-1.12</td>
<td>-0.92</td>
</tr>
<tr>
<td>Production of machines and electrical equipment</td>
<td>3.9</td>
<td>-1.44</td>
<td>-1.19</td>
</tr>
<tr>
<td>Production of equipment for radio, television and telecommunication appliances</td>
<td>2.2</td>
<td>-0.58</td>
<td>-1.42</td>
</tr>
<tr>
<td>Production of medical, precision and optical instruments, clocks and watches</td>
<td>1.1</td>
<td>-0.35</td>
<td>-1.27</td>
</tr>
<tr>
<td>Production of motor vehicles, trailers and semi-trailers</td>
<td>10.4</td>
<td>-1.95</td>
<td>-2.61</td>
</tr>
<tr>
<td>Production of remaining transport equipment</td>
<td>1.7</td>
<td>-3.82</td>
<td>-2.85</td>
</tr>
<tr>
<td>Production of furniture; remaining production business</td>
<td>4.2</td>
<td>-1.37</td>
<td>-1.02</td>
</tr>
</tbody>
</table>

Source: Central Statistical Office, own material.

The last two columns of Table 1 show minimal values of output response functions in individual sections to interest rate and nominal exchange rate impulses. These values mark the deepest output response in a given business after the shock. The analysis of these values together with the information presented
in Fig. 1 indicates that a differentiation of responses in relation to that observed in all industrial enterprises may be statistically significant.

Figures 5 and 6 present functions of response of the volume of output to interest rate and nominal exchange rate shocks in sections of the largest shares in industrial processing. The graph of these functions in the analysed group is similar. The section where behaviour clearly differs from that of other members of the group is “the production of motor vehicles, trailers and semi-trailers”.

**Figure 5. Functions of response to output impulse in selected sections after interest rate shock (WIBOR1M rate)**

![Graph showing functions of response to output impulse in selected sections after interest rate shock.](image)

Source: own material.

The analysis of results presented in Figures 5 and 6 together with the data presented in Table 1 indicate a differentiation of responses in individual sections to shocks generated by monetary policy and changes in the exchange rate. There is a question then about the source of this differentiation. The literature indicates that the structure of financing, typical of a given business area may play a significant role here. It was suggested by, among others, Dedola and Lippi (2005). The comparison of a maximum scope of output response of individual business areas with selected factors of balance structure connected with the structure of financing is presented in Figure 7.
The results presented show that on average in the case of sections characterised by lower financial liquidity indicators, the effect of shock is bigger. This interdependence is especially clear in the case of interest rate shocks and second degree financial liquidity indicator.
First degree financial liquidity indicator: relation of short term investments to short term liabilities.
Source: Central Statistical Office and own material.

Preliminary results indicate the possibility of connection between balance structure (related to the typical business financing pattern) and the scale of response to interest rate and exchange rate shocks. The result may be interpreted as confirmation of a significant role played in the Polish economy by additional channels of transmission mechanism, e.g. balance channel or bank credit channel. Moreover, the analysis of data at the disaggregated level may be useful from the perspective of monetary policy, especially in the conditions observed in the recent period of distortions on the financial markets and changes in the position of economy in the business cycle.

4. Summary

The presented research was aimed at a preliminary analysis of sensitivity of output of the industrial processing section to shocks generated by monetary policy. Because of the essential role played by the exchange rate in transmission analysis, the research was completed with the research of nominal exchange rate effects. The VAR model based results confirm the differentiation of responses in different business areas, observed also in other economies. A provisional analysis indicates that the structure of financing typical of individual business areas may be an important factor in order to explain the differentiation of the power of their responses.

The results obtained so far indicate the appropriateness of further research in the discussed area. One of the threads of further research may be the use
of alternative approaches to identification of shocks in the model, based on the work of Raddatz i Rigobon, 2003. It would be interesting to make a deeper analysis of factors to explain the differentiation of responses within individual business areas.

The research results are interesting from the perspective of the research on the transmission mechanism of monetary policy impulses in the Polish economy. The knowledge of business area differentiation of responses to monetary policy shocks conditioned by the impact of the structure of financing may be especially significant in the context of currently observed distortions on the financial markets as well as changes in the credit policies of financial institutions.

Bibliography

Companies which make strategic decisions in relation to market growth can either opt for the local growth on the domestic market or decide to go elsewhere outside the country and begin international growth, called business internationalisation. The author aims at showing the progress of internationalisation of Polish companies on the basis of available research including the author’s own research. The introduction to the problem is to show the strategy of market growth and business internationalisation on the basis of the literature and then to identify basic growth dilemmas faced by Polish companies.

1. Market Growth Strategy

Market growth strategy is one of the basic strategies presented by H. I. Ansoff in his growth strategy model and one of the key business strategies in general. Initially it was understood by H. I. Anstoff in two ways: as entering new markets perceived as new groups of customers or as new geographical markets. The latter was examined by H. I. Anstoff in his new 3-dimensional version of growth strategy model, see Fig. 1.

Figure 1. H. I. Ansoff’s tridimensional business growth model

Fig. 1 indicates that, according to the new model, a company may follow a number of growth opportunities. From situation A, in which the company decides to do business within the present geographical market to meet the current customers’ needs using the current technologies (the situation close to market penetration in the old model), up to situation H, in which the company decides to do business on a new geographical market to meet customers’ new needs using new technologies (the situation close to diversification in the old model with simultaneous geographical expansion of the company). The new 3-dimensional model very well reflects the reality and illustrates growth opportunities to be followed by a company. In his new model, H. I. Anstoff clearly marks entering new markets as the direction of growth, at present more and more frequently chosen by a number of businesses.

Corporate geographical growth means gradual increase in the business range by means of entering new geographical areas. Newly established companies mainly start doing business on the local market: town, district or province. Later on, they start reaching other regions of the country with their products, to cover first, part and then the whole of the domestic market. For many companies, it means ultimate growth. Some of them, however, decide to take a further step and leave the domestic market to do business elsewhere. Here, they have a number of development opportunities: entering one country, several domestic markets, business in a given world region (e.g. the European market) or eventually entering the global market. Stages of geographical growth are presented in Fig. 2.

**Figure 2. Stages of geographical corporate growth**

![Figure 2](image)

Source: own material

Fig. 2 shows that the moment the company makes an offer abroad it starts the process of internationalisation. It is the way internationalisation is described by M. Gorynia, who claims that internationalisation comes into effect with at least one product, whether in manufacturing or services, in the portfolio of the company connected with the foreign market. And a company business
plan in relation to its foreign environment is described as strategy of corporate internationalisation\textsuperscript{1}.

2. Internationalisation of companies

P. W. Beamish, A. Morrison, Ph. M. Rosenzweig claim that internationalisation is a broader term than just sales of products effected abroad. According to the above internationalisation is a process in the course of which there is a growing awareness within the company of the impact of its action on the international market, on its future and transactions are concluded with companies in other countries\textsuperscript{2}. In this sense, it can be said they refer also to the strategy of internationalisation. Thus, internationalisation as expansion on international markets is an essential part of the corporate market growth.

The development of business from the local to national market will result from the desire to intensify sales and increase profit. It may proceed in a natural way, along the path indicated by H. I. Ansoff, or with certain modifications. Companies frequently combine several growth strategies, especially product and market growth, which develop in parallel. Irrespective of entering subsequent local markets, the company works on the new products and launches them on all the markets. It often happens that irrespective of growth in a given field, the company diversifies and enters another sector, and within the basic activity on these local markets that have been saturated, it implements the strategy of penetration.

The growth on the international market may be effected in a different fashion. The sequential model was presented by scientists from the University of Upsala. They stated that companies, in their international expansion, first focus on closer markets to penetrate those more distant later. Besides, they identified the four most frequent consecutive forms of entering international markets:

- occasional export,
- export by independent representatives,
- setting up a foreign commercial subsidiary,
- setting up a foreign manufacturing subsidiary.

This model is presented in Fig. 3.

\textsuperscript{1} M. Gorynia, Podstawy strategii przedsiębiorstw w biznesie międzynarodowym, w: Strategie przedsiębiorstw w biznesie międzynarodowym (Introduction to Corporate Strategy in International Business, in: Corporate Strategies in International Business) Akademia Ekonomiczna in Poznań, Poznań 2000.

\textsuperscript{2} P. W. Beamish, A. Morrison, Ph. M. Rosenzweig, International Management, 3rd edition, IRWIN, Boston 1997, p. 3.
According to the model presented in Fig. 3, a company develops on the international market on the one hand through the growth in the geographical market diversification, i.e. gradually entering subsequent domestic markets. On the other hand through market commitment growth proceeding on the subsequent markets from the simplest forms, i.e. occasional export to more sophisticated forms of internationalisation. The resultant of these two is the growth in the international corporate commitment.

Not every single company must go through all the forms of internationalisation: they may decide, for instance, to set up a manufacturing subsidiary on a foreign market right away. They may decide to enter a number of domestic markets at one time. It is enough for the company to open a Web site, through which it may offer its products to customers all over the world. The customers will make on-line orders, and the sales staff will send the products via couriers.

Besides, there is a certain category of companies of the so-called born globals. These companies, at the very moment of setting up or shortly afterwards, start implementing their goals aimed at gaining majority of their profits from the sales of products abroad. It is thought that such companies appear due to the development of advanced communication technologies, easily spread of new technologies and the growing significance of niche markets. Such features as high competitiveness, a high degree of specialisation, a niche concentration strategy and strong global managerial orientation distinguish the born globals from other companies.  

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Although at present the category of born globals seems to be growing, the gradual corporate growth is still dominating. W. Kuemmerle presented his gradual growth model in Fig. 4.

**Figure 4. Matrix of international expansion**

![Matrix of international expansion](image)


According to the model presented in Fig. 4, companies gradually proceed from business on the local market, meant here as the domestic market through business on the regional market reaching the global market. In their growth they gradually develop resources at a suitable level, which enables them to make use of the opportunities at that level. When companies achieve a strong position at a given level, e.g. regional, they become attractive to global suppliers or distributors, which facilitates their further growth and their entering the global markets.

What makes companies decide to go beyond the local (domestic) market? It is partially determined by similar motives to expanding business on the domestic market, i.e. increasing sales and income of the company. However, these are not the only reasons. It is determined by a variety of factors, both external and internal. Nearly every single publication on international business quotes a comprehensive list of such factors.

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What well completes the theoretical considerations on the premises and motives of entering foreign markets by companies is the *Annual Global CEO Survey* research carried out by PricewaterhouseCoopers among 1400 managers in 45 countries. The survey concerns the perception of globalisation processes and the increase in the complexity of company operations. Managers were asked, among others, about the motives behind the international expansion of their companies. Managers from well developed countries pointed out in the first place to the acquisition of new customers (78% of responses) to be followed by better quality of customer handling (54%), cost reduction (48%), higher productivity (38%) and opportunity to hire highly qualified and talented people (24%). For managers from developing countries these factors had a different significance. At the beginning they also mentioned the acquisition of new customers (64%), However, later on the order was as follows: cost reduction (50%), higher productivity (39%), better quality of customer handling (36%) opportunity to hire highly qualified and talented people (14%)\(^5\).

### 3. The growth dilemmas of Polish companies

Depending on the stage of development of Polish companies, they face the dilemma whether to do business locally or undertake the competition on the national market or perhaps directly on the international market going beyond the EU to the markets of other countries or even to go the global market. The situation is presented in a general way in Fig. 5.

**Figure 5. Strategic decisions made by Polish companies: market choice**

![Diagram showing market choice dilemma]

Source: own material

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The situation presented in Fig. 5 refers to the markets, in which a Polish company will sell its products. Going outside the borders of the country does not have to mean that sales on the domestic market are to be abandoned. The same refers to the investments in manufacturing made abroad by Polish companies desiring to take advantage of the difference in labour costs in Poland or other Central and East European countries and first of all countries of the Far East in order to increase competitiveness, see Fig. 6.

**Figure 6. Choice of location of manufacturing of Polish companies and sales market**

Source: own material.

4. Progress of internationalisation of Polish companies

How often do Polish companies decide to undertake the strategy of market growth? Unfortunately, there is no comprehensive research on the subject, though the problem itself appears from time to time in the context of other research problems. The largest group of companies was included in the research undertaken by G. Gierszewska. In 1998 she examined 200 state and privatised companies, analysing data from the period of 1990–1997. The research refers, among others, to the identification of the growth strategy according to the H. I. Ansoff model. The results prove that the most frequently used strategy was the market penetration strategy, while the market growth strategy was in third position.

Before, research done by M. Gorynia in the early 1990s on the sample of several dozen processing industry and construction companies in the Poznań region indicated that a third of the examined companies confined their business to the regional market, while nearly all of them pointed to the national market.

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as the market they worked on. Approximately half of them indicated the three largest export markets, so they were active on the foreign market\(^7\). It is interesting that all the examined companies working on the regional market intended to enter the national market and nearly all of them in general intended to enter new export markets\(^8\). There are not many other research items to show the range of company growth on the domestic market.

It is a fair assumption to say that some companies working presently on the local market will aim at expanding the geographical range of their business. That was the case e.g. in the brewery sector in Poland in the 1990’s. Polish breweries of regional or even local range tended to expand the geographical scope of their business\(^9\), see Fig. 6.

A similar behaviour can be seen in relation to limited liability company Marwit, a producer of one-day’s juices. In the late 1990’s it started to conquer the national market, entering Warsaw first, with other large cities to follow.

**Figure 6. Changes in the market range of selected breweries in Poland in the 1990’s**

![Diagram showing changes in market range](Image)


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\(^7\) M. Gorynia, Zachowania przedsiębiorstw w okresie transformacji (Corporate behaviour in the period of transformation). Mikroekonomia przejścia (Microeconomics of transformation), Wydawnictwo AE w Poznaniu, Poznań 1998, pp. 155–156.

\(^8\) M. Gorynia, Zachowania przedsiębiorstw w..., (Corporate behaviour in...) op. cit., p. 176.

\(^9\) M. Jarosiński, Strategie dywersyfikacji na przykładzie przedsiębiorstw w szybkoglobalizujących się sektorach, w: Zachowania strategiczne polskich przedsiębiorstw w szybkoglobalizujących się sektorach (Diversification strategies exemplified by companies in fast globalising sectors, in: Strategic behaviour of Polish companies in a fast globalising sector) – research report, SGH, Warsaw 2000.
The changes in the market range of researched breweries presented in Fig. 5 show clearly that companies aim at covering the whole domestic market with sales and try to sell abroad, so they want to go international. This stage of development was also undertaken by companies from other industries, e.g. LPP possessing sales outlets in nearly all countries of Central and Eastern Europe or Solaris Bus & Coach: at present the third largest producer of town buses in Europe, selling its buses also in the Middle East. Also Forte S.A., Maspex Ltd. or Atlas Ltd. are flagship Polish companies to compete effectively on the European market. PKM Duda, which possesses totally 11 companies in Germany and the Ukraine, develops in a similar way.

We are also not short of companies working on the global market. Selena S.A. possesses manufacturing plants outside Poland in Brazil, Korea, China, the USA and Turkey. It is currently, concerning the output, the fourth largest world manufacturer of polyurethane foam used in the construction industry. In turn, Katowice Famur group, the largest in Poland and one of the most significant in the world, is a producer and supplier of modern machines and appliances for the extractive industry sector (including extraction of oil and gas). Sales on foreign markets amount to nearly half of its output, and the company is the world’s fifth largest manufacturer of appliances of this sort. HTL-SFERA S.A. is the world’s largest manufacturer of safe piercers and personal lancets.

ADB (Advanced Digital Broadcast) is a truly global enterprise. Its head office is in Geneva, manufacturing outlets in Taipei, Bangkok and Shanghai, research and development departments in Zielona Góra, Katowice, Wrocław, Poznań, Charkov and Broomfield, and logistic and financial functions located in Taiwan. The management board consists of six people: only three of them are Poles, the rest: an Italian, a Taiwanese and a Frenchman.

These are only a few examples of Polish companies on the European and global markets. There are many more of them, which has been proved by various research undertaken in Poland. The research carried out by a UMK team headed by S. Sudol and M.J. Stankiewicz examining 100 industrial companies shows the companies’ markets divided into the domestic market and different foreign markets, see Table 1.

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Table 1. Markets of companies examined in spring 1998

<table>
<thead>
<tr>
<th>Markets</th>
<th>Percentage of companies on a given market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic market</td>
<td>100.0</td>
</tr>
<tr>
<td>EU markets</td>
<td>67.8</td>
</tr>
<tr>
<td>Central and Eastern European countries(without Russia)</td>
<td>62.2</td>
</tr>
<tr>
<td>Russia</td>
<td>34.4</td>
</tr>
<tr>
<td>Other European countries</td>
<td>14.4</td>
</tr>
<tr>
<td>Asian countries</td>
<td>20.0</td>
</tr>
<tr>
<td>NAFTA countries</td>
<td>11.1</td>
</tr>
<tr>
<td>African countries</td>
<td>5.6</td>
</tr>
<tr>
<td>South American countries</td>
<td>2.2</td>
</tr>
<tr>
<td>Other markets</td>
<td>8.9</td>
</tr>
</tbody>
</table>


Unfortunately, the data presented in Table 1 does not indicate explicitly the share of Polish companies committed to foreign markets in the examined group. It can be assumed, however, that at least 67.8% of the examined companies work on the foreign market, which constitutes a large proportion anyway.

One of the latest researches to touch upon the problem of the internationalisation of Polish companies is the research carried out by the team headed by T. Gołębiowski of The Warsaw School of Economics on the models of business done by Polish companies. In the survey, companies were asked among other things about the share both the Polish market and foreign markets in incomes from sales. It appears that at the turn of 2005 and 2006 half of the companies declared the share of the Polish market as higher than 50%, and 46% of them – below 50%. It is interesting that the survey identified a group of companies which do not sell on the Polish market at all (4%).

For many companies internationalisation means export business mainly. According to the data by the Central Statistical Office, since 2000 there has been a dynamic growth in the export of Polish goods. The export value in 2007 tripled compared to 2000. From January until November 2008, Polish exports amounted to about 107 bn euros. Table 2 shows the major export destinations.

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11 It is the largest group of companies working on the foreign market, in this case the EU.
Table 2. Major destinations of Polish exports in 2008

<table>
<thead>
<tr>
<th>Country</th>
<th>Bn euros</th>
<th>Share %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>26.8</td>
<td>24.9</td>
</tr>
<tr>
<td>France</td>
<td>6.6</td>
<td>6.2</td>
</tr>
<tr>
<td>Italy</td>
<td>6.5</td>
<td>6.1</td>
</tr>
<tr>
<td>Great Britain</td>
<td>6.1</td>
<td>5.7</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>6.0</td>
<td>5.6</td>
</tr>
<tr>
<td>Russia</td>
<td>5.7</td>
<td>5.3</td>
</tr>
<tr>
<td>Netherlands</td>
<td>4.3</td>
<td>4.0</td>
</tr>
<tr>
<td>Ukraine</td>
<td>4.2</td>
<td>3.9</td>
</tr>
<tr>
<td>Sweden</td>
<td>3.4</td>
<td>3.2</td>
</tr>
<tr>
<td>Hungary</td>
<td>3.0</td>
<td>2.8</td>
</tr>
</tbody>
</table>

Source: www.paiz.gov.pl, 12.03.2009.

All the time our companies perceive Germany as the major foreign market for Polish goods. Tin total, 3/4 of Polish exports are directed to EU countries.

Polish companies’ export commitment is large. Since 2002 foreign direct investments made by Polish companies have been growing. In 2007 they amounted to nearly 3.5 bn euros. The interest in foreign markets is definitely growing.

5. Conclusion

Foreign markets have always attracted the interest of Polish companies. It may be expected that at present Polish companies will overcome the geographical barriers of growth. What will favour it, is the development of modern ways of communication, better transport infrastructure, uniform European market, better opportunities to finance corporate growth and first of all: thinking in global terms. Thus, it can be expected that the number of Polish companies developing dynamically from the local market up to the global market will grow rapidly.

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Methods of increasing bank capital effectiveness – part 1

1. Introduction

One of the goals of every rationally working enterprise, including a bank, is making the most effective use of the capital at its disposal. Bearing in mind that capital becomes a limited resource for banks and at the same time it is not gratuitously obtained, it should be managed in such a way as to ensure its maximum efficiency. A helpful instrument in the process of increasing capital effectiveness is the process of its allocation. However, in order to carry out allocation, first the process of measurement and calculation must be completed.

Banks as institutions of public trust are subject to special regulations that force the possession of capital (own funds) at an adequate level. The notion of bank capital is not explicit and is diversely perceived. The definitions quoted in the literature differ from one another, which does not mean at all that they are incorrect. They only present a different point of view or emphasize various capital aspects.

In the practice of bank management there are numerous kinds of capital of different significances for business and relations with the environment\(^1\). Below some basic views of bank capital are presented.

According to J. F. Sinkey\(^2\) there are three approaches to present the value of capital:.

- book value,
- regulatory,
- market.

**Book value capital (balance capital)** is the capital whose value corresponds to the amount “completing” the value of liabilities up to the assets amount. The amount of capital equals the sum of the following balance items\(^3\):

- subordinated liabilities,
- core (funds) capital,

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\(^1\) M. Iwanicz-Drozdowska, Zarządzanie finansowe bankiem, (Bank financial management) PWE, Warszawa 2005, p. 208.


\(^3\) Accounting Law of 2002, Dz.U. (Journal of Laws) No. 76, item 694, with later amendments.
Methods of increasing bank capital effectiveness – part 1

- due payments for core capital (negative quantity),
- own shares (negative quantity),
- supplementary (funds) capitals,
- revaluation capital (funds),
- remaining reserve capitals (funds) (including general banking risk fund, remaining),
- past years profit (loss),
- current year profit (loss).

Regulatory approach is a little different. Is is generally accepted that bank regulatory capital consists of three elements:
- Tier 1 – core capitals (funds),
- Tier 2 – supplementary capital (funds),
- Tier 3 – short-term funds.

In the regulatory approach there are no unanimous definitions of capital due to the opportunity to apply diverse solutions by supervisory authorities. In other words, under the jurisdiction of one supervisory authority capital include, for instance, short term subordinated loans while under another they do not. Nevertheless, individual definitions of capital are not essentially divergent and concern less important elements.

Market approach estimates capital value as a product of the issued shares by their market (stock market) price.

According to C. Matten four kinds of capital are to be distinguished:
- physical capital – used by bank money managers interested in what capital is available, what instruments there are to acquire it and what the acquired funds are to be invested in,
- regulatory capital – used by supervisory authorities to secure depositors and other creditors against losses,
- risk capital – estimated in order to determine a potential bank loss with a given profile, what is the loss probability and if the bank effectiveness is measured with risk taken into account,
- economic capital – estimated in order to determine return on capital, to secure the risk of unexpected losses the bank is exposed to.

M. Iwanicz-Drozdowska claims that in bank financial management both regulatory capital (including in fact physical capital) and economic capital are

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important. These two kinds of capital may be described as financial capital. The role and significance of financial capital can be first of all referred to:

- process of obtaining a bank licence and its later retainment, among others due to cautionary regulations and other legal regulations,
- process of bank management in order to gain value added for shareholders with acceptable risk level on their part.

Besides financial capital it should be distinguished that:

- human capital – defined as resource of skills, knowledge, health and vital energy contained in every man (society). This capital forms a basis for the capital of innovativeness and entrepreneurship, whose existence and value depend on the methods of management,
- innovativeness and entrepreneurship capital – defined as an advantage due to the introduction of new solutions in the field of management and offered bank products,
- reputation capital – depending on financial capital and the two above-mentioned, though they cannot affect it. Defined as bank ability to develop mutual relations with the environment, i.e. customers, investors and employees.

To conclude, there is also available capital, mentioned among others by the Basel Committee on Banking Supervision. Available capital is not legally defined, that is why it may be understood in a number of ways. It is often compared to equity or sum of core, supplementary and reserve funds corrected by profits/losses of past years and the current period increased by the value of subordinated loans. Available capital is sometimes defined as risk capital or risk capital increased by invested capital, which, in turn, is understood as capital corresponding to the value of purchased fixed and intangible assets. It seems that among possible definitions of available capital, the most adequate is to perceive it as a capital maximum amount, to be allocated in a direct way to the organisational units or bank business lines.

Polish legal regulations require banks to keep amounts of share capital and additional balance items described by the Bank Supervision Authority at a level not lower than higher than the following values:

- sum of capital requirements on accounts of individual kinds of risk and capital requirements on account of exceeding limits and contravention of other norms determined in the law,

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6 Ibidem p. 211.
7 Range of practices and issues in economic capital frameworks, Basel Committee on Banking Supervision, March 2009.
8 Article 128 Banking Law, Act of 29 August 1997 with later amendments.
• the amount estimated by the bank indispensable to cover all identified essential kinds of risk in the banking business and changes in the business environment, taking into account the expected risk level (internal capital).

In conclusion to this part of the considerations, it should be stated that the indicated approaches are linked together and to a certain extent they are mutually complementary. Taking into consideration the approaches presented above, it seems that further discussion should be devoted to three kinds of capital: regulatory, internal and economic, although balance capital or available capital can be, by no means, forgotten.

2. Regulatory capital

Trying to determine and define the regulatory capital, one should remember its triple nature. It forces us to look at it from different perspectives, first: capital resources (own funds), second: total capital requirement, third: internal capital. The “triplity” of regulatory capital results directly from article 128 of the Banking Law whose regulations among others oblige banks to maintain the solvency ratio (capital adequacy ratio – CAR) at a level of at least 8\%\(^9\).

\[
\text{Solvency ratio} = \frac{\text{Regulatory own capital}}{\text{Total capital requirement} \times 12.5} \geq 8\%
\]

The result from the above equation that regulatory own capital, called colloquially regulatory capital, corresponds to at least the total capital requirement amount. It should be borne in mind that their own regulatory funds do not directly correspond to the bank’s own capital, in the sense of balance. But they are calculated on the basis of a supervisor’s recommendations and correspond to the sum of core capital, supplementary capital and third tier capital, i.e. Tier 1 + Tier 2 + Tier 3. In other words, due to capital requirements, regulatory capital should exceed them. From the point of view of funds, it will be as large as permitted by the existing capital base, i.e. Tier 1, 2 and 3. It should be additionally remembered that regulatory capital should also be higher than internal capital.

\(^9\) In the case of a bank beginning its operational activity at the level, CAR should be maintained at the level of at least 15\% for the first 12 months of activity, then for another 12 months of activity at the level of at least 12\%. Additional limitations as far as the ratio and the level of regulatory capital are included in Resolution No. 380/2008 of the Financial Supervision Authority.
2.1. Regulatory capital as own regulatory funds

Regulatory own funds, although due to the name may be associated with balance funds, it is possible, only theoretically, to put an equation mark between them. Own regulatory funds (own funds) correspond to the sum of Tier 1, Tier 2 and Tier 3, set according to the recommendation of the Polish supervisor.

Article 127 of the Banking Law Act and Resolution\textsuperscript{10} No. 381/2008 of the Financial Supervision Authority (KNF) of 17 December 2008 determines the elements of own funds and detailed rules of setting bank owned funds.

Bank owned funds consist of:
1) Core funds (Tier 1),
2) Supplementary funds decreased by items defined in the Banking Law (Tier 2),
3) Other items defined by the Financial Supervision Authority (Tier 3).

Re 1. Bank core funds include
1) bank basic funds composed of:
   • in a state bank – statutory fund, spare fund and reserve fund,
   • in a joint stock company bank – paid and registered initial capital, spare capital and reserve capital, excluding any liabilities on account of preferred shares,
   • in a cooperative bank – paid members’ share fund, resource fund and reserve fund,
   • in a foreign bank branch – funds defined in the regulations of the branch;
2) core funds additional items which include:
   • general risk fund for unidentified banking risk,
   • past years’ retained profit,
   • profit in the course of approval and net profit of the current reporting period, calculated according to the accounting rules, decreased by any anticipated charges and dividends, in amounts that do not exceed the profit verified by chartered accountant,
   • other items defined by the Financial Supervision Authority;
3) items decreasing core funds that include:
   • bank owned shares estimated according to the balance value, decreased by write-offs caused by a permanent loss of their value,

\textsuperscript{10} Resolution on other reductions in core funds, their volume, scope and conditions of reduction in bank core funds, other bank items recognized as supplementary funds, their volume, scope and conditions of their classification as bank supplementary funds, reductions in supplementary funds, their volume, scope and conditions of their reductions in bank supplementary funds; and scope and methods of determination of bank activity in holdings in calculation of own funds.
Methods of increasing bank capital effectiveness – part 1

• tangible and intangible assets according to the balance value
• past years’ loss,
• loss in the course of approval,
• current period net loss,
• other decreases in bank core funds defined by the Financial Supervision Authority.

KNF Resolution No. 381/2008 defines balance items, which reduce core funds. The reductions of core funds in the case of premises determined in the resolution are:

• bank capital involvement in financial institutions, credit institutions, banks and insurance companies,
• missing amount of reserve for banking risk,
• amounts of expected losses and negative amounts resulting from the calculations referred to in § 76–79 of Annex no. 5 to the KNF Resolution no. 380 of 17 December 2008 on bank capital adequacy\(^\text{11}\) (in the case of banks calculating amounts of risk weighted exposures using the methods of internal ratings),
• exposure amount on account of securitisation items,
  (the above items amount to 50% of the balance value) and
• unrealised losses on debt capital instruments classified as available for sale,
• unrealised profits on account of evaluation of real estate constituting investment,
• net profit from capitalisation of future income from securitised assets supporting credit quality for securitised items.

Re 2. Supplementary funds consist of:
1) capital (fund) from revaluation of material tangible fixed assets created on the basis of separate regulations,
2) balance items, the qualification of which is to be decided by the Financial Supervision Authority through general resolution or individual decision.

\(^{11}\) KNF Resolution No. 380/2008 of 17 December 2008 on the scope and detailed principles of setting capital requirements on account of individual kinds of risk, including the scope and conditions statistical methods application and the range of information enclosed to applications for the permission to use them, principles and conditions of recognition of liability transfer agreements, supaparticication agreements, credit derivative agreements and other agreements than liability transfer agreements and subparticipation agreements, for the purpose of determination of capital requirements, conditions, scope and ways of using evaluations by external institutions in relation to credit rating and export credit agencies, method and detailed principles of calculation of the bank solvency ratio, scope and method of bank activity in holdings in calculation of capital requirements and solvency ratio and determination of additional balance items indicated together with own funds in capital adequacy account and the scope, way and conditions of their determination.
According to the Banking Law Act, the Financial Supervision Authority agrees to classify the following items as supplementary funds, provided the conditions mentioned in the Act are met:

a) additional amount within the responsibility of cooperative bank members, in part defined by KNF;

b) subordinated liabilities, understood as liabilities on account of accepted funds by a bank in amounts and principles determined in the decision made by KNF at the request of the bank, reduced at the end of each year in the last 5 years of the agreement by 20% of the amount – funds meeting according to the agreement together the following conditions:
   • funds taken for the period of at least 5 years (period of agreement),
   • funds cannot be withdrawn from the bank before the expiry date,
   • funds are subject to return last in the case of bank collapse or liquidation,
   • return of funds is not secured by the bank directly or indirectly;

c) funds from own or other resources,

d) liabilities on account of securities with indefinite maturity dates as well as other instruments of a similar kind,
   1) other proposals defined by the KNF in order to make banking business secure and bank risk management correct,
   2) reduction in supplementary funds defined by the Financial Supervision Authority.

Supplementary funds and different components of these funds are subject to the following limitations:
   • they must not exceed core funds,
   • the volume of the additional amount of responsibility of cooperative bank members must not exceed shares paid by them,
   • the amount of subordinated liabilities, regarded as supplementary funds, must not exceed 50% of core funds in a state bank, joint stock company bank and foreign bank branch,
   • the sum of subordinated liabilities recognised as supplementary funds and the additional amount of responsibility of cooperative bank members must not exceed half of bank core funds.

KNF Resolution no. 381/2008 defines balance items which, having met certain conditions, may become other items of supplementary funds. They are:
   • unrealised profits on debt instruments classified as available for sale,
   • unrealised profits on capital capital instruments classified as available for sale,
• unrealised profits from real estate investments,  
  (the above items are to be accounted for up to 60% of the amount – before income tax as well as  
  • positive amounts resulting from revaluation and reserves accounted for in the calculations, referred to § 76–79 of Annex no. 5 to the Resolution on bank capital adequacy (in the case of banks calculating amounts of weighted exposures using the method of internal ratings) up to 0,6% of amounts of risk weighted exposures calculated with these methods.  

KNF Resolution no. 381/2008 defines additionally the balance items which reduce supplementary funds. The reductions in supplementary funds in the case of premises quoted in the Resolution are:  
• bank capital involvement in financial institutions, credit institutions, banks and insurance companies,  
• missing amounts of reserves for the banking risk,  
• amounts of anticipated losses and negative amounts resulting from calculations referred to in § 76 – 79 of Annex no. 5 to the Resolution on bank capital adequacy (in the case of banks calculating amounts of weighted exposures using the method of internal ratings),  
• exposure amount on account of securitisation items.  

The above items are considered in the reduction of supplementary funds amounting to 50% of the involvement balance value. Moreover, if 50% of the sum of items mentioned above is bigger than the sum of supplementary funds, the difference should be taken away from the bank core funds.  

Recognition of funds as supplementary funds made up of their own and other resources on account of securities with an indefinite time of maturity and other similar instruments is determined by fulfilment of the following conditions:  
• funds made up of their own or other resources may be used freely by the bank to cover unidentified risk, and their amount has been calculated according to the accounting rules in force, set by the banks’ management and verified by chartered accountants,  
• liabilities on account of securities of indefinite maturity date and other similar instruments must not be subject to repayment on the creditor’s initiative without prior consent of the Financial Supervision Authority. Moreover, the agreement must provide the bank the opportunity to postpone repayment of interest on these items, in the case of bank bankruptcy or liquidation the accepted funds will be subject to return last, and conditions of issue must ensure the opportunity to cover the losses with the amount of debt together with unpaid interest on these items.
The banks whose scope of business is significant can make use of short-term capital when setting capital adequacy norms, referred to in KNF Resolution No. 380/2008. Short-term capital is the sum of the following items, if positive:

- market profit, accruing till the reporting day reduced by known liabilities,
- losses (with a negative sign) on all operations recognised as bank portfolio, accruing till the reporting day, excluding losses on the account of changes in exchange rates and prices of goods, within the scope in which it has not been included in their own funds or covered in another way,
- liabilities on account of granted subordinated loans meeting conditions defined in the Resolution,
- capital value of subordinated entities after meeting conditions defined in the Resolution.

The amount of regulatory funds set on the basis of these rules, in other words, the regulatory amount fund, is the base to confront it the total capital requirement and internal capital.

2.1. Regulatory capital as total capital requirement

In an attempt to define regulatory capital (RC) one should also consider it from the point of view of the total capital requirement, calculated on the basis of rules in the KNF Resolutions from 380/2008 to 386/2008. The KNF resolutions, being the Polish equivalent of the New Capital Agreement (NCA, Basel II\(^{12}\)), include the essence and major assumptions of the NCA, additionally introducing their own special solutions. The basic idea of Basel II is retained, i.e. the so-called three pillars. According to this idea Pillar I is responsible for regulatory capital.

Within Pillar I the bank is obliged to calculate capital to cover three major risks: credit, operational\(^ {13}\) and market.

In the case of a significant scope of trade activity the bank calculates capital requirements on account of:

- credit risk,
- market risk, including:
  - currency risk,
  - goods price risk,
  - securities capital price risk,
  - debt instruments price special risk,
  - interest rate general risk,

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\(^{12}\) In June 2004 Basel Committee published the final version of NCA.

\(^{13}\) It is worth mentioning that operational risk is not fully included in Pillar I of Basel II.
• settlement risk, delivery risk and contracting parties’ credit risk,
• exceeding the limits of involvement concentration and limits of large involvement,
• exceeding the threshold of capital concentration,
• operational risk.
Banks whose trade activity is not significant calculate capital requirement on account of the following kind of risks:
• credit risk,
• operational risk,
• market risk, including:
  – currency risk,
  – goods price risk;
• exceeding the limits of involvement concentration and limits of large involvement,
• exceeding the threshold of capital concentration.
In order to calculate the capital requirement on account of three risks one may use:
• to measure the credit risk:
  – standard method,
  – advanced methods based on internal ratings, including: the basic model of Internal Rating Based Approach Foundation – IRBF or advanced Internal Rating Based Approach Advance IRBA;
• to measure market risk:
  – standard method,
  – method of VaR model (value at risk);
• to measure operational risk:
  – basic method: Basic Indicator Approach – BIA,
  – standard method Standard Approach – SA,
  – advanced method Advance Measurement Approach – AMA.
However, Pillar I does not cover all risks that appear in banking. Risks not fully included in Pillar I are: securitisation, residual and operational risks. There should be a question asked here: And other important risks? The answer is as follows: all important banking risks should be covered by capital within the NCA Pillar II, i.e. internal capital.

2.2. Regulatory capital as internal capital
The NCA Pillar II wants banks to work out Internal Capital Adequacy Assessment Process – ICAAP. The definition of internal capital accepted by the Polish supervisor determines the capital amount which secures all important kinds
of risk identified in banking, also risks resulting from the changes in business environments. This capital is to reflect the real business risk of a given bank. Its value should cover the level of unexpected losses assumed by the bank within a definite time horizon. The internal capital assessed by the bank is secured by regulatory funds. The Polish supervisor allows the following methods of internal capital assessment:\(^{14}\):

1) **method based on minimal capital requirement**, on the basis of which the amount of required internal capital is calculated. This method is based on the assessment and estimation of the amount of additional capital to cover risks partly or as a whole which are not secured by the total capital requirement;

2) **method of component blocks** to enable to identify all important risks identified in banking. To cover every important risk, capital is estimated with consideration to the results of stress tests, to be done taking into account the most negative but at the same time most probable scenario. Internal capital is the sum of individual capitals covering a given risk;

3) **method of reference of the current level of internal capital (top-down method)** consists of referring maintained internal capital in a given period of time to individual risks identified in banking. In other words, the total amount of capital is “divided” in order to cover individual risks and at the same time, limits the risk generating activity. If the level of risk generated by a given activity is fully covered by the referred capital, there is no necessity to undertake action ensuring capital adequacy. In the case of the lack of capital, the capital base maintained by the bank should be increased or activity limited in order to reduce the level of risk down to the adequate level;

4) **economic capital models which**, in order to calculate the internal capital, used advanced quantitative methods allow us to estimate the so-called capital at risk – CAR, also referred to as economic capital – EC or risk adjusted capital – RAC. Economic capital means the amount of capital that covers all the unexpected with an assumed level of tolerance to risk in a definite time horizon. The measurement of risk capital is practically based on VaR methodology, which measures the value of possible unexpected loss to suffer on account of a given risk or activity.

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Their own regulatory funds should exceed the amount of internal capital, which is calculated on account of all important risks identified in banking. As an example, the following list of risks covered by internal capital may be given:

- credit,
- market,
- operational,
- business,
- capital,
- strategic,
- reputation,
- business cycle,
- country,
- insurance
- and others.

It is worth mentioning that the list of risks secured by the total capital requirement is decisively shorter than the list of risks covered by internal capital. It should also be said that calculating the internal capital, the bank uses its own internal models to calculate it, unlike the total capital requirement calculation whose methods are imposed top-down.

A broader explanation should be given to the question of economic capital, which is sometimes mistakenly identified with internal capital.

### 3. Internal capital versus economic capital

Economic capital (EC) is defined as an indispensable amount of capital for every transaction which will cover the economic risk connected to it, assuming that this capital was calculated on the basis of the internal bank method.

Economic capital is a measure of risk indicating the volume of expected losses. In other words, it reflects the reduction of the value of profit from a given transaction, organisational or business unit on account of expected losses which are treated as a cost of running activity and should be secured by purpose provisions, and in particular by the generated income. Economic capital most often covers the following risks:

- credit,
- market,
- operational,
- business.

It should be also stressed that economic capital does not cover losses suffered in extreme situations. The level of economic capital is calculated mostly on the
basis of VaR methods or EaR (Earning at Risk) and is determined by basic parameters of quantitative methods, i.e. confidence bracket (tolerance level) and time horizon. The indicated parameters have a significant impact on the economic capital. The higher the confidence level, the higher the value of capital. The longer the time horizon (in the case of credit risk), the more likely bank bankruptcy, and higher the value of capital. It must be said here that the time horizon for market risk calculation is significantly shorter (one or two days) than in the case of credit risk (most often annually). In order to calculate the total value of capital, it is indispensable to accept the identical time horizon for calculation of capital to cover all measurable risks.

Economic capital is sensitive indeed to slight changes in the confidence level: e.g. at the level of 99.00% the amount of capital can be twice lower than at the level of 99.50%. It should be stated that the decision over the above mentioned parameters for calculation of economic capital is a strategic decision to be approved by the highest bank authorities. Its significance results from the fact that the level of economic capital is determined by the so-called “risk appetite,” which in turn takes into account not only the owner’s expectations (the appropriate rate of return), but also those on the part of the supervisor (capital adequacy and financial stability) and investors together with rating agencies (insolvency risk). The risk appetite determines the size of risk the bank is able to accept. The level of appetite is reflected among others by the bracket of confidence, which decides the amount of the rating level given to the bank: the higher the bracket of confidence, the higher the rating, e.g. AA rating requires a level of tolerance of 99.97%.

In conclusion, in order to determine the bracket of confidence for EC calculation, the bank authorities should first determine the risk appetite, which results in the earlier calculation of the target level of capital which is be able to accept this risk. It should be remembered, however, that hedging against unexpected losses does not depend only on the level of their own funds, but also on the revealed profitability and liquidity of assets.

The calculated value of economic capital forms basis for determination of the total economic capital on a banking scale. The total value may be calculated through:

- nominal sum of individual economic capitals,
- accounting for the effect of diversification between individual risks in the sum.

In the first case, it is assumed that extreme events can appear simultaneously, i.e. that all risks secured by economic capital are fully correlated with one another. In other words, the black scenario appears simultaneously in all measured risks.
The other approach draws different assumptions: the measured risks are not interdependent, so extreme events do not occur simultaneously in all measured risks (the black scenario will occur in the case of market risk and it will not occur at all or on a definitely smaller scale in the case of credit risk). It is therefore necessary to account for the correlation between different risks.

In practice correlation is considered after the process of risk aggregation from the lowest level at which economic capital is calculated, e.g. the level of transaction, up to the highest level: most often the level of the entity (bank). Practice also indicates that risks correlation is most often estimated through the linear correlation ratio (table 1 presents an exemplary correlation matrix). The basic objection against this method concerns the assumption that multidimensional decomposition is usual, which does not have to be practically significant. Besides, correlation between risks are determined on the basis of historical data, which in turn does not have to comply with the current risk profile. Additionally, used time series of data may not encompass a full business cycle with its scope, which as a consequence may result in an under estimation of the capital and ultimately to no capital adequacy of the bank. However, there are three facts in favour of the use of the variance/covariance method. First, it is an intuitive method and easy to interpret (results can be easily and logically explained). Second, calculation algorithm is not complicated and third, the total (aggregated) amount of the capital is determined analytically from the capital securing individual risks accounting for mutual correlations.

The final reliance level is estimated and accepted for calculation on the basis of expert knowledge. The degree of reliance should be subject to constant monitoring or verification if appropriate premises occur.

<table>
<thead>
<tr>
<th>Credit risk</th>
<th>Market risk</th>
<th>Operational risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0,75</td>
<td>0,5</td>
</tr>
<tr>
<td>0,75</td>
<td>1</td>
<td>0,25</td>
</tr>
<tr>
<td>0,5</td>
<td>0,25</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: own material.

A non-standard method to be used in risk aggregation are copula functions\textsuperscript{15}. The use of copula functions enables us to eliminate the deficiency to be found in the variance-covariance methods – the deficiency concerning the assumption of

\textsuperscript{15} Copula – maths copula is a multidimensional decomposition on a unit square (unit cube for three dimensions) with uniform edge decompositions.
the “normality” of multidimensional decomposition. The copula functions, derived from the family of the Archimedes functions, possible to use in capital markets data analysis are: Copula Gumbela, Copula Franka, Copula Ali-Mikhail-Haq.

The use of copula functions enables us to eliminate the assumptions concerning the forms of loss decompositions. With an appropriately chosen copula form it is possible to definitely better approximate the behaviour of the so-called “tail” of loss decomposition (i.e. determination whether the “tail” is wide or narrow). Unfortunately, the method has its deficiencies that are manifested mainly in a higher degree of algorithm complexity (simulation becomes indispensable). Additionally, the obtained amount of capital may be sensitive to the chosen copula form, due to which the results are not intuitive and it may be difficult to explain them. Some difficulties may refer as well to the availability of data, on the basis of which the method calibration is made.

It conclusion it should be said that the calculation of internal capital based on the model of economic capital, most common in commercial banks in Poland may bring an "incomplete” effect. Because of the use of among other VaR based methods for calculation of economic capital, the obtained value of capital may cover only these significant risks in banking that are to be measured through quantitative methods. The definition of internal capital indicates that this capital can cover (secure) all significant kinds of risk identified in banking activity. The assumption that internal capital is equal to economic capital will not always appear to be true.

The assumption that both capitals are equal results in the fact that one does consider capital to cover risks difficult to measure or ones that the bank is not able to measure. The author claims that economic capital measured on the basis of quantitative methods should be increased by the capital to cover all other significant risks identified in banking.

It seems that the capital reflecting the amount of capital to cover remaining significant risks the bank is not able to measure through quantitative methods should consist of the following elements:

- capital to cover significant risks difficult to measure estimated with non-quantitative methods, e.g. method close to the estimation of capital to cover interest rate risk in the bank portfolio, expert method or another simplified method. For this purpose, one can also use a method based on qualitative and non quantitative estimation of the risk level – when the risk level exceeds the internally determined quality thresholds, expert estimation of the amount of capital can be made (e.g. using the internally drawn up and tested matrix of transition). For instance, capital
to cover capital risk\(^{16}\) can be estimated as amount of the growing cost of obtaining additional amount of capital in the pessimistic scenario concerning interest rates, availability of capital sources of the time flow,

- **capital covering remaining significant non-measurable risks** whose direct measurement is not possible. The level of such capital can be estimated, for instance, through percentage dependence of its level from risk weighted assets or balance sums, interest results or gross results etc., with the capital calculation base to reflect most credibly its connection with the risk for which the capital has been estimated.

Summing up all the considerations it should be stated that internal capital should be the sum of economic capital calculated on the basis of non-quantitative methods e.g. expert or qualitative and economic capital estimated for the remaining significant risks. The results from the presented deliberations show that economic capital is a component of internal capital.

It should be mentioned here that internal capital should secure the bank against the effects of extreme occurrences. In the author’s opinion losses from extreme occurrences are not covered from economic capital. In this connection it is necessary to account for the amount of internal capital for the results of the so-called stress tests carried out by the bank. Stress tests of all the identified significant risks are the basis for evaluation of the potential effects of the impact of unfavourable changes in the economic environment on the financial situation of the entity. As a result they offer a reply to the essential question of whether or not the estimated level of internal capital ensures full security to bank activity. Stress tests are litmus paper to indicate the banks’ stability in extremely unfavourable conditions. Again in conclusion, stress tests are indispensable tools to dynamically evaluate the degree of demand for additional capital, they complete capital measurement methods when the limited scope and amount of data reduces the predictive power of internal models applied by the bank.

**Thus, internal capital is the sum of economic capital covering significant risks difficult to measure, calculated on the basis of non-quantitative methods, capital covering remaining significant unmeasurable and capital (the so-called buffer capital) covering losses incurred from extreme situations.**

Comparing regulatory capital, understood as the total capital requirement and internal capital it is clearly seen that these are two completely different

\(^{16}\) Capital risk defined as risk resulting from the lack of adjustment of own funds quality to the scale and complexity of banking activity or bank difficulties to obtain additional capital, especially when this process must be carried out quickly and in time of unfavourable market conditions.
categories, concerning only the same bank. Below, table 2 presents the major differences between both capitals.

Table 2. Internal capital versus total capital requirement

<table>
<thead>
<tr>
<th>Total capital requirement</th>
<th>Internal capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulated by Basel II Pillar I</td>
<td>Regulated by Basel II Pillar I</td>
</tr>
<tr>
<td>Secures against three kinds of risk: credit, operational and market</td>
<td>Secures against all significant risks identified in the bank activity</td>
</tr>
<tr>
<td>Estimated by methods imposed by Basel II</td>
<td>Estimated by bank internal methods (own models)</td>
</tr>
<tr>
<td>Corresponds to the amount of capital requirement determined by solvency ratio</td>
<td>Corresponds to internally estimated amount of capital</td>
</tr>
<tr>
<td>Makes sum of requirements of individual risks (does not account for the effect of diversification)</td>
<td>Makes sum of economic capital (accounting for effect of diversification or not), capital to cover other significant risks as well as buffer capital</td>
</tr>
<tr>
<td>Calculated with the top-down set level of confidence (99.9%)</td>
<td>Calculated with the internally set confidence brackets, depending on the level of risk appetite and expected external ring</td>
</tr>
<tr>
<td>Used as buffer of insolvency and stability of the financial system</td>
<td>Used to optimise the use of available own funds (including also balance capital)</td>
</tr>
</tbody>
</table>

Source: own material.

Being aware of what the bank capital is and knowing its most important kinds, it is worth presenting measures of its effectiveness and mechanisms to raise this effectiveness. The above issues will be included in the following article.

Bibliography

1. Phenomenon of coopetition

One of the new phenomena observed in recent years in the area of strategic management is the creation of corporate coopetitive relations. The notion of coopetition itself has not been explicitly defined yet\(^1\). Diverse comprehension of the phenomenon of coopetition results first of all from different treatment of this phenomenon: from the most general to very precise quests. Coopetition may be referred to as a system of simultaneous streams and interdependent competitive and cooperative relations among competitors maintaining their own organisational identity.

Corporate coopetition belongs to poorly recognisable phenomena in management sciences. We know even less about the factors making competitors cooperate and compete at the same time. This article aims to present the sectoral and corporate factors making companies enter into coopetive relations as well as to propose the matrix of coopetition: the instrument helpful in both determination of the character of coopetition and coopetition planning work. The author’s reflections and conclusions are a result of world literature analysis, her own surveys, carried out among managers in several dozen companies which are planning or presently creating coopetitive relations and include her own personal business experience.

Coopetition belongs to an extraordinarily complex type of relations between companies. It is a result first of all of the simultaneity of occurrence of competition and cooperation between the involved entities. This paradox results in the fact that at least two independent parties cooperate with each other in order to derive common benefit, however they do not stop being competitors\(^2\). The complexity of cooperation and competition phenomena results in the simultaneous application of two contradictory kinds of logic of corporate relations which consist of trust

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(common interests) and conflict (conflict of aspirations, confrontation). Thus, there is a paradoxical situation in which the competing parties must trust each other, become involved in cooperation or share information, experience and cooperation risk. Thanks to this, both parties can integrate their efforts to gain the intended benefits and implement individual strategic goals.

In coopeitive relations, despite a simultaneous occurrence of competition and cooperation, there is an important feature of coopeition, i.e. divisibility of their occurrence. The parties clearly determine areas in which they compete, as well as areas of cooperation. The divisibility of competitive and cooperative relations lets the companies effectively coordinate their activities within both coopeition and their own development. In the case of cooperative connections, the responsibility for the coordination of activities directly connected to cooperation may rest with the involved parties or the unit integrating them (e.g. industrial associations or administrative supervising institutions)3.

In the coopeitive relations streams of cooperation and competition are considered in a comprehensive way accounting for the context of the creation of competitive cooperation and the consequences for competitive and cooperative relations between the parties in question. Cooperation between competitors often intensifies their competitive activities (e.g. coopeition between TP S.A. with Digital Canal +). Enhanced competitive activities between parties necessitate closer cooperation. Hence, the cooperative system possesses a dynamic character.

The complexity and dynamism of corporate coopeition generate considerable transaction costs within the whole system. It results first of all in the necessity for security systems, both in the area of cooperation and actions that are definitely competitive. In the cooperative area, security systems result in contract stipulations, the form and course of mutual relations as well as the acquisition of specific purpose assets. Security systems are essential as there is a probability of parties’ opportunist behaviours, attempts to deceive or to evade responsibility4. As a result the relations are characterised by a narrower area of cooperation and higher transaction costs. The maintenance of the stream of competitive relations increases the danger of the occurrence of conflict situations between the parties, which besides opportunism results in free riding and limited rationality in developing mutual coopeitive relations5.

2. Sectoral and corporate factors to determine coopetition between companies

In connection with the complexity of coopetitive relations there exists the question of factors which make direct competitors cooperate. The key factors for the creation of coopetitive relations are sectoral and corporate (internal). The significance of these factors results from the direct character and power of influence on companies, which as a result enable companies to develop competitive cooperation.

Among the sectoral factors one should recognize the following as significant: technological advancement, susceptibility to globalisation, the intensity of competition, sector structure, concentration ratio, the pace of sector growth, sector profitability, sector entry barriers, supply security, threat of appearance of substitutes and the age of the sector. The sectoral factors also have their internal structure of significance of impact on companies enduring them to coopetition. The susceptibility to globalisation, technological advancement and higher intensity of competition are recognised as fundamental factors. According to K. Ohmae, cooperation between competitors in the sectors susceptible to globalisation is one of the vital elements of their development strategy. The importance of competitive cooperation is confirmed by research carried out by P. H. Dickson and K. M. Weaver, who indicated the growth in significance of coopetitive relations in the process of globalisation of sectors. Companies in the sectors susceptible to globalisation are forced to cooperate with direct competitors due to, among others, the necessity of the abrupt extension of their business scale and cost reduction. Cost reduction is also becoming a motive of the creation of competitive cooperation in the technologically advanced and hyper-competitive sectors. Dynamic technological progress involves huge spending on research and development. It is a characteristic fact that companies spend for R&D from 35% of sales income and upwards. Such a significant financial burden causes among others the necessity of its return through the sales scale and fiercer competition in the chase for the return of incurred investment outlays in a shorter and shorter period.

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time. Research carried out by R. M. Guidice, A. Vasudevan and G. Duysters proves a strong correlation between the intensity and changes in technology and companies inclination to coopetition\(^9\).

Hyper-competitive processes and phenomena force competitors to implement certain behaviour and they set tangible organisational requirements\(^10\). The complexity of a hyper-competitive environment, the aggressiveness of rivals’ attacks, the permanently changing market game principles, as well as high organisational demands set for companies caused a considerable rise in companies’ interest in coopetition relations\(^11\). Coopetition has become an important determinant of the successful implementation of strategies in hyper-competitive sectors. It reduces, to a large extent, business risk in this unstable and turbulent environment.

Observations made by J. Cygler indicate that in the sectors characterised by a significant susceptibility to globalisation, technological advancement or hyper-competition hallmarks the level of occurrence of coopetitive relations is high\(^12\). Whereas, the sectoral factors of mediocre impact on the creation of corporate coopetition are: sector structure, sector concentration ratio, sector pace of growth, sector profitability, entry barriers and supply security. The value of the majority of these factors depends on the sector of the life cycle. The positive correlation between the occurrence of these factors and the inclination of competitors to coopetition is observed in the case increasing sector complexity, its insecurity and turbulence, sector concentration ratio, fierceness of competition, rise in costs of entry and operation in the sector and a shift to the more attractive strategic group. It has been noted that in the initial phase, the universality of coopetitive relations is mediocre, nevertheless showing a strong rising trend. The highest level of coopetition occurs at the turn of the phases of growth and maturity. It results mainly from the opportunity to gain access to specialised assets which are to complete competitors’ innovations and become accelerators of market and


\(^12\) J. Cygler, Kooperencja przedsiębiorstw, (Corporate coopetition) Czynniki sektorowe i korporacyjne (Sectoral and corporate factors), Ed. SGH, Warszawa 2009.
financial success\textsuperscript{13}. The last period of the sector life cycle sees the relatively lowest level of coopetition\textsuperscript{14}.

Besides the sectoral factors also external factors, which encourage competitors towards competitive cooperation, have been analysed. Corporate factors (internal), which have been taken into consideration, include a number of areas of the competitors’ activities, though their scope is limited. It is a result, first of all, from the nature of coopetition, as well as the necessity to separate streams of competitive and cooperative relations.

The most important corporate factors are: complementarity of resources, convergence of goals and corporate strategies, company size (symmetry), compatibility of organisational cultures and structures, coopetitors’ reputation, system of relations with other competitors, as well as the skill to cooperate with other competitors. Like the sectoral factors, corporate factors are characterised by an internal structure of essence. Among all the evaluated factors only complementarity of resources is regarded as the key factor. It reflects the extent to which the resources and skills of the involved parties generate higher benefits than in the case of individual business\textsuperscript{15}.

Among complementary resources there are strong synergy relations which give the result in the fact that the layouts of these resources within coopetitive relations are more valuable and not to be followed by other competitors\textsuperscript{16}. The complementarity of resources in coopetitive relations is due also essentially to other factors: the significance of complementary resources and the concentration of control over resources. Companies are more interested in stable relations with competitors if the object of cooperation is common use or transfer of complementary resources of strategic significance for their development. M. Zineldin treats the possession of complementary resources by the parties as prerequisite for successful coopetitive relations\textsuperscript{17}. These resources are becoming the basis for the development of new products, services or technologies, building the foundation for the competitive advantage of the involved parties.


\textsuperscript{14} J. Cygler, Kooperencja przedsiębiorstw a cykl życia sektora (Corporate coopetion and sectoral life cycle), „Studia i Prace Kolegium Zarządzania i Finansów” Zeszyt Naukowy Nr 90, SGH, Warszawa 2008 pp. 60–71.


The concentration of control over complementary resources is equally important. Competitors are vitally interested in the cooperation, when the object of cooperation includes the resources that cannot be acquired from different sources or the acquisition of which is very difficult. Limited access to complementary resources makes the coopetition between companies stable and the involved parties are not interested in any opportunist actions. Even more significance is given to indivisible resources whose acquisition is unprofitable or simply impossible.

Corporate factors of mediocre significance are: convergence of interests, strategies and organisational cultures, as well as reputation. Their significance is connected to the scope of cooperation and competition between the parties and the quality of direct contacts. Coopetitive relations are frequently acceptable with a considerable convergence of strategic factors and a divergence of cultural factors at the same time. It is much more difficult to manage coopetition in the opposite situation.

3. **Sectoral coopetitive potential and corporate coopetitive potential**

Taking into account the sectoral and corporate factors affecting coopetition, their essentiality and intensity of occurrence, a model has been constructed to evaluate the sector coopetitive potential and corporate coopetitive potential.

Sectors have their own characteristics resulting from the value configuration of their factors. The occurrence of different values of sectoral factors results in the fact that the sectoral environment encourages companies in a different way to coopetition. The coopetitive potential of the sector determines the sectoral factors degree of intensity influence on a competitors’ decisions to create coopetitive relations. Coopetitive potential testifies to the essentiality of coopetitive relations for the survival and development of enterprises under the conditions of sector environment.

The measurement of the sector coopetitive potential is carried out with the use of sectoral factors which affect corporate decisions on the creation of coopetitive relations, as well as the significance of these factors. Moreover, the assessment refers to the intesity of occurrence of sectoral factors with consideration to the kind of correlation between individual factors and corporate coopetition inclination. In the accepted scale, 1 point is minimal evaluation, while 5 points are granted when the intensity of occurrence of a given factor maximally effects the corporate decision concerning coopetition. Table 1 presents the scheme of the potential coopetitive sector.

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Some sectoral factors are complex in character, which necessitates the analysis of their components: subfactors. Because of the comparable impact of subfactors on the general assessment of sectoral factors for the purpose of the transparency of analysis it was assumed that the value of sectoral factors is equal to an arithmetic average of all its components (example: of sector susceptibility to globalisation).

The analysis of value of individual sectoral factors influencing the coopetitive decisions of companies enables us to evaluate not only the general coopetitive potential of the sector but also its internal structure. The results of the analysis form the basis to determine goals and scope of competitive cooperation.

The outline of evaluation of sector coopetitive potential presented in Table 1 enables to estimate the degree of intensity of impact of sectoral factors in terms of numbers. The coopetitive potential is to calculate via the following formula:

$$PK_s = \sum_{i=1}^{n} w_i \cdot \frac{\sum_{j=1}^{k} o_{ij}}{k},$$

where:
- $PK_s$ – sector coopetitive potential,
- $i$ – other sectoral factor,
- $w_i$ – factor weight $i$,
- $j$ – component subfactor of the sectoral factor $i$,
- $o_{ij}$ – value of estimation of a component subfactor of factor $i$,
- $k$ – number of component subfactors of sectoral factor $i$.

Considering the above formula, it should be stated that the values of coopetitive potential of sector $PK_s$ are included in the bracket $(20\%, 100\%)$. The border between a high and low sector coopetitive potential is the value of $60\%$. The high value of sector coopetitive potential testifies to high costs of running businesses in the sector. Growing business costs result in the fact that companies are forced to create coopetitive relations. The higher the costs of sector coopetitive potential, the stronger the impact of sectoral factors on decisions about coopetition made by companies.
Table 1. Criteria of evaluation of sector coopeitive potential

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Weights&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Evaluation Scale</th>
</tr>
</thead>
</table>
| Technological advancement<sup>b</sup> | 3                   | **1** Intensity of R&D spending is lower than 0.7%. Low technology sectors.  
**2** Intensity of R&D spending within bracket: (0.7%, 1.5%) Low and medium technology sectors.  
**3** Intensity of R&D spending within bracket: (1.5%, 5%). Medium and high technology sectors.  
**4** Intensity of R&D spending within bracket: (5%, 10%). High technology sectors.  
**5** Intensity of R&D spending higher than 10%. Very high technology sectors. |
| Intensity of competitive       | 3                   | **1** Sector in which competitive advantage is durable (several dozen years), market game rules are known and stable, no aggressive actions, only co-existence.  
**2** Sector in which competitive activities are predictable and of lowered aggressiveness. Advantage is durable (even up to 10 years).  
**3** Sector of mediocre level of competition. Advantage is predictable and lasts a few years.  
**4** Sector of strong competition. Competitive advantage lasts about one year. Aggressive competitive actions.  
**5** Hyper-competitive sector in which market game rules are unexpectedly changed. Competitive advantage lasts from a few weeks to a few months. |
| Susceptibility to globalisation | 3                   | **1** Integrated sector spreads throughout the country.  
**2** Integrated sector spreads over the region of part of the continent.  
**3** Integrated sector spreads over countries of the continent.  
**4** Integrated sector spreads over the Triad countries.  
**5** Integrated sector spreads over most countries of the globe, including the Triad countries. |

Value of factor II below 20%.  
Value of factor II within bracket: (20%, 40%).  
Value of factor II within bracket: (40%, 60%).  
Value of factor II within bracket: (60%, 80%).  
Value of factor II more than 80%.  
Value of factor TNI below 20%.  
Value of factor TNI within bracket: (20%, 40%).  
Value of factor TNI within bracket: (40%, 60%).  
Value of factor TNI within bracket: (60%, 80%).  
Value of factor TNI more than 80%. |
<table>
<thead>
<tr>
<th>Criterion</th>
<th>Weights</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sector structure</td>
<td>2</td>
<td>Sector structure is very transparent,</td>
<td>Sector structure is transparent, 2–3</td>
<td>Average structure of the sector (4–6</td>
<td>Complex sector structure, (there are</td>
<td>Very complex structure: multitude of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>no strategic groups.</td>
<td>strategic groups. Mobility barriers are</td>
<td>strategic groups). Average mobility</td>
<td>10 strategic groups). Mobility barriers are high. Shift from one group to another is very difficult.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>low. It is easy to shift from one group</td>
<td>barriers. There are shifts between</td>
<td>high barriers. Shift from one group to another is very difficult.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>to another.</td>
<td>groups, but not without difficulties.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concentration</td>
<td>2</td>
<td>Strongly concentrated sector. There are</td>
<td>Sector is very much dispersed, no clear</td>
<td>Dispersed sector, leaders appear, but</td>
<td>Average concentration of the sector. There are several dozen companies in the sector with comparable market shares.</td>
<td></td>
</tr>
<tr>
<td>ratio</td>
<td></td>
<td>only 2–3 companies.</td>
<td>leaders. Five largest companies have</td>
<td>they do not have much advantage over</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>less than 20% market share.</td>
<td>others. Total share of the largest</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>five does not exceed 40%.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sector rate of</td>
<td>2</td>
<td>0 or negative rate of growth.</td>
<td>Lowered rate of growth.</td>
<td>Average rate of growth.</td>
<td>High rate of growth.</td>
<td>Very high rate of growth.</td>
</tr>
<tr>
<td>growth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rentowność sektora</td>
<td>2</td>
<td>Very low (0 or negative).</td>
<td>Low.</td>
<td>Average.</td>
<td>High.</td>
<td>Very high.</td>
</tr>
<tr>
<td>Entry barriers</td>
<td>2</td>
<td>Very low.</td>
<td>Low.</td>
<td>Average.</td>
<td>Increased, in some cases overcoming</td>
<td>Very high, overcoming exceeds capacities of individual companies.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>requires the competitors' cooperation.</td>
<td></td>
</tr>
</tbody>
</table>
### Table 1

**Criterion** | **Weights** | **Evaluation Scale**
--- | --- | ---
Supply security | 2 | 1. Very high. Every company has unlimited access to all resources.  
2. High. Companies can acquire resources, but there are additional costs in the case of acquisition of some strategic resources.  
3. Average. There are difficulties in the case of acquisition of strategic resources. It is possible to change suppliers, but it raises costs.  
4. Low. Part of strategic resources controlled by a few companies. There is a limited opportunity to change suppliers, but they will not deliver resources of similar quality.  
5. Very low. Majority of strategic resources under control of one or a few companies. The change of suppliers very difficult and costly. Some resources under control are unique.

Substitute threat | 1 | 1. Very little.  
2. Little.  
3. Average.  
4. Big.  
5. Very big.

Sector age | 1 | 1. Sector in the phase of ageing.  
2. Sector is in the phase of birth.  
3. Sector is in the phase of development.  
4. Sector on the border of the phase of growth and maturity.  
5. Sector is in the phase of maturity.

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*a* Factors distinguished and with their weight estimated on the basis of author’s interviews with managers from several dozen Polish and foreign companies which are planning coopetition or are in the course of coopetition with their competitors, and on the basis of literature.

*b* In criterion “technological advancement” the scale follows the OECD definition.

*c* Evaluation scale ascribed to this factor is not of monotonic character. The lowest level of coopetition is observed in the phase of ageing (last). The research proved that the highest level of coopetition is to be observed in the phase of maturity. Cf. J. Cygler, *Kooperencja przedsiębiorstw a cykl życica sektora (Corporate coopetition and sector life cycle)*, „Studia i Prace Kolegium Zarządzania i Finansów (Studies and papers of Collegium of Management and Finance)” no. 90, SGH, Warszawa 2009.

Source: own material.
Companies are aware of the complexity of their situation resulting from the sector determinants and that is why they are interested in coopetitive relations. In the case of the low value of the sector coopetitive potential, the significance of corporate competitive cooperation for their strategy is on the decline. It means that sectoral factors do not force companies to search for their own development through coopetitive relations. Despite low sector coopetitive potential, companies can opt for coopetition, however the specific character of these relations charged with higher transaction costs makes relations less profitable.

The durability of corporate coopetitive relations depends on the degree of the parties’ corporate adjustment which testifies to the coopetitive potential of companies. Corporate coopetitive potential is determined by the level of a competitors’ adjustment to corporate factors which enable them to create coopetitive relations. Thus, companies are not analysed individually and autonomously, the compatibility of rivals who decide to cooperate is the subject of this analysis.

The evaluation of corporate coopetitive potential is made through corporate factors that effect the decisions to choose the coopetitor as well as their weight. The evaluation refers also to the intensity of occurrence with consideration to correlations between these factors and the decision to choose the coopetitor. As in the case of sector coopetitive potential evaluation, the growing scale of 1 to 5 points was used. Table 2 presents the layout of evaluation of corporate coopetitive potential. There were also some corporate factors that showed structural complexity, which brought about the necessity of accounting for their component subfactors. Similar to the analysis of sector coopetitive potential analysis, the evaluation of complex corporate factors is the arithmetic average of their components.
Table 2. Criteria of evaluation of corporate coopetitive potential

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Weights</th>
<th>Evaluation scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resources complementarity</td>
<td>3</td>
<td>Resources are complementary within brackets: [0%, 20%].</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Resources are complementary within brackets: (20%, 40%).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Resources are complementary within brackets: (40%, 60%).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Resources are complementary within brackets: (60%, 80%).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Resources are complementary within brackets: (80%, 100%).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parties contributed insignificant and standard resources.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Majority of contributed resources of little significance for the parties.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Among the contributed resources there were few of strategic value.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Majority of desired (by parties) resources contributed to coopetition.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All necessary resources contributed. Also those resources contributed that could not be acquired in any other way by as a result of coopetition.</td>
</tr>
<tr>
<td>Convergence of goals</td>
<td>2</td>
<td>Parties’ goals are convergent within brackets: (0%, 20%).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parties’ goals are convergent within brackets: (20%, 40%).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parties’ goals are convergent within brackets: (40%, 60%).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parties’ goals are convergent within brackets: (60%, 80%).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parties’ goals are convergent within brackets: (80%, 100%).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Convergence in insignificant goals.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Convergence in goals of smaller significance.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Convergence of goals among which there were a few important ones.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Convergence of goals with domination of strategic ones.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Convergence of all strategic goals.</td>
</tr>
<tr>
<td>Convergence of corporate strategies</td>
<td>2</td>
<td>Strategic orientation considerably different from each other making cooperation hardly possible.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>There are substantial differences in the strategic orientation of companies, making cooperation difficult but not impossible.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parties aware of differences in strategic orientations, but with mutual involvement they believe in coopetition success.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Slight orientation differences concerning less significant issues.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The same strategic orientations. Quite convergent way of strategic thinking.</td>
</tr>
<tr>
<td>Criterion¹</td>
<td>Weights²</td>
<td>Evaluation scale</td>
</tr>
<tr>
<td>-----------</td>
<td>----------</td>
<td>------------------</td>
</tr>
<tr>
<td>Convergence of corporate cultures</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>There is a substantial disproportion between organisational cultures of the parties. They follow extremely different values and their behaviours exclude each other. Communication and cooperation are very difficult. There are numerous conflicts. Cooperation possible (though very difficult) with simultaneous contractual and organisational security measures. Very high transaction costs of the cooperation.</td>
</tr>
<tr>
<td>Parties originate from different national cultures.</td>
<td>Parties originate from different national culture ranges.</td>
<td>Parties may originate from different national culture ranges but from similar region, or different regions representing a similar kind of culture.</td>
</tr>
<tr>
<td>Criterion</td>
<td>Weights</td>
<td>Evaluation scale</td>
</tr>
<tr>
<td>-----------</td>
<td>---------</td>
<td>------------------</td>
</tr>
<tr>
<td><strong>Reputation</strong></td>
<td>2</td>
<td>There is a large disproportion of the parties’ reputation. There is a threat of unethical actions by a party of low reputation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>There is a substantial disproportion in the reputation of coopetitors. Cooperation is difficult and requires special contractual and organisational security measures.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reputation of the coopetitive parties is not asymmetric but differences are acceptable with contractual security measures.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Differences in the reputation of parties are slight and they do not cause trouble in cooperation with competitors.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Both parties enjoy a very good and durable reputation, and cooperation will make the reputation of the coopetitors even better.</td>
</tr>
<tr>
<td><strong>Corporate size symmetry</strong></td>
<td>1</td>
<td>There is a large disproportion in the size of the parties. There is a threat of takeover from one of the parties.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>There is a substantial disproportion in the size of coopetitors. Cooperation is difficult and requires special contractual and organisational security measures.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coopetition parties are not symmetrical, but differences between them are acceptable with contractual security measures.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Differences in the parties’ size are not large and do not cause serious trouble in the cooperation between competitors.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Both parties are symmetrical in size. There is no threat of takeover to either party.</td>
</tr>
<tr>
<td><strong>Organisational structure adjustment</strong></td>
<td>1</td>
<td>Organisational structures differ largely and make the cooperation of competitors hardly possible.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>There are substantial differences in organisational structures of the companies. They make cooperation difficult but possible.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parties aware of organisational differences believe in coopetition success with mutual involvement.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Differences in organisational structures are not large and refer to less important issues,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parties’ organisational structures are practically the same.</td>
</tr>
<tr>
<td><strong>System of relations with other competitors</strong></td>
<td>1</td>
<td>Parties belong to competing coopetitive networks and have different positions in them.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parties belong to competing coopetitive networks but have comparable positions in them.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parties belong to different coopetitive relations, but do not compete with each other.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parties belong to the same coopetitive network. There are differences in the parties’ positions in the network.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Parties belong to the same coopetitive network and have comparable positions in them.</td>
</tr>
</tbody>
</table>
### continued Table 2

<table>
<thead>
<tr>
<th>Criteriona</th>
<th>Weightsa</th>
<th>Evaluation scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to cooperate with competitors</td>
<td>1</td>
<td>Parts cannot cooperate with each other, contradictions revert to open conflicts.</td>
</tr>
</tbody>
</table>

---

*a Factors are distinguished and with their weight estimated on the basis of author’s interviews with managers from several dozen Polish and foreign companies which are planning coopetition or are in the course of coopetition with their competitors, and on the basis of literature.

*b In the case of factor connected with the system of relations with other competitors, values lower than average were considered, when the parties belong to competing networks. Evaluation higher than average are given when parties belong to the same coopetitive relations. Average value is given when parties belong to different networks of coopetitive relations which do not compete against each other or when the do not belong to any networks.

Source: own material.
The evaluation of corporate coopetitive potential presented in Table 2 enables us to estimate the adjustment level of competitors in terms of numbers. Corporate coopetitive potential is calculated on the basis of the formula:

$$PK_p = \sum_{i=1}^{n} w_i \cdot \frac{\sum_{j=1}^{k} o_{ij}}{k},$$

where:

- $PK_p$ – corporate coopetitive potential,
- $i$ – another corporate factor,
- $w_i$ – factor weight $i$,
- $j$ – component subfactor of corporate factor $i$,
- $o_{ij}$ – value of estimation of component subfactor of corporate factor $i$,
- $k$ – number of component subfactors of corporate factor $i$.

The value of the coopetitive potential of company $PK_s$ is included in the brackets [20%, 100%]. The border between a high and low sector coopetitive potential is the value of 60%. The high value of corporate coopetitive potential testifies to the durability of cooperative relations between competitors. Thanks to this, coopetitive relations will generate lower transaction costs resulting from strategic and cultural differences of the involved parties. Companies are interested vitally in choosing coopetitors, the cooperation with whom will require a relatively low level of transaction costs. That is why, if possible, companies will tend to choose the competitor whose cooperation will incur the relatively lowest costs.

However, companies cannot always afford to choose the coopetitor with a high coopetitive potential. When the value of corporate coopetitive potential is low, cooperation between competitors become liable. In that case, coopetitors resign from further cooperation. Competitors will decide to cooperate with low coopetitive potential only when environmental factors force them to do so. Such decisions are most often taken by businesses in coopetitive sectors or when administrative instruments impose such activities.

4. The Coopetition matrix

Coopetitive relations may have diversified forms depending on the volume of the coopetitive potential of the competitors’ sector and on their coopetitive potential. Considering the value of sector coopetitive potential and corporate coopetitive potential, four basic kinds of determinants of coopetitive relations are to be distinguished. Figure 1 shows their matrix presentation.
In the situation where both the sector coopetitive potential and corporate coopetitive potential are low (square 1), competitors are not interested in cooperation. The lack of cooperation results, first of all, in the lack of strong sector stimuli which would threaten the competitors’ current development. Taking into account a high level of transaction costs to accompany coopetitive relations, the parties cannot see any reason for competitive cooperation if their strategic goals can be achieved with lower outlays.

In the case of growth in value of the sector coopetitive potential together with a low corporate potential (square 2) coopetition is unstable with competitive actions dominating. Competitors choose to cooperate due to large complexity in their sector. Coopetition is the a prerequisite for survival and development of the parties. Moreover, a low corporate coopetitive potential results in the lack of cooperation durability relations between rivals. They are treated as a necessary evil, burdened with very high transaction costs.

In the case of the high value of sector and corporate coopetitive potentials, coopetitive relations seem to be stable (square 3). The significance of competitive cooperation for the involved parties and the accomplishment of their strategies is considerable. It is effected by the high sector coopetitive potential. Companies are aware of the growing difficulties of self-reliant management in the sector. Thus, rivals are vitally interested in cooperation. The degree of coopetitors’ compatibility is high, which reduces the cost of competitors’ cooperation. Thus, there is a great chance to accomplish the objectives set by the parties.
Small sector coopetitive potential and big corporate coopetitive potential contribute to the conditions generating unstable relations with cooperation elements dominating (square 4). Small sector coopetitive potential indicates a minor significance of coopetitive relations for the corporate growth strategies. Companies are not directly threatened by the situation in the sector and may admit that the self-reliant management is beneficial to them. That is why their coopetition inclination is not big. While a large compatibility of competitors may appear to be an insufficient condition to develop competitive cooperation.

The presented coopetition matrix and structure of its variables provide us with a basis for research into coopetitive relation characteristics in the sector and the corporate context. The matrix shows the essence of complexity of coopetition as well as its dynamic character. The model may become an important instrument to examine coopetitive relations serving a thorough analysis of the factors influencing the creation and development of corporate competitive cooperation. At the same time, it may support the process of planning and control of corporate coopetition effects.

The original coopetition model is dynamic. It enables a coopetitive relations analysis on account of time changes in sector coopetitive potential and coopetitive potential of the involved parties. The research on corporate coopetition enables its evaluation from the dynamic perspective, the indication of development trends of these relations and the consequences of these actions.

The analysis of sectoral and corporate factors influencing decisions made by companies, whether or not, to create coopetition and building the matrix of coopetition would enable us to indicate the diversified significance of both determinant groups with a dominance of the sector elements. The major stimulant to create coopetitive relations is a complex sector situation, which enables companies to cooperate and compete at the same time. Whereas, corporate factors effect the stability of these relations.

Bibliography

Social reporting by enterprises operating in Poland: a review

1. Introduction

Enterprises should manage their business processes in such a manner which minimises the adverse impact of such activity on the environment and on society. The degree of an enterprise’s success depends largely on the quality of its contacts to the stakeholders, meaning any group the enterprise may directly get in touch with. Shareholders, employees, clients, suppliers, business partners and local communities are among the most important stakeholders. The definition commonly used by the European Commission is that socially responsible business is a concept whereby companies decide voluntarily to contribute to a better society and a cleaner environment, a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis.

The most dynamically growing type of investment activity is socially responsible investing. In the United States alone that type of investment is worth an estimated 2.7 trillion dollars, or more than 10% of the total market. In Europe, that value grew from an estimated 1 trillion euro in 2005 to 1.6 trillion euro or so in 2007. A Goldman Sachs investment bank report of 2007 showed that corporations that are socially responsible leaders report better stock market results by an impressive 25% on average.

More and more enterprises tend to screen their activity to measure its impact on the social sphere. Results of measurements are presented in reports produced specifically for that purpose or as supplements to mandatory financial reporting. Social reporting can be said to extend the scope of information disclosure for enterprises. That involves the release of data in areas that have no tradition of being presented to a wider audience, such as information on employment, products, assistance to local communities, or preventing or limiting environmental pollution.

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1 Jak można inwestować w akcje spółek odpowiedzialnych społecznie, „Gazeta Prawna”, 19 June 2008.
Such reporting should deal with socially responsible activities and irresponsible practices with an indication of the underlying causes\(^2\).

This article presents the author’s own evaluation model to apply in reviewing social reports and findings of his assessment of social reports presented by enterprises operating in Poland. The study was conducted to check the hypothesis that social reports prepared by enterprises in Poland are not exactly prepared to standard. They do not cover the complete scope, so a reader of such reports has no way of obtaining a clear view of the reporting enterprise’s activity or of its effects. Because the information the social reports convey is not objective readers do not feel such reports are reliable. Hardly ever are they written in a clear, comprehensible style, so they fail the criterion of communicativeness.

2. What is social reporting

The history of social reporting is as yet relatively brief. First standalone non-financial reports appeared late in the 1980s, mostly dealing with environmental issues\(^3\). Over the past decade three factors combined to stir the development of social reporting. First, a growing number of international organisations launched initiatives to promote socially responsible activity and non-financial reporting. A first such memorable initiative was a “Global Reporting Initiative” of 1997, followed by a “Global Compact” programme launched in 1999 and considered to have been an important move, which raised the issue of human rights, employee rights and environmental protection. Some 50 world corporations signed it in 2000\(^4\). A further significant document was a “Green Paper” the European Commission released in 2001. The next major step in the development of social reporting was taken with the Triple Bottom Line concept, which implied, basically, that enterprises should present reports disclosing the economic, social and environmental aspects of activity\(^5\). Third, in recent years the belief spread that investments in companies operating with no socially responsible dimension to their activity carry with them much higher risk levels than in firms that


are good “citizens”\textsuperscript{6}. The growing popularity of non-financial reporting reflects developments in the business environment and beyond.

The most common tool now applicable in producing social reports is a set of Sustainability Reporting Guidelines developed by a Global Reporting Initiative (GRI). The guidelines, first officially released in 2000, are a comprehensive set of standards organisations can apply in the process of voluntary communication of their economic, social and environmental performance. The GRI was initiated in 1997 by a Coalition of Enterprises for an Environmentally Responsible Economy (CERES) in cooperation with coordinators of the \textit{United Nations Environment Programme} (UNEP)\textsuperscript{7}. The GRI Sustainability Reporting Guidelines are the effect of more than three years of cooperation of a host of non-government organisations, corporations, consultants, representatives of academic milieus and business organisations. The GRI itself declares its vision is to obtain sustainability reporting to become as commonplace and comparable an activity as financial reporting\textsuperscript{8}. These are the most complete and credible guidelines, and they have been recognised as such by stakeholders in many enterprises all over the world. Next to the guidelines of universal character, the GRI developed a number of procedures to reflect conditions specific to individual sectors.

Ten basic principles of the GRI reporting describe how a sustainability report should be structured. The principles themselves are organised into two groups:

1) Principles indicating topics which should be included in a report (material, stakeholder inclusion, sustainability context, completeness), and

2) Principles for ensuring the quality and appropriate presentation of reported information (balance, comparability, accuracy, punctuality, clarity and reliability)\textsuperscript{9}.

A report prepared on the above-discussed standards should be composed of several parts and should set out certain specific company data. First, it is necessary to present the organisation generally, its vision, strategy, as well as the main assumptions of its socially responsible policy. The organisation is also obliged to spell out its ethical principles and describe economic, environmental and social policies along with the related procedures, indicators and forecasts. The implementation procedure of the particular elements of the strategy must also


\textsuperscript{7} Sustainability: A guide to Triple Bottom Line reporting, Group of 100 Inc., 2004, p. 17.

\textsuperscript{8} http://www.globalreporting.org/Home, 22 February 2008.

be explained. Another requirement is that a social report includes a discussion of relations with stakeholder groups and with it, among other things, a description of the identification of stakeholder groups and of mutual communication with them. The guidelines indicate that a sustainable report should be organised into the following categories:

1) Vision and strategy – Strategy description of the organisation with a statement about the relevance of sustainable development included in it and, with also, a statement from the most senior decision-maker of the organisation.

2) Profile – presentation of the organisation’s activity profile, with a description of the published report.

3) Governance structure and systems – review of the organisational structure and the governance system.

4) Indicator of compliance of the content within GRI guidelines (GRI Content Index) – a table showing where the required GRI information can be found in a report.

5) Performance indicators – review of the effects of the reporting organisation’s activities in three groups:
   a) economic performance indicators (EC – direct economic effects) – covers financial results, market presence and economic impacts on certain stakeholder groups,
   b) environmental performance indicators (EN – environmental effects) – covers the following aspects: natural resource and energy consumption, pollutant emissions, environmental protection expenditures, etc.

Sustainability reports should be prepared to binding standards. Some of the most universal standards include: AA 1000, ISO 14001, EMAS, SA 8000. Special attention should be turned to the AccountAbility 1000 (AA 1000) standard. This standard was developed by the London Institute of Social and Ethical AccountAbility. It was prepared with the cooperation of numerous government organisations, non-governmental organisations and representatives of the business world from various countries. This standard describes the audit process, and

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11 Ibidem, p. 224.
focuses on the preparation of non-financial reports. The underlying idea of its authors is to support the activity of organisations in three aspects – economic, social and environmental, that is, to support comprehensively its sustainable development. This standard maps out the best practices in social reporting and auditing. The AA 1000 may be applied as a standalone tool or in conjunction with other standards in respect of social accountability of business. Moreover this standard is used in two ways: as a tool to evaluate the activity of organizations for its compliance with declared values and ethical principles, and as a set of guidelines describing methods of communication and governance in respect of social accountability. It supports the organisation in formulating strategic objectives and measuring the degree of their realisation. Audits are easier to carry out and the choice of tools for presentation of their activity performance is facilitated. It should be emphasised that the AA 1000 standard proved itself as an introduction to strategic analysis for commercial organisations but also for research institutes, non-governmental organisations, other non-profit bodies and entities12.

3. Social reporting evaluation model applied in Poland

The author’s social report evaluation model presented here was developed in cooperation with representatives of PricewaterhouseCoopers, ACCA, CSR Consulting, and Forum Odpowiedzialnego Biznesu13. Evaluation criteria are centred on features well-prepared social reports should possess. The following three basic criteria were adopted: completeness, trust, communication, each with weight assigned to them. The first two were given a weight of 40% each, the third 20%. Within each basic criterion specific criteria were identified, each assigned a maximum number of points a report of the evaluated enterprise can be granted14 (Table 1). Weights and points assignment was established on expert assessment.

The authors of the model recognised that a social report is good when it conveys such information that gives readers an idea of the activity of the organisation and its affects. Readers should obtain information on: what does the enterprise do, what is its area of activity, and what is the scope of the report in reference to the entirety of its operations. Completeness covers four areas:

- key effects of activity – presentation of the most important effects of the enterprise’s direct and indirect activities,

13 Prof. W. Orłowski, Prof. J. Hausner, Prof. W. Gasparski, Dr P. Rogala, J. K. Wygnański, and M. Panek-Owsiańska participated in the development of the evaluation model to apply to social reports.
14 www.raportyspołeczne.pl
• the most important stakeholders – identification and characteristics of the enterprise’s stakeholders,
• the corporate social responsibility strategy – presentation of commitment to the idea of the social responsibility of business by integrating it with the enterprise’s business strategy and a presentation of the strategy of corporate social responsibility,
• governance systems – presentation of the structure the enterprise’s activity in the context of sustainable development.

The authors of the model desire a social report to provide evidence showing that structures, processes and control mechanisms work in the enterprise such that make possible adequate communication of the effects of the enterprise’s activity. Readers of reports should be able to observe to what extent the mechanisms presented were submitted to tests. A good report should also quote opinions of external assurance providers. The trust criterion covers seven areas:
• governance processes – presentation of the ways of running the enterprise and senior management staff involvement in them,
• consultation with stakeholders – presentation of the manner of using feedback information from stakeholders, with the impact thereof on the enterprise operation,
• activities in respect of corporate social responsibility – presentation of actions in that area, with effects thereof,
• activity schedules – presentation of projected actions related to socially responsible business in the coming period,
• objectiveness of disclosure – presentation of positive and adverse aspects of the enterprise operation,
• indicators and measures – presentation of data related to corporate social responsibility,
• independent external verification – presentation of opinions external assurance providers on data set out in the evaluated report.

The authors of the model consider communication an important criterion of evaluation of social reports. Viewed from that angle a report should be comprehensible to its readers, that is, written in a style its recipients feel is clear to them? The evaluation also includes an assessment of the use of the media for communication. This criterion covers six areas:
• structure of the report – evaluating its underlying logic,
• clarity of communication – evaluating the intelligibility of the report,
• conciseness – evaluating the length of the report,
• availability – evaluating the way the report was made available to recipients,
• attractiveness of presentation – evaluating the appearance and innovative appeal of the report.
• environmental effectiveness – evaluating environmental solutions in producing the report.

A checklist to evaluate social reports with specific criteria is presented in Table 1.

**Table 1. Social report evaluation checklist**

<table>
<thead>
<tr>
<th>Completeness</th>
<th>Max</th>
<th>Value</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity of the enterprise, financial results, geographic location, data on employment</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Key direct and indirect economic, social and environmental performance indicators related to the activity of the enterprise</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corporate social responsibility strategy and commitments in that respect undertaken by the enterprise management</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reasons for picking the indicators used in the report</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corporate social responsibility process</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooperation with key stakeholders policy</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scope of the report</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial results disclosed in the social report</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reporting policy (report period covered, frequency reporting)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Placing corporate social responsibility reporting in the context of other reporting</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significance of corporate social responsibility and implications to enterprises of the application of sustainable development principles, along with dilemmas and related issues that want to be resolved</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>30</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Weight (40%) – max. 12 points**

<table>
<thead>
<tr>
<th>Trust</th>
<th>Max</th>
<th>Value</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internal aspects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The most important accomplishment in the period covered</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name of member of the directing body responsible for strategy implementation regarding corporate social responsibility</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact data of person responsible for the report</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**continued Table 1**

<table>
<thead>
<tr>
<th>Completeness</th>
<th>Max</th>
<th>Value</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate social responsibility driven governance systems integrated with the enterprise’s business strategy</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic risks and ways to mitigate them</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal audit processes</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>History of observance/disregard of regulations of the law</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inclusion of basic economic, social and environmental indicators and data, with indicators of impacts of material issues</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objectiveness of disclosure (both positive and adverse aspects of the enterprise operation are communicated)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**External aspects**

| Governance guidelines or standards applied (e.g., the AA 1000, sector-specific standards) | 2   |       |          |
| GRI reporting guidelines applied                                                 | 3   |       |          |
| Stakeholder identification process, with description of consultation with them   | 2   |       |          |
| Using feedback information from stakeholders                                      | 3   |       |          |
| Statements by external assurance providers:                                      |     |       |          |
| - scope                                                                         |     |       |          |
| - depth of insight – on site visitations and select location tests               |     |       |          |
| - interpretation of reported data/findings                                       |     |       |          |
| - indicating data/information not included in the report that could/should be considered | 3   |       |          |
| - independent comments regarding the goals of the enterprise and identified performance indicators |     |       |          |

**TOTAL**  
34

**Weight (40%) – max. 13.6 points**

<table>
<thead>
<tr>
<th>Communication</th>
<th>Max</th>
<th>Value</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Layout and appearance (graphic attractiveness of presentation)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intelligibility and adequate length (can readers understand the strategy of the firm based on the report?)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability to stakeholders (e.g., available electronically on the net, available in foreign languages known to the recipients, available in printed form, adapted for use by people with disabilities)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 4. Evaluation of social reports prepared by enterprises operating in Poland

The evaluation model discussed here was used to review social reports prepared by enterprises operating in Poland which signed up to take part in a second Social Reporting Contest in 2008. The following eleven enterprises joined the contest:

- Bank Millennium SA,
- BRE Bank SA,
- Cereal Partners Poland Toruń-Pacific Sp. z o.o.,
- Coca Cola HBC Polska Sp. z o.o.,
- Grupa Lotos SA,
- Grupa Nowy Styl,
- Hewlett-Packard Polska Sp. z o.o.,
- Kampania Piwowsarska SA,
- Polskie Górnictwo Naftowe i Gazownictwo SA,
- Polski Koncern Naftowy Orlen SA,
- ZF Polpharma SA.

This author performed evaluations of the social reports submitted by the enterprises that enlisted in the Contest. The results of the review are shown in the following table. To keep the findings confidential the names of the participating...
enterprises have been encrypted. The numbers assigned to the enterprises do not reflect the order in which they are listed above.

Table 2. A summary of findings of the evaluated social reports

<table>
<thead>
<tr>
<th>Criterion/Enterprise</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completeness</td>
<td>8.0</td>
<td>2.8</td>
<td>0</td>
<td>4.0</td>
<td>2.8</td>
<td>2.4</td>
<td>0.8</td>
<td>6.4</td>
<td>1.6</td>
<td>6.0</td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>6.4</td>
<td>2.8</td>
<td>0</td>
<td>3.6</td>
<td>4.0</td>
<td>2.0</td>
<td>2.8</td>
<td>0.8</td>
<td>7.6</td>
<td>2.4</td>
<td>5.6</td>
</tr>
<tr>
<td>Communication</td>
<td>2.4</td>
<td>2.5</td>
<td>0</td>
<td>2.25</td>
<td>2.5</td>
<td>2.0</td>
<td>1.75</td>
<td>1.75</td>
<td>3.25</td>
<td>2.25</td>
<td>3.25</td>
</tr>
<tr>
<td>Total</td>
<td>16.8</td>
<td>8.1</td>
<td>0</td>
<td>9.85</td>
<td>9.3</td>
<td>6.8</td>
<td>6.96</td>
<td>3.35</td>
<td>17.25</td>
<td>6.25</td>
<td>14.85</td>
</tr>
</tbody>
</table>

Source: own calculations.

The figures in table 2 show that only 18.2% of the reviewed social reports scored above 50% of the maximum number of points that could be scored. An impressive 54.5% of the reports obtained values under 30% of the maximum points possible to score. For the completeness criterion, only 18.2% of the reports scored above 50% of the maximum points possible to score. As many as 63.6% of reports gained under 30% of the maximum points possible to score. Under the trust criterion none of the reports gained values above 50% of the maximum points possible to score. A huge 82% of reports won under 30% of the maximum points possible. For the communication criterion, 63.6% reports gained above 50% of the maximum points possible. Just one report gained under 30% of the maximum points possible. The presented findings show that the fewest social reports reviewed met the trust criterion and most met the communication criterion.

A more in-depth evaluation of the social reports studied revealed that they presented neither any specific CSR strategy nor their policies regarding cooperation with key stakeholders, a shortage which affects their assessment for completeness. The reason the reviewed reports obtained such poor performance values for trust was mainly that they presented none of the basic economic, social and environmental performance indicators, said nothing about adverse aspects of the enterprise operation, failed to apply the requisite guidelines and standards in their preparation, and were not reverted to external auditors for verification. In respect of communication power, the weaknesses of the reviewed reports included poor intelligibility, limited availability to stakeholders, and no innovative approach in their preparation.

It has to be stated that the results of the report evaluation are unsatisfactory. The social reports submitted by Grupa Lotos SA and BRE Bank obtained the best scores. The fewest number of mistakes were made by them in those two reports. Still, the two were not fully prepared.
5. Highlights of evaluation

While the number of enterprises operating in Poland that submitted social reports reviewed by the author was small, the findings can nonetheless be generalised, as the number of enterprises publishing social reports in Poland is minute. In 2007, just 12 enterprises published complete social reports, 16 released environmental reports or social engagement reports. A good 30 enterprises had special sections on corporate social responsibility included in yearly reports.\textsuperscript{15} The situation in that respect did not much change in 2008. The conclusions resulting from the study were based on a detailed evaluation of the social reports. They refer above all to mistakes committed in their preparation. This author believes the most important of such mistakes include the following:

- most of the reports reviewed did not meet standards prescribed for social reports, such as AA 1000, ISO 14001, EMAS, or sector standards. Nor are the GRI guidelines fully followed,
- most of the analysed reports failed to discuss key economic, social and environmental performance indicators related to the activities of the enterprises,
- most reports did not acknowledge the significance of corporate social responsibility or its strategy,
- many reports failed to quote the basic economic, social and environmental performance indicators,
- the reports under evaluation set out no information regarding any verification of the data by independent analysts,
- the reports fail to present the adverse aspects of the operation of the enterprises. They tend to highlight positive aspects alone,
- the reports contain no reference to the processes of consultation with stakeholders or ways to utilize feedback information from stakeholders,
- most reports did not name the persons responsible for implementing corporate social responsibility strategies,
- the social reports reviewed are not easy to read. No summary is supplied. Most reports were written in Polish only.

6. Conclusion

As pressure from different groups of stakeholders will be growing, more and more enterprises will release social reports, and also more frequently. Reporting on

\textsuperscript{15} M. Greszta, Raportowanie społeczne na świecie i w Polsce, Raporty Społeczne 2007, p. 15.
economic, social and environmental issues in many cases became an unwritten standard requirement of access to capital or mere acceptance among clients. Many representatives believe that non-financial reporting helps enterprises gain competitive advantage because they thereby sustain dialogue with their environment.

The idea of corporate social responsibility has not yet spread widely in Poland. Enterprises operating in Poland should pay more attention to the implications of that concept and use its tools effectively. Enterprises in Poland are at the initial stage of social reporting. Few enterprises engage in social reporting, and those who do mostly are at a variance to the GRI guidelines and are not fully in compliance with the AA 1000 or other standards. Reliability is the worst weakness of social reports. The best reports are released by enterprises held by international corporations, which adopt their own standards for reporting. Enterprises operating in Poland will very soon have to pay more attention to social reporting, which increasingly helps them towards success as that lends them credence as market players.

Bibliography

Summary

Piotr Albiński

Meeting the convergence criteria and introducing the euro in Poland: Dilemmas in a time of crisis

The correct term for Poland’s entry to the euro zone is a subject of debate involving politicians and academics. Research studies highlight the benefits and costs of adopting the euro. Benefits include, for instance, a mitigation of macro- and microeconomic risks of economic activity. Costs, especially in a time of crisis, include short-term hazards to stability. As Poland failed to meet 4 criteria in 2008, namely budget deficit, price stability, currency rate (and legal convergence), and as a slowdown of growth is anticipated for 2009–2010, it would be pointless for Poland to enter the ERM II in 2009.

If Poland can meet the nominal convergence criteria and achieve lasting stability in the years 2010–2011, despite the adverse consequences of the world crisis, then ERM II entry can be envisaged for the year 2010, for instance, and euro adoption for 2013, i.e., early as the EU opens a new financial perspective for the years 2013–2020. The ERM II entry should be effected on conditions that guarantee not only a brief stay in the ERM II system but also the maintenance of long-term stability after adopting the euro. This will have to be preceded striking a compromise with the political opposition to put through a change of the Polish constitution and to get the euro finally introduced into Poland. If Poland’s political elite prove unable to work out a compromise on that matter the decision will be deferred until after the next general election, and Poland’s progress to monetary integration with the euro area will lengthen.

Tomasz Chmielewski

Impulse response to monetary policy shocks at the level of industry

The paper aims at broadening the analysis of the mechanism of the impulse transmission of monetary policy through the analysis of the impact of central bank policy shocks on the output of individual sections within the processing industry of the Polish economy. The analysis is carried out in the context of the approach to a transmission mechanism widely used in literature based on the vector autoregression models (VAR). The additional use of information at a more disaggregated level should enable a better understanding of the transmission mechanism. In the light of recent events on the financial markets, it is essential that such an approach to transmission analysis should potentially enable also the research of susceptibility in particular sectors of the economy to the decisions of the central bank depending on the balance structure typical to particular sectors of the economy and being a derivative of the typical structure of financing business.
Summary

Miroslaw Jarosinski

**Market growth strategies of Polish companies – from local to global markets**

Market growth strategy is one of the basic strategies followed by enterprises. There is no difference with regards to Polish companies. The research undertaken in Poland and the author’s own observations confirm that Polish companies tend to increase the scale of their business on the Polish market. Frequently, as they have achieved a suitable position they decide to enter a foreign market, beginning in this way the process of internationalisation of their business. Polish companies more and more often enter the European markets and as it appears also the global ones. They develop not only export but also foreign direct investment, constructing factories and taking over foreign competitors.

The present stage of development of internationalisation of Polish companies is not high yet. But it may be expected that they will overcome geographical growth barriers more quickly both on the domestic and foreign market and their internationalisation rate will dynamically grow in the future.

Tomasz Cicirko

**Methods of increasing bank capital effectiveness – part 1**

Joanna Cygler

**Sectoral and corporate coopetitive factors – coopetition matrix**

Coopetitive relations in which there are streams of competition and cooperation between direct competitors, belong to the most complex intercorporate relations burdened with high transaction costs. Thus, there is a question of circumstances in which companies decide to enter coopetition. Two groups of factors were analysed: sectoral and corporate (internal). Among the sectoral factors one should recognise as essential: susceptibility to globalisation, technological advancement and intensity of competition. In the group of internal factors, resources complementarity appears to be most important.

The value and intensity of occurrence of the sectoral factors affects the sector coopetitive potential which indicates the necessity to create coopetitive relations. Whereas, the value and intensity of occurrence of corporate factors determines corporate coopetitive potential, which testifies to the durability of coopetitive relations between the involved parties. The values of sector coopetitive potential and corporate coopetitive potential gave rise to building the original model of coopetition matrix. The matrix enables to identify kind of coopetitive relations and planning and the control of the effects of competitive cooperation.
Piotr Wachowiak

**Social reporting by enterprises operating in Poland: a review**

The author discusses the key issue of corporate social responsibility (CSR). This is a particularly sensitive issue now as trust in business has slumped. The article presents the essentials of social reporting and a way of evaluating social reports. The author presents his own evaluation model to assess social reports combined with the results of the evaluation of social reports prepared by enterprises in Poland with which he performed with the use of the model. The most common mistakes committed in the preparation of social reports are isolated. The studies performed show that the social reports of enterprises operating in Poland are not produced in conformity with social reporting standards.