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The political economy of reforms: Empirical evidence from post-communist transition in the 1990s

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Byung-Yeon Kim and Jukka Pirttilä

The political economy of reforms: Empirical evidence from post-communist transition in the 1990s

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All opinions expressed are those of the authors and do not necessarily reflect the views of the Bank of Finland.

Byung-Yeon Kim and Jukka Pirttilä

The political economy of reforms: Empirical evidence from post-communist transition in the 1990s*

Abstract

Using a novel data set from post-communist countries in the 1990s, this paper examines linkages between political constraints, economic reforms and growth. A dynamic panel analysis suggests public support for reform is negatively associated with income inequality and unemployment. Both the *ex post* and *ex ante* political constraints of public support affect progress in economic reform, which in turn influences economic growth. The findings highlight that while economic reforms are needed to foster growth, they must be designed so that they do not undermine political support for reform.

Key words: Political constraints, economic reform, transition, growth, dynamic panel models

JEL classification number: P26; O11; C33

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Byung-Yeon Kim and Jukka Pirttilä

The political economy of reforms: Empirical evidence from post-communist transition in the 1990s

Tiivistelmä

Tässä tutkimuksessa tarkastellaan poliittisten rajoitteiden, talousuudistusten ja talouskasvun välisiä yhteyksiä käyttämällä hyväksi uutta 1990-luvun tutkimusaineistoa siirtymätalousmaista. Dynaamiseen paneeliestimointiin perustuvien tulosten mukaan talousuudistusten saama julkinen tuki vähenee tuloerojen ja työttömyyden kasvaessa. Ns. *ex post*- ja *ex ante* -poliittiset rajoitteet, jotka viittaavat talousuudistusten saamaan tukeen, vaikuttavat valittuihin talousuudistuksiin. Niillä on puolestaan myönteinen vaikutus talouskasvuun. Tulosten mukaan talousuudistukset johtavat talouskasvuun, mutta ne pitää suunnitella siten, ettei uudistusten julkinen tuki rapaudu.

Asiasanat: poliittiset rajoitteet, talousuudistukset, siirtymätaloudet, kasvu, dynaamiset paneelimallit

JEL -luokittelu: P26; O11; C33

1 Introduction

Honest policy advice from economists often collides with political reality. When political reality wins out, first-best solutions are not implemented. Economic debates, in contrast, traditionally focus on what constitutes good economic policy without necessarily taking political constraints into account. In recent years, interest has revived in the practical, yet equally inspiring, aspects of economic policy – political economy. The much-debated books of Drazen (2000) and Persson and Tabellini (2000) reflect this growing taste for political economy.[1] These studies touch on the political economy of reforms, an area that several questions. How is reform progress determined? What determines support for reform? How can reforms be best implemented? Is there an optimal speed and sequencing of reforms?

The collapse of socialist economies in Eastern Europe and former Soviet Union, as well as their subsequent transition towards market economies, was arguably one of the most far-reaching economic events of the 20th century. Pain accompanied the economic transition process; all countries experienced a major fall in output after the start of reforms. A majority of the transition countries saw sharp increases in income inequality and unemployment. In Russia, for example, output declined by about 40% from 1992 to 1997, unemployment rose from 4.8% in 1992 to 10.9% in 1997, and income inequality expressed by Gini coefficient soared from 26.9 to 48.3. Most of the countries started to grow only towards the end of the 1990s. Even now, the sustainability of Russia's long-waited economic boom is dubious.

The transition countries in the former Soviet republics and Eastern Europe are unique in that their transitions have involved simultaneous democratisation and marketisation. Almost all countries attempted political liberalisation by establishing democracy and civic freedom at the early stage of the transition. From early on, all wide-ranging economic reforms must have been passing through the political process. With worsening economic conditions in the early years of transition, one would expect indications of an immediate feedback from economic experience to politics to block the implementation of radical market reforms either through political pressure on the reform-oriented government or by reinstating a communist or socialist party at election time.

Policy choices varied markedly across these transition economies. Countries were often classified as full (big-bang) reformers or as partial reformers. Policies were especially distinct with respect to the austerity imposed by stabilisation, speed and forms of privatisation, and tolerance of rent-seeking behaviour. This indicates politics, and more specifically mass support, has been important for policymaking.

The combination of the sudden start of transition, the rapid establishment of democratic institutions affecting the nature and speed of reforms, and variances in policy choices across transition countries provides a unique opportunity (arguably, close to laboratory conditions) to investigate the interaction of the political process and economic reforms. Unlike in Latin America and East Asia countries, which have a long history of path-dependence of reforms, the Eastern European transition experience offers an unrivalled opportunity to test political economy theories of reform. In the case of East Asian economies, in contrast, economic reforms generally preceded political transformation reforms, suggesting feedback from economic experience to politics was slow and weak.

[1] Rodrik (1996) provides an earlier synthesis.

The rising interest in the political economy of reforms in transition countries is reflected in the growing volume of theoretical and empirical research. Among these, Blanchard (1997) highlights the interactions between macroeconomic variables such as unemployment and budget deficits, and the optimal speed of transition reforms. Roland (2000) focuses on how political constraints determine a reform path. Empirical studies (e.g. Berg et al 1999; Havrylyshyn et al., 1998; and Campos and Coricelli, 2002) suggest economic reforms (liberalisation and restructuring), prudent macroeconomic policies (low inflation and small budget deficits) and beneficial initial conditions (including relatively small distortions before transition, the experience of pre-transition reforms and beneficial geographical location) are crucial determinants of growth during transition. Nevertheless, macro-level empirical studies have tended to overlook the interactions between economic reforms, political constraints and growth.[2] As a result, many recent theories have yet to be tested.

We attempt here to fill the gap between the key theories of the political economy of reforms and empirical research on growth in transition countries. We use a novel data set that makes it possible to build a dynamic panel econometric model to test the relationships between public support for reforms, progress in reforms, and economic growth.

We first examine what determines support for economic reform among citizens. Our key focus is on how economic outcome from earlier reforms and the material welfare of individuals (in terms of e.g. growth, inflation, unemployment and income inequality) affect support for future reforms. Public support for reform is likely to act either through *ex ante* political constraints (blocking reforms before they are launched) or *ex post* constraints (backlash and policy reversal).

Second, we test the extent to which these political constraints have influenced the nature of economic policies. This can be viewed as a way to study empirically the validity of political economy models of reforms in a transition context. The chosen reform may even be related to past macroeconomic outcomes, opening the way to testing of policy endogeneity to economic variables highlighted in the optimal speed literature, e.g. Blanchard (1997).

Third, we examine how reforms affect growth, employing dynamic panel models that address some of the issues overlooked in the existing literature on growth in transition countries. These include a treatment of the three equations of the determinants of growth, support for reforms and progress in reforms as a system, and taking account of the dynamic nature of transitions using the GMM estimator of Arellano and Bond (1991).

Our results suggest that support for reform depends on past macroeconomic performance, especially factors such as unemployment, inflation and income inequality that directly affect personal welfare. Support for reform, in turn, is a crucial determinant of the reform path. This finding implies that political constraints have played a key role in shaping economic policies in transition countries. Thus, transition reforms are not an exogenous process but crucially dependent on political economy considerations. In addition, we find that accumulated reform progress affects economic growth positively, which dominates the negative short-run impact of reform on growth.

The paper proceeds as follows: Section 2 reviews theoretical research on the political economy of transition and earlier empirical work on growth in transition countries. Section 3 explains our empirical approach. We present our main results in Section 4 and check for their robustness in Section 5. We summarise our findings in Section 6.

[2] Some studies, e.g. Fidrmuc 2000, Jackson et al (2001) and Warner (2001), build on evidence from election results in individual countries.

2 Public support, reform progress and economic growth in transition countries: A literature survey

2.1 Political constraint of economic reform and determinants of public support

In any democracy, decisions to launch or continue major reforms require sufficient public support. Emphasising the importance of political constraints in adopting and carrying out a reform program, Drazen (2000, p. 624) claims, "for a program of reform and transition to succeed, it must have the necessary political support at crucial decision stages." Given high uncertainty about the outcome of reforms and the freshness to democratic processes and institutions, one might well argue political constraints play an important role in policymaking in transition countries.

Several studies analyse the role of political constraints on economic reforms. Rodrik (1994) argues that the consequences of reform often involve the redistribution of income among different groups. Thus, economic reforms are avoided or implemented only gradually unless the efficiency gain from reforms is substantial and income is redistributed in a way that minimises opposition. The probability of voting against reform may thus increase with individual uncertainty. Fernandez and Rodrik (1991) suggest that some eventual winners may even vote against an efficiency-gaining reform package when losers are not identified *ex ante.*

Ex post political constraints are analysed in Wyplosz (1993) and Dewatripont and Roland (1995). In more detail, Wyplosz (1993) maintains that continuation of a reform requires a more stringent condition compared to a condition that enables the start of reform. This model assumes the unanimity rule, whereby governments focus on income distribution between the losers and winners, even when the losers are minority. Dewatripont and Roland (1995) provide a model that contains both aggregate and individual uncertainties. Due to aggregate uncertainties, a partial implementation of reforms might be beneficial for the society because of an early reversal option. Sequencing is also important; a partial reform that increases the welfare of a median voter will lead to the continuation of another reform as long as the aggregate outcome is positive. This suggests that starting with a reform that increases the welfare of a majority runs a smaller risk of reversal.

If political constraints are important for the start and continuation of a reform, the government needs to design mechanisms to compensate losers. Otherwise, a status-quo bias or reform reversal are likely. For example, unemployment is very likely to increase during transition. To avoid opposition to a reform by the unemployed, the government needs to provide unemployment benefits. In these conditions, Dewatripont and Roland (1992) point out that a slower, feasible speed of transition may be preferable because the pressure on fiscal sector is lessened. This has an implication for the optimal speed of transition. Aghion and Blanchard (1994) highlight the role of fiscal balance affected by unemployment benefits in the speed-of-reform decision. If the government adopts a big-bang reform that leads to the shedding of too many jobs, the fiscal burden becomes so large it makes both the restructured state sector and the private sector unprofitable. This suggests that there is an a slower, optimal speed of transition that allows both the state and

private sectors to operate at positive profitability while the government maintains enough public support for the continuation of a reform.

Only a few studies offer empirical evidence that political constraints are important in shaping the nature, adoption and reversal of reforms. Lora (1998) constructs reform measures for 19 Latin American and Caribbean countries for the period of 1985-1995, and then regresses several political and economic variables on the adoption of reforms. The results suggest that adoption of reforms correlates positively with economic crises such as GDP contraction and high past inflation.

Fidrmuc (2000) investigates political support for reforms in four transition countries by looking at the relationship between votes received by various parties (reform support) and economic factors. He finds that the support for reformist parties is negatively correlated with unemployment but positively associated with the size of the private sector. These findings suggest that the distributional aspect of reform is a significant factor influencing support for reform. Using data on four Polish elections, Jackson et al. (2001) support the hypothesis that economic factors are important in explaining political support for reforms. They argue that support for pro-reform parties significantly depends upon whether job creation in new firms keeps up with job losses at former state-owned enterprises. Warner (2001) uses data of Russian regions to looks at the effect of reform progress on support for pro-reform parties in December 1995 parliamentary elections and finds that reforms created positive political feedback rather than backlash against reforms.

2.2 Reform progress and economic growth

A large number of studies investigate the relationship between economic reform and economic growth.[3] Early studies (De Melo et al., 1996; Fischer et al., 1996) find that the index of reform progress compiled by the World Bank is positively associated with economic growth. Krueger and Ciolko (1998) criticise such studies by arguing that the measure of reform is significantly correlated with the initial condition of reforms such as export share and GNP per capita before the start of the transition. They find that initial conditions play a larger role in output performance than reform-related variables that exclude indirect effects on growth through initial conditions. Havrylyshyn et al., (1998) suggest that, even after controlling for initial conditions, a variable relative to the economic reform index may be significant. They further show that, while the short-term effect of reform on growth may be negative, its long-term effect is sufficiently positive to overcome the short-term loss. Brunetti et al. (1997) emphasise the importance of institutions in economic performance, finding that variables such as rule of law and corruption significantly affect economic growth in transition countries. Havrylyshyn and van Rooden (2000) respond that the impact of institutional development on economic growth, while statistically significant, is hardly overwhelming. Staehr (2003) examines complementarity and sequencing of reforms and argues that a simultaneous implementation of various reform policies instead of sequential one is preferred for an efficiency consideration but the speed of reform has little impact on growth.

Existing empirical studies suffer from substantial methodological drawbacks. First, few make much effort to capture the dynamic nature of economic growth. Yet, as a dynamic phenomenon, early positive growth may provide momentum for further growth in

[3] Harvylyshyn et al., (1998) and Campos and Coricelli (2001) provide a survey of empirical studies on economic growth in transition economies.

later years, say, by increasing agents' confidence in the economy, providing the government with more room for policy manoeuvres or reducing political constraints so as to free up resources to enhance economic growth. Second, although many variables used as dependent or independent variables are potentially correlated, existing studies tend to pay insufficient attention to the issues of endogeneity and multi-collinearity. For example, an unobserved shock may cause correlation between error terms and economic growth. Moreover, while the exchange rate regime is correlated with inflation rates, the speed of privatisation may be correlated with fiscal balance of the economy.

Berg et al. (1999) attempt to deal with the above criticisms. They include previous economic growth as regressors for the estimation of current economic growth and use IMF targets for macroeconomic variables as a proxy for an index of reform progress to mitigate the endogeneity problem of the measure of reform progress. Although no single policy variable is sufficiently robust to exclusion tests, they find reform-related measures are often significant. Yet, one can argue that instrumenting only the reform index and estimating the model using a fixed-effects estimator is a partial solution. Moreover, including lagged growth variables as regressors creates so-called Nickell's bias.

Even ignoring the methodological problems, the literature on economic growth overlooks another potentially important issue, i.e. how reform progress is determined. The theoretical literature reviewed above suggests political constraints should affect the nature and speed of reform. By treating reform progress as exogenous, earlier literature on economic growth disregards the possibility of feedback from economic performance onto reform progress through public support for the reform.

3 Empirical framework and econometric methods

3.1 Reform support

We assume that support for a market-oriented reform is a function of variables that can be classified into three groups: income distribution, macroeconomic performance, and time-invariant fixed effects. We include income inequality and unemployment as income distribution-related variables to use them as a proxy of *ex post* political constraints. The importance of the two variables in explaining support for reform has been extensively discussed in several studies (e.g. Dewatripont and Roland, 1992; Wyplosz, 1993; Aghion and Blanchard, 1994; Fidrmuc, 2000). Inflation and economic growth rates, which represent macroeconomic performance, likely, but not exclusively, affect the entire population of a country in a way that affects the mean of public support. The variables relating to the third group include all fixed effects including initial conditions and institutions. It is likely that other country-specific unobserved characteristics affect support for reform, but we believe that these are captured to a great extent by country-specific fixed effects. Therefore, we estimate the following equation

$$reform_{it} = \alpha_i + \beta reform_{it-1} + \sum_{j=0}^{j=1} r_{ij} unemp_{it-j} + \sum_{j=0}^{j=1} \delta_{ij} gini_{it-j} + \sum_{j=0}^{j=1} \phi_{ij} grow_{it-j} + \sum_{j=0}^{j=1} \lambda_{ij} l\inf la_{it-j} + \varepsilon_{it}, \qquad (1)$$

where subscripts i and t denote country and year, respectively, $reform_{it}$ is support for reform towards a market economy, $unemp_{it}$ denotes unemployment rates, $gini_{it}$ is Gini

coefficients, $grow_{it}$ is growth rates of GDP and $linfla_{it}$ denotes log of domestic inflation rates.[4]

The dependent variable, *reform*, is based on information from the Central and Eastern Eurobarometer (CEEB) surveys, which were commissioned by the European Union and had been conducted from 1990 to 1997.[5] Values for other variables are based on official statistics from the IMF and the EBRD. The countries we are concerned here with are Armenia, Belarus, Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russia, Slovakia, Slovenia and Ukraine.

The annual CEEB surveys monitor economic and political changes, as well as attitudes towards Europe and the European Union. The regular CEEB sample size is about 1,000 respondents per country. The dependent variable, *reform*, is measured by subtracting the share of respondents who answered "wrong" from that of those who replied "right" to the following question:

Do you personally feel that the creation of a free market economy, that is, one largely free from the state control, is right or wrong for (our country's) future?

Note that we specify a dynamic model by including the lagged dependent variable. Following a general-to-specific approach, we test the dynamic model including all lagged variables and then present a parsimonious model after deleting insignificant variables. We start by estimating Equation (1) with a fixed effects model that eliminates country-specific time invariant variables. Next, we use the GMM model account for measurement errors in variables and possible endogeneity biases.

We test *ex ante* political constraints in contrast with *ex post* political constraints. Equation (1) assumes that public support for a market reform is affected by past and current economic variables that might determine whether the individual wins or loses. Indeed, a future probability of winning or losing may also be important. These *ex ante* political constraints are tested using the data from the CEEB surveys. The surveys asked,

Over the next 12 months, do you expect that the financial situation of your household will (get a lot better, get a little better, stay the same, get a little worse, get a lot worse)?

The respondent could choose one of the five options. We measure the variable relative perceived future winning/loss as follows: first we assigned 1, 2, 3, 4, and 5 to replies that the respondent's situation will get a lot better, get a little better, stay the same, get a little worse and get a lot worse, respectively; second, we obtained the average of such figures weighted by each share of respondents who answered about their future financial situation.

[4] Data on economic growth, inflation rates, unemployment rates, exchange rate regime, fixed capital investment and government budget balance are from EBRD Transition Reports (various issues) and the World Bank database. The source of Gini coefficient is the United Nations University World Institute for Development Economics Research (WIDER) (data can be downloaded from http://www.wider.unu.edu/). In order to keep comparability across countries and across years, we used Gini coefficients that are derived from the TransMONEE dataset available from the WIDER. TransMONEE surveys, which have been implemented by the UNICEF, have monitored public policies and social conditions in Central and Eastern Europe and the former Soviet Union. For more detailed information on this dataset, refer to http://www.unicef-icdc.org/resources/.

[5] Responses come from citizens 15 years or older. Respondents are interviewed face-to-face in their private residences. A multi-stage random probability sample design has been applied to all countries except Hungary, which adopted a quota sampling technique for survey 2. The details of the surveys and questionnaire are posted at http://www.social-science-gesis.de/en/data_service/eurobarometer/ceeb/.

Thus a higher average suggests that more people perceive their future financial situation will get worse.

If we incorporate this variable in equation (1), the equation changes becomes

$$reform_{it} = \alpha_i + \beta reform_{it-1} + \sum_{j=0}^{j=1} r_{ij} unemp_{it-j} + \sum_{j=0}^{j=1} \delta_{ij} gini_{it-j} + \sum_{j=0}^{j=1} \phi_{ij} grow_{it-j} + \sum_{j=0}^{j=1} \lambda_{ij} l\inf la_{it-j} + \omega futloss_{it} + \varepsilon_{it} \quad (1)$$

where $futloss_{it}$ is the perceived winning/loss in coming twelve months, measured as explained above.

3.2 Progress in reform

Governments are assumed to consider two factors when they design, adopt and implement a reform: support from the mass public for a market-oriented reform and macroeconomic performance. The former may be interpreted straightforwardly: without sufficient public support, it will be difficult for a government to carry out reform policies.

Macroeconomic performance can directly affect reform progress because it can ease resource constraints faced by the government. For example, excessive unemployment rates may affect reform progress not only indirectly by dampening public support for the reform, but also directly through forcing spending on the social safety net. Government fiscal balance can also play a role in reform progress. A government with a high fiscal deficit should find it difficult to pursue policies leading to increases in government expenditure. For example, a policy of rapid restructuring may result in increases in government expenditure.

Thus, we model progress in reform as

$$li_{it} = \alpha'_i + \beta' li_{it-1} + \sum_{j=0}^{j=1} \kappa_{ij} reform_{it-j} + \sum_{j=0}^{j=1} r'_{ij}\, unemp_{it-j} + \sum_{j=0}^{j=1} \delta'_{ij}\, gbal_{it-j} + \sum_{j=0}^{j=1} \phi_{ij}' grow_{it-j} + \sum_{j=0}^{j=1} \lambda'_{ij}\, l\inf la_{it-j} + \varepsilon'_{it} \quad (2)$$

where, as the same in Equation (1), i and t denote country and year, respectively. li is the measure of reform progress, while gbal denotes the share of government budget balance in proportion to GDP.

For the dependent variable, the measure of reform progress, we use a structural reform index that represents the level of structural reforms achieved each year. The index was compiled by the World Bank and has been used in several papers as a proxy of a reform progress (De Melo et al., 1996; Fischer et al., 1998; Berg et al., 1999).[6] To account for the endogeneity of reform progress, we employ a two-step approach to estimate Equation (2). First, we estimate Equation (1), then we substitute support for reform in the current period ($reform_{it}$) with the predicted value from Equation (1). As in the estimation of Equation (1), we use both fixed effects model and GMM to estimate Equation (2).

[6] This index is a weighted average of three indices: price liberalisation and competition, trade and foreign exchange regime, and privatisation and banking reform. For a detailed discussion, see de Melo et al. (1996).

3.3 Economic growth

The work on determinants of economic growth in transition countries suggests four groups of variables determining economic growth, i.e. progress in structural reform, macroeconomic policies, initial conditions and institutions. We include this key set of variables by incorporating determinants relating to reform progress and macroeconomic policies, and by treating variables related to initial conditions and institutions as country-specific fixed effects.

Our analysis differs from most of the earlier growth literature in the transition context in that we use the predicted index of reform progress (from Step 2 regressions) rather than assuming that progress in reforms is entirely exogenous. In addition, we use a dynamic specification based on the Arellano-Bond (1991) GMM estimator for dynamic panels.

Earlier studies generally acknowledge that reforms may undermine growth in the short term, but add that as their beneficial long-term effect dominates, the overall relation between reforms and growth is positive. A shortcut to capturing this is to use a short panel to include both the contemporaneous reform index and lagged cumulative reform index as right-hand side variables. The prediction here is that contemporaneous reform may have a negative sign, whereas lagged cumulative reform will clearly have a positive impact on growth.

Thus, we estimate the model

$$grow_{it} = \alpha''_i + \beta'' grow_{it-1} + \kappa'' li_{it} + \gamma'' cli_{it-1} + \sum_{j=0}^{j=1} \delta''_{ij}\ gbal_{it-j} + \sum_{j=0}^{j=1} \phi_{ij}'' capf_{it-j} + \sum_{j=0}^{j=1} \lambda''_{ij}\ l\inf la_{it-j} + \theta exch_{it} + \varepsilon''_{it} \quad (3)$$

where subscripts i and t denote a country and year, respectively. *cli* is accumulated progress in reform, measured as the sum of the reform index, *exch* is a dummy that refers to whether a country adopts fixed exchange rate regime (=1) or not (=0), and *capf* denotes the index of fixed capital formation. While capital formation is not used in other studies on growth determinants in transition countries, the literature on economic growth in non-transition countries frequently uses it as a regressor.

4 Econometric results

4.1 What determines support for reform?

In the first step of our empirical analysis, we examine the determinants of support of reforms (Equation (1) above). These results are reported in Table 1. The basic results are obtained from Model 1 (general) and Model 2 (parsimonious),[7] which are based on a fixed effects estimator.

The results (especially for Model 2) suggest that both increases in lagged unemployment and lagged inflation reduce support for reforms. This confirms that there is a feedback from actual economic performance to public opinion about reforms. In addition, increasing economic inequality (measured with Gini coefficients) reduces support for

[7] As elsewhere in the paper, all the parsimonious models are obtained by dropping insignificant variables one by one from the general model.

reforms. One explanation for inflation's role is that it is linked to wage and pension rigidities, so nominal price increases reduce real income. Inflation may also have adverse distributional implications and may therefore also be another proxy for inequality. Interestingly, growth rates (on which most economic policy focuses) have little impact on people's opinion about the benefits of reform.

In addition to fixed effect regressions, we use GMM estimation to control for possible measurement errors and an endogeneity bias in support for reforms and other variables. Lagged dependent variables turn out to be insignificant, so our results are based on static GMM estimation. Results from GMM regressions (Models 3 and 4) confirm the overall picture. The tests reported revealed no problems in the specifications. Unemployment and Gini coefficients are clearly significant, whereas inflation is somewhat less significant.

What is the interaction between support for reforms, macroeconomic performance and chosen economic reforms?

Step 2 regressions examine how chosen economic reforms (measured by the World Bank aggregate liberalisation index, *li*) depend on support for reforms and past macroeconomic performance. This analysis corresponds to Equation (2) in Section 3. Two linkages are of interest: political economy factors[8] and optimal speed of transition considerations.

These linkages are tested with a host of econometric specifications. Models 1 and 2 are based on two-step least squares (2SLS) estimation, where support for reform is first predicted from Step 1 regression and then used as a determinant of chosen reform.[9] The third model is similar to Model 2, but standard errors are bootstrapped to check if inference remains the same as in the standard 2SLS with predicted reform. In Models 1-3, contemporaneous macro-variables are dropped from the model to ensure the results do not suffer from endogeneity bias. A possible time lag between the implementation of economic policy and changes in economic performance also motivates this choice. Finally, GMM is used to allow inclusion of contemporaneous variables. Dynamic specification was first used (Arellano-Bond one-step estimation with robust standard errors), but as the lagged dependent variable turned out to be insignificant, the reported results are based on static GMM. Specification tests detect no problems with the GMM models.

Results are presented in Table 2. The main finding is that the predicted support for reform is significant for explaining progress in reforms. Said another way, the probability of carrying out reform continuously is positively associated with public support for reforms.[10] Likewise, if unsuccessful outcomes of earlier reforms undermine political support for reforms, future reforms would slow. This provides empirical evidence that political constraints are an important consideration when politicians decide on the nature and speed of economic reforms. While intuitively clear, the finding is important in that it provides empirical evidence for the political economy models of transition.

Another interesting finding relates to the role of unemployment. High unemployment significantly reduces the pace of reform. Interpreted in the spirit of the Aghion-Blanchard

[8] At this stage, the analysis is related to *ex post* political constraints. *Ex ante* constraints are analysed in section 5.

[9] Model 2 is similar to 1 with the exception that lagged fiscal balance (gbal1) and lagged reform are dropped.

[10] The *reform* variable is significant in all other specifications except 1 (lagged *reform* and *gbal1* may cause this) and 5 (i.e. the general specification of GMM). The *reform* variable is significant in the final parsimonious GMM model, Model 6.

(1994) transition model, the optimal speed of transition is slower because of the effect of unemployment on a fiscal balance.[11]

Finally, while results from the GMM estimation (Models 4 and 5) complement the above picture, these results must be interpreted with caution due to the small sample size. Support for reform is still significant, whereas unemployment is not. One explanation is that the some of the effects of unemployment are channelled through the inclusion of contemporaneous fiscal balance. Higher unemployment is reflected in a worse fiscal position, so there should be a positive correlation between fiscal balance and reform progress. As the budget balance becomes more positive, beneficial reforms once constrained by fiscal considerations can be implemented at a faster pace.[12]

4.2 Explaining growth

Our final step is to examine how progress in reforms and other factors explain economic growth (corresponding to Equation (3) in Section 3). Results reported in Table 3 reveal lagged growth is clearly significant. The results further confirm that, in the short term, predicted reform has a negative sign, and lagged cumulative reform is a quantitatively larger positive factor and statistically more significant. In Model 1 (without exchange rate), high inflation undermines growth, whereas inflation is not precisely determined if the exchange rate regime is included (Model 2). This suggests that fixed exchange rates have successfully curbed inflation in transition countries during the years of this study. Our analysis confirms earlier findings on the positive impact of prudent fiscal policy on growth. Turning to the role of investment, it is somewhat surprising that the contemporaneous capital formation has a positive sign, when its lagged impact is negative.

4.3 Economic significance

We first divide the countries into two groups in terms of Gini coefficient values from 1992 to 1997, i.e. low and high.[13] To grasp the magnitude involved in our key results, suppose a country managed to reduce its Gini coefficient by 12.2. This change is equivalent to that from the mean of high Gini coefficient to the mean of the low Gini coefficient group. Since the coefficient on Gini and lagged Gini in the regression of support for reform is –0.9 and –0.97 (Table 1, column 4), respectively, the aggregate impact of changes in the Gini coefficient on support for reform is 22.8. This leads to an increase in reform progress by 0.096, since the coefficient on support for reform for the estimation of progress in reform is 0.0042 (Table 2, column 2). In the estimation of economic growth, two independent variables are constructed based on progress in reform. One is progress in reform itself in a

[11] Although the relationship in their model between unemployment and optimal speed of reform is non-linear in the sense that small levels of unemployment are useful for reforms. A better test for this theory would add a non-linear empirical specification.

[12] Dewatripont and Roland (1992) construct a model with a trade-off between budget balance and chosen reforms. Pirttilä (2001) finds empirical support for this theory.

[13] The group of low-income inequality include Poland, Slovenia, Czech Rep. Slovakia, Hungary, and Romania, while that of high-income inequality comprises of Bulgaria, Latvia, Lithuania, Estonia, and Russia. Armenia, Belarus and Ukraine are excluded from this exercise, because data on Gini coefficients are missing for some years.

corresponding year and another is accumulated progress in reform. Respective coefficients on accumulated reform and progress reform, 9.0 and –0.85, (Table 3, column 2), suggest that an increase in the Gini coefficient by 12.2 induces a 0.8% increase in growth.[14] Since the mean of annual growth rates among low and high Gini coefficients groups is 1.4% and –3.7%, respectively, the impact of Gini coefficient accounts for 16% of differences in annual growth rates between the two groups.

In the same way, we classified the countries into two groups in terms of unemployment rates from 1992 to 1997, i.e. low and high.[15] The difference in unemployment rates between these two groups is 6.4%. By applying a similar method as above, we can conclude that a reduction in unemployment rates by 6.4% will induce a 0.5% increase in annual growth rate if others being equal. The average of annual growth rates among low and high unemployment countries from 1992 to 1997 is –3.8% and 1.3%, respectively. This suggests that without political constraints caused by unemployment aspects, the gap between the two groups would have widened from 5.1% to 5.6%.

For the sake of illustration, suppose Russia reduces income inequality to the level of Poland, i.e. from 40.4 to 27.4. This should lead to a 0.85% increase in the growth rate. By the same token, assume Hungary decreased its mean of unemployment rates from 1990 to 1997 to that of the Czech Republic in the same period, i.e. from 9.4% to 3.2%. This induces an increase in annual growth rates by 0.51% *ceteris paribus*, which accounts for about 50% of the difference in the mean of growth rates between the two countries.

5 Robustness analysis

5.1 The role of ex ante and ex post political constraints

We now focus on robustness analysis of Equation (1), by estimating its variant (1)' in Section 3. Equation (1)' includes *futloss* (future loss) as an additional regressor, which can be interpreted as an *ex ante* political constraint (i.e. a perceived future worsening of economic conditions reduces support for reform and reform progress). Note that *ex post* political constraints are captured by existing regressors such as unemployment rates and Gini coefficients.

The findings reported in Models 1 and 2 in Table 4 reveal that as earlier, increasing economic inequality and unemployment reduce support for reform. An interesting result is

[14] Note that this calculation is based on the assumption that other variables do not change. In fact, from the data of our sample countries, we find a negative correlation between Gini coefficient and unemployment rates. More specifically, the average unemployment rate among countries belonging to the low Gini coefficient group from 1992 to 1997 was 10.2%, while that belonging to the high Gini coefficient group was 7.5%. This implies that the government might have attempted to reduce income inequality more intensively by other means in a country where unemployment rates were higher. Taking account of this negative correlation between income inequality and unemployment rates, the net growth effect of a reduction in Gini coefficient from high to low will become smaller, namely from 0.8% per annum to 0.6% per annum, because of a corresponding increase in an unemployment.

[15] The group of low unemployment rates comprises the Czech Republic, Russia and the three Baltic countries, while that of high unemployment rates include Romania, Hungary, the Solovak Republic, Bulgaria, Slovenia and Poland. The average annual unemployment rate of the former group of countries from 1992 to 1997 was 5.9%, while that of the latter group was 12.3% for the same period.

that *futloss* negatively correlates with support for reform, i.e. support for reforms depends both on earlier outcome of the reforms and the perceived future losses.[16] Said differently, support for reform, which depends on both *ex ante* and *ex post* political constraints, is needed for carrying out actual reforms.[17] Given the significance of *futloss* in determining support for reform, the combined impact of *ex ante* and *ex post* political constraints on economic growth increases significantly. Based on the assumption of changes from the mean of Gini coefficient in the high Gini coefficient group to that in the low Gini coefficient group, and from the mean of *futloss* in high *futloss* group (that is, 0.72) to the mean of *futloss* in low *futloss* group (that is, 0.27), a rise in public support for reform by decreasing the Gini coefficient and by increasing the share of the population that views their financial situation positively, as explained above, boosts economic growth by 1.2% per annum.[18] If we add this to the impact of unemployment on economic growth through support for reform (based on the assumption of the change from the average unemployment rates in countries belonging to the group of high unemployment rates to that belonging to the group of low unemployment rates), the total effect of political constraints on economic growth is 1.7% per annum.

5.2 Reform indicators

We now turn to measurement issues in capturing actual reforms in Step 2 regressions. The measure used above, *li*, is an aggregate of the World Bank liberalisation indices, *lii* (internal or price liberalisation), *lie* (external liberalisation) and *lip* (private sector entry, capturing e.g. privatisation and corporate governance). One can argue that support for reform may vary depending on the aspect of reform. To explore this, we use all three indices separately as dependent variable in Step 2 regressions. It turns out that support for reform is not significant in explaining internal and external liberalisation. This is understandable as most countries launched these reforms early in their transition, so *ex post* political constraints could hardly affect these choices.

Models 1 and 2 in Table 5 report the results for explaining the private sector entry variable, *lip*. The results show that political support (now lagged) is again significant for this subset of reforms. Moreover, unemployment slows the speed of restructuring and privatisation. These results are well in line with the intuition that support for reform is more likely to be a decisive factor in planning reforms that directly affect the status of workers (whether or not restructuring actually causes the employees to be laid off). The fact that unemployment directly influences future restructuring is consistent with the predictions of the Aghion-Blanchard model.

The European Bank for Reconstruction and Development (EBRD) produces a wide set of reform indicators.[19] We construct an average indicator of the following EBRD indices: small-scale privatisation, governance and enterprise restructuring, competition policy, banking reform, price liberalisation and trade and foreign exchange liberalisation.

[16] We also found that predicted reform calculated with *futloss* is significant in the Step 2 regression.

[17] These results are not reported here, but may be obtained from the authors on request.

[18] This is based on the following calculation: the effect of futloss on economic growth = (change in futloss from high fuloss group to low futloss group) × (the coefficient on futloss appearing in table 4) × (the coefficient on predicted reform in table 2) × (the coefficient on accumulated reform progress in table 3) = (-0.45) × (-27.6) × 0.0042 × 9.0 = 0.46 (%).

[19] These were recently backdated to cover years before 1995.

This index, *ebrd*, depicts the cumulative progress in these areas. Its first difference, *debrd*, is used as an alternative reform index in Step 2 regressions. These results are covered in Models 3 and 4 in Table 5. While there are some changes in these results in comparison to the main set of results of Table 2 above, the main results are fairly robust – even with the EBRD index, reform support and unemployment retain their signs and remain significant in the parsimonious model.

5.3 The role of democracy

The importance of political constraints may vary according to the degree of political freedom in a country. We examine this by augmenting first- and second-step estimations with data from Freedomhouse. Freedomhouse rates all countries according to their political freedom on a scale of 1 to 7. Western-type democracies get a grade of 1 and an absolute dictatorship gets a 7. We denote this variable by *freedom*. Freedomhouse classifies countries into three groups: free, partially free and not free.

A number of interesting hypotheses arise. Well-established political freedom may reinforce support for market reforms. Thus, *freedom* is included as a determinant of support for reform in Step 1 regressions below. Second, in Step 2 regressions, the dependent variable, progress in reforms, may depend on the degree of political freedom, while the influence of support for reform may hinge on the level of democracy. It is possible that political constraints are strongest in politically free countries. These hypotheses are tested by including *freedom* directly into Step 2 regressions and by constructing an interaction variable between freedom and support for reform, i.e. *iareform=reform*f*. This interaction term has positive values only if a country is politically free.

The results are reported in columns 3 and 4 of Table 4 and columns 5 and 6 of Table 5. For the sake of brevity, only results based on GMM estimations are reported here.[20] Consider first the results of explaining support for reform in Table 4. An increase in the political freedom in the country (a decrease in the *freedom* value) increases support for market-oriented reforms. The role of other determinants remains the same. Similarly to the results of Fidrmuc (2001), increase in political freedom is also positively correlated with actual progress in reforms (Table 5, column 6). However, the interaction variables *iareform* and lagged *iareform* are not significant in explaining progress in reforms. Thus, while politically free countries are likely to become more economically free, the strength of political constraints does not vary significantly among politically free and less free countries. One explanation is that most of the countries in the sample have been classified as free or partially free over the whole estimation sample. In addition, even in the absence of complete political freedom, country leaders may have been dependent on the public opinion through indirect routes, e.g. pressure to change the political system.

[20] Results from LSDV regressions were qualitatively similar and may be obtained from the authors on request.

6 Conclusions

This paper investigated the relationships between public support for reform, actual progress in reform and economic growth. To measure support for a market-oriented reform, we used a novel data set from post-communist countries from 1990 to 1997 – the Central and Eastern Eurobarometer surveys.

We used a fixed effect panel and GMM estimator to estimate three equations, taking into account endogeneity of support for reform and actual progress in reform for the determination of economic growth. Our results suggest that both *ex post* and *ex ante* political constraints influenced reform progress in these countries; a finding that supports predictions of key theoretical work on transition economics. Public support for reform is positively associated with favourable economic conditions affected by earlier reforms and negatively correlated with increases in income inequality and unemployment. Support for reform progress and unemployment affected actual progress in reforms, which in turn were associated with economic growth. In terms of economic significance, our results indicated that a combined impact of political constraints on economic growth, defined as the sum of the growth effect of *ex post* political constraints caused by income inequality and unemployment aspects as well as that of *ex ante* political constraints, would be as much as 1.7% per annum. In more particular, a decrease in income equality in Russia to the level of income inequality in Poland would have increased Russia's annual growth rates by 0.85%.

Our analysis highlighted the fact that, while economic reforms are needed to foster growth, they must be designed in such a way that they do not undermine political support for reform. Thus, policies reducing harmful social impacts of economic growth such as rising inflation, unemployment or income inequality (all justifiable in their own right) need to be framed in the context of market-oriented reforms. These policies form a crucial element of a successful reform package, even from the efficiency point of view.

Due to the paucity of data, our analysis was abstracted from a number of potentially important themes. One such theme is the role of international financial institutions. Many transition countries have followed, to some extent, policy advice from such institutions as the IMF. This suggests the chosen reform policies may reflect other considerations other than support among the electorate. Furthermore, institutional differences other than the degree of democratic freedom (which we considered) may have interesting implications for political economy linkages. In some countries, powerful elite groups have arguably succeeded in influencing political decision-making to serve their own rent-seeking purposes. In such circumstances, the reforms chosen likely differ from those that would have been chosen in an ideal democracy.

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Tables

Table 1: Determinants of public support for a free market economy

Model	1	2	3	4
Dependent var.	reform	reform	reform	reform
Estimation method	OLS, fixed effects	OLS, fixed effects	GMM	GMM
Variable				
Linfla	-4.051**	-2.861**	-4.278*	-4.495
	(-2.05)	(-2.30)	(-1.73)	(1.56)
Linfla1	2.665		0.763	
	(1.44)		(0.41)	
Unemp	-1.570		-0.851	
	(-0.11)		(-0.50)	
Unemp1	-2.201***	-2.014***	-1.933***	-2.442***
	(-3.13)	(-4.42)	(-3.27)	(-3.43)
Grow	0.119		0.149	
	(0.27)		(0.26)	
Grow1	0.238		0.064	
	(0.71)		(0.209)	
Gini	-0.543	-0.650	-0.503	-0.906**
	(-0.96)	(-1.28)	(-0.92)	(-2.15)
Gini1	-1.110**	-1.069**	-0.689	-0.971*
	(-2.04)	(-2.20)	(-0.93)	(-1.83)
No. of obs.	67	69	53	55
R^2	0.29	0.28		
F-test	F(8,58)=5.09 [0.000]	F(4,64)=10.65 [0.000]		
Wald (joint significance)			$Chi^2(8)=$ 59.92 [0.000]	$Chi^2(4)=$ 31.61 [0.000]
Sargan test of overidentification			$Chi^2(112)=61.44$ [1.000]	$Chi^2(112)=57.89$ [0.405]
AR(1) test			-1.482 [0.138]	-1.627 [0.104]
AR(2) test			0.703 [0.482]	0.789 [0.430]

Notes: This table refers to STEP 1 regressions (dependent variable: support for reform).
*, ** and *** denote significance at 10%, 5% and 1% levels, respectively. t-values are based on robust standard errors and reported in brackets. Results in Column (1) and (2) are corrected for heteroskedasticity. p-values are indicated in squared brackets.

Table 2: Determinants of progress in reforms

odel	1	2	3	4	5
Dependent var.	li	li	li	li	li
Estimation method	2SLS, fixed effects	2SLS, fixed effects	2SLS, std errors bootstrapped	GMM	GMM
Variable					
Reform				0.00082	0.0030**
				(1.23)	(2.40)
Predicted reform	0.0037	0.0042**	0.0042**		
	(1.66)	(2.31)	(2.00)		
Reform1	0.0068	0.00087	0.00087	0.00041	
	(0.81)	(1.02)	(1.01)	(0.56)	
Linfla				-0.0086	
				(-0.660)	
Linfla1	0.0065	0.0050	0.0050	0.0091	
	(0.65)	(0.52)	(0.44)	(0.95)	
Unemp				0.0038	
				(0.50)	
Unemp1	-0.0298***	-0.027***	-0.027***	-0.020**	
	(3.43)	(-3.92)	(-3.53)	(-2.01)	
Grow				-0.0067***	-0.0073***
				(-3.71)	(-3.48)
Grow1	0.0019	0.0015	0.0015	0.0023	
	(1.15)	(0.96)	(0.85)	(1.24)	
Gbal				0.013***	0.0050***
				(3.61)	(2.92)
Gbal1	0.0016			-0.0007	
	(0.98)			(-0.40)	
No. of obs.	63	66	66	61	76
R^2	0.587	0.28			
F-test	F(6,56)=7.13 [0.000]	F(5,60)=16.32 [0.000]			
Wald (joint significance)				$Chi^2(10)=$ 116.2 [0.000]	$Chi^2(3)=14.06$ [0.003]
(Sargan) test of overidentification		$Chi^2(2)=1.617$ [0.445]		$Chi^2(75)=$ 70.93 [0.612]	$Chi^2(51)=56.0$ [0.293]
AR(1) test				-0.850 [0.395]	-2.374 [0.018]
AR(2) test				-1.090 [0.276]	-1.231 [0.218]

Notes: STEP 2 regressions (dependent variable: liberalisation index). *, ** and *** denote significance at 10%, 5% and 1% levels, respectively. t-values are based on robust standard errors and reported in brackets. Results in column (1) and (2) are corrected for heteroskedasticity. p-values are indicated in squared brackets.

Table 3: Determinants of economic growth

Model	1	2
Dependent var.	Grow	Grow
Estimation method	GMM	GMM
Variable		
Grow1	0.399***	0.374***
	(7.72)	(3.40)
Predicted li	-10.09*	-0.855
	(-1.75)	(-1.06)
Lagged cli	15.575***	9.044***
	(3.63)	(2.68)
Linfla	-2.460**	-1.236
	(-2.16)	(-1.34)
Linfla1	0.777	0.520
	(1.42)	(0.46)
Gbal	.583***	.380***
	(3.10)	(2.93)
Gbal1	-0.179	-0.921
	(-1.37)	(-1.03)
Exch		2.537*
		(1.86)
Capf		0.240***
		(4,68)
Capf1		-0.195***
		(-2.73)
No. of obs.	49	45
Wald (joint significance)	$Chi^2(7)=433.66$ [0.000]	$Chi^2(10)=3263.39$ [0.000]
(Sargan) test of overidentification	$Chi^2(20) =$ 18.74 [0.5385]	Chi2(20) = 21.87 [0.3476]
AR(1) test	-2.34 [0.0195]	-2.20 [0.0281]
AR(2) test	0.71 [0.480]	-0.04 [0.971]

Notes: STEP 3 regressions (dependent variable: growth). *,** and *** denote significance at 10%, 5% and 1% levels, respectively. t-values are based on robust standard errors and reported in brackets. p-values are indicated in squared brackets.

Table 4: Determinants of public support for a market economy: robustness check

Model	1	2	3	4
Dependent var.	reform	reform	Reform	Reform
Estimation method	Fixed effects	Fixed effects-parsimonious	GMM	GMM
Variable				
Linfla	-1.987		-5.200**	-3.682*
	(-0.91)		(-1.94)	(-1.85)
Linfla1	2.864*		0.650	
	(1.86)		(0.43)	
Unemp	0.406		-0.906	
	(0.29)		(-0.57)	
Unemp1	-0.879	-1.357**	-1.792***	-1.332***
	(-1.08)	(-2.31)	(-2.91)	(-2.79)
Grow	-0.171		-0.105	
	(-0.46)		(-0.18)	
Grow1	0.109		-0.020	
	(0.33)		(-0.07)	
Gini	-0.958	-1.130**	-0.315	
	(-1.60)	(-2.17)	(-0.59)	
Gini1	-0.969*	-0.752*	-0.986	-0.702
	(-1.88)	(-1.85)	(-1.36)	(-1.38)
Futloss	-38.98**	-27.61***		
	(-2.64)	(-3.20)		
Freedom			-7.263**	-7.035**
			(-2.30)	(-2.29)
Freedom1			6.057*	
			(1.85)	
No. of obs.	56	60	53	59
R^2	0.43	0.38		
F-test	F(10.45)=4.69	F(4,53)=11.15		
	[0.0001]	[0.000]		
Wald (joint significance)			$Chi^2(10)$=1113.0*** [0.000]	$Chi^2(4)$= 21.47*** [0.000]
Sargan test of overidentification			$Chi^2(150)$=54.59 [1.000]	$Chi^2(60)$=73.23 [0.117]
AR(1) test			-1.345 [0.179]	-1.628 [0.103]
AR(2) test			0.691 [0.490]	1.601 [0.109]

Notes*:* Alternative STEP 1 regressions. *,** and *** denote significance at 10%, 5% and 1% levels, respectively. t-values are reported in brackets and p-values squared brackets. Results in columns (1), (2), (3) and (4) are corrected for heteroskedasticity.

Table 5: Determinants of progress in reforms: robustness check

Model	1	2	3	4	5	6
Dependent var.	lip	lip	debrd	debrd	li	Li
Estimation method	Fixed effects	Fixed effects – parsimonious	Fixed effects	Fixed effects – parsimonious	GMM	GMM
Variable						
Predicted reform	0.003		0.012			
	(1.34)		(1.46)			
Reform					0.0031***	0.0021*
					(3.68)	(1.91)
Reform1	0.002*	0.002***	0.005**	0.0052*	0.0016*	
	(1.90)	(2.95)	(1.99)	(1.96)	(1.81)	
Linfla					-0.0046	
					(-0.40)	
Linfla1	0.007		0.065		-0.0094	
	(0.58)		(1.43)		(-0.99)	
Unemp					0.0058	
					(0.75)	
Unemp1	-0.006	-0.010***	-0.025	-0.456***	-0.018*	-0.026***
	(-1.22)	(-3.42)	(-1.22)	(-3.59)	(-1.99)	(0.000)
Grow					-0.0079***	
					(-4.90)	
Grow1	-0.002		-0.002		-0.0001	
	(-0.80)		(-0.39)		(-0.085)	
Gbal					0.013***	0.0063***
					(4.79)	(3.40)
Gbal1	0.0003		0.008		0.0009	
	(0.20)		(1.45)		(0.56)	
Freedom					-0.067***	-0.47**
					(-2.98)	(1.99)
Freedom1					0.0036	
					(0.24)	
Iareform					-0.0026**	
					(-2.43)	
Iareform1					-0.0016	
					(-1.61)	
o. of obs.	63	81	63	81	61	70
R^2	0.33	0.26	0.41	0.25		
F-test	F(6,56)=7.63 [0.0000]	F(2,78)=14.23 [0.000]	F(6,56)=6.85 [0.000]	F(2,78)=12.53 [0.000]		
Wald (joint significance)					$Chi^2(14)=4602$*** [0.000]	$Chi^2(4)=29.28$*** [0.000]
Sargan test of overidentification					$Chi^2(210)=59.51$ [1.000]	$Chi^2(60)=51.82$ [0.765]
AR(1) test					-1.484 [0.138]	-1.822 [0.068]
AR(2) test					-0.832 [0.405]	0.379 [0.704]

Notes: Alternative STEP 2 regressions. *,** and *** denote significance at the 10%, 5% and 1% levels, respectively. t-values are reported in brackets and p-values squared brackets. Results in columns (1), (2), (3) and (4) are corrected for heteroskedasticity.

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