Studia i Analizy
Studies & Analyses

Centrum Analiz
Społeczno-Ekonomicznych

Center for Social
and Economic Research

156

Max Gillman

Evaluating Government Policy in Transition Countries

Warsaw, 1999

This paper was prepared for the research project No. P 96-6089-R (ACE PHARE Programme 1996) on "The Medium and Long-term Perspectives of Fiscal Adjustment of Selected Central European Countries".

Graphic Design: Agnieszka Natalia Bury

DTP: CeDeWu – Centrum Doradztwa i Wydawnictw "Multi-Press" sp. z o.o.

ISSN 1506-1701, ISBN 83-7178-111-3

Publisher:
CASE – Center for Social and Economic Research
ul. Sienkiewicza 12, 00-944 Warsaw, Poland
tel.: (4822) 622 66 27, 828 61 33, fax (4822) 828 60 69
e-mail: case@case.com.pl

Contents

Max Gillman

is an assistant professor in the Economics Department of Central European University. He writes on monetary economics and macroeconomics, with some applications to transition countries. He served as a fellow at the Center for Economic Research and Graduate Education – Economics Institute in Prague, the University of Melbourne, the University of New South Wales, and the University of Otago, and served as aide for tax and social security legislation in the U.S. House of representatives.

Max Gillman, Department of Economics, Central European University, Nador ut. 9, Budapest, 1051, Hungary; gillman@ceu.hu

Abstract

The paper examines neoclassical measures to evaluate government policy in transition countries: 1) marginal factor prices and the return to capital, 2) growth rates and taxes, 3) inflation rates, and 4) debt/GDP ratios, related to international real business cycle and endogenous growth theory. It further postulates a way to consider the debt/equity position of the government, related to a risk-yield framework. This gives a potentially more useful indicator than the debt/GDP ratio alone. Empirically these measures are examined in an illustrative way for a set of Central European countries plus Germany and the US for comparison, for the period of 1990-1998, using an internally standardized data set from the on-line *International Financial Statistics*.

1. Introduction

A view of a government's macroeconomics policy versus what is known as "microeconomic reform" is that the former shifts around the burden of the problem while the latter solves the problem. In economic terms, if there is a distortion in incentives, the first-best solution is to eliminate the distortion. Such macroeconomic problems with microeconomic solutions may be a disincentive to work that raises long-term unemployment because of moral hazards problems arising out of an unemployment insurance system that subsidizes not working. Or it may be incomplete insurance across states of nature because of a "free" national health care system that induces substitution towards low-quality health care. Or it may be incomplete consumption smoothing intergenerationally because of a government pension/social security scheme that inefficiently creates moral hazard by inducing early retirement. Or it may be incomplete smoothing of consumption intertermporally because of a lack of integration into international capital markets, because of unenforceable property rights, high and varying inflation rates, or high and accelerating government debt.

Evaluating the government reform policies of the Central European nations, as they seek integration in international markets, requires fresh examinations of what role governments actually play in democratically-inclined societies: something beyond the mix of monetary and fiscal policy within an IS-LM multiplier framework. Intertemporal analysis over the horizon of optimal agents means:

(1) that with Ricardian equivalence between debt and taxes, there is no multiplier from deficit spending.

(2) It means that with the Fisherian equation that sets the nominal interest rate equal to the expected inflation rate plus the marginal product of capital, there is no multiplier from printing money at a faster rate.

Rather than postulating multipliers from current period government spending, optimization over time leaves us to examine how the government raises capital intertemporally and how it invests its capital. And this is one way to think of microeconomic reforms: how the government raises and spends capital and controls freedom of economic, social and political exchange through regulations. How do we examine the broad effect of policy through the sequences of incremental reforms? Can we discern directions in which governments and the private sectors are headed?

2. Neoclassical Measures

Different ways to evaluate government policy have been used with neoclassical methods that generally focus on the economy's performance and only indirectly reflect government action. Three categories of such measures are the (1) marginal factor products, (2) tax and growth rates, and (3) debt ratios.

2.1. Marginal Factor Products

From an arbitrage-type perspective, with the integrated-market law of one price, the real interest rate is itself a summary measure of how a developing country is viewed. Computation of a real rate follows by assuming that the deterministic Fisher equation of interest rates holds, and that the actual inflation rate equals the expected inflation rate. This means that for countries in which the inflation rate has been accelerating or decelerating unexpectedly, the ex post actual rate will not equal the ex ante expected inflation rate and the ex post real rate cannot be computed this way. And this problem is evident when the computed ex post real rate is a negative quantity. In the Central European transition countries, such a computed negative real rate is commonplace in countries with highly variable inflation rates.

One way to compute the real rate that minimizes this problem is to choose a nominal interest rate that builds in a risk premium for inflation rate variance. This is consistent with the generalized Fisher equation under uncertainty, which in certain cases gives the nominal interest rate as the expected inflation rate plus the deterministic real rate plus what has been called an inflation risk premium [Bogacheva, 1999; see Lucas and Stokey, 1987; Bansil and Coleman, 1996]. The government's treasury debt interest rate generally may include some of this risk premium. But these rates are more commonly thought of as the risk-free rate for the particular country, and using this to compute a real interest rate aggravates the problem of finding negative real rates, since the treasury debt rate is relatively low. In the on-line *International Financial Statistics*, which supplies a degree of homogeneity across national accounts, there is a "lending rate" which generally is the highest nominal interest rate reported and one that would be more likely to include an inflation risk premium. There are two consistently available inflation rate indicators, the consumer price index and the producer price index. The producer price index (PPI) gives a

generally lower rate of inflation. Computing the real rate as the lending rate minus the PPI gives an upper bound on the real rate that can be reasonably well-compared across countries.

Table 1 shows the real interest rate for the 1990's for several Central European countries plus Germany and the United States for comparison. The Czech Republic has had a low and steady real rate; Hungary has had a higher and more variable rate; Poland has had a still higher and more variable rate; and Slovenia has had an even higher rate as variable as Poland's. This suggests that the higher average rates are partly to compensate for greater variability. In Slovenia, there are numerous capital controls that may cause the rate to be higher than say Poland's, with equal variability. The high rate in Germany and even higher rate in the US, both with equally low variability, suggest a higher marginal product of capital than in the transition countries.

Why would the marginal product of capital be higher in Western countries than in transition countries? Convergence theory in the exogenous growth framework predicts that countries with higher marginal products and the same technology will grow faster as all countries converge to the same rate of growth of output, as capital flows to the higher marginal product areas. However even with a scarcity of capital in developing countries, capital will not flow into these countries if the human capital stock is low and as a result the return on physical capital is actually lower than in the West. This is the argument of Lucas (1989). This logic and Table 1 suggest that the stock of human capital may be lower relative to the stock of physical capital in the above transition countries, and so the return on physical capital is lower.

Alternatively, the degree to which the Hungarian, Polish, and Slovenian rates are above the German rate may be for other reasons than a premium due to variability. For example, (a) a lack of full integration in capital markets can result because of insufficient domestic property right enforcement such as bankruptcy laws that lead to a low collateral value on loaned capital. This conceivably can make the return to owners of capital low because of leakage of capital to non-owners, perhaps as has been the Czech experience. (b) With solid property rights, market segmentation can constrain investment to be financed out of domestic savings, raising marginal products in transition countries such as Hungary and Poland. (c) Similarly, government restrictions on capital flows can cause segmentation that raises the marginal product of capital, perhaps as in Slovenia. (d) And incentive-compatibility problems with debt repayments can decrease international capital finance and increase marginal products, perhaps as in Romania, Ukraine, and Russia.

A related gauge of a country's progress and relative ranking amongst nations is its real wage, and how fast it rises. The rate of increase in the real wage is a rough

measure of the return to the average level of human capital, comparable to the real rate of interest on physical capital. In equilibrium on the "balanced-growth" path, the net rates return to human and physical capital should be equal. Taxes reduce the net returns to both types of capital, and leisure can act as a tax on human capital that decreases its net return.

Table 2 shows the percent change in the real wage in the 1990's for several Central European countries plus Germany and the US. The computation takes the wage series in the International Financial Statistics and deflates it with the PPI, before calculating the percentage change. It shows high rates of "return" to human capital in Czech and Poland in recent years, of over 10%, compared to a US rate near 1%. Compared to the real rate of interest on physical capital, the Czech human capital rate is higher, the Polish rates were about the same in 1996, while the US growth rate in wages was much below its return on physical capital.

The high rates for Czech and Poland support the notion of a scarcity of human capital relative to physical capital there. Although it is well-known that Central European nations have high literacy and attenuation rates, this general human capital is only a part of the composition of human capital. The other is specific human capital from on-the-job training and learning-by-doing, that comes most readily in industries building comparative advantage in international markets. This is what presumably is at lower levels in Central European human capital. The low wage rate growth in the US may be a reflection more of a stratified labor market than of the human capital return. The unskilled wage growth rate should reflect productivity gains. But the Central European productivity gains likely also result from more jumps in human capital to higher skill levels.

A step further than examining the marginal factor products that is not investigated here is to examine how transition country business cycle facts compare to international evidence. The literature on international real business cycles details how various aggregates co-move with output [Backus, Kehoe, and Kydland, 1995; Cooley and Hansen, 1995]. Table 3 shows real output and the correlation amongst countries. There is a high positive correlation amongst the US, Germany, Poland, Czech, and Slovenia, while Hungary and Romania move opposite of the US. Germany moves most closely with Poland and Czech, and opposite of Hungary. Opposite movements within an integrated market are explained in the business cycle literature by shocks to technology specific to the particular country or industry. For example, this suggests that Hungary may be specializing in industry that is not as pronounced in Germany.

Business cycle evidence generally includes a procyclical real interest rate and a possibly procyclical real wage. The degree to which transition countries are found to fall within the range of evidence would suggest a degree of integration in world markets, and would reflect some degree of market stability. Table 3, using the real interest data from

Table 1, shows a slight positive correlation of the US real interest rate with US GDP. There is a higher correlation of the Polish real interest rate and US GDP; a slight negative correlation of the Hungarian real interest rate and US GDP; and a strong negative correlation of the German real interest rate and US GDP.

2.2. Endogenous Growth and Taxes

The marginal factor prices and the business cycle evidence can suggest some degree of market integration. They are indicators of the health of private markets which governments support and constrain, and only indirectly reflect government policy. The other such key indicator is the growth rate of real GDP. Endogenous growth theory tells us that the balanced-growth rate of output equals the amount that the marginal product of capital (physical or human) exceeds the Fisherian rate of time preference, normalized by a coefficient for the preference for intertemporal substitution, generally taken to be between 1 and 2. Thus with the same preference parameters, nations have output growth rate differentials determined by differences in their marginal product of capital [1].

Table 4 shows the growth rates amongst several Central European nations and Germany and the US, and the correlation between the growth rate and real interest rate of each country. Germany, Hungary, Poland, and Slovenia show such a positive correlation between real interest rates and output growth rates, although Czech and the US show a negative correlation.

Endogenous growth theory also emphasizes that it is the net marginal product of capital, net of marginal taxes on capital, that determines the growth rate. Thus the tax burdens of nations should negatively affect the growth rates. Recent extensions of this growth theory to a monetary setting finds the same kind of negative growth effect from the inflation tax. The inflation rate acts on exchange and induces greater substitution on leisure. And greater leisure use induces a lower return on human capital. These taxes are a more direct gauge of government action.

Table 5 shows the total revenue as a share of GDP. This captures not only the average tax rate but also includes other items such as asset sales from privatization efforts. Hungary, Poland, and Slovenia show similar levels and gradual declines in the levels. Czech and Germany are at similar levels but Czech shows a declining trend, and Germany

[1] See de Gregoria (1996), Fisher (1993), Bruno and Easterly (1998), Gomme (1993), Ireland (1994), Chari, Jones, and Manuelli (1996), Jones and Rossi (1993), Gillman et al (1999), Stokey and Rebelo (1995), and Wu and Zhang (1998).

a rising trend. The US share has been low and relatively stable, while Romania's share has dropped to a level below that of Czech. Hungary and Romania show the most variability.

Table 6 shows the share of the increase in base money in total GDP, where base money is defined as reserves plus currency. The mean and standard deviation consistently move together across the sample. Both are highest in Hungary and Romania, and about half those numbers in Poland. Czech, Germany, Slovenia, and the US have means near 1% with low variability.

Table 7 shows the inflation rates, defined as the percentage change in the Consumer Price Index, across a larger sample of Central European nations and Germany and the US, ranked according to mean across disparate years as data allows. Again is the striking relation between the level of the mean and the level of the variance; they rise together uniformily, except for the US and Czech, across the sample countries. Generally the countries in Table 7a are subject to analysis because they have relatively stable inflations. But after Slovenia, the countries in Table 7b historically have such high and variable inflation rates, that the real interest rate is often negative, a reflection of de facto debt repudiation, and the investment climate consequently is poor in terms of integration in the capital markets. Recently the inflation rates have come way down to low steady levels in Croatia and Latvia, and to somewhat higher levels in Ukraine and Russia.

A consequence of high inflation rates can be lower growth rates of GDP. This is supported in endogenous growth theory and in empirical studies [Gillman et al, 1999, de Gregoria, 1996]. Table 8 shows the correlation of inflation rates and GDP growth rates for the sample of countries found in Table 4. The evidence shows a strong negative correlation for Poland, Hungary, the US, and Czech, a slight negative effect for Romania, a slight positive effect for Germany, and a strong positive correlation for Slovenia. The literature on the growth-inflation effect has identified a negative non-linear effect, whereby the negative correlation is stronger at low inflation levels than at high ones. The lower level of the negative effect for Romania compared to the higher levels of the negative effect for Poland, Hungary, and the US is consistent with these results.

2.3. Debt

Considering inflation rates as summary evidence of the monetary policy, the summary measure for fiscal policy often is taken to be government debt levels relative to GDP. Some literature views debt as a something of a free ride, in the sense that we do not have to worry about debt at all, as in traditional IS-LM models. More neoclassically, we can build overlapping generations economies in which debt increases net wealth because the

burden of repayment is put more heavily on unborn generations that have no weight in the utility function that is maximized [Obstfeld and Rogoff, 1996]. As a counter to such thinking, the Barro-Ricardo logic makes debt merely a set of future tax payments that dynastic-family utility functions fully include. Indeed it is the unfunded entitlement programs that cause such onerous marginal wage tax rates in Eastern European countries that have inherited a legacy of massive communist era social welfare programs.

When debt is focused upon it is usually in the context of its magnitude relative to national output, making the debt/GDP measure a combination of government and private sector activity [2]. Table 9 shows the debt/GDP for Central European nations plus Germany and the US from 1989–1997, as IMF data is available. The small and shrinking Czech debt is notable, as is the rising Romanian debt. Germany and Slovenia also show rising levels while Hungary and the US exhibit a rising and falling trend. It is difficult to make much more out of such numbers by themselves. But one important consideration suggested by the evidence, in light of other evidence on growth rates and marginal products, is that different governments may in effect be choosing different positions on a risk-yield frontier, in the sense of the capital asset pricing tradeoff. Certainly, Hungary with the highest debt ratio seems not exceedingly more likely to default than Czech with the lowest debt ratio. But at the same time, the yield to governments, if measured by the increase in taxes from economic expansion, is higher in Hungary with its high growth rate than in Czech with its low growth rate.

Table 10 compares, for low inflation countries, their mean debt/GDP for 1994–1997 their GDP growth rates for 1994–1998. There is some sense in which the higher debt counties of US, Poland, and Hungary have had higher growth rates that Germany and Czech, suggesting a lower risk, lower yield preference for Germany and Czech. However from this perspective, Slovenia is an outlier. This may be because of its capital restrictions, or because the debt/GDP is a mixed measure of private and government activity, rather than a measure of only government activity as would be desired for applying a risk-yield framework.

3. A Measure of a Government's Debt-equity Ratio

Private firms choose how risky they want their finance structure to be. Highly leveraged, with a high debt-equity ratio and seeking a high growth rate of return, or less highly leveraged, with possibly a more stable but lower yield. The market uses the debt-

[2] A country's level of international reserves is sometimes cited as evidence about the strength of government finances. Certainly with fixed exchange rates, international reserves are necessary to support an overvalued currency.

equity ratio in part in evaluating the risk of default by firms, since when the company is highly leveraged, the contractual interest payments on debt are large relative to the non-contractual dividend payments on equity ownership. A downturn in revenue creates a greater likelihood of default in a more highly leveraged firm.

For evaluation of the risk of government finance, the debt/GDP measure is related to the concept of a debt-equity ratio, but requires some additional assumptions to view it in this way. A benefit of the extension of the debt/GDP measure to a perspective of the debt-equity ratio is a broader way to evaluate directly the government policy of transition countries, in which default is possible.

A federal government like a private firm has two basic means of external finance: borrowing through debt and selling equity. When IBM sells debt, it is limited by wanting to avoid having high contractual interest payments that risk default. When IBM sells equity stock to raise capital, it is limited by wanting to avoid "diluting" the unit share value of the stock. This share circulates in a secondary market but has no other value than the financial yield to investors. When the government sells debt, it faces the same limit of wanting to avoid high contractual interest payments that are too high relative to a downturn in tax payments plus seignoirage, since this also risks default. The difference between private and public finance relates mainly to its equity shares. The government "sells" its equity when it buys goods and services with freshly printed money. The stock of fiat money has no par value, similar to the unit equity share of a firm, in that it cannot be converted into anything else like gold, as with commodity money. Fiat money has no debt features. And its value is diluted when the government issues more of it, like private equity. As long as IBM issues equity at a rate below the rate of demand for its equity, the unit share price will keep rising. Likewise the government's fiat will depreciate in value only if its issuance exceeds in rate of growth the demand. However, unlike IBM's stock, the government's fiat serves also as a means of exchange. If Panama became a "dollarized" with IBM stock instead of U.S. currency, then IBM would enjoy an additional demand for its equity beyond its rate of return, and IBM would reap seignoirage: it could issue more without dilution of its equity value. So this is the main difference in the equity finance. The government's fiat enjoys the additional transactions demand. In addition, the government can induce differential default on its debt, without a court system of bankruptcy restructuring of debt as with private firms, through unexpectedly high money printing and inflation (equity dilution) that breaks the implicit contract of paying a certain real interest rate on its debt.

Government revenues are mainly its tax receipts, from all sources plus asset sales for example through privatization. Its issuance of money also adds to its capital. And from here we can define a notion of the equity value, or net worth, of the government, not an obviously well-defined concept. First, to define the asset value of the government, we

could try to determine the present discounted value of the government's profit stream, as for a private firm. But then what are the profits for a government? In a sense they are the new taxes generated (or lost) plus seignoirage by having set and enforced the property rights covering markets such that the markets could expand (or contract). With an economy growing, markets expand, taxes increase, and the government reaps this tribute in return for supplying the flow of services in the form of defining property rights.

Assuming that the government reinvests all profits, then all past incremental increases in the economy's output and taxes, carried forward without interest, are captured by the current tax revenues expected at the end of the year. And the future increase in taxes is captured by the future increase in output, factored by the average tax rate. This suggests that the current and future discounted tax revenues plus seignoirage can be defined as the asset value of the government. The real discount rate, denoted r, for such future tax revenues from the expansion of the economy should be the risk-free real interest rate, denoted r_f, plus a premium, denoted p, for the degree of inefficiency with which the government uses the new taxes to maintain or improve its services; or $r \equiv r_f + p$. This interest rate will simply be measured by the real interest rate in the economy, where the particular market rate will be chosen as a retail rather than wholesale rate so as to be more likely to include the full premium. The revenue at time t can be expressed as the average federal tax rate τ factored by the real output y_t, plus the rate of growth of the money stock σ factored by the real money supply, denoted here by $m_t \equiv M_t/P_t$, where M is the nominal money stock and P the aggregate price level. Assuming constant average tax, money supply growth, and real interest rates, then the infinite discounted stream is

$$\frac{\tau y_t + \sigma m_t}{1+r} + \frac{\tau y_{t+1} + \sigma m_{t+1}}{(1+r)^2} + \frac{\tau y_{t+2} + \sigma m_{t+2}}{(1+r)^3} + \ldots$$

Assuming real output and real money demand grow at constant rate g, this asset value equals

$$\frac{(\tau y_t + \sigma m_t)}{1+r} + \frac{(\tau y_t + \sigma m_t)(1+g)}{(1+r)^2} + \frac{(\tau y_t + \sigma m_t)(1+g)^2}{(1+r)^3} + \ldots = \frac{(\tau y_t + \sigma m_t)}{r-g} .$$

The equity value at time t, denoted e_t, of the federal government can then be defined as the asset value minus the real debt at time t, denoted d_t:

$$e_t \equiv \frac{(\tau y_t \pm \sigma m_t)}{r - g} - d_t .$$

And the debt-equity ratio is given by

$$\frac{d_t}{e_t} = \frac{d_t}{\frac{(\tau y_t + \sigma m_t)}{(r-g)} - d_t} .$$

Defining velocity *v* as the ratio of real output to real money, or $v_t \equiv y_t / m_t$ the inverse equity-debt ratio can be written as a function of the debt-output ratio, velocity and the other parameters:

$$\frac{e_t}{d_t} = \frac{(\tau + [\sigma / v_t])}{(r-g)(d_t / y_t)} - 1 . \qquad (1)$$

The equity-debt ratio depends negatively on the debt-output ratio, the money velocity, and the real interest rate, and positively on the average tax, money supply growth and output growth rates. Given computation of real interest rate, data exists so that this can be readily computed for any country. Note that

$\sigma/v = \sigma M/Y = (\Delta M/M)\ M/Y = \Delta M/Y$

where *M* and *Y* are the nominal base money stock and nominal income, so that this can be measured by the increase in the nominal base money relative to nominal GDP, as in Table 6.

4. Empirical Estimation of the Debt-equity Ratios

Calculation of the Debt/Equity ratios in Table 11 below uses the IMF data of the Tables 1, 4, 5, 6, and 10, for the real interest rate, the growth rate of GDP, the share of taxes (revenue) in GDP, the change in the money base relative to GDP, and the debt/GDP ratio. As with debt/GDP ratios, the evidence here shows a sense in which the low growth rate countries of Czech and Germany have the low debt/equity ratios compared to the high growth rate countries with higher debt/equity ratios. But now Slovenia, which has a low debt/GDP ratio but a high growth rate, fits in the high debt/equity, high growth group of countries rather than being an outlier as in the debt/GDP comparison of risk/yield. We also find that the variability of the debt/equity ratio rises with the mean across countries in an unbroken pattern, thereby exhibiting greater monotonicity in this than the inflation rate data.

Can anything be said about the levels of the debt/equity ratio? Consider some private corporation examples for comparison. From 1991 to 1998 the high growth Intel

Corporation had long term debt equity ratios as in Table 12. These are of a low level comparable to the governments of countries in Table 11. Another corporation, IBM, had a debt-equity ratio of 1.5 in 1998, considerably higher, and private corporations often have such ratios above 1. Using revenues as the profit stream in the government debt-equity ratio arguably makes the levels low compared to private corporations. But with a consistent methodology, countries still can be compared on this basis to each other, and the evidence suggests the possibility of using a framework of risk-yield tradeoffs.

$(\tau y_t + \sigma m_t)$

5. Evaluation of Changes in the Debt-equity Ratio

Applying the concept of yield-risk to gauge government policy does not imply that high debt is necessarily good because it guarantees high yield, although if along the efficiency frontier, it may lead to higher, albeit possibly more variable, GDP growth. The government may not be close to the efficiency frontier at which the yield-risk tradeoff is optimally chosen as a result of tangency between preferences and the production possibility curve that uncertainly transforms current social capital into future social capital at some risk. The process of getting to the efficient frontier is a major dilemma for transition countries. This is done by more efficiently transforming government revenues into a flow of property rights services, in particular with respect to the communist-era social welfare entitlements for health, pensions, education, disability, and the ill-defined and enforced tax base.

On a gradual approach to a reasonable policy that can be roughly considered along the efficiency frontier, policy tensions can arise when attempting to decrease the debt/equity ratio. Increasing hear-horizon revenues through higher marginal tax rates may sacrifice future tax revenues because of lower economic growth. Similarly increasing the tax base without lowering the marginal rates would raise the effective marginal rates and also sacrifice growth. Relying on high seignoirage requires high inflation rates and recent research indicates that this is an inefficient form of taxation relative to factor and consumption taxes [Lucas, 1993; Aiyagari et al, 1998].

Raising tax and inflation rates increases the liquidity perhaps in the short run, but increases avoidance, decreases the tax base, lowers economic growth, and decreases the future stream of taxes. The ability of the government to pay interest payments on debt through tax revenues is the way in which the concept of "Ricardian equivalence" is manifest [see Barro, 1990]. However the subtext of the practice of such equivalence

is that such liquidity of the debt comes at the cost of a marginally increasing dynamic cost in terms of decreased economic growth. This hidden feature of Ricardian equivalence creates perhaps the central problem of a high debt-equity ratio: liquidating the future growth of the economy through higher marginal tax rates helps avoid insolvency at the cost of lower net worth, and a higher expected future debt-equity ratio. Thus as the debt-equity ratio is analyzed, a look at the pace of changes in the quality of government spending and in the marginal tax rates, including inflation rates, gives an indication of the likely future debt-equity ratio.

6. Qualifications and Conclusions

The data set used is for illustrative purposes. Using the International Financial Statistics has the advantage of a well-screened data set that is comparable across countries, but has disadvantage of missing data points. As no econometric analysis has been performed on the data set, and as the missing data points are clearly identified in the tables, it is clear that the results are discussed given these limitations. Filling in missing points with less internationally accepted data may be possible, but does introduce less confidence in the consistency of the data set taken as a whole.

The paper finds a certain risk-yield tradeoff in the cross-country comparison of the calibrated debt-equity ratios and the growth rates of GDP. This is robust to some changes in the data years used, and the countries were selected in a non-biased way based on whether a debt-equity ratio could be computed. For example, while almost having enough data for Romania, some key data, necessary for computation of the debt-equity ratio, were missing and could not be filled in from national accounts data. As this is a first postulation of the theoretical concept of a debt-equity ratio as applied above to governments, the data succeeded in illustrating how the concept can be used to interpret a broad measure of government performance in Central European countries. And the data shows how these countries can be compared to Western economies in this measure. Further work to extend the data base across years, countries, and regions would be interesting.

The concept of the debt-equity ratio brings together how the central dilemmas of governments are resolved in terms of the need for to raise capital, the efficacy of how it is raised, and the effectiveness with which it is invested. It offers an alternative summary measure related to older discussions of macroeconomic tradeoffs and of the industrial policy of the government. It is in place of the 1960s type discussions of taking a position of a certain inflation-unemployment equilibrium along a supposedly stable Phillips curve,

which turned out not to be stable. And it is alternative to the 1980s idea of governments actively participating in supporting industries in some type of industrial policy, which turned out to be an international set of weak private bank loans. The concept here merges these under the 1990s type emphasis on microeconomic reform that leads to more efficient markets and more effective government policy. In this the capital of the government is viewed as is the capital of the finance theory of private firms. This views efficient governments as taking a position along the central finance tradeoff of risk and yield, as dependent on their national cultures or preferences. It views inefficient governments in terms of whether they are moving towards such an efficiency frontier. And it views the investment of international capital markets as diversifying across idiosyncratic risks that are systemic to a country or a region in part because of the particular risk-yield tradeoff taken by the government of that country or region.

References

Aiyagari, S. Rao, R. Anton Braun, and Zvi Eckstein (1998). 'Transaction Services, Inflation, and Welfare'. Journal of Political Economy, vol. 106, no. 6, 1274–1301.

Bansil, Ravi, and Wilbur John Coleman (1996). 'A Monetary Explanation of the Equity Premium, Term Premium, and Risk-Free Rate Puzzles'. Journal of Political Economy, 104:1135–1171.

Backus, David K., Patrick J. Kehoe, and Finn E. Kydland (1995). 'International Business Cycles: Theory and Evidence'. in Cooley ed., Frontiers in Business Cycle Research, Princeton University Press, Princeton, pp. 331–356.

Barro, Robert J. (1990). 'Macroeconomic Policy'. Harvard University Press.

Bogacheva, Elena, (1999). 'Demand for Money and Interest Rates in a Representative Agent Economy with Costly Credit'. manuscript, CERGE-EI.

Bruno, Michael and William Easterly (1998). 'Inflation Crises and Long Run Growth'. Journal of Monetary Economics 41, 3–26.

Chari, V.V., Larry E. Jones, and Rodolfo E. Manuelli (1996). 'Inflation, Growth, and Financial Intermediation'. Review, Federal Reserve Bank of St. Louis, May/June.

Cooley, Thomas F., and Gary Hansen (1995). 'Money and Business Cycles'. in Cooley ed., Frontiers in Business Cycle Research, Princeton University Press, Princeton, pp. 175-216.

de Gregorio, Jose (1996). 'Inflation, Growth, and Central Banks'. Policy Research Working Paper 1575, World Bank, February.

Fisher, Stanley (1993). 'The Role of Macroeconomic Factors in Growth'. Journal of Monetary Economics, 32, 485–512.

Frenkel, Michael, and Gil Mehrez (1997). 'Inflation and the Misallocation of Resources', manuscript presented at the 1997 European Economic Association Meetings, Toulouse.

Gillman, Max, Michal Kejak, and Akos Valentinyi. (1999). 'Microfoundations of Inflation and Growth: Non-linearities and Financial Development'. forthcoming Institute of Advanced Economics working paper, Vienna.

Gomme P. (1993). 'Money and growth revisited'. Journal of Monetary Economics, 32, 51–77.

Ireland, Peter N. (1994). 'Money and Growth: An Alternative Approach'. American Economic Review; 84(1), March 1994, pages 47–65.

Jones, Larry E., and Peter E. Rossi (1993). 'Optimal Taxation in Models of Endogenous Growth'. Journal of Political Economy, (June), 485–517.

Lucas, Robert E., Jr. (1989). 'Why Does Not Capital Flow from Rich to Poor Countries'. Proceedings, American Economic Review, March 1989, pp. 242–251.

Lucas, Robert E., Jr. (1993). 'On the Welfare Cost of Inflation'. manuscript, University of Chicago.

Lucas, Robert E., Jr. and Nancy L. Stokey (1987). 'Money and Interest in a Cash-in-Advance Economy'. Econometrica, 55: 491–513.

Obstfeld, Maurice, and Kenneth Rogoff, (1996). Foundations of International Macroeconomics, MIT Press, Cambridge.

Siwinska, Joanna (1999). 'Public Debt Structure and Dynamics in the Czech Republic, Hungary, Poland, and Romania'. Case Research paper No.162.

Stokey, Nancy L., and Sergio Rebelo (1995). 'Growth Effects of Flat-Rate Taxes'. Journal of Political Economy, vol. 103, no.3 (June), 519–550.

Wu Y. and J. Zhang (1998). 'Endogenous growth an the welfare costs of inflation: a reconsideration'. JEDC 22, 465–482.

Table 1.

Real Interest Rate	Czech	Germany	Hungary	Poland	Slovenia	US
Lending Rt - % ch Ppi		mort.bond				
1990		0.072				0.100
1991		0.066	0.009	0.043		0.085
1992		0.069	0.102	0.113		0.063
1993	0.031	0.063	0.030	0.031		0.060
1994	0.037	0.062	0.085	0.027	0.212	0.071
1995	0.037	0.048	0.043	0.080	0.106	0.088
1996	0.048	0.060	0.038	0.129	0.158	0.083
1997		0.040	0.035		0.139	0.084
Mean	0.038	0.060	0.049	0.070	0.154	0.079
Standard deviation	0.007	0.011	0.033	0.044	0.044	0.014
Correlation with US	0.67	-0.14	-0.52	0.20	-0.98	1.00

Table 2. Percentage Change in Real Wage

% change in	Czech	Germany	Hungary	Poland	Slovenia	US
Real Wage (Wage Index /PPI)						
1991		4.50	-6.50	11.20		3.10
1992		5.30	8.10	7.00		1.80
1993		5.50	7.00	5.90	24.50	1.00
1994		1.00		1.20	8.90	1.40
1995	10.10			12.60	5.20	-1.00
1996	13.20			11.60	7.50	1.00
1997	12.80				5.00	3.00
Mean	12.03	4.08	2.87	8.25	10.22	1.47
Standard deviation	1.38	2.10	8.13	4.37	8.15	1.39

Table 3. Real GDP and its Correlation

Real GDP							
	US	**Slovenia**	**Romania**	**Poland**	**Hungary**	**Germany**	**Czech**
1989	5697.4					2297.3	
1990	5743.8		857.9		2089.3	2429.4	
1991	5687.9		747.2	457.74	1840.7	2750.6	
1992	5842.7		646	447.6	1784.4	2811.1	
1993	5973.1	174.3	655.1	443.19	1774.1	2778.5	498.7
1994	6183.6	183.6	681.1	449.2	1826.4	2858	514.7
1995	6308.4	191.1		486.11	1853.6	2913.7	547.4
1996	6544.8	197		508.5		2952.4	568.9
1997	6802.1	204.4				3012	574.4
Correlation of Real GDP							
	US	**Slovenia**	**Romania**	**Poland**	**Hungary**	**Germany**	**Czech**
US	1.00	0.99	-0.56	0.79	-0.32	0.77	0.95
Slovenia	0.99	1.00	1.00	0.95	0.99	1.00	0.98
Romania	-0.56	1.00	1.00	0.93	0.96	-0.92	1.00
Poland	0.79	0.95	0.93	1.00	0.79	0.99	0.99
Hungary	-0.32	0.99	0.96	0.79	1.00	-0.86	0.93
Germany	0.77	1.00	-0.92	0.99	-0.86	1.00	0.97
Czech	0.95	0.98	1.00	0.99	0.93	0.97	1.00
Corr. of Real Interest Rate							
with US GDP	0.09	-0.37		0.43	-0.09	-0.86	0.97

Table 4. Growth Rate of GDP

Growth Rate of	Czech	Germany	Hungary	Poland	Romania	Slovenia	US
Real GDP							
1990		0.058					0.008
1991		0.132	-0.119	-0.183			-0.010
1992		0.022	-0.031	-0.022	-0.135		0.027
1993		-0.012	-0.006	-0.010	0.014		0.022
1994	0.032	0.029	0.029	0.014	0.040	0.053	0.035
1995	0.064	0.019	0.015	0.082		0.041	0.020
1996	0.039	0.013	0.013*	0.046		0.031	0.037
1997	0.010	0.020	0.044	0.069	-0.066	0.038	0.039
1998	-0.027		0.051	0.048	-0.073	0.042	
Mean	0.024	0.035	-0.002	0.006	-0.044	0.041	0.022
Standard deviation	0.034	0.044	0.059	0.084	0.071	0.008	0.017
Correlation of own real Int rt, grth rt.							
	-0.29	0.32	0.36	0.37		0.57	-0.33

* Hungarian Central Statistical Office

1997–98: Central European Economic Review, Vol VII No.4

Table 5. Revenue as a Share of GDP

Revenue/GDP	Czech	Germany	Hungary	Poland	Romania	Slovenia	US
1989		0.296					0.183
1990		0.289	0.529		0.347		0.183
1991		0.285	0.509		0.373		0.179
1992		0.317	0.480		0.365		0.176
1993	0.348	0.318	0.484		0.319	0.426	0.179
1994	0.332	0.326	0.478	0.419	0.299	0.415	0.184
1995	0.327	0.323	0.430	0.409	0.296	0.417	0.188
1996	0.311	0.316	0.425	0.398	0.279	0.408	0.192
1997	0.304	0.320		0.388		0.400	0.200
Mean	0.324	0.310	0.476	0.404	0.325	0.413	0.185
Standard deviation	0.017	0.016	0.038	0.013	0.037	0.010	0.007

Table 6. Change in Base Money Relative to GDP

	Czech	Germany	Hungary	Poland	Romania	Slovenia	US
Change in Base Money/GDP							
1990		0.016					0.009
1991		0.010	0.130	0.051	0.077		0.006
1992		0.022	0.051	0.053	0.121		0.008
1993		0.002	0.051	0.021	0.088		0.010
1994	0.021	0.003	0.043	0.028	0.059	0.024	0.010
1995	0.015	0.005	0.069	0.056	0.051	0.015	0.005
1996	0.010	0.007		0.027	0.043	0.009	0.006
1997	0.000	-0.001		0.035	0.065	0.013	0.009
Mean	0.012	0.008	0.069	0.039	0.072	0.015	0.008
Standard deviation	0.009	0.008	0.036	0.014	0.026	0.006	0.002

Table 7a. Inflation Rate

	Germany	US	Slovakia	CzechRep	Moldova	Hungary	Poland
Inflation Rates							
1991	3.64	4.23				34.23	76.71
1992	5.06	3.03				22.95	45.33
1993	4.46	2.95				22.45	36.87
1994	2.73	2.61	13.41	10.06		18.87	33.25
1995	1.84	2.81	9.89	9.10	12.07	28.30	26.80
1996	1.49	2.93	5.81	8.82	22.12	23.49	20.15
1997	1.75	2.34	6.11	8.45	10.96	18.28	15.91
1998	0.29	1.61	6.80	10.80		14.30	11.80
Mean	2.66	2.81	8.40	9.45	15.05	22.86	33.35
Standard deviation	1.62	0.74	3.23	0.96	6.15	6.21	20.78

Table 7b. Inflation Rate

	Slovenia	Latvia	Romania	Bulgaria	Russia	Croatia	Ukraine
Inflation Rates							
1991			230.62			122.22	
1992	156.62	243.27	211.21	91.30		632.50	
1993	31.90	108.77	255.17	72.88	874.62	1483.62	4734.91
1994	19.77	35.93	136.76	96.06	307.38	107.33	891.19
1995	12.63	24.98	32.24	62.05	197.41	3.95	376.75
1996	9.68	17.61	38.83	123.01	47.57	4.34	80.33
1997	9.09	8.45	154.76	1082.26	14.62	4.13	15.94
1998	8.00	4.70	64.00	46.20	27.60	5.70	10.50
Mean	35.38	63.39	140.45	224.82	244.87	295.47	1018.27
Standard deviation	54.12	86.80	88.15	378.92	329.21	524.99	1851.55

Table 8. Growth-Inflation Effects

Correlation of Annual Growth Rate of GDP and Inflation Rate for 1990 – 1998						
Czech	Germany	Hungary	Poland	Romania	Slovenia	US
-0.557	0.080	-0.858	-0.946	-0.113	0.799	-0.764

From data in Tables 4 and 7, plus the inflation rates in 1990 for Germany and the US of 0.027 and 0.054 respectively

Table 9. Debt to GDP Ratios

Debt/GDP	Czech	Germany	Hungary	Poland	Romania*	Slovenia	US
1989		0.224					0.413
1990		0.247					0.444
1991		0.239	0.741				0.481
1992		0.261	0.785		0.150		0.503
1993	0.159	0.286	0.897		0.140		0.517
1994	0.141	0.302	0.871	0.723	0.170	0.154	0.510
1995	0.114	0.373	0.860	0.579	0.180	0.168	0.507
1996	0.101	0.388	0.724	0.511	0.230	0.222	0.499
1997	0.101	0.390		0.480	0.330	0.241	0.474
Mean	0.123	0.301	0.813	0.573	0.200	0.196	0.483
Stnd dev	0.026	0.066	0.073	0.108	0.071	0.042	0.035

*Data for Romania from Siwinska (1999)

Table 10. Debt/GDP and Growth Rate of GDP: Risk-Yield Tradeoff?

Mean	Czech	Slovenia	Germany	US	Poland	Hungary
Debt/GDP, 1994 – 97	0.114	0.196	0.363	0.498	0.573	0.818
Gr Rt GDP, 1994 – 98	0.024	0.041	0.020	0.033	0.052	0.035

Table 11. Debt to Equity Ratios

Debt/Equity	Czech	Germany	Poland	Slovenia	Hungary	US
1990		0.012				0.268
1991		-0.050			0.174	0.325
1992		0.043			0.243	0.106
1993		0.067			0.063	0.115
1994	0.019	0.033		0.125	0.103	0.105
1995	-0.004	0.034		0.053	0.051	0.216
1996	0.013	0.058		0.157		0.128
1997	0.025	0.025	0.111	0.134		0.114
Mean	0.013	0.043	0.111	0.117	0.146	0.172
Stnd. Deviation	0.013	0.036	0.000	0.045	0.081	0.086
Gr Rt GDP, 1994 – 98	0.024	0.020	0.052	0.041	0.035	0.033

Table 12. Intel Corporation

INTEL CORPORATION: Debt-equity ratios, 1991–98							
1991	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**
0.079	0.111	0.133	0.111	0.083	0.059	0.130	0.039

Mean 0.093, Stnd. Dev. 0.034

73	J. D. Sachs, A. M. Warner Achieving Rapid Growth in the Transition Economies of Central Europe
74	J. Bauc The Nature of Fiscal Crisis in Transition Economies
75	I. Hashi, J. Mladek, A. Sinclair The Process of Exit in the Czech Republic 1990-1994: The Nature and Extent of Formal and Informal Exit Mechanisms
76	U. Kosterna, The State of Public Finances in Post-socialist, Central European Economies: a Comparison with the European Union Countries
77	L. T. Orlowski, Fiscal Consolidation in Central Europe in Preparation for Accession to the European Union
78	E. Balcerowicz, K. Kloc, Liquidation of Private Firms in Poland, 1990-1994
79	K. Panajotova, Privatization in Bulgaria – Starting Point, Development and Future
80	M. Antczak, Income from the Privatisation of State Enterprises in Poland, Hungary and Czech Republic in 1991-1994
81	S. Golinowska, State Social Policy and Social Expenditure in Central and Eastern Europe
82	D. Vaskova, Comparison of the Tax Structure in Central European and European Union Countries: Tax Reform Goals and the Current Situation
83	V. Uldrichova, Current Problems in the Financing of the Czech Public Health System
84	M. Dmitriev, N. Kartsev, Fiscal Policy of CIS Countries in 1993-1995
85	W. Jermakowicz, P. Kozarzewski, J. Pańków Privatization in the Republic of Kazakhstan (in Russian also available)
86	Б. Гончаж, В. Панькув, Преобразование промышленных предприятий: стратегии, действующие лица, результаты
87	S. Wellisz, Georgia. A Brief Survey of Macroeconomic Problems and Policies (in Russian also available)
88	Od czego zależy wartość majątku państwowego? (Opracował R. Petru)
89	W. Jermakowicz, B. Irishev, The Banking System in Kazakstan (in Russian also available)

90	L. T. Orlowski The Path of Exchange Rates in the Polish Economic Transformation
91	Р. Антчак, М. Маркевич Экономические реформы в Кыргызстане в 1994-1995 годах
92	И. Топиньска Расходы на содержание социальной сферы Кыргызстана в 1994-1995 годах
93	В. Панькув, Б. Гончаж, Г. Григолашвили, Трансформация государственных предприятий в Грузии
94	A. Czarczyńska, K. Śledziewska-Kołodziejska, Ewolucja form współpracy walutowej w Europie
95	Rola i status banku centralnego w Polsce (Opracował P. Dobrowolski)
96	И. Синицина, Проблемы реформирования социальной защиты и социальной инфраструктуры в Грузии
97	Polityka kursowa i jej rola w ograniczaniu inflacji (Opracowała A. Czarczyńska)
98	К. Клёц, Центральный банк и банковская система в Кыргызской Республике (1994-1996)
99	Р. Гортат, Демократия с гор Тян-Шаня
100	К. Клёц Реорганизация и ликвидация государственных промышленных предприятий в Кыргызстане
101	A. B. Czyżewski, W. M. Orłowski, Scenariusze makroekonomiczne rozwoju gospodarki polskiej w latach 2000-2005
102	В. Ермакович, Ю. Панькув Приватизация в Кыргызстане в 1992-1996 гг.
103	W. Jermakowicz, P. Kozarzewski, Privatization in Mongolia
104	В. Ермакович, Модели массовой приватизации
105	М. Маркевич, Р. Могилевский, Я. Цукровски, Перспективы роста доходов государственного бюджета Кыргызской Республики в 1997-2000 гг.
106	Р. Антчак, М. Домбровски, М. Маркевич, Я. Цукровски, Перспективы финансирования бюджетного дефицита Кыргызской Республики в 1997-2000 гг.

107	М. Маркевич, Перспективы развития рынка ценных бумаг в Кыргызской Республике
108	М. Маркевич, Р. Могилевский, Я. Цукровски, Государственные расходы Кыргызской Республики: перспективы на 1997-2000 гг.109 , Л. Таркхинишвили, Грузия: путь к демократии?
110	И. Синицина, Фискальная политика и организация сферы государственных финансов Грузии
113	К. Клёц, Центральный банк и коммерческие банки Грузии
114	M. Jarociński, A. Jirny, Monetary Policy and Inflation in Georgia (1996-1998) (in Russian also available)
115	L. Landy, Developing Sound Banks in Transitional Economies: Structural Reforms in Ukraine
116	Я. Кузьма, Бюджетные дотации к коммунальным услугам в Кыргызстане
117	Б. Цукровска, Я. Цукровски, Реформа организации и финансирования системы здравоохранения в Кыргызстане
118	П. Козаржевский, Приватизация промышленности в Кыргызской Республике
119	Петр Козаржевский, Ярослав Кузьма, Приватизируемые и приватизированные промышленные предприятия Кыргызстана
120	Wojciech Maliszewski, Central Bank Independence in Transition Economies
121	Przemysław Woźniak, Relatives Prices and Inflation in Poland 1989-1997
122	Марек Домбровски, Фискальные проблемы в период трансформации
123	Влодзимеж Панькув, Барбара Гончаж, Георгий Моргошиа, Георгий Ахаладзе, Кшиштоф Поломски, Трансформация предприятий в Грузии
124	Роман Могилевский, Яцек Цукровски, Налоговые льготы в Кыргызской Республике: количественная оценка
125	Robert S. Kravtchuk, Budget Deficits. Hyperinflation and Stabilization in Ukraine
126	Georges de Menil, Boris Najman, Andrew Jirniy, Oleksander Rohozynsky, A Model of Ukrainian Macroeconomic Indicators

128	Magdalena Tomczyńska, Exchange Rate Regimes in Transition Economies127 Małgorzata Markiewicz, Wpływ polityki fiskalnej na proces dezinflacji w gospodarkach przechodzących transformację
129	Jarosław Bauc, Effectiveness of Capital Inflow Sterilization in Poland
130	Dilemmas of Exchange Rate Policy in Central Europe: Lucjan T. Orłowski, Exchange Rate Policies in Central Europe in Response to the EMU, Wojciech Maliszewski, Implicit Target Zone and Exchange Rate Behaviour in Poland (May, 1998)
131	Real Exchange Rate, Foreign Trade and Economic Growth: Małgorzata Jakubiak, International Trade and Real Exchange Rate in Poland; Maryla Maliszewska, Modelling Real Exchange Rate in Transition: the CASE of Poland and Romania; Mateusz Walewski, Exchange Rates and Economic Growth in East Asian Countries in Years 1950-1992. Lesson for Post-communist Economies (May, 1998)
132	Krzysztof Rybiński, Capital Inflows in Central and Eastern Europe: Inflation, Balance of Payments and Recommended Policy Responses (May, 1998)
133	Polityka kursowa w okresie transformacji: Małgorzata Antczak, Rola kursu walutowego w procesie dezinflacji w krajach przechodzących transformację gospodarczą; Lucjan T. Orłowski, Realny kurs złotego a struktura bilansu obrotów kapitałowych Polski (May, 1998)
134	Rudiger Ahrend, Vadym Lepetyuk, Forecasting Real GDP and the Current Account in a Transition Economy: Two Simple Econometric Methods and their Application to Ukraine (June, 1998)
135	Роберт Брудзыньски, Заир Чокоев, Малгожата Маркевич, Публичный долг Кыргызской Республики
136	Marek Jarociński, Skutki nierównomiernego opodatkowania sektorów w Polsce – analiza w równowadze ogólnej (June, 1998)
137	Małgorzata Antczak, Urban Górski, The Influence of the Exchange Rate Stability on Inflation: A Comparative Analysis (July, 1998)
138	Роман Могилевский, Яцек Цукровский, Оценка стоимости льгот, предоставляемых некоторым категориям граждан Кыргызской Республики (September, 1998)

139	Роберт Брудзыньски, Малгожата Маркевич, Экономические реформы в Кыргызстане в 1997-1998 гг.(September, 1998)
140	Емир Джугели, Ираклий Гварамадзе, «Нулевые» аукционы: цели и анализ результатов (September, 1998)
141	Приватизация за любую цену. Анализ опыта Республики Грузия в 1997–1998 годах. Под редакцией Влодзимежа Панькува и Барбары Гончаж
142	Ирина Синицина, Марек Ярочиньски, Бюджетно-налоговая система и государственные финансы Грузии в 1997–1998 гг.143 Michał Górzyński, Privatization in Romania
144	Robert Brudzyński, Investment Risk in Branches of the Kyrgyz Economy
145	Magdalena Tomczyńska, Ewa Sadowska-Cieślak, Zmiany w polskim systemie finansowym w ramach przygotowań do integracji z UE
147	Krzysztof Rybiński, Mateusz Szczurek, Current Account – Inflation Trade-Off. Lessons for Poland and Other Transition Economies
148	Urban Górski, The Interbank Money Market in Ukraine
149	Jarosław Neneman, The Reform of Indirect Taxation in Hungary, the Czech Republic, Poland and Romania
150	Rafał Antczak, Małgorzata Antczak, The Case of Gradual Approach to Foreign Trade Liberalisation in Transition Economies
151	Wojciech Maliszewski, Medium-Term Fiscal Projection for Selected Countries in Transition
152	Rafał Antczak, Monetary Expansion in Transition Economies and Their Influence on Inflation Performance
154	Krzysztof Rybiński, Thomas Linne, The Emerging Financial System of Poland: Institutional Constraints and External Links
155	Jacek Cukrowski, Jarosław Janecki, Financing Budget Deficits by Seigniorage Revenues: the Case of Poland 1990-1997
156	Max Gillman, Evaluating Government Policy in Transition Countries