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Highlights in this issue:

- **Government revenue growth is volatile in Poland**
- **The link between GDP and government revenues is relatively weak**
- **Frequent and significant policy changes are a likely reason**
- **This volatile policy is bad for business**

Business cycles, quality of economic policy and government revenues in Poland

*By Aleksander Rutkowski**

Summary

The volatility of general government tax revenues has increased in Poland in recent years. The correlation between GDP growth and revenue growth appears to be lower in Poland than in many other EU Member States, which suggests that the instability of its revenues has a different. This Country Focus *argues that discretionary policy measures may be one such cause. This is supported by firm-level survey data on the quality of economic policy – tax policy in particular. It appears that economic policy in Poland has been less predictable, consistent and transparent than in other new Member States, and that this gap in the quality of policy is increasing.*

Introduction

In 2006, public finances in most of the EU Member States benefited from a significant economic upturn, as well as sharp increases in revenues, beyond what could be considered a normal cyclical response. This indicated an increase in tax elasticities, reflecting in particular the corporate tax buoyancy that had started in 2005. This had been preceded by a period of underperforming revenue growth before 2004 (European Commission, 2007a, pp. 39-41). Poland experienced even larger fluctuations in tax elasticities. These fluctuations may have resulted from economic mechanisms related to growth and the business cycle or from discretionary policy decisions. Such decisions can be assessed in terms of their short-term impact (counter- or pro-cyclicality) or long-term impact (on the stability of the business environment).

In principle, changes in government revenues result either from business cycles or from discretionary policy measures

Tax revenue growth depends on GDP growth and its composition. That government revenues show volatility resulting from business cycles is normal in a market economy. In contrast, the changes in revenues resulting from discretionary measures can be a sign of either positive or negative phenomena. On the one hand, they may reflect government's attempts to smooth the business cycles, in line with the tax smoothing theory, or – if fiscal consolidation is the objective – they may reflect a pro-cyclical tax policy. On the other hand, measures may impair business activity in the long term if they are too frequent, non-transparent and unexpected, thus increasing uncertainty and hence transaction costs (Williamson, 1979). The impact of volatility in taxation on investment is negative, according to the literature (Aligardi, 2001; Jeong, 2002; Edmiston, 2004). Fiscal (and monetary) volatility

*** Directorate for the Economies of the Member States.**

appears to consistently go hand-in-hand with low economic growth (Brunetti, 1998). In addition, government revenue developments cease to be predictable if no stable relationship between revenue components and tax bases can be estimated.

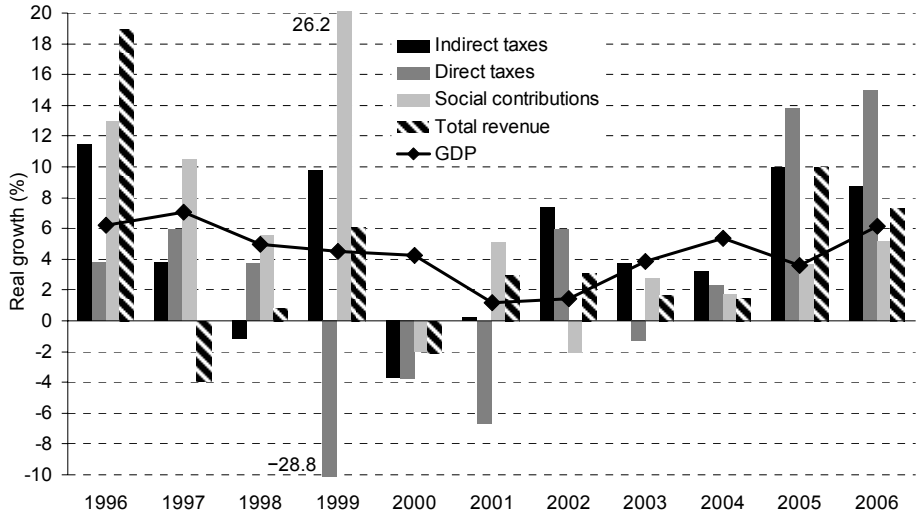
Government revenue growth in Poland is quite volatile, but is only loosely correlated with GDP growth.

In the light of the above, in analysing the aspects of the quality of Poland's public finances, it appears useful to establish, first, if the volatility of government revenues is predominantly due to GDP fluctuations or rather to numerous and frequent discretionary measures, and second, how it has affected business activity.

Prima facie, general government revenue growth seems to be only loosely correlated with GDP growth in Poland and the relationship differs across revenue components (Chart 1). In particular, tax elasticities (revenue growth rates divided by tax base growth rates) for major tax categories have started to fluctuate considerably in Poland since the end of the 1990s. This evidence suggests that the main sources of revenue volatility are discretionary policy measures (or statistical reclassifications and revisions leading to structural breaks in time series), since the composition of growth has not changed substantially (European Commission, 2007b, pp. 267-269).

This *Country Focus* starts by analysing the business cycle as a standard explanation of revenue fluctuations in Poland. A possible business-cycle-induced volatility of revenues is examined in two steps: firstly, the strength of the link between headline GDP growth (and its components) and revenues; and secondly, the size of the fluctuations of the cyclical component of general government revenues based on the estimated potential GDP growth. It then goes on to analyse an alternative determinant of revenue fluctuations in Poland – the stability, consistency, predictability and transparency of economic policy – on the basis of survey data for transition economies.

Chart 1: Real GDP growth and real growth of different general government revenue components in Poland



Source: Commission services
Note: Real growth rate of government revenue components is calculated with the GDP deflator. Real rather than nominal growth rates are analysed to avoid spurious correlation stemming from inflation, which has been high in Poland, driving both nominal revenues and nominal GDP (and its components).

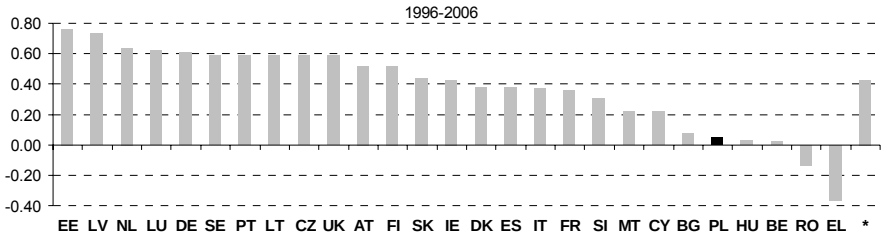
Revenue dependence on business cycles: the correlation between GDP growth and revenue growth

The link between revenue growth and GDP growth in Poland is among the weakest in the EU.

Poland ranks almost bottom in the EU regarding the correlation of its real general government revenue growth and real GDP growth (Chart 2). The relationship between revenue and GDP growth rates appears to have become slightly stronger in more recent years, but it still remains among the four weakest (in terms of absolute correlation coefficients).

The volatility of the cyclical component of revenues in Poland is also among the lowest in the EU.

Chart 2: Correlation between real GDP growth and real general government revenue growth



Source: Commission services
Note: The real growth rate of government revenue components is calculated with the GDP deflator. * = median.

At the major revenue component level, some variation in correlation coefficients can be observed (Table 1). In Poland, indirect taxes have the largest share in total general government revenues (more than ⅓). Their link with the growth of private consumption is negative, weighing on the overall weak relationship between total revenue growth and GDP growth. The negative relationship points to the effects of value-added-tax reliefs which are used more intensively during times of robust consumption growth (European Commission, 2007b, pp. 267-269). The relationship between revenue growth in social contributions (the second most important revenue component, slightly less than ⅓) and real growth of their tax base (compensation of employees) is stronger than in the EU. In contrast, the link between GDP growth and direct taxes (⅕ of total revenues) is weaker.

The revenue component, which can be directly influenced by the government, fluctuates most.

Other revenues (more than ⅙ of total revenues, mainly non-tax items such as dividends, interest, administrative fees, etc.) are negatively correlated with GDP growth in Poland. These other revenues appear to be the most subject to discretion by policy makers and to contribute to the instability of total revenue growth. Looking at the series presented in Chart 1, the volatility of total revenue growth is in general higher than the volatilities of each of its three main components (indirect taxes, direct taxes and social contributions). If data for 1999 are considered (when the pension reform was implemented, resulting in a visible major shift between the revenue components, notably the replacement of lower personal income tax by higher social contributions), social contributions also exhibit lower fluctuations than total revenues. Finally, if 2004 and 2005 are excluded (when significant corporate income tax and personal income tax cuts resulted in lower tax avoidance), direct taxes also have lower volatility (see also European Commission, 2007b, pp. 267-269).

Table 1: **Correlation between real growth rates of main general government revenue components and real growth of respective tax bases**

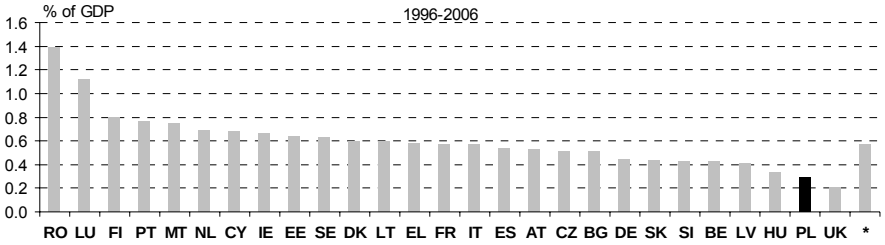
	Social contributions and compensation of employees	Indirect taxes and private consumption	Direct taxes and GDP	Other revenues and GDP
PL	0.37	-0.11	0.18	-0.16
EU-27*	0.27	0.05	0.37	0.04
NMS*	0.12	-0.05	0.40	0.06

Source: Commission services
Note: The real growth rate of government revenue components is calculated with the GDP deflator. NMS = EU New Member States. * = simple averages.

Business-cycle-induced revenue uncertainty: the volatility of the cyclical components of government revenues

Business cycles appear to have a weaker impact on the volatility of government revenues in Poland than in other EU Member States. Standard deviations of the cyclical components of revenues, which reflect the magnitude and frequency of fluctuations, put Poland close to the bottom of the ranking (Chart 3). The cyclical components of revenues are estimated by the Commission on the basis of potential GDP calculated with a production function approach (Denis et al., 2002).

Chart 3: Volatility of cyclical components of general government revenue



Source: Commission services
Note: Volatility is measured with standard deviations. * = median.

Another determinant of revenue rises and falls: discretionary policy measures

From the sections above, it appears that business cycles are not as strong a determinant of the volatility of government revenues in Poland as in other countries. If not the business cycle, then some other factors must determine the considerable changes in tax revenues in Poland. Discretionary economic policy may be an alternative factor. Excessive volatility of economic policy, including changes in tax law or in administrative interpretations, is likely to be reflected in negative views of entrepreneurs on the quality of business environment. At a more disaggregated level, too high volatility of policy translates into too low stability, consistency, predictability and transparency of policy.

Firm-level survey data can be helpful in measuring the stability of economic policy, including tax measures.

Box: The quality of economic policy as reflected in the Business Environment and Enterprise Performance Surveys (BEEPS)

Many qualitative features of economic policy – such as stability (the frequency and importance of changes in laws and regulations), consistency and predictability (whether ad hoc decisions prevail or rather long-term planning including early public consultation and information activities) and transparency (the way the changes in laws are explained and implemented by the administration) – are assessed by enterprises in three editions of the Business Environment and Enterprise Performance Survey (BEEPS, 1999, 2002, 2005) managed jointly by the World Bank and the European Bank for Reconstruction and Development. The BEEPS were conducted in the transition economies of Central and Eastern Europe and the Commonwealth of Independent States. The original firm-level datasets are publicly available.

In this *Country Focus*, the enterprises' replies concerning Poland were compared with the replies for all other new Member States (excluding Cyprus and Malta, which were not present in the BEEPS) and the same without Bulgaria and Romania (due to their later accession). This makes it possible to control for volatility related to trial-and-error policy during the economic transition (the reason why Poland should not be compared with more mature economies e.g. the EU-15). The country scores (averages of replies) were weighted by the number of responding enterprises (roughly proportional to country size). The scale for different questions was harmonised: 0 = worst economic environment, 100 = best. Then, for each year, the scores for similar questions of the survey, related to one of the two areas: overall economic policy quality or tax policy quality, were aggregated into synthetic indices. The absolute levels of indicators are not fully comparable across years because questions are similar but not identical in different editions of the BEEPS; however, the relative performance disparities of Poland compared to other countries in each year can be considered and their evolution over time assessed.

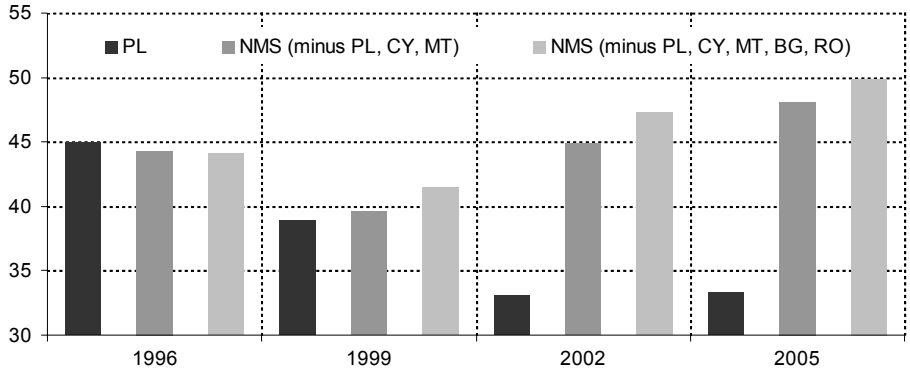
It appears that, in general, Poland does worse than other new Member States (also when Bulgaria and Romania are included). Only in 1996 was the situation apparently better in Poland than in the other Central European new Member States on average (Chart 4) – but it has since deteriorated. Entrepreneurs in Poland have suffered from frequent and significant institutional changes which were not announced in advance or well explained. In particular, the quality of tax policy was

Compared to the other new EU Member States, economic policy in Poland is less stable, consistent, predictable and transparent. Moreover, the gap has increased.

lower in Poland in the years covered by the surveys (Chart 5), and remained low in Poland whereas it improved in other new Member States. All these indicators can be interpreted as signals of high volatility in economic regulations, including tax policy, in Poland.

Frequent changes in the regulatory environment impact government revenues not only directly, but also indirectly via their influence on economic activity. Poland has had persistently lower investment rates than other new EU Member States and the gap has widened since 1999 (European Commission, 2006, pp. 14-15), which can partly be attributed to a worse business climate due to low regulatory stability, consistency, predictability and transparency. Furthermore, the role of ad hoc discretionary measures is consistent with the findings that Polish fiscal policy is 'expenditure-led', i.e. decisions on revenues are adjusted to planned levels of government expenditures, and strongly influenced by a political (electoral) cycle (Rutkowski, 2007). In such an institutional setting, decisions on public spending, resulting from short-run political goals, have quickly resulted in laws and administrative interpretations being tweaked on the revenue side.

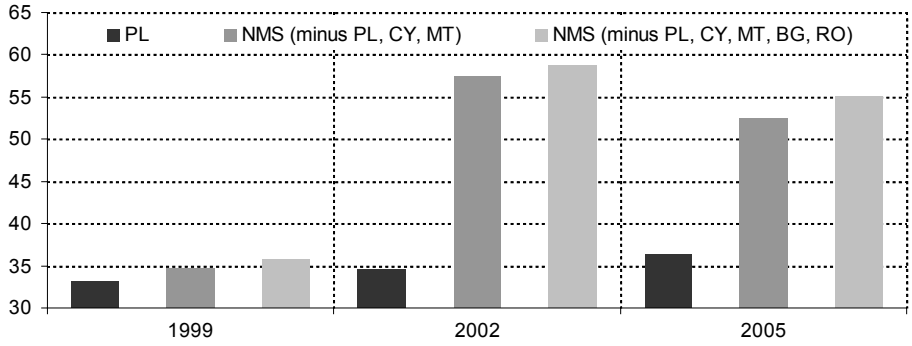
Chart 4: Stability, consistency, predictability and transparency of economic policies



Source: BEEPS (all years); Commission services.
Note: Standardised scale: 0 = worst economic environment, 100 = best.

Tax policy in particular scores poorly in Poland and its quality has deteriorated in relative terms.

Chart 5: Quality of tax policy



Source: BEEPS (all years; data for 1996 not available); Commission services.
Note: Standardised scale: 0 = worst economic environment, 100 = best.

Conclusions: policy-induced rather than business-cycle-induced volatility

As suggested by the literature, too frequent, non-transparent and unexpected policy alterations impair business activity in the long term, thus increasing uncertainty, which generates transaction costs. In particular, volatility in taxation harms growth through its negative impact on investment. Besides, it is difficult to forecast government revenues and prepare credible budgets if there is no stable relationship between revenue components and tax bases.

This *Country Focus* has compared Poland against other Member States in two dimensions: first, the link between business cycles and government revenues; and second, the quality of economic policy. Poland has one of the weakest correlations between GDP growth and government revenues. The volatility of the cyclical component of revenues is almost the lowest in the EU. On the other hand, not only is the volatility of economic policy in Poland higher than in other new Member States and the quality of its tax policy lower; but this gap in quality has even widened.

Both parts of the analysis suggest that discretionary policy measures are more important than the business cycle as a source of increases or decreases in annual empirical (ex post) tax elasticities in Poland. It would therefore be worthwhile for the government to reduce the number and frequency of significant and unexpected or non-transparent policy changes it makes, especially those affecting tax regulations and administration, in order to both reduce the uncertainty surrounding government revenue planning and to create a more business-friendly environment.

References

Agliardi, E. (2001), "Taxation and Investment Decisions: A Real Options Approach", *Australian Economic Papers*, Vol. 40, pp. 44-55.

BEEPS (1999, 2002, 2005), Business Environment and Enterprise Performance Survey, World Bank and European Bank for Reconstruction and Development, Firm-Level Data (All Rounds), available from http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/ECAEXT/EXTECAREGTOPANTCOR/0,,contentMDK:21303980~pagePK:34004173~piPK:34003707~theSitePK:704666,00.html

Brunetti, A. (1998), "Policy volatility and economic growth: A comparative, empirical analysis", *European Journal of Political Economy*, Vol. 14, pp. 35-52.

Denis, C., K. McMorrow and W. Röger (2002), "Production function approach to calculating potential growth and output gaps: estimates for the EU Member States and the US", *European Economy*, *Economic Papers*, No. 176.

Edmiston, K. D. (2004), "Tax Uncertainty and Investment: A Cross-Country Empirical Examination", *Economic Inquiry*, Vol. 42, pp. 425-440.

European Commission (2006), *Country Study: Growth and Competitiveness in the Polish Economy. The Road to Real Convergence,* European Economy, Occasional Papers, No. 27, available from http://ec.europa.eu/economy_finance/publications/publication7536_en.pdf

European Commission (2007a), *Economic forecasts – spring 2007*, European Economy, No. 2, available from http://ec.europa.eu/economy_finance/publications/publication7048_en.pdf

European Commission (2007b), *Public finances in EMU – 2007*, European Economy, No. 3, available from http://ec.europa.eu/economy_finance/publications/publication338_en.pdf

Jeong, B. (2002), "Policy Uncertainty and Long-Run Investment and Output across Countries", *International Economic Review*, Vol. 43, pp. 363-392.

Rutkowski, A. (2007), "Ceilings and anchors: fiscal rules for Poland", European Commission, *Country Focus*, Vol. IV. Issue 4, available from http://ec.europa.eu/economy_finance/publications/publication10063_en.pdf

Williamson, O. (1979), "Transaction-cost economics: The governance of contractual relations", *Journal of Law and Economics*, Vol. 22, pp. 233-261.

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