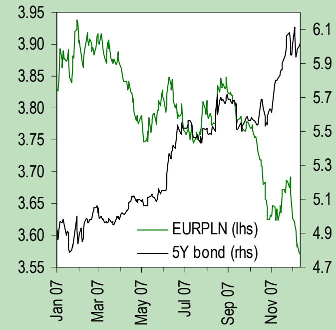
Bank Zachodni WBK

# MACROscope

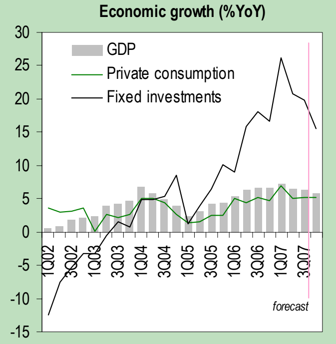
Polish Economy and Financial Markets

December 2007

EURPLN rate and 5Y bond yield




Economic growth (%YoY)




## More does not mean better

- **November's decision of the Monetary Policy Council to raise rates did not bring surprises, though some market participants started to price-in a hike by as much as 50bp.** In our opinion, the MPC will continues its strategy of gradual tightening of monetary policy. We expect another 25bp at the beginning of the year. On the other hand, US FOMC decided to lower its target for the federal funds rate by 25bp and though the scale of the move was in line with market consensus, it disappointed the market, which was a reason for another increase in risk aversion. More monetary policy expansion in the US is in the pipeline.

- **In the previous report we presented the view on zloty correction and higher yields, especially at the short end of the curve. While the former forecast materialised, zloty weakening was very temporary.** Amid higher expectations for monetary tightening, which was driven mainly by higher inflation path for the following months, as well as due to liquidity problems towards the year-end, money market rates and bonds of short maturity rose by almost 40bp. Five and ten-year bonds saw a yields increase by ca. 20 bp and the curve in this segment is still inverted. As regards the zloty, a correction lasted some 10 days and while the EURPLN rate failed to break the level of 3.70 (despite several attempts), it fall quite sharply. Therefore, it seems that our forecast for the average zloty rate against the euro was not optimistic enough. Nevertheless, we do not change our FX forecast for the next year, though it is possible that EURUSD will test the level of 1.50 in the Q1. Our prediction of Polish yields assume some strengthening, as we think that the peak in official rates priced-in by the market is too high and additionally liquidity problems should be less important for the Polish market.

- **GDP growth data for the third quarter surprised positively.** This relates not only to the rate of economic growth (6.4% vs. consensus of 5.8%), but also to its structure. Fixed investment growth was higher than expected, and private consumption increase was below forecasts. Some of the MPC members perceive inflation prospects in somewhat brighter colours, but it is still important that domestic demand growth remained above potential GDP growth rate.

- **Tightening labour market conditions are a challenge for both the central bank and enterprises.** In the *Special focus* we analyse whether fast employment increase can be coupled with robust rise in labour productivity, which could mitigate inflationary pressures. The results suggest that in the recent years the trade-off between the quantity and quality of labour slightly decreased. On the other hand, the demographic trends suggest that in the next years the enterprises will have to focus on increase in productivity as labour force will be not be easily available.

**Financial market on 30 November 2007:**

| | | | | | |
|---|---|---|---|---|---|
| NBP deposit rate | 3.50 | WIBOR 3M | 5.56 | USDPLN | 2.4589 |
| NBP reference rate | 5.00 | Yield on 2-year T-bonds | 5.96 | EURPLN | 3.6267 |
| NBP lombard rate | 6.50 | Yield on 5-year T-bonds | 6,02 | EURUSD | 1.4749 |

This report is based on information available until 11.12.2007

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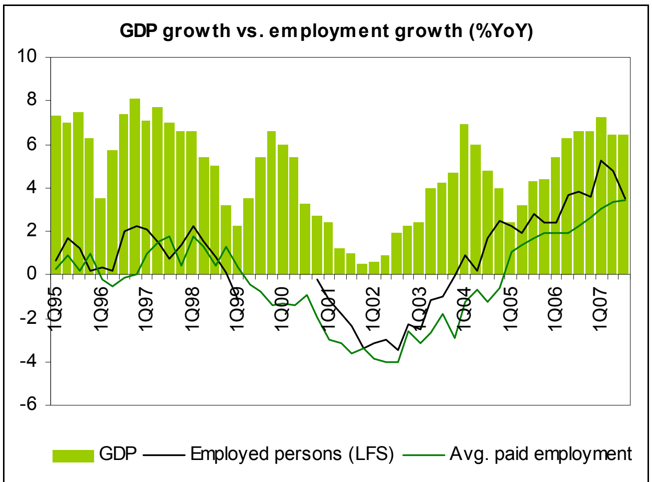
# Special focus

## Productivity above all

### Thorough changes on the labour market

The situation on the Polish labour market has been in the focus of attention of economists and individuals responsible for economic policy for years. Some few years ago the key reason for this interest was the record highest in Europe unemployment rate that according to official statistics had exceeded 20%. Over the last few quarters, however, the situation on the Polish labour market has changed dramatically.

After a relatively short period of economic revival that was not accompanied by a significant growth in demand for labour (the so-called *jobless recovery* in the years 2003-2004), the last three years have seen a significant acceleration on the scale unprecedented since the start of the economic transformation. According to the data from the Labour Force Survey since the mid-2004 the working population in the national economy has grown by ca 1.5m people and the unemployment rate in that period has reduced by over a half to reach 9% in Q3 which is the lowest level since 1992 when the research started.




Source: CSO, own estimates

### Growth in employment = reason for being happy?

Fast and sustainable growth in employment is a positive and very desirable phenomenon from the point of view of consumers and households. This is also an objective of a social/economic policy of majority of governments. However, the trends that are welcome by the majority of citizens and consumers are worrying for entrepreneurs.

With time, domestic companies encounter growing problems with finding qualified labour force. Especially that the revival on the domestic labour market overlapped with the wave of job emigration after Poland accession to the EU as a result of which sizable populations (at least in some sectors) of qualified staff emigrated[1]. Additional factor that should be noted is the trend sustainable for years, i.e. the drop in participation rate of the Poles and the growth in the number of people giving up work before reaching the retirement age (among others, as a result of taking advantage of rights to early retirement or disability pensions).

In the environment of limited labour supply, following the growth in employment rate, the tension on the labour market and pay demands have been growing which in the recent months has been reflected in the accelerated growth in the average pay in the enterprises sector to 11%YoY in October. This in turn contributes to the cost pressure in companies. Entrepreneurs need to choose whether to agree to grow salary costs substantially or whether to limit further expansion. The former choice may be a source of inflation pressure if companies decide to shift the growing labour costs onto the prices of products and services. On the other hand, if it proves difficult or impossible, in view of severe market competition, to grow prices following the growth in costs, there is always a drop in profitability which may lead to economic slow-down. Another possible solution is an increase in labour productivity, e.g. by substitution of labour by higher capital outlays (investment in new technologies).

This is the reason why the growing tension on the labour market is thoroughly analysed by the central bank and put the central bankers on alert. The Monetary Policy Council has, for a long time, been highlighting that one of the key factors impacting inflation in the medium term is the relation between the growth in labour productivity and growth in pay. Recently, the above relation has changed unfavourably from the point of view of the central bank as it clearly leads to the growth in unit labour costs. In such a situation it seems important to answer the question whether the rapid GDP growth (5-6% per annum) and the related growth in employment, if continued, are bound to lead to growing tension on the labour market? Given the stiffness on the side of labour supply and demographic factors (that are described in more detail towards the end of the paper), the continuation of the growth in employment is surely to maintain or even boost the growth in pay. As this is the case, the factor that might arrest the growth in unit labour costs is quick growth in productivity. The common sense is that there is a trade-off between employment growth and productivity. Does this condition hold also in the Polish economy? What could be its consequence for domestic monetary policy, and what

[1] According to CSO estimates in the years 2002-2006, the number of Poles staying temporarily in the EU increased from 0.45 to 1.6m, of which the majority worked in the EU states that decided to open labour markets for our citizens (although the data refer to all emigrants, not only to those who were seeking a job).

implications stem for macroeconomic policy of the government? In the search for the answer to these questions we decided to have a closer look at the relation between the changes in employment and labour productivity in Poland and other European states.

### Is there a trade off between the growth in employment and growth in productivity?

Contemporary theoretical economic growth models (e.g. standard neoclassical model or models based on the endogenous growth theory) do not envisage a reverse relation between the growth in employment and labour productivity in the long run.[2] However, in the short or even medium term, there is usually a trade-off between the growth in employment and growth in productivity. This is because of a few factors. Firstly, new staff need to be usually trained and equipped; before it happens, the marginal and average labour productivity goes down. Secondly, the longer the period of the growth in employment the worse staff, in terms of skills, background and experience, are available on the market (the better ones are employed first). The growth in employment also leads to the growth in pay which impacts the relative price of production factors prompting companies to substitute work with higher capital expenditure.

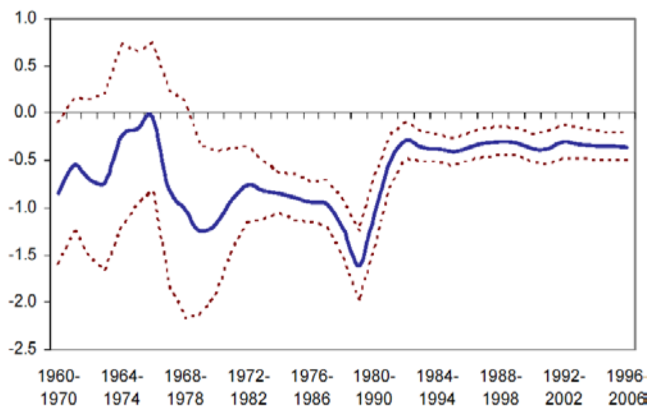
Behaviour of different companies in different economic cycles and problems with productivity measurement can be an additional factor that enhances the short-term trade-off between employment and productivity. For instance, during recession, companies (as long as they believe that the slow down is temporary) can reduce employment to a lower extent than indicated by the drop in production as they do not want to lose highly skilled staff (accumulated human capital). They may temporarily keep redundant FTEs but reduce their workload as a result of which productivity measured as production per employee goes down faster than employment. Later, in the initial revival period, companies are able to considerably grow production through better utilisation of resources, which coupled with stable nominal employment leads to the growth in unit productivity[3].

As international experience indicates, the relation between growth in productivity and growth in employment vary in different countries and changes with time. The trade-off may be weakened by for example development of transfer of modern technologies or management skills. Also, labour market regulations and institutions have impact on the strength of relation between labour and productivity. One of the objectives of the macroeconomic policy should be getting the right balance between simultaneous growth in productivity and employment or at least minimising the trade-off between the two trends in the medium run.

Interestingly, there is research that shows that over the last two decades, this objective was achieved in practice in the world's most developed economies. The outcome of econometric estimates produced based on the data from the UE and OECD states indicates that since the mid-80's the negative relation between growth in employment and growth in productivity has clearly weakened[4], which according to the authors is attributable to, among other things, the positive impact of the labour market reform over the recent years.

If it was possible to confirm the same pattern in Poland, there would be hope that the fast growth in employment will not be accompanied by the significant drop in labour productivity, which would mean that the risk of significant acceleration in the unit labour costs growth and inflation growth will not be excessive.

**Effect of 1% employment growth on yearly productivity (rolling regression over 10-years window)**




Source: European Commission (2007), *The EU economy: 2007 review – Moving Europe's productivity frontier*

### Productivity vs. employment in Poland

It is advisable to start the analysis of the relation between the employment and productivity in Poland with the general assessment of trends visible in the recent years. At the beginning, one should realise that errors and inaccuracies are bound to occur in the assessment of the above relation because of a number of factors. The key problem is a lack of adequately long time series or in fact the lack of adequately long history of free market economy in quite stable conditions. In the published research about

[2] Technological progress the result of which is the growth in work productivity, is neutral for employment in the long run. On the other hand, positive shock on the labour supply side can be neutral (or on the assumption of flat economies of scale) or positive for the work productivity (on the assumption of growing economies of scale).

[3] This effect can be partly avoided, e.g. by measuring productivity as a product per actually worked hours rather than the number of workers. However, very often, the relevant data is not available, especially in emerging economies.

[4] Cavelaars, P. (2005), *Has the trade-off between productivity gains and job growth disappeared?*, Kyklos, 58 (1); European Commission (2007), *The EU economy: 2007 review – Moving Europe's productivity frontier*

interdependencies between labour and productivity in developed countries, its authors used observations showing changes in employment and labour productivity in 10-20 year periods to avoid distortion of the results caused by mutual interaction of variables throughout economic circles. Meanwhile, the statistics for Poland (especially the quarterly data) do not cover even one full economic cycle. This is why the trends observed based on the data can reflect short term adjustments and interactions of the two variable in different stage of economic cycle rather than the medium term changes in the relation between employment and productivity.[5]


Source: own estimates based on CSO data

If we look at data regarding changes in labour productivity and employment[6] in the last dozen of years, one should notice that while productivity was constantly rising, the amount of labour (regardless of its measure) fluctuated substantially over time.

**Average annual growth in GDP, employment and productivity in different periods (% yoy)**

| | | Based on LFS data on employed persons | | Based on data on avg. paid employment in national economy | |
|---|---|---|---|---|---|
| | GDP | Employed | Productivity | Paid empl. | Productivity |
| 1993-1994 | 4.5 | -1.7 | 6.3 | n/a | n/a |
| 1995-1998 | 6.3 | 1.2 | 5.0 | 1.5 | 4.8 |
| 1999-2002 | 2.9 | -2.6* | 4.0* | -3.2 | 6.2 |
| 2003-2006 | 4.8 | 1.5 | 3.2 | 0.6 | 4.2 |

Source: own estimates based on the CSO data
* average growth in the period 2001-2002; in view of the methodological change in 1999, there is no data continuity

Although in the entire available sample, there is a clear negative correlation between labour productivity and employment, however, what can be easily tested, the relation is not stable over time and changes considerably in different periods (even with regards to its direction) which is illustrated by the chart below. based on quarterly data.


Source: own estimates based on CSO data

It seems likely that the behaviour of the analysed relation arises, among other things, from the short-term adjustments on the labour market as part of the economic cycle. In particular, the rapid growth in labour productivity in the years 1993-1994 and 1999-2002 coincided with sharp job destruction, initially in effect of structural changes in the economy in the initial stage of transformation, later on during to economic slowdown.

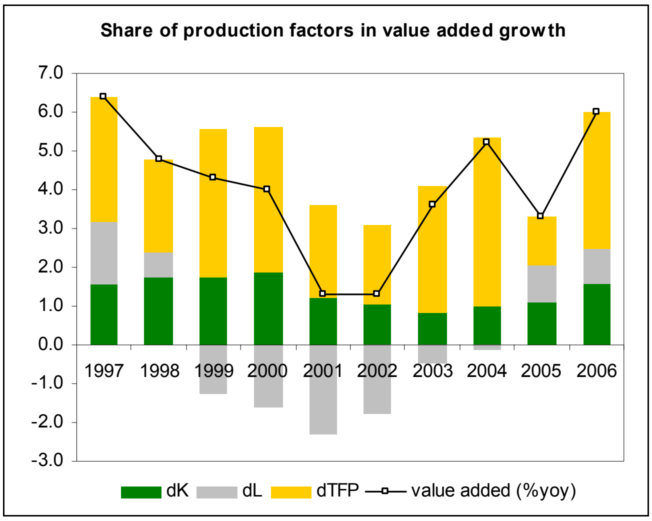
At this point it should be noted that the simple and popular productivity measure, defined as the value of the product in constant prices (GDP, added value) per work unit (e.g. per working person / paid employee / 1 hour worked, etc.) does not only reflect productivity of staff understood as the technical effectiveness and efficiency in delivering tasks but it also changes if impacted by factors such as degree of utilising production factors (production capacity) and/or work substitution for capital following the change in their relative costs. In such cases changes in simple measures do not reflect changes in productivity understood as effect of technological progress. Therefore, it is often used to employ total factor productivity measure (TFP) that gauges to what extent product growth has reflected other improvements than change in expenditure of production factors.

On the basis of available data we have tried to estimate TFP for Poland, employing relatively simple method of growth decomposition. The results seem to, at least

[5] In addition, the available data on the domestic labour market is characterised by frequent methodological changes that distorts their continuity and has a negative impact on the reliability of estimates produced based on the data.

[6] In the report, we will use two employment measures: the data on persons employed from LFS survey and data on average paid employment in national economy. Both measures have some advantages: persons employed include working people other than on the basis of a labour contract, while paid employment data present number of employed translated into FTEs. Both series are subject to discontinuities and methodological changes.

partly, confirm our hypothesis about substitution of labour by capital. The years 1999-2002 saw a significant drop in labour expenditure that was offset by the concurrent growth in capital expenditure. At the same time, there was also a significant growth in the TFP, especially in the years 1999-2000 which may mean that paralleled to the change in share of the relative production factors there was a general growth in efficiency of their utilisation and significant improvement in production processes causing a productivity jump.[7] Moreover, the data showed that TFP growth was taking place both in periods of increase and decline in employment.



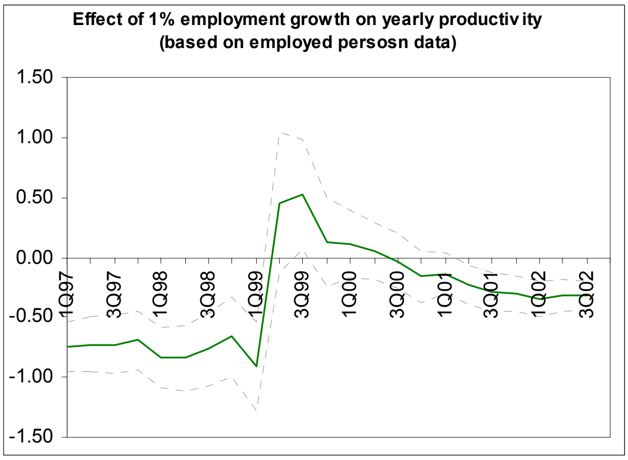

Source: own estimates based on CSO data

### Simple econometric model

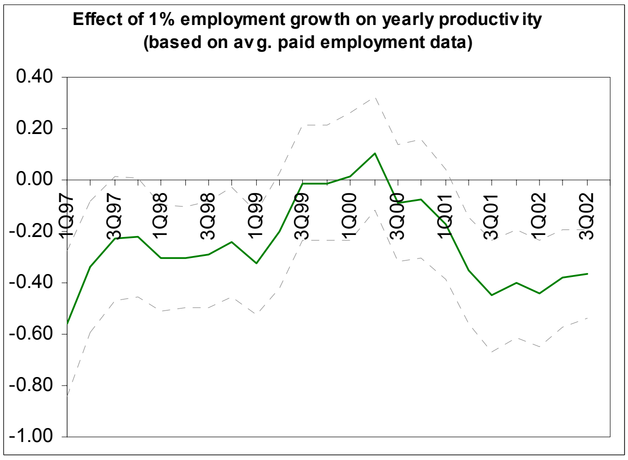
In spite of the fact that the available data is clearly impacted by cyclical factors which may distort the estimates related to their medium term interactions, we decided to make an attempt to assess how the relation between the employment and productivity has changed over the recent years. To this end we used methodology taken from available foreign publications on a similar issue[8], while modifying it so that it is possible to analyse one country only.

In short, the applied methodology is based on estimates of linear regression on a rolling sample of fixed number of observations, where the dependent variable is the change in productivity in a specific time horizon (we used eight quarters) and the explanatory variables are: change in employment in the same period and the initial productivity level (product per unit of labour in the first quarter in the current period). See the *Technical Appendix* for more information about the model design.

The results presented in the charts below are not unanimous. Changes in parameters of equation based on FLS data confirm the thesis that over the last ten years there has been a change in the relation between the growth in productivity and the number of the employed as a result of which the trade-off between the two variables, which was so strong in H2 of the previous decade, has been weaker recently (although still present). On the other hand, parameters of regression estimated using data on average employment in the national economy suggest that after a short period when the trade-off has disappeared (2000-2003), recently it turned significant again, even more than in the nineties.




Source: own estimates; data on the X axis represents the beginning of the estimation period that covers 20 consecutive quarters




Source: own estimates; data on the X axis represents the beginning of the estimation period that covers 20 consecutive quarters

### Quick look at the sector data

To supplement the analysis of the changes in the productivity-labour relation, we decided to have a look at the cross-sectional data on labour productivity in

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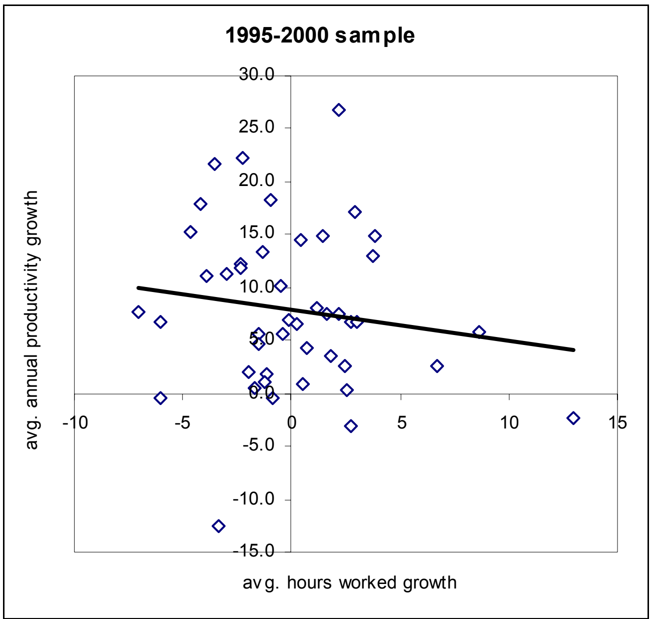
[7] The main constraint was availability of data on accumulated capital stock. Our data was based on the CSO data regarding value of fixed assets in the national economy. See the *Technical Appendix* for the methodology of TFP estimates.

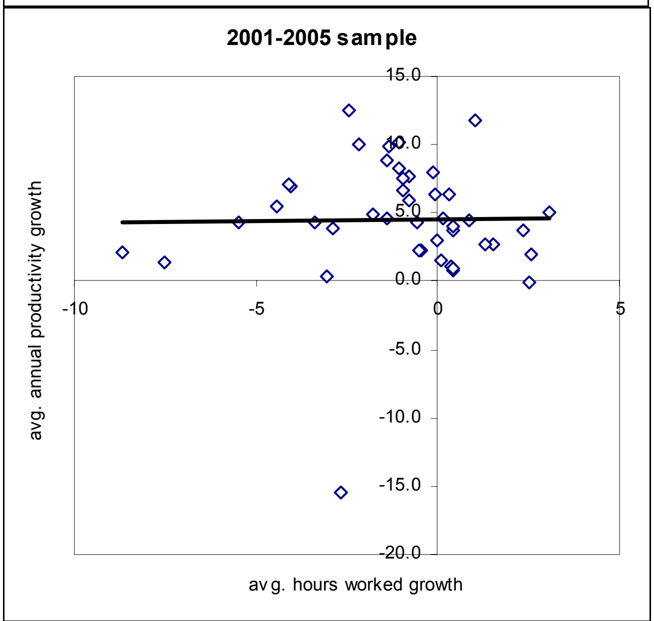
[8] Research to date was based on cross-country pooled regression. See: Beaudry P., Collard M. (2002), *Why has the employment-productivity tradeoff among industrialized countries been so strong?*, NBER Working Paper 8754; Cavelaars, P. (2005), *Has the trade-off between productivity gains and job growth disappeared?*, Kyklos, 58 (1); European Commission (2007), *The EU economy: 2007 review – Moving Europe's productivity frontier.*

individual sectors of the economy using the information gathered in the EU KLEMS base[9].

We compared average annual growth in the pace of growth of labour efforts (measured in two ways: as the number of the employed and the number of the average worked hours) and the pace of growth in productivity (added value per worked hour) in individual sectors dividing the entire available group of observations into two equal sub-periods: 1995-2000 and 2001-2005.

**Average growth in hours worked vs. average growth in labour productivity in sectors**




Source: own estimates based on the EU KLEMS data

At the first glance, the data seems to confirm the hypothesis about the decreased trade-off between productivity and work at the turn of the decade. The estimated ratio of the correlation between the average growth in productivity and labour growth changed in "good" direction: in the case of calculations based on average hours worked from –0.14 in 1995-2000 to +0.01 in 2001-2005; in case of numbers for average employment respectively from –0.33 to –0.12. Nevertheless, amid given number of observations, the correlation ratio was not statistically significant, which implies that one cannot treat the result as a clear confirmation of a hypothesis.

One should notice that in both analysed sub-samples there was high discrepancy between labour-productivity trade-off in specific branches, and also that some branches and sectors were characterised by clearly positive relation between employment growth and productivity gains. Interestingly, those were mainly branches from services sector, and also some from manufacturing. It is as interesting as services are usually considered as non-tradables, where productivity is lower and grows more slowly than in those areas that are subject to international competition. The explanation of this issue is probably the fact that among above-mentioned branches there were mostly those that received large amounts of foreign direct investments, particularly in the second half of 90s (which implied big transfer of knowledge and technology) – they included, among others, financial intermediation, wholesale and retail trade, hotels and restaurants. Most of them were also characterised by higher than average output per hour worked. It suggests that over the last years there were flows of labour force from branches with lower productivity to those more effective, which was in favour of productivity gains in the entire economy.

### Premises for MPC's cautious optimism...

The presented estimates should be treated with caution in view of the outlined methodological problems and the quality of source data. Nevertheless, they indicate that Poland, like other EU and OECD states, has recently seen a change that consists in decreasing the trade-off between job growth and growth in labour productivity.

This allows us to be slightly more optimistic about the growing inflation pressure arising from the situation on the labour market. The results imply that given some rate of employment growth, rise in unit labour costs may be less dramatic nowadays than it used to be in the middle of 90s., as it will be accompanied in the medium term by weaker decline in labour productivity

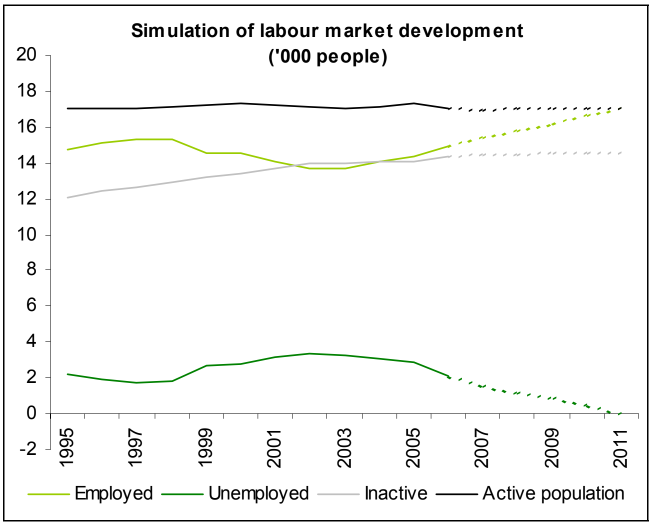
Nevertheless, some trade-off (especially in the short run) between employment and productivity growth, may be observed.

Paradoxically, perhaps we should not be worried too much about negative trade-off between labour and productivity.

[9] Research project sponsored by the European Commission aimed at creating databases and supporting research on growth in employment and productivity in the EU

The reasons for that are tendencies taking place in the labour supply. At the beginning of the paper, we mentioned that one of the unfavourable phenomena contributing to the tension on the labour market is the drop in the professional activity which is the lowest across the EU anyway. Additional negative factor, the importance of which will grow over time, are demographic trends. The wave of demographic boom population entering the labour market is about to be over. While in previous years, over 200,000 people has been joining labour market every year, in 2006 the working age population (according to LFS data) increased by only 47,000 and according to demographic projections, starting from 2010, it will start to shrink rapidly.[10]

As a result, maintaining the quick or even moderately quick growth in employment for the next few years may be impossible. Making a purely theoretic assumption that annual growth of employment will stabilise at 2.5% in the next few years, and at the same time, there will be no significant changes in economic activity (participation rate) of the population, then as early as in 2010, the unemployment rate (LFS definition) will go down below 3%, and in the next year is likely to drop to zero.




Source: own estimates based on CSO data

### ... and government mobilisation?

In this situation it seems that the social-economic policy of the government plays the special role in preserving the lasting economic growth in the next years and minimising the tensions in the labour market. As regards demographic trends and ageing society, in practice the government can do very little to yield noticeable results in the next several years. Therefore its actions should concentrate on solutions, which may at least in some part compensate the fall in the working age population in the next years. The weakening of the pressure in the labour market may follow if one of the events (or their combination) takes place: Poles massively return from job emigration; there is a significant acceleration of the labour productivity growth in the economy, or there is a noticeable rise in the participation rate in the society. In fact, the government should take actions in all these directions simultaneously. One should also add the opening of the labour market onto the job immigration form the countries of lower income.

It seems that special attention should be regarded to the promotion of economic activity of Poles. Although in the short term this may broaden the negative relation between the employment growth and the productivity, as the people entering the labour market after a long absence are not going to work as effectively as the experienced employees. However, in the long term, together with appropriate policy on raising human capital (spending on education, innovation, research and development), this may allow for continued fast economic growth through freeing large reserves of the labour force and a simultaneous increase in its productivity.

It is not to be doubted that in the current situation there is no room for further extending and rising the size the pension privileges for many professional groups. In contrast, new regulation should be introduced, which would allow for keeping people in the labour market, which in the nearest years would supply the 55-64 years age group. It seems necessary to limit the rights to earlier retirement, so as it was possible only in exceptional and medically justified cases. The issue of the women pension age comes to foreground, as it should be lengthened (according to the Eurostat data the average age of women exit from the labour market in Poland is the lowest in the whole Europe, by almost 5 years below the EU-15 average). It is worth to take care that the currently binding regulation did not discourage from taking up jobs those who already retired and to ease instead of tightening the regulation on the self-employment, temporary and part-time work, as it was done in the previous years.

For sure the list of desirable activities on the labour market regulation is vast and covers solutions arousing as strong controversies in the society as the introduction of the flat-tax. However, taking up those activities is necessary. It is worth most of all to succeed in "freeing Poles energy" according to the programme declaration of the new ruling party, as otherwise instead of the economic miracle in the next few years we may face an economic slowdown resulted from sudden growth of tensions in the labour market.

[10] *Przejście z pracy na emeryturę*, Informacje i Opracowania Statystyczne GUS (2007); *Prognoza demograficzna na lata 2003-2030*, Informacje i Opracowania Statystyczne GUS (2004)

# Technical Appendix

## 1. Total Factor Productivity

Total factor productivity (TFP) is a measure of productivity often understood as a consequence of technical progress. In reality, TFP changes reflect jointly: general progress of knowledge, reflected in technology changes, management skills, organisation of production process, etc., as well as the level of capacity utilisation.

Starting from the neoclassical model of economic growth with production function of constant returns to scale, e.g. the Cobb-Douglas type:

$$Y_t = A_t L_t^{\alpha} K_t^{1-\alpha}$$

where $Y$ represents output, $L$ – labour input, $K$ – capital stock, $A$ – level of knowledge/technology ($A = TFP$), $\alpha$ - output elasticity with respect to labour input,

one can derive the so-called Solow decomposition, linking economic growth with growth in capital and labour:

$$\frac{\Delta Y}{Y} = \frac{\Delta TFP}{TFP} + \alpha\frac{\Delta L}{L} + (1-\alpha)\frac{\Delta K}{K}$$

where $\Delta$ represents increase between beriod $t\text{-}1$ and $t$; so, for example $\frac{\Delta Y}{Y}$ represents percentage change of $Y$. Thus:

$$\frac{\Delta TFP}{TFP} = \frac{\Delta Y}{Y} - \alpha\frac{\Delta L}{L} - (1-\alpha)\frac{\Delta K}{K}$$

Estimation of TFP growth on the basis of above formula and empirical data requires making some assumptions about (time invariant) elasticity of production with respect to labour input. Empirical estimates for Poland in various studies usually ranged between 0.55 and 0.66. [11] For our purposes, we assumed $\alpha$ = 0,55.

Our estimates of TFP growth employed following annual data from CSO for 1997-2006 period: $Y$ – value added growth in constant prices; $L$ – average paid employment growth in the national economy (full sample results); $K$ – growth of fixed assets in the national economy in constant prices.

For the entire analysed period 1997-2006, following average growth rates has been estimated:

| $\Delta Y$ | $\Delta L$ | $\Delta K$ | $\Delta TFP$ |
|---|---|---|---|
| 4.0 | -0.3 | 1.4 | 3.0 |

[11] Żółkiewski Z., Kolasa M. (2003), *The Total Factor Productivity and the Potential Product in Poland 1992-2002*, Konferencja NBP w Zalesiu Górnym; Gradzewicz M., Kolasa M. (2003), *Szacowanie luki popytowej dla gospodarki polskiej przy użyciu metody VECM*, Bank i Kredyt

## 2. Econometric regressions

The econometric approach was loosely based on the methodology adopted in several other research papers surveying interdependence between job growth and productivity gains. Originally, it consisted in running cross-country pooled regression across a sample of different countries, where changes in labour productivity over a specified (relatively long) time horizon was explained by the change in labour input in the same period and initial level of labour productivity (at the start of analysed period). The starting point for the methodology was Solow-Swan model of economic growth, predicting that rate of productivity growth is inversely related to the initial level of output per employee in a given country (the less developed country, the faster is its convergence in terms of productivity towards more advanced economies).

The main problem that was connected with application of this methodology was that it was originally designed to analyse employment-productivity trade-off across groups of countries, while gave no conclusions regarding the relation in specific countries. The second issue is that surveys made so far relied on labour and productivity changes over reasonably long time horizons (10-20 years) in order to filter-out impact of cyclical fluctuations. To implement the methodology for our purpose, following changes have been made:

The regression estimated in this paper is:

$$\Delta_i \log\left(\frac{Y_t}{L_t}\right) = \alpha_0 + \alpha_1 \log\left(\frac{Y_{t-i}}{L_{t-i}}\right) + \alpha_2 \Delta_i \log(L_t) + \varepsilon_t$$

where:

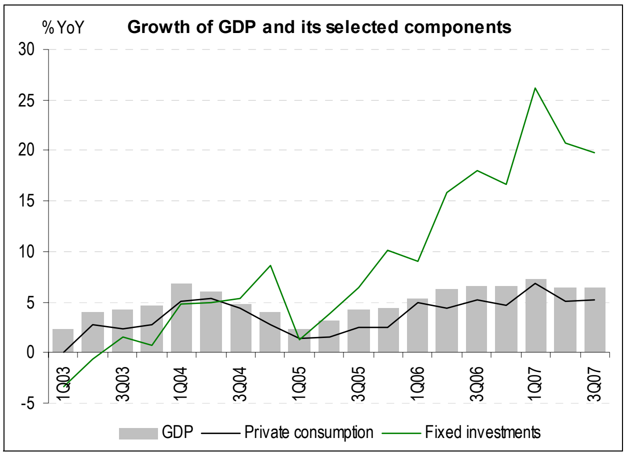
$Y_t$ – GDP in constant prices in time $t$;

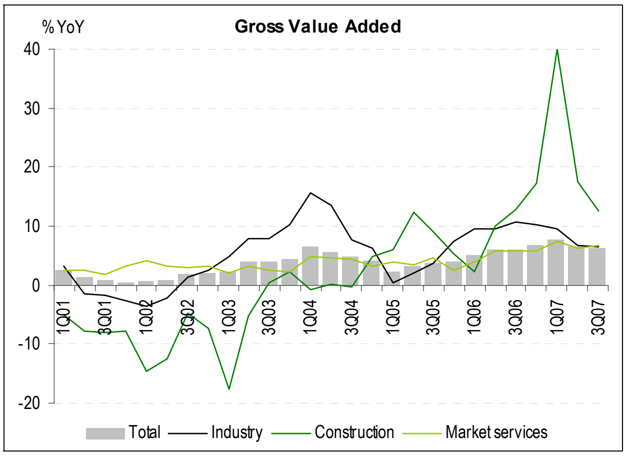
$L_t$ – labour input in $t$; regressions were run with two alternative measures of labour: persons employed (LFS) and average paid employment in national economy;

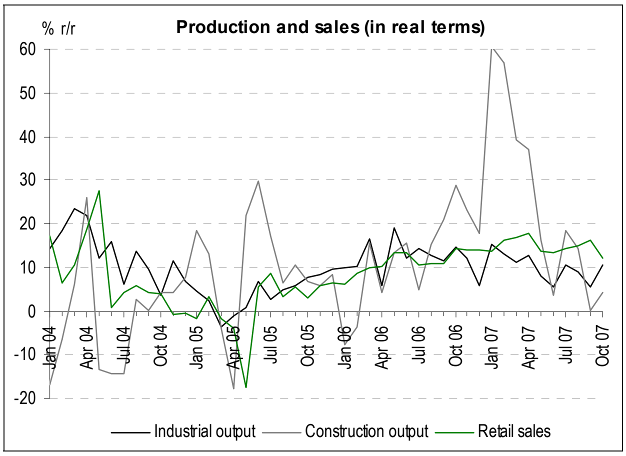
$\Delta_i$ – increase of given variable in the horizon of $i$ quarters, i.e. difference between its value in time $t$ and $(t\text{-}i)$; fixed value of $i$ equal 8 quarters has been adopted.

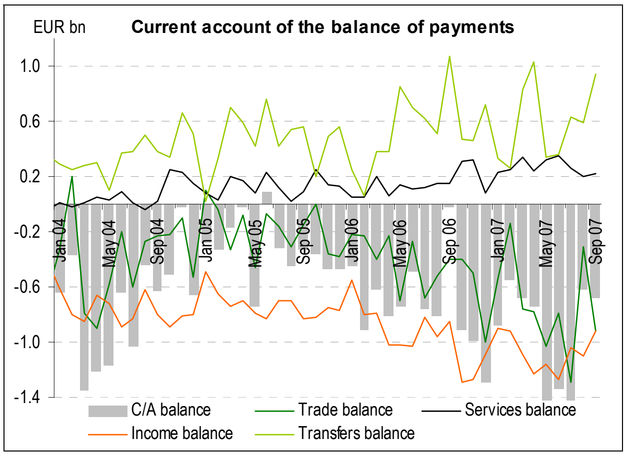
The sample of quarterly data for available analysis included period from 1Q1995 to 2Q2007. However, as the equation uses variables lagged by 8 quarters, the sample for estimation started in 1Q1997. The equation has been estimated with OLS in iterations over the sample of fixed length of 20 quarters (each time the sample window was moved forward by one). The charts on page 5 show a line representing evolution of estimated parameter $\alpha_2$ in time together with its standard errors.

# Economic update




Source: CSO, NBP, own calculations

### Better than expected data on GDP growth in Q3

- GDP growth in the third quarter reached 6.4%YoY i.e. was exactly the same as in the second quarter. The result was much better than the market consensus and our forecast of 5.8%. Much better than expected result for Q3 increased chances that GDP growth in the whole year will reach as much as 6.5%.
- The breakdown of domestic demand growth, which reached 7.4%YoY versus 8.2% and 7.7%, respectively, in Q2 and Q1, was more favourable than expected. Fixed investment growth was stronger than expected and reached 20%YoY (consensus at 18.2%), while private consumption grew 5.2%YoY (consensus at 5.5%). Strong investment growth will increase potential of the Polish economy in future, which should be anti-inflationary in the medium-term. Meanwhile, private consumption growth does not seem excessive, given the strong growth in disposable income, which may suggest that recent trends observed in the labour market do not have strong inflationary impact, at least as regards the demand side.
- However, there is still risk related to strong rise in ULC. According to our estimates, rise in ULC in Q3 reached 6.8%YoY. It is lower than previously expected 7.3% (higher GDP data means higher productivity and thus lower ULC), but still represents very high growth and acceleration from 6.4% in Q2.
- On the supply side of national accounts it is worth to notice the strong growth of value added in construction. It amounted to 12.6%YoY, while our estimate based on monthly data on construction output was at 8.6%YoY. In the contrary to previous quarters, it proved that the value added growth in construction in Q3 was faster than the average growth of construction output in this period. This confirms our opinion that lower constriction output growth seen in monthly data has not meant major weakening in investment activity and slump in construction sector.

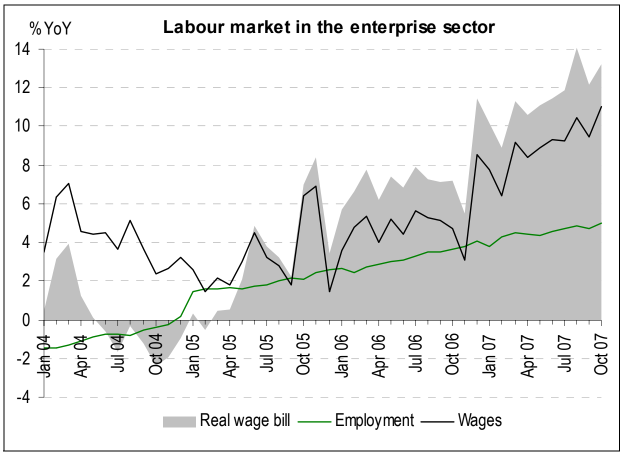
### Good economic activity indicators for October

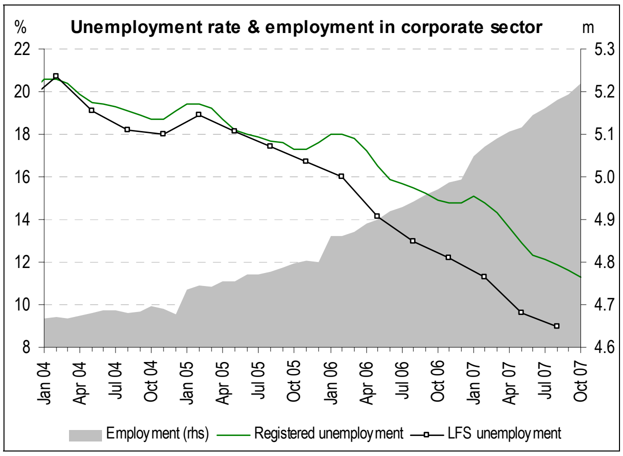
- Industrial output growth in October proved stronger than expected. The growth was experienced in vast majority of branches, including those producing mostly on foreign markets, which indicate that despite the zloty strengthening exporters are still increasing their production.
- October saw another weak result in construction sector. However, the same as data on value added for Q3, the breakdown of construction output growth in Q3 does not mean confirm it. Output at companies preparing building sites surged 45.2%YoY and in case of building installation grew 13.1%YoY.
- Retail sales growth was stronger than predicted. Two-digit growth rate was noted in all components. The data suggest that growth in private consumption should reach at least 5% in the final quarter of this year.

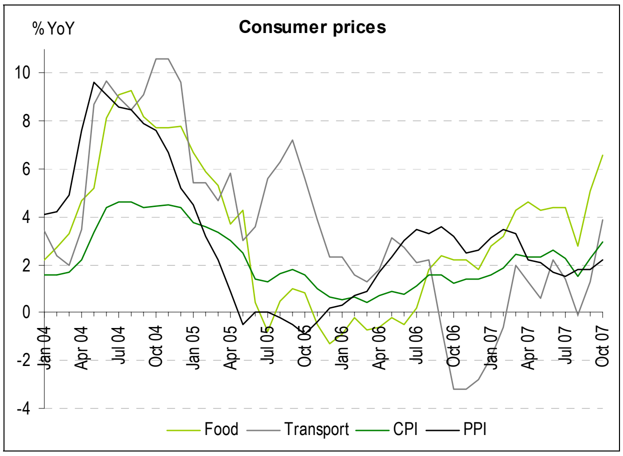
### Gradual widening of external imbalance

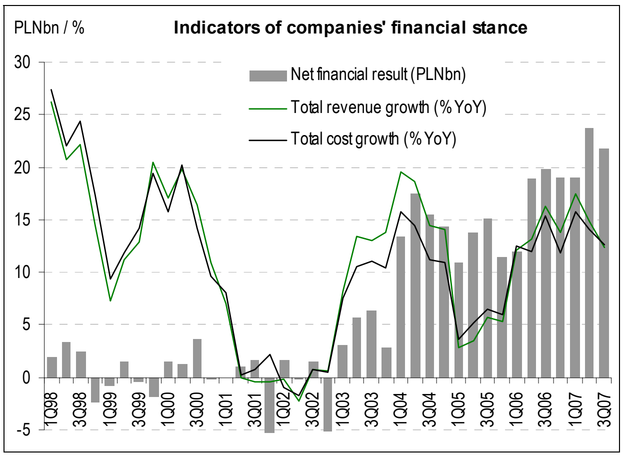
- The balance of payments data for September did not change overall picture of external relations of the Polish economy.
- The current account deficit was lower than forecasted, but it did not result from better than expected performance in trade, but from lower than forecasted deficit in income balance.
- The trade deficit significantly increased as compared to the previous month, which was connected with the slowdown in exports, though it is worth to notice that imports was below expectations despite a large, one-off transaction.
- In the coming quarters we expect acceleration in growth of both exports and imports, though this should be coupled with widening of the current account deficit to around 5% of GDP at the end of 2008 from below 4% at present.

# Economic update




Source: CSO, NBP, own calculations

## Labour market conditions remain tight

- The average wage in the corporate sector in October rose by 11.0%YoY, clearly exceeding the market expectations.
- The employment growth in October was another surprise as it accelerated to 5%YoY reaching another all-time high.
- The gross wage bill in the enterprise sector in October increased by 16.6%YoY, while during the first three quarters this year it averaged 13.7%YoY. Real growth of wage bill in October reached 13.2%YoY against 11.3% in January-September period. The effective net wage bill most probably increased on a larger scale due to a decline of the disability pension contribution since July. Robust increase in households income support expectations for further healthy rise in private consumption.
- At the end of October the registered unemployment rate reached 11.3%. This means that fast pace of unemployment reduction (by 3.6pp in annual terms) was maintained. The number of unemployed dropped 25%YoY reaching 1.72m.
- At the same time the CSO released the LFS results for Q3, which showed that the unemployment rate reached 9% against 13% in the previous year. This means a deceleration of unemployment reduction, which is connected with weakening of labour demand growth. According to the LFS, the number of employed in Q3 increased by 3.5%YoY, which means significant slowdown from 4.8%YoY in Q2 and 5.3%YoY in Q1. Thus, while in the corporate sector the employment growth rate in Q3 reached a record high level, we experienced a weakening of labour demand in the whole economy. This may suggest that the smaller business units limit the scale of their expansion.
- Despite weaker labour demand, the annual fall in the participation rate, which is still visible in the LFS results, indicates that the labour market conditions remain very tight.

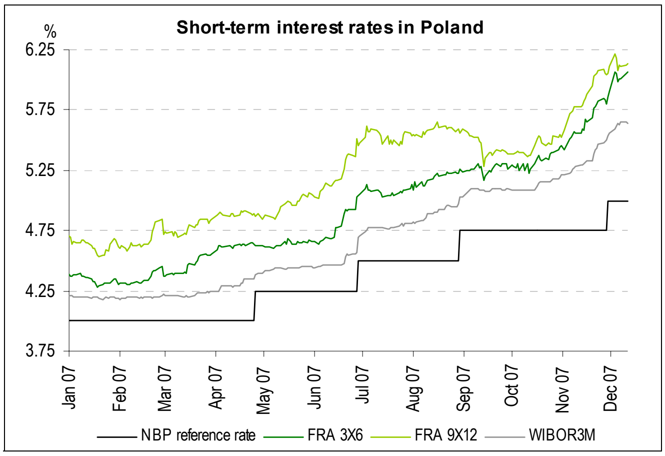
## CPI inflation pulled up by inflation

- The CPI inflation in October accelerated to 3%YoY after rise of prices by 0.6%MoM. The food price growth in October proved very close to our expectations of 1.6%MoM and was 1.7%MoM and 6.6%YoY. The prices in transport did not change on a monthly basis and rose 3.9% in annual terms, i.e. were lower than we assumed. A change in other categories of consumption goods and services was in line with our forecasts. Net inflation in October was 1.4%YoY.
- A scale of further inflation rise will depend mainly on the situation in the food market According to the FinMin's estimate, the CPI inflation rate in November reached 3.5%YoY.
- A positive news for the inflation prospects were data on producer prices for October, as PPI inflation reached 2.2%YoY against expectations of 2.5%YoY.

## Financial stance of enterprises remain strong

- Although annual pace of income growth in enterprises employing more than 49 people decreased (gross and net respectively to 8.8% and 9.9% from over 26% in Q2), one should remember that last year the results were extremely high.
- Despite significant increase in the wage bill observed this year, in the first three quarters of 2007 the cost-to-revenues ratio was lower than last year (93.6% vs. 94.2%), and costs breakdown showed only slight rise in share of wage costs by 0.2pp.
- What is important, the data showed that financial situation of exporters remain very good. It seems, however, that with the ongoing appreciation of the zloty it will be difficult for exporters to maintain such favourable financial stance. In particular, this may concern smaller firms, as they are more vulnerable to rise in costs (labour and commodities) and the zloty appreciation.

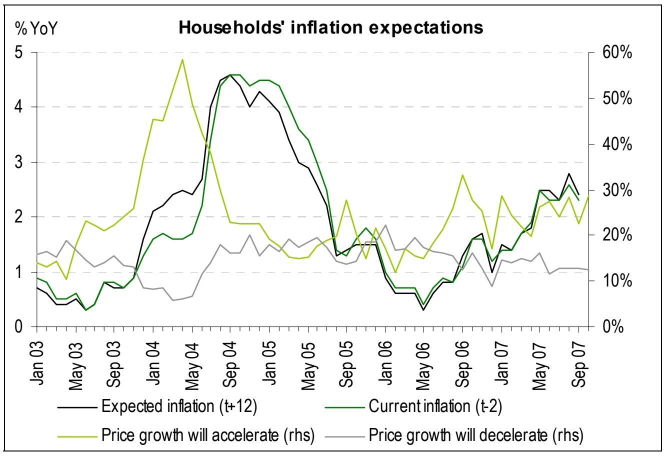
# Central bank watch




**Selected fragments of MPC statement (November meeting)**

Considering the above factors [favouring higher inflation as well as limiting its growth in future] and the risk of second-round effects of an increase in the current inflation, the Council assessed the probability of inflation overshooting the inflation target in the medium term to be higher than the probability of inflation running below the target and decided to raise the NBP's interest rates. The Council will strive to bring inflation down to the level consistent with the inflation target in the medium term.

The Council will be closely monitoring the growth and structure of domestic demand, including the degree of the expansionary fiscal policy stance, developments of the current account balance, the relation between wage and labour productivity growth, zloty exchange rate, the impact of globalisation on the economy and on food prices.




**Selected fragments of MPC minutes (October meeting)**

During the meeting, the Monetary Policy Council discussed the outlook for inflation in the context of the past, current and, primarily, anticipated economic situation. The discussion at the meeting focused on: changes in the environment of the Polish economy, exchange rate and food prices developments and the outlook for economic growth. The Council discussed the influence of these factors on the future inflation in Poland in view of the October inflation projection. pursued by major central banks.

At the meeting, the Council also discussed food price developments. Growth of these prices may continue in the longer term as it stems, to a large extent, from structural factors connected with increased demand for food in developing countries. At the same time it was pointed out that in Poland food still accounted for a considerable part of the consumption basket. As a result, a significant food price increase may be conducive to increasing inflation expectations and, consequently, to further build-up of wage pressure.

Source: NBP, Reuters

**The MPC strategy unchanged**

▪ In November the MPC raised main interest rates by 25 bp. This was the fourth interest rate hike this year, bringing the reference rate up to 5% from 4% before the April meeting when the tightening cycle began. The decision was consistent with the consensus among market analysts, although a part of market participants speculated about 50 bp hike and this was priced-in to some extent.

▪ The list of factors, which may lead to increase in the inflation rate in future, mentioned by the Council in its official statement was almost the same as a month ago (higher food prices were added), similarly to the list of factors counteracting inflation increase. However, the MPC recognised that strength of anti-inflationary factors "may be insufficient to keep inflation at the target level over the monetary policy transmission horizon". Similarly as in October, the Council assessed that the probability of inflation overshooting the inflation target in the medium term is higher than the probability of inflation running below the target. Nevertheless, this time it was high enough to trigger a rate hike.

▪ We think that monetary policy prospects have not changed as compared to the scenario predicted by us earlier. The MPC is aware that the CPI inflation may rise further (even to above 3.5%), due to strong upward tendency in food prices and gradually strengthening wage pressure. Therefore, more rate hikes are in the pipeline. However, the strategy of monetary tightening adopted by the MPC should not be changed. We keep our view that we will see next two hikes of the same scale, in January and March, and the reference rate will peak at 5.5%. Deviation from this scenario may take place only if the next data releases (concerning among others inflation, labour market trends, and economic activity) will be significantly different from expectations.

**Expectations up along with inflation increase**

▪ According to the NBP data, in November the expected inflation in 12 months time rose to the level of 2.6% (by 1 pp), which was slightly more than CPI inflation increase lagged by two months, which is used to quantify inflation expectations.

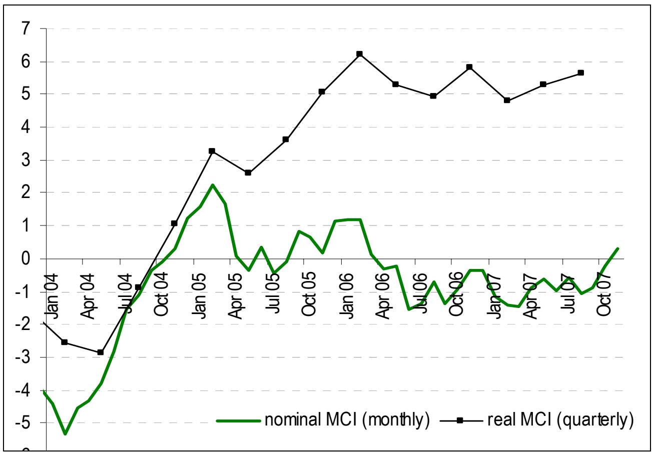
▪ Together with inflation increase observed recently, one should also expect a further pick-up in inflation expectations. This will be also interesting to analyse the structure of responses to questions asked in the opinion poll. Already the October' data indicated that percentage of people expecting that "prices will grow faster than currently" rose to the highest level in a year (28.7%). However, for comparison, in the first half of 2004 (when the MPC hiked rates three times in reaction to possible second-round effects driven by high food and fuel prices) this figure amounted to close to 50%.

**There was a motion to hike rate in October**

▪ According to the MPC minutes of the October's meeting, some members concluded that the assessment of the inflation outlook based of the ECMOD-based October inflation projection and considering factors not accounted for in the projection indicated that the probability of inflation overshooting the target in the projection horizon was significant and warrant raising interest rates.

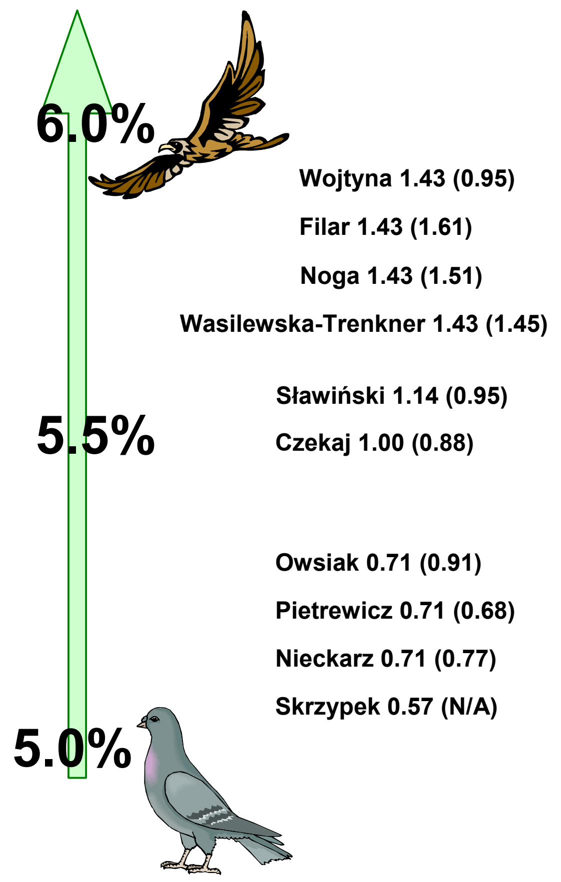
▪ Other Council members, however, were convinced that the recently observed appreciation of the zloty exchange rate limited the rise of inflation and that the inflation outlook would be affected by future developments in the foreign exchange market. They also pointed to the symptoms of an economic weakening. After Q3 data release risk of GDP slowdown moderated, though the zloty continued the appreciation trend.

# Restrictiveness of the Monetary Policy (Council)




**Monetary policy restrictiveness increased further**

- After the restrictiveness of monetary policy rose in October even with no hike in interest rates, the next month brought even more significant move upwards. This was driven by both market interest rate increase and zloty strengthening, though the former factor's influence was more significant amid its higher weight.
- After December monetary policy will be even more restrictive, which to some extent will be driven by expectations for more interest rate hikes by the MPC and by further appreciation of the Polish currency. In our opinion, however, it is hard to assess to what extent financial market prices-in next hikes, as money market rates has been recently under influence of fears over the liquidity of the sector towards the end of the year.




Index is between 0 and 2. A vote for the majority view is given a score of 1. A vote for a more hawkish (less dovish) decision than the majority view has a score of 2 and a vote for a less hawkish (more dovish) decision than the majority view has a score of 0. Average of points for all votes is the value of the index for a given MPC member.

Numbers directly by the name are values of the index for 2007 (period since the beginning of Skrzypek's term) and numbers in parentheses are values of the index for 2004-06.

Direction of the arrow reflects our expectations regarding direction of interest rate changes within the nearest 12 months. Values in percent indicate **our subjective** assumption as regards a preferred level of the reference rate in 12 months by a particular MPC member.

**Did the NBP President vote in favour of hike in November?**

In the interview with *Gazeta Wyborcza* daily, the NBP President Sławomir Skrzypek tried to explain its August decision, when he was the only member of the Council voting against the rate hike. In his opinion, sufficient argument against tightening was connected with global market turmoil and the beginning of credit crunch in the US. However, in recent weeks different opinions of the NBP President appeared as regards inflation prospects, which might have suggested that he was in favour of 25 bp rate hike in November. If this was indeed the case and the decision was unanimous this time, the President would not decrease his position further on the scale of restrictiveness of MPC members.

**Andrzej Wojtyna not so hawkish?**

On the other hand, the MPC member who proposed the motion of hike in July and was the only member supporting it, which put him to the most "hawkish" position, presented recently less hawkish stance. According to Reuters agency, he said: "the Council is not behind the curve; the momentum of change is not sufficient to force radical moves and cause excessive nervousness". This could mean that during the November's meeting there was no even motion to hike rates by 50 bp, which was risk factor for some market participants. On the other hand, we still do not know who proposed hiking rates already in October and who supported such motion. The answer to this question will be revealed only in February and this will probably lead to some changes in the index of MPC members restrictiveness. Although, it is worth mentioning that faster hike does not necessarily mean that a member of the Council would like to see higher peak in rates, as it is presented on the left hand side.

**There will be probably motion to hike rates in December**

Halina Wasilewska-Trenkner suggested in the interview with daily *Rzeczpospolita* that a rate hike is possible in December ("if there is a fire, the fire brigade cannot sleep"). This is a bit contradictory with the above-mentioned comments by professor Wojtyna, who did not suggest at all that the brigade may sleep (actually, he mentioned that further hikes will be probably necessary and are more likely today than before), but he did not think about current inflation situation in "fire!" category. However, the remaining question is whether the MPC would like to hike rate month-by-month given they do not think they are behind the curve. Though December's meeting is usually earlier than in other months, some members did not exclude a possibility of such move. We think they rather wanted to have door open in case of very surprising economic data.

**What mainstream members suggested?**

We do not think the motion to hike rates in December will find support of majority. From this perspective comments by Czekaj and Sławiński were important. Czekaj said this should not happen and only very unexpected data could change it. Sławiński said: "currently, there are no dramatic developments that would cast a doubt on our pledge to effectively stabilise inflation in the mid-term", though "further interest rate hikes cannot be ruled out next year". We think the MPC will continue gradual tightening, sending signals in order to stabilise inflation expectations.

Source: CSO, Eurostat, NBP, Reuters, own calculations

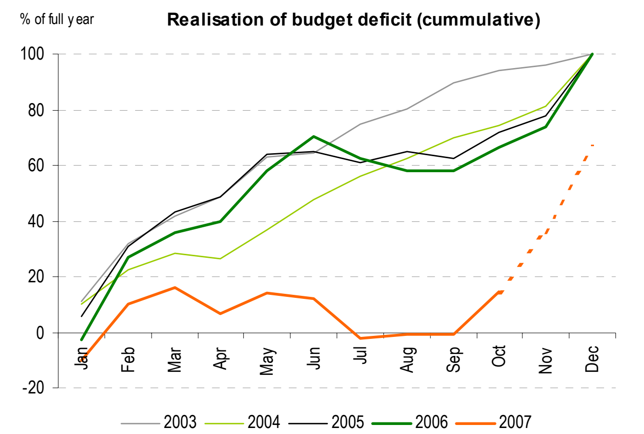
# Government and politics

| Fragment of the exposé of PM Donald Tusk |
|---|
| The first task of our government will be to bring out positive energy from Poles with awareness of differences between us. |
| Free people, not tied by too high taxes and too complicated regulations (...) produce more and more goods. This is the essence of democratic capitalism, this is the essence of policy, which we want to propose Poles today – liberal economic policy and solid social policy. |
| I want so that this would be a march always in one direction, towards lower taxes and elimination of excessive and often redundant fiscal burdens, which citizens pay for administration. I know that at the same time we have to ensure wage increase for workers in public sector. |
| There is a need for reduction in public debt. The public debt cannot increase on such a pace as to date. In a few years the budget should be close to state of balance. |
| We will promote entrepreneurship, we will finally change the law – and this is firm declaration – which does not help enterprises. |

| Six priorities according to the new finance minister |
|---|
| Reduction in the public debt by 4-7pp until 2011 |
| Simplification of the tax system |
| Higher spending on education |
| Faster construction of roads with greater use of EU funds |
| Faster privatisation |
| Preparation of Poland to the euro zone entry |

**Key spending cuts planned in 2008**

| Item | Amount in PLNm |
|---|---|
| Subsidy to Social Security Fund | 1500 |
| Special reserves | 590 |
| Justice | 245 |
| Internal affairs | 235 |
| Economy | 150 |
| Construction and hosuing | 130 |
| Major state's offices and agencies (e.g. chancellery of the Prime Minister, President, Sejm and Senate) | 156 |




Source: BZWBK, Ministry of Finance, PAP, Reuters

### Not too much details in Prime Minister's exposé

▪ Instead of details concerning the planned reduction in budget deficit, the new Prime Minister Donald Tusk stressed in his exposé the necessity to "bring out positive energy" in the economy through simplification of taxes and regulations.

▪ The Prime Minister announced radical acceleration in privatisation. In a half year, a detailed plan of privatisation for the next 4 years is going to be presented (in 2008 privatisation revenues are planned to reach at least PLN2.3bn).

▪ Tusk said the crowning achievement of the economic policy would be the euro adoption, but this should be beneficial for "ordinary people". This suggests the new cabinet will not sacrifice fast real convergence for meeting Maastricht criteria.

▪ Mr Tusk stressed need for increase in the participation rate, but gave no details also how the government will achieve it.

### Priorities of the new finance minister

▪ In his first public speech the new finance minister Jacek Rostowski presented three pillars of the financial policy.

▪ However, Mr Rostowski gave not much details. For instance, he did not indicate a date when Poland should adopt the euro, yet only said that the decision on this issue goes beyond the term of the current parliament, which should be disappointing for those who hoped for speeding up preparations for the euro zone entry.

▪ It seems that the main priority for the new finance minister will be reduction of the public debt in relation to GDP. Mr Rostowski is going to reduce the state's borrowing needs among others thanks to planned acceleration in privatisation. The debt relation to GDP is going to be reduced also due to keeping fast pace of the economic growth thanks to deregulation of the economy and investments in infrastructure and education.

### Disappointing reduction in the 2008 budget deficit

▪ After approval of the 2008 budget draft in the first reading by the Sejm, the Public Finance Committee adopted amendments submitted by its chairman and head of PO caucus Zbigniew Chlebowski, assuming changes in the structure of budget worth around PLN3.5bn. As a result, there will be increase in spending by PLN1.85bn for wage hikes for teachers and budget deficit will be reduced by PLN1.5bn to PLN27.1bn. Let us remind that earlier reduction to PLN25-26bn or even to PLN20bn was planned.

▪ Savings are going to be achieved in a large part through reduction in subsidy to the Social Security Fund the next year. This will be possible due to higher transfers to the fund this year and thus constraining its needs in 2008. This means that the government makes use of this year's money (that could reduce this year's deficit) instead of looking for real savings the next year.

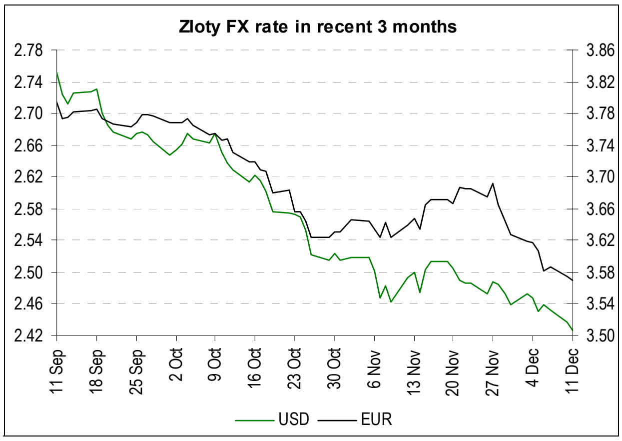
### Faster realisation of this year's budget spending

▪ In line with expectations, the final quarter of this year saw acceleration in realisation of budget spending. At the end of October the budget was in the deficit of PLN4.4bn or 14.8% of the full-year plan and the last two months of the year should see continuation of the tendency.

▪ The pace of spending growth in January-October period accelerated to 11.3%YoY from 10%YoY after September. Budget spending reached 77.1% of the full-year plan.

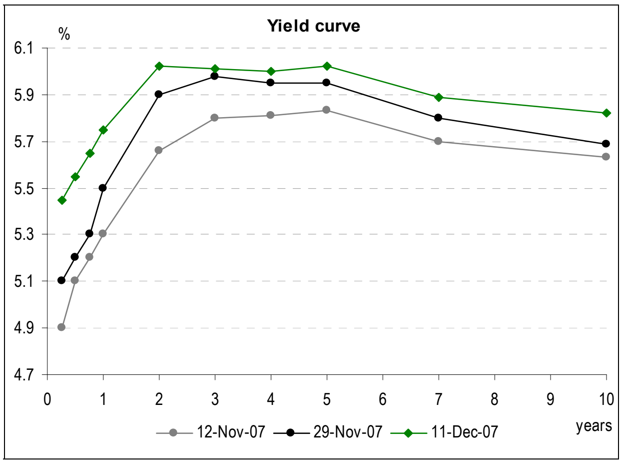
▪ At the same time, the pace of revenues growth in January-October period decelerated to 19.9%YoY from 21.2% after September, mainly due to weaker than predicted inflows from indirect taxes. To some extent this was also a high base effect. Inflows from direct taxes grew on the similar pace as earlier, indicating that the economy remains in good condition.

# Market monitor



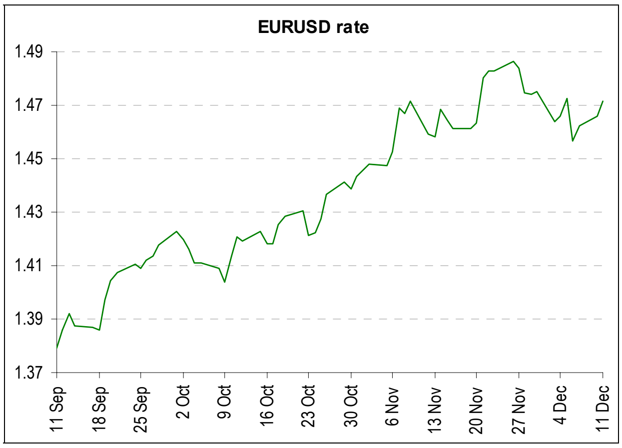

## Significant zloty appreciation

- At the end of October the EURPLN rate did not manage to break the 3.60 level and a correction followed, among others with regards to rising risk aversion. Despite the tries the zloty did not break the 3.70 level against the euro and after a series of positive events, such as good GDP data release, announcements of rating agencies of possible Poland's rating upgrade already next year, as well as fall of risk aversion amid expectations of interest rate cut in the US, there was a substantial zloty appreciation experienced.
- In our view, zloty is going to be supported by the expectations of further interest rate hikes in Poland and possible rate cuts by the major central banks. At the end of this year larger foreign transfers may support the zloty. In spite of this there are some technical signals, which are pointing that quite soon (start of January) there may be a correction, which might appear amid some risk aversion



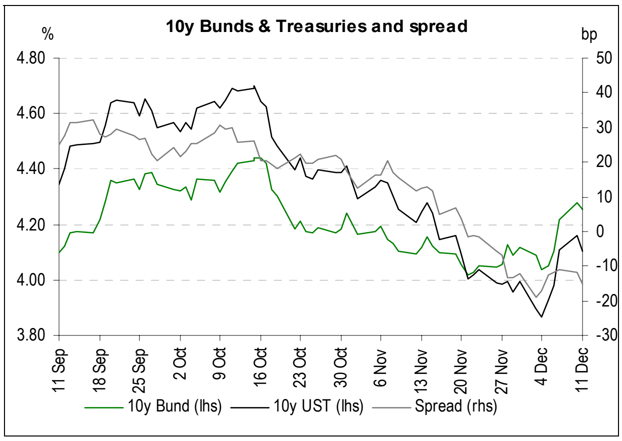

## Bonds weaken after high CPI

- Since the release of our last report bonds significantly weakened due to rising expectations of stronger monetary policy tightening and possibility of rate hikes accumulation in the nearest time. CPI data (they confirmed the inflation forecast of the MinFin), data on employment and wages, as well as MPC comments appeared to be the negative factors. After the release of the decision and the Council's communiqué there was a recovery, however the MinFin's November inflation forecast contributed to further sell-off. The money market rates are high due to market concerns over liquidity ahead of turn of the year.
- We presume that fears over larger scale of monetary policy tightening or faster rate hikes may keep prices at low levels. The rise in yields may follow after the labour market data. However, after the MPC meeting, at which the Council will decide not to change rates, we expect recovery.




## The dollar reached record low levels

- In the second part of November the dollar's weakening against the single currency was continued. At the end of the previous month the moods in the international markets improved and the dollar started recovering. Investors expected, that the rate cut would support the US economy, and moreover some short-dollar positions were closed ahead of year-end. After the EURUSD rate fell below 1.46 the dollar weakened again.
- In the coming months we expect further dollar's weakening against the euro, and the EURUSD rate may break 1.50. The main reason would be further rate cuts by the Fed and falling interest rate disparity against the EMU. Potential news on problems of some financial institutions as well as signals of slowdown in the United States will be an essential factor for the dollar.

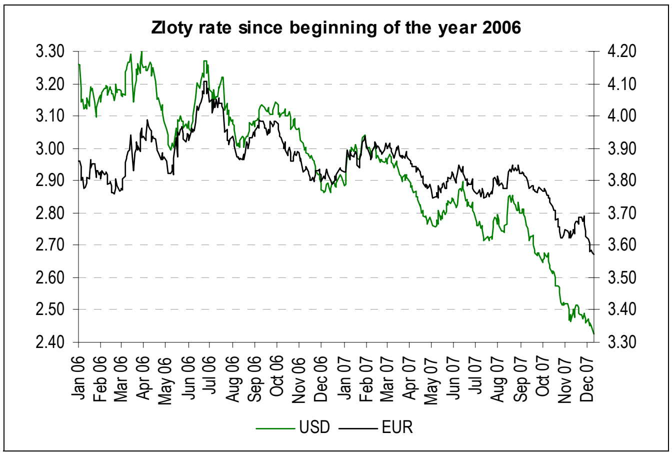


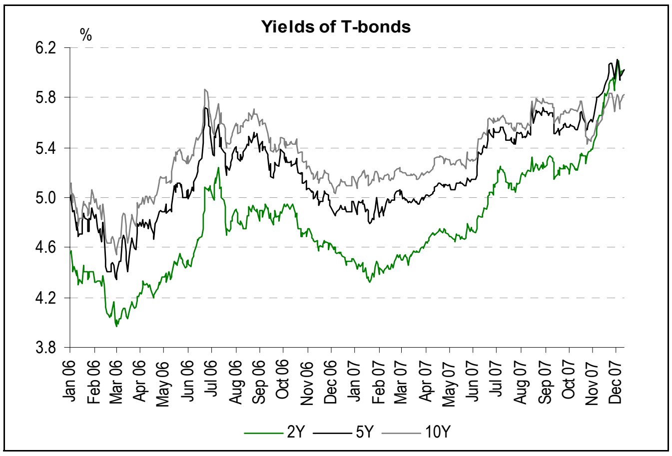

## 10Y bonds cheaper in the EMU than in the US

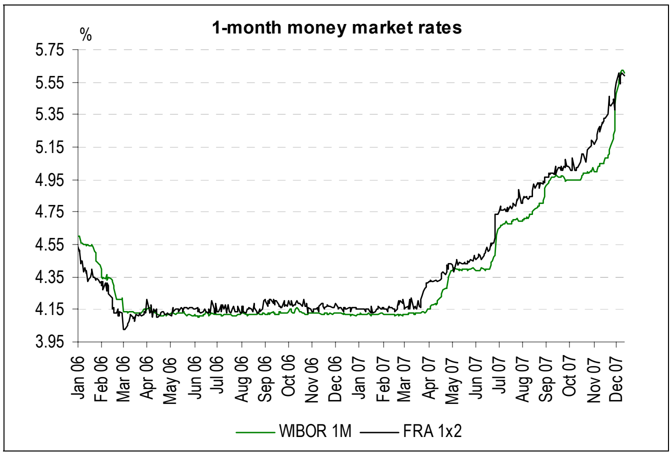
- The retreat from the safe-haven assets and fears over performance of the US economy along the Fed comments increased expectations of larger scale of monetary easing in the US. As the 10Y yields of Treasuries reached 3.80% level investors interpreted them as overstated and started sell-off, which was paused with the decision and the communiqué of the Fed. Bunds weakened on hawkish comments of the ECB. Yields of the 10Y Treasuries declined since the mid November from 4.20% to 4.0%, and of Bunds rose from 4.09% to 4.25%.
- We expect that problems of the US housing market may keep the uncertainty in the financial markets. Problems of the US economy amid lower inflation pressure may lead to further interest rate cuts even down to 3.75%. In our view if the situation in the credit markets does not stabilise next year ECB may cut rates.

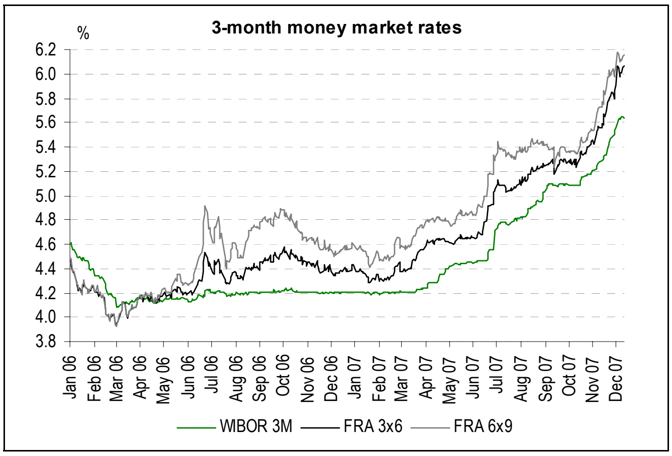
Source: Reuters, BZ WBK

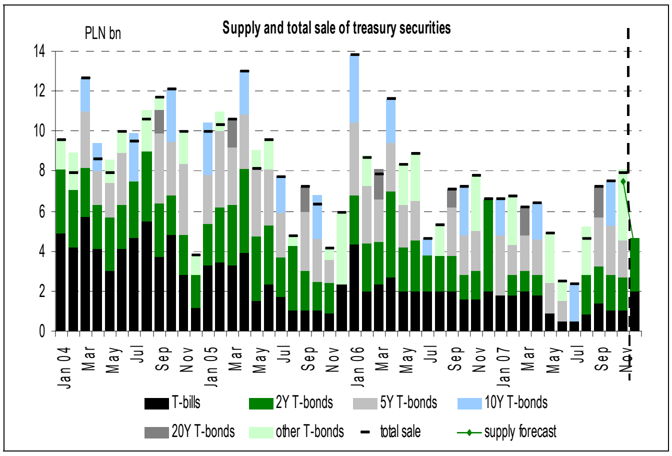
# Market monitor




## Treasury bill auctions (PLN m)

| | OFFER / SALE | |
|---|---|---|
| **Date of auction** | **52-week** | **Total** |
| **08.10.2007** | 500 / 500 | 500 / 500 |
| **22.10.2007** | 500 / 500 | 500 / 500 |
| **Total October** | **1 000 / 1 000** | **1 000 / 1 000** |
| **05.11.2007** | 1 000 / 1 000 | 1 000 / 1 000 |
| **19.11.2007** | - | - |
| **Total November** | **1 000 / 1 000** | **1 000 / 1 000** |
| **03.12.2007** | 2 000 / 2 000 | 2 000 / 2 000 |
| **17.12.2007** | - | - |
| **Total December** | **2 000 / 2 000** | **2 000 / 2 000** |

* estimations based on Ministry of Finance preliminary information

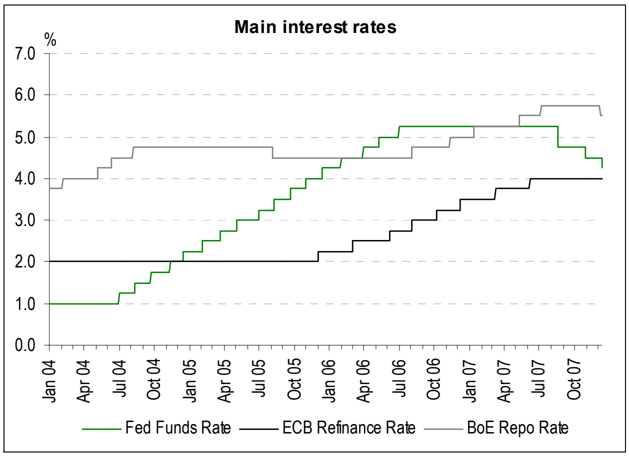
## Treasury bond auctions in 2007 (PLN m)

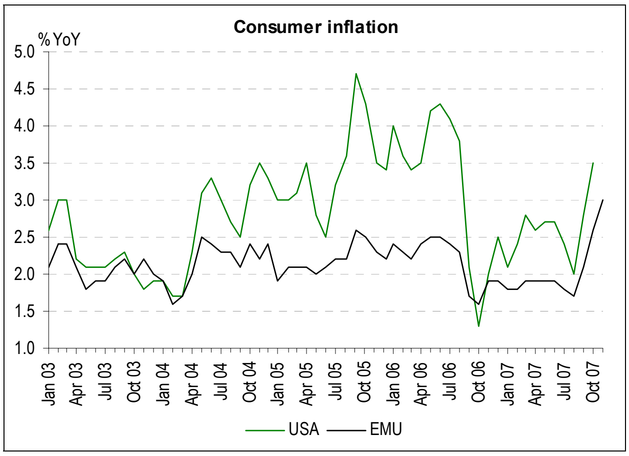
| month | First auction | | | | Second auction | | | | Third auction | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | date | T-bonds | offer | sale | date | T-bonds | offer | sale | date | T-bonds | offer | sale |
| **January** | - | - | - | - | 10.01 | DS1017 | 1 800 | 1 800 | 17.01 | PS0412 | 3 000 | 3 000 |
| **February** | 07.02 | OK0709 | 1 000 | 1 000 | 14.02 | WZ0118 \| IZ0816 | 2400 \| 0 | 2400 \| 0 | 21.02 | PS0412 | 1 500 | 1 500 |
| **March** | 07.03 | OK0709 | 1 000 | 1 000 | 14.03 | WS0922 | 1 400 | 1 400 | 21.03 | PS0412 | 1 800 | 1 800 |
| **April** | 04.04 | OK0709 | 1 000 | 1 000 | 11.04 | DS1017 | 1 800 | 1 800 | 18.04 | PS0412 | 1 800 | 1 800 |
| **May** | - | - | - | - | 09.05 | WZ0118 \| IZ0816 | 2000 \| 500 | 2000 \| 498 | 16.05 | PS0412 | 1 500 | 1 500 |
| **June** | 06.06 | - | - | - | 13.06 | WS0437 | 1 000 | 1 000 | 20.06 | PS0412 | 1 000 | 1 002 |
| **July** | 04.07 | - | - | - | 11.07 | DS1017 | 1 800 | 1 800 | - | - | - | - |
| **August** | 01.08 | OK0709 | 2 000 | 1 400 | 08.08 | WZ0118 \| IZ0816 | 2 400 \| 0 | 2 400 \| 0 | - | - | - | - |
| **September** | 05.09 | OK0709 | 1 800 | 1 800 | 12.09 | WS0922 | 1 500 | 1 500 | 19.09 | PS0412 | 2 500 | 2 500 |
| **October** | 03.10 | OK0709 | 1 800 | 1 800 | 10.10 | DS1017 | 2 160 | 2 160 | 17.10 | PS0412 | 2 300 | 2 300 |
| **November** | 07.11 | OK0709 | 1 700 | 1 700 | 14.11 | WZ0118 \| IZ0816 | 3 000 \| 600 | 3 000 \| 578 | 21.11 | PS0413 | 2 200 | 2 200 |
| **December** | 05.12 | OK0709 | 2 660 | 2 660 | | - | - | - | - | - | - | - |

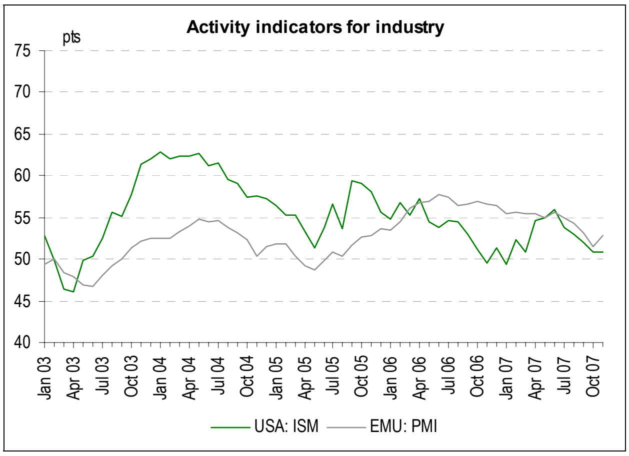
* with supplementary auction

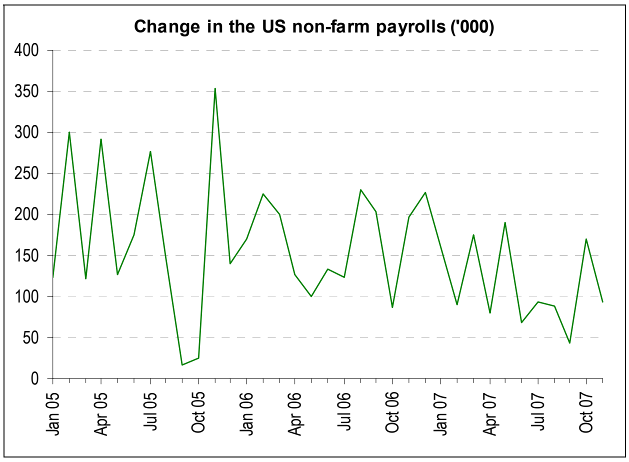
Source: Ministry of Finance, Reuters, BZ WBK

# International review




Source: Reuters, ECB, Federal Reserve

## Fed eased the monetary policy

▪ Since the October decision on interest rate cut by Fed the expectations that there may be another one by 50 pb on tensions in the credit market were mounting. Despite some certain fall of expectations for a cut of larger scale ahead of the meeting the 25 bp interest rate cut disappointed investors. The FOMC wrote in the communiqué, that the uncertainty regarding the economic growth and inflation increased among others in reaction to the developments of events in the financial markets.

▪ In December the ECB left the interest rates unchanged (the main rate stayed at 4.0%), while the communiqué and the comments of Jean Claude Trichet were more hawkish than expected. The ECB president emphasised the upside risks to inflation and said that the bank is ready to counter them. ECB revised down economic growth and inflation forecast up. We consider the ECB comments as more hawkish than potential next rate decisions.

## High inflation in the EMU

▪ Core inflation in the US in October amounted to 0.2%MoM (2.2%YoY). The headline CPI figure rose in line with expectations by 0.3%MoM and 3.5%YoY. Core inflation was close to the Fed's comfort zone, and the CPI growth resulted from the energy and food prices. PPI rose by 0.1%MoM, slightly below forecasts. The core PPI was also lower than pointed by the market consensus and remained unchanged on monthly basis, though it rose by 2.5%YoY from 2% in September.

▪ Final data on inflation in the euro zone showed an HICP index rise by 2.6%YoY in October. On the other hand, according to the preliminary estimates inflation accelerated to 3%YoY in November. This increase of inflation growth rate weakened expectations for a rate cut in the EMU and creates challenge for the central bank amid problems in the credit markets.

## Low levels of the ISM activity indices

▪ The ISM index for the US manufacturing sector in November was slightly lower than expected and amounted to 50.8 pts, against 50.9 pts in October. On the other hand, the services sector decreased to 54.1 pts, below the expectations (55 pts). The indices show a certain weakening of the activity in the US economy with regards to the situation in the credit markets, as well as the housing market. Their components also point to rising price indices.

▪ In November the PMI index showing the activity in the manufacturing sector in the EMU rose to 52.8 pts against the lowest level in 26 months in October (51.5 pts). The PMI index for the services sector fell less than expected to 54.1pts (the lowest level in 27 months). It is worth to note that the input price index rose to 63.4 pts (the highest level since October 2000). Low activity indices levels show the influence of the financial markets turmoil and the strong euro.

▪ After the revision the GDP in the United States in Q3 amounted to 4.9% against 3.9%, against the previous estimates and expectations of 4.8%. These data were less important as it focused on the newer issues.

## The US labour market data did not disappoint

▪ The US labour market data in November were slightly better than expected and showed a decline of non-farm payrolls to 94k against expected 90k. The data for October were upwardly revised to 170k from 166k. On the other hand, the rate of unemployment remained in November unchanged at 4.7% while the market forecasted a rise to 4.8%.

▪ The Q3 US ULC growth rate was revised to -2% from -0.2%, and the productivity figure was revised to 6.3% from 4.9%.

▪ Labour market data were slightly above expectations and to some extent contributed to improvement of moods and weakening of expectations of a 50 bp move in the US.

# Economic calendar

| Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|
| **10 December**<br>US: Pending home sales (Oct) | **11**<br>GER: ZEW index (Dec)<br>US: Wholesales inventories (Oct)<br>US: Fed meeting – decision | **12**<br>***POL: Switch auction***<br>***POL: Balance of payments (Oct)***<br>US: Import prices (Nov)<br>US: Trade balance (Oct) | **13**<br>***POL: MPC minutes (Dec)***<br>***POL: CPI (Nov)***<br>CH: SNB meeting - decision<br>US: PPI (Nov)<br>US: Retail Sales (Nov) | **14**<br>***PL: Money supply (Nov)***<br>EMU: Final HICP (Nov)<br>US: CPI (Nov)<br>US: Capacity utilization (Nov)<br>US: Industrial output (Nov) |
| **17**<br>***PL: Wages and Employment (Nov)***<br>US: NY Fed index (Dec)<br>US: Net capital flows (Oct)<br>EMU: Preliminary manufacturing PMI (Dec)<br>EMU: Preliminary services PMI (Dec) | **18**<br>***PL: MPC meeting***<br>US: House starts (Nov) | **19**<br>***PL: MPC meeting – decision***<br>***PL: Industrial Output (Nov)***<br>***PL: PPI (Nov)***<br>GER: Ifo Index (Dec) | **20**<br>US: Final GDP (Q3)<br>US: Core PCE (Q3)<br>US: GDP deflator (Q3)<br>US: New jobless claims<br>US: Philadelphia Fed index (Dec) | **21**<br>***PL: Business climate (Dec)***<br>***PL: Core inflation (Nov)***<br>***PL: Retail sales (Nov)***<br>***PL: Unemployment (Nov)***<br>***PL: Calendar of CSO data releases in January***<br>US: Core PCE (Nov)<br>US: Final Michigan (Dec) |
| **24**<br>DE, JP: Market holiday | **25**<br>***PL: Christmas Day*** | **26**<br>***PL: Second day of Christmas – market holiday***<br>DE, GB: Market holiday | **27**<br>US: Durable goods orders (Dec)<br>US: New jobless claims<br>US: Consumer confidence (Dec) | **28**<br>US: New homes sales (Nov) |
| **31**<br>DE, JP: Market holiday<br>US: Chicago PMI (Dec)<br>US: Home sales (Nov) | **1 January**<br>***PL: New Year's Day – market holiday***<br>US, DE, GB, JP: Market holiday | **2**<br>***PL: Auction of 2Y bonds***<br>JP: Dzień wolny<br>EMU: Manufacturing PMI (Dec)<br>US: ADP report (Dec)<br>US: Manufacturing ISM (Dec)<br>US: FOMC minutes | **3**<br>JP: Market holiday<br>EMU: M3 money supply (Nov)<br>US: New jobless claims<br>US: Factory orders (Nov) | **4**<br>EMU: Non-manufacturing PMI (Dec)<br>US: Non-farm payrolls (Dec)<br>US: Unemployment (Dec)<br>US: Non-manufacturing ISM (Dec) |
| **7**<br>***PL: Treasury bills auction***<br>EMU: PPI (Nov) | **8**<br>EMU: Retail sales (Nov)<br>US: Pending home sales (Nov) | **9**<br>***PL: Auction of 20Y bonds*** | **10**<br>GB: BoE meeting – decision<br>EMU: ECB meeting - decision<br>US: New jobless claims<br>US: Wholesales inventories (Nov) | **11**<br>US: Import prices (Dec)<br>US: Trade balance (Nov) |

*Source: CSO, NBP, Finance Ministry, Reuters*

**MPC meetings and data release calendar for 2007**

| | I | II | III | IV | V | VI | VII | VIII | IX | X | XI | XII |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MPC meeting | 30-31 | 27-28 | 27-28 | 24-25 | 29-30 | 26-27 | 24-25 | 28-29 | 25-26 | 30-31 | 27-28 | 18-19 |
| MPC minutes | - | - | - | - | 24 | 21 | 19 | 23 | 20 | 25 | 22 | 13 |
| GDP* | - | - | 2 | - | 31 | - | - | 30 | - | - | 30 | - |
| CPI | 15 | 15[a] | 14[b] | 13 | 15 | 13 | 13 | 14 | 13 | 15 | 14 | 13 |
| Core inflation | 22 | | 23[b] | 23 | 23 | 22 | 23 | 23 | 24 | 22 | 23 | 21 |
| PPI | 19 | 19 | 19 | 20 | 21 | 20 | 19 | 20 | 19 | 18 | 20 | 19 |
| Industrial output | 19 | 19 | 19 | 20 | 21 | 20 | 19 | 20 | 19 | 18 | 20 | 19 |
| Retail sales | 29 | 23 | 23 | 25 | 25 | 26 | 24 | 24 | 25 | 23 | 26 | 21 |
| Gross wages, employment | 16 | 15 | 15 | 17 | 17 | 19 | 16 | 16 | 17 | 15 | 16 | 17 |
| Unemployment | 29 | 23 | 23 | 25 | 25 | 26 | 24 | 24 | 25 | 23 | 26 | 21 |
| Foreign trade | about 50 working days after reported period | | | | | | | | | | | |
| Balance of payments* | 2 | - | 30 | - | - | 29 | - | - | 28 | - | - | - |
| Balance of payments | 16[c] | 12 | 14 | 13 | 18 | 15 | 13 | 13 | 12 | 15 | 13 | 12 |
| Money supply | 12 | 14 | 14 | 13 | 14 | 14 | 13 | 14 | 14 | 12 | 14 | 14 |
| NBP balance sheet | 5 | 7 | 7 | 6 | 7 | 6 | 6 | 7 | 7 | 5 | 7 | 7 |
| Business climate indices | 23 | 22 | 22 | 23 | 23 | 22 | 23 | 23 | 24 | 23 | 23 | 21 |

* quarterly data, [a] preliminary data, January, [b] January and February, [c] November 2006

*Source: CSO, NBP*

# Economic data and forecasts

### Monthly economic indicators

| | | Nov 06 | Dec 06 | Jan 07 | Feb 07 | Mar 07 | Apr 07 | May 07 | Jun 07 | Jul 07 | Aug 07 | Sep 07 | Oct 07 | Nov 07 | Dec 07 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Industrial production | %YoY | 12.0 | 5.9 | 15.4 | 13.0 | 11.3 | 12.6 | 8.1 | 5.6 | 10.4 | 8.9 | 5.4 | 10.6 | 9.5 | 9.8 |
| Retail sales [c] | %YoY | 13.6 | 13.3 | 16.5 | 17.5 | 19.2 | 15.1 | 14.8 | 16.2 | 17.1 | 17.4 | 14.2 | 19.4 | 19.0 | 17.9 |
| Unemployment rate | % | 14.8 | 14.8 | 15.1 | 14.8 | 14.3 | 13.6 | 12.9 | 12.3 | 12.1 | 11.9 | 11.6 | 11.3 | 11.3 | 11.4 |
| Gross wages [b c] | %YoY | 3.1 | 8.5 | 7.8 | 6.4 | 9.1 | 8.4 | 8.9 | 9.3 | 9.3 | 10.5 | 9.5 | 11.0 | 10.1 | 9.4 |
| Employment [b] | %YoY | 3.8 | 4.1 | 3.8 | 4.3 | 4.5 | 4.4 | 4.4 | 4.6 | 4.7 | 4.8 | 4.7 | 5.0 | 5.1 | 4.9 |
| Export (€) [d] | %YoY | 21.7 | 10.2 | 15.4 | 13.8 | 15.0 | 16.8 | 9.8 | 10.7 | 17.4 | 16.5 | 8.4 | 14.3 | 10.8 | 16.3 |
| Import (€) [d] | %YoY | 22.6 | 18.2 | 19.6 | 12.2 | 18.5 | 23.8 | 12.9 | 16.6 | 23.5 | 12.9 | 13.9 | 15.5 | 14.1 | 18.0 |
| Trade balance [d] | EURm | -499 | -996 | -542 | -141 | -757 | -781 | -1030 | -786 | -1293 | -310 | -921 | -576 | -859 | -1304 |
| Current account balance [d] | EURm | -993 | -1290 | -881 | -545 | -681 | -740 | -1524 | -1343 | -1436 | -618 | -681 | -726 | -919 | -1334 |
| Current account balance [d] | % GDP | -3.0 | -3.2 | -3.4 | -3.2 | -3.2 | -3.2 | -3.4 | -3.7 | -3.9 | -3.7 | -3.9 | -3.8 | -3.7 | -3.7 |
| Budget deficit (cumulative) | PLNbn | -18.5 | -25.1 | 3.1 | -3.0 | -4.8 | -2.1 | -4.3 | -3.7 | 0.6 | 0.3 | 0.2 | -4.4 | -10.9 | -19.9 |
| Budget deficit (cumulative) [e] | % of FY plan | 73.9 | 100.0 | -10.3 | 10.1 | 16.1 | 6.9 | 14.2 | 12.3 | -2.1 | -0.9 | -0.7 | 14.8 | 36.4 | 66.4 |
| CPI | %YoY | 1.4 | 1.4 | 1.6 | 1.9 | 2.5 | 2.3 | 2.3 | 2.6 | 2.3 | 1.5 | 2.3 | 3.0 | 3.3 | 3.5 |
| PPI | %YoY | 2.5 | 2.6 | 3.1 | 3.5 | 3.3 | 2.2 | 2.1 | 1.7 | 1.5 | 1.8 | 1.8 | 2.2 | 2.9 | 3.4 |
| Broad money (M3) | %YoY | 14.6 | 16.0 | 19.3 | 18.0 | 18.0 | 17.8 | 16.0 | 14.7 | 15.6 | 16.1 | 14.4 | 13.6 | 13.6 | 12.8 |
| Deposits | %YoY | 13.4 | 15.2 | 18.5 | 18.3 | 17.7 | 18.2 | 16.4 | 15.2 | 15.9 | 16.3 | 15.4 | 15.1 | 14.8 | 13.5 |
| Loans | %YoY | 20.7 | 23.4 | 25.0 | 26.5 | 26.8 | 28.4 | 28.6 | 29.2 | 31.4 | 31.1 | 31.0 | 30.4 | 29.2 | 29.6 |
| USD/PLN | PLN | 2.97 | 2.88 | 2.98 | 2.98 | 2.94 | 2.83 | 2.80 | 2.84 | 2.75 | 2.80 | 2.73 | 2.61 | 2.49 | 2.45 |
| EUR/PLN | PLN | 3.82 | 3.81 | 3.88 | 3.90 | 3.89 | 3.82 | 3.78 | 3.81 | 3.77 | 3.81 | 3.79 | 3.71 | 3.66 | 3.60 |
| Reference rate [a] | % | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.25 | 4.25 | 4.50 | 4.50 | 4.75 | 4.75 | 4.75 | 5.00 | 5.00 |
| Lombard rate [a] | % | 5.50 | 5.50 | 5.50 | 5.50 | 5.50 | 5.75 | 5.75 | 6.00 | 6.00 | 6.25 | 6.25 | 6.25 | 6.50 | 6.50 |
| WIBOR 3M | % | 4.20 | 4.20 | 4.20 | 4.20 | 4.22 | 4.32 | 4.44 | 4.52 | 4.78 | 4.80 | 5.09 | 5.13 | 5.36 | 5.60 |
| Yield on 52-week T-bills | % | 4.29 | 4.20 | 4.14 | 4.07 | 4.23 | 4.36 | 4.43 | 4.42 | 4.70 | 4.80 | 5.01 | 5.04 | 5.30 | 5.75 |
| Yield on 2-year T-bonds | % | 4.65 | 4.54 | 4.41 | 4.46 | 4.55 | 4.71 | 4.70 | 4.93 | 5.14 | 5.23 | 5.25 | 5.30 | 5.77 | 6.00 |
| Yield on 5-year T-bonds | % | 5.01 | 4.91 | 4.90 | 4.97 | 4.98 | 5.07 | 5.11 | 5.40 | 5.50 | 5.61 | 5.60 | 5.59 | 5.90 | 6.00 |
| Yield on 10-year T-bonds | % | 5.18 | 5.10 | 5.16 | 5.18 | 5.18 | 5.27 | 5.28 | 5.52 | 5.60 | 5.68 | 5.69 | 5.64 | 5.70 | 5.80 |

*Source: CSO, NBP, Finance Ministry, BZ WBK own estimates*

[a] at the end of period [b] in corporate sector [c] in nominal terms [d] balance of payments data on transaction basis [e] 2006 - % of Dec, 2007 - % of plan

## Quarterly and annual economic indicators

| | | 2005 | 2006 | 2007 | 2008 | 1Q07 | 2Q07 | 3Q07 | 4Q07 | 1Q08 | 2Q08 | 3Q08 | 4Q08 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP | PLNbn | 983.3 | 1 060.2 | 1 162.6 | 1 265.6 | 266.7 | 280.2 | 286.8 | 328.8 | 298.3 | 306.4 | 312.7 | 357.2 |
| GDP | %YoY | 3.6 | 6.2 | 6.4 | 5.5 | 7.2 | 6.4 | 6.4 | 5.9 | 4.6 | 5.9 | 5.7 | 5.9 |
| Domestic demand | %YoY | 2.4 | 7.3 | 7.6 | 7.1 | 7.7 | 8.2 | 7.4 | 7.1 | 5.8 | 7.5 | 7.2 | 7.5 |
| Private consumption | %YoY | 2.0 | 4.8 | 5.6 | 5.7 | 6.9 | 5.1 | 5.2 | 5.2 | 5.0 | 6.5 | 6.0 | 5.5 |
| Fixed investments | %YoY | 6.5 | 15.6 | 19.2 | 14.0 | 26.2 | 20.8 | 19.8 | 15.5 | 12.0 | 15.0 | 14.5 | 14.0 |
| Industrial production | %YoY | 4.0 | 12.5 | 9.9 | 8.8 | 13.0 | 8.5 | 8.1 | 9.9 | 7.1 | 8.7 | 10.6 | 8.7 |
| Retail sales (real terms) | %YoY | 1.5 | 11.9 | 14.9 | 15.4 | 17.4 | 14.1 | 12.8 | 15.3 | 14.5 | 18.4 | 15.2 | 13.6 |
| Unemployment rate [a] | % | 17.6 | 14.8 | 11.4 | 8.5 | 14.3 | 12.3 | 11.6 | 11.4 | 11.1 | 9.3 | 8.7 | 8.5 |
| Gross wages (real terms) [c] | %YoY | 1.2 | 4.2 | 6.6 | 6.3 | 5.9 | 6.5 | 8.1 | 6.7 | 6.1 | 6.4 | 6.5 | 6.2 |
| Employment [c] | %YoY | 1.9 | 3.2 | 4.6 | 4.3 | 4.2 | 4.5 | 4.8 | 5.0 | 4.8 | 4.5 | 4.3 | 3.7 |
| Export (€) [b] | %YoY | 17.8 | 20.4 | 13.6 | 13.0 | 14.7 | 12.3 | 13.8 | 13.6 | 13.0 | 13.0 | 13.0 | 13.0 |
| Import (€) [b] | %YoY | 13.4 | 24.0 | 16.6 | 17.3 | 16.8 | 17.5 | 16.6 | 15.7 | 17.0 | 17.0 | 17.0 | 18.0 |
| Trade balance [b] | EURm | -2 242 | -5 536 | -9 296 | -15 438 | -1 440 | -2 594 | -2 524 | -2 738 | -2 683 | -4 058 | -4 013 | -4 685 |
| Current account balance [b] | EURm | -3 866 | -8 787 | -11 427 | -17 569 | -2 104 | -3 610 | -2 735 | -2 978 | -3 347 | -5 074 | -4 224 | -4 925 |
| Current account balance [b] | % GDP | -1.6 | -3.2 | -3.7 | -5.0 | -3.2 | -3.7 | -3.9 | -3.7 | -4.0 | -4.3 | -4.6 | -5.0 |
| Budget deficit (cumulative) [a] | PLNbn | -28.6 | -25.1 | -19.9 | -28.0 | -4.8 | -3.7 | 0.2 | -19.9 | - | - | - | -28.0 |
| Budget deficit (cumulative) [a] | % GDP | -2.9 | -2.4 | -1.7 | -2.2 | - | - | - | - | - | - | - | - |
| CPI | %YoY | 2.1 | 1.0 | 2.4 | 3.2 | 2.0 | 2.4 | 2.0 | 3.3 | 3.7 | 3.2 | 3.2 | 2.6 |
| CPI [a] | %YoY | 0.7 | 1.4 | 3.5 | 2.6 | 2.5 | 2.6 | 2.3 | 3.5 | 3.6 | 3.1 | 3.0 | 2.6 |
| PPI | %YoY | 0.7 | 2.5 | 2.5 | 2.6 | 3.3 | 2.0 | 1.7 | 2.9 | 3.3 | 2.5 | 2.0 | 2.7 |
| Broad money (M3) [a] | %YoY | 13.1 | 16.0 | 12.8 | 11.9 | 18.0 | 14.7 | 14.4 | 12.8 | 13.1 | 12.8 | 12.1 | 11.9 |
| Deposits [a] | %YoY | 12.6 | 15.2 | 13.5 | 11.2 | 17.7 | 15.2 | 15.4 | 13.5 | 13.1 | 12.9 | 12.2 | 11.2 |
| Loans [a] | %YoY | 13.3 | 23.4 | 29.6 | 23.1 | 26.8 | 29.2 | 31.0 | 29.6 | 28.0 | 26.0 | 23.8 | 23.1 |
| USD/PLN | PLN | 3.23 | 3.10 | 2.77 | 2.48 | 2.97 | 2.82 | 2.76 | 2.52 | 2.40 | 2.46 | 2.53 | 2.54 |
| EUR/PLN | PLN | 4.02 | 3.90 | 3.78 | 3.63 | 3.89 | 3.80 | 3.79 | 3.65 | 3.60 | 3.64 | 3.67 | 3.63 |
| Reference rate [a] | % | 4.50 | 4.00 | 5.00 | 5.50 | 4.00 | 4.50 | 4.75 | 5.00 | 5.50 | 5.50 | 5.50 | 5.50 |
| Lombard rate [a] | % | 6.00 | 5.50 | 6.50 | 7.00 | 5.50 | 6.00 | 6.25 | 6.50 | 7.00 | 7.00 | 7.00 | 7.00 |
| WIBOR 3M | % | 5.29 | 4.21 | 4.72 | 5.66 | 4.20 | 4.42 | 4.89 | 5.36 | 5.53 | 5.70 | 5.70 | 5.70 |
| Yield on 52-week T-bills | % | 4.92 | 4.18 | 4.69 | 5.74 | 4.14 | 4.40 | 4.84 | 5.36 | 5.80 | 5.75 | 5.70 | 5.70 |
| Yield on 2-year T-bonds | % | 5.04 | 4.57 | 5.22 | 5.81 | 4.47 | 4.78 | 5.21 | 5.69 | 5.95 | 5.80 | 5.75 | 5.75 |
| Yield on 5-year T-bonds | % | 5.25 | 5.03 | 5.50 | 5.83 | 4.95 | 5.19 | 5.57 | 5.83 | 5.95 | 5.85 | 5.75 | 5.75 |
| Yield on 10-year T-bonds | % | 5.24 | 5.22 | 5.53 | 5.69 | 5.17 | 5.36 | 5.66 | 5.71 | 5.75 | 5.70 | 5.65 | 5.65 |

*Source: CSO, NBP, Finance Ministry, BZ WBK own estimates*

[a] at the end of period; [b] balance of payments data on transaction basis [c] in corporate sector

This analysis is based on information available until 11.12.2007 has been prepared by:

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