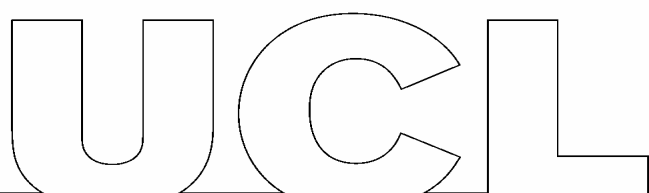


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**Inequality, Democracy and Taxation:
Lessons from the Post-Communist Transition**

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Inequality, Democracy and Taxation: Lessons from the Post-Communist Transition

Christopher J Gerry^a and Tomasz M Mickiewicz^{a,b}

Abstract

Using data for post-communist economies (1989-2002), we examine the determinants of income inequality. We find a strong positive association between equality and tax collection but note that this relationship is significantly stronger under authoritarian regimes than under democracies. We also discover that early macroeconomic stabilisation resulted in lower inequality; we confirm that education fosters equality and find that larger countries are prone to higher levels of inequality.

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1. Introduction

In this article we re-examine the factors underpinning the variation in inequality among the transition countries. While controlling for a number of factors, we find that there is less inequality in countries that collect more taxes. Second, this effect is far stronger for the more authoritarian regimes in the region than for democracies. Drawing on the existing literature, we explore possible reasons for the latter effect.

Recognising the political system as the conduit through which demands for redistribution are channelled and delivered, the most recent inequality literature has increasingly focused on the way in which political *and* economic factors shape the income distribution. This is an important research area and one in which many questions remain unanswered. The quest to unearth causal relationships, develop appropriate empirical tools and ultimately to inform economic policy remains paramount.

The diversity of spatial and temporal experience draws attention to some of the underlying complexities. Indeed, across the former Communist countries of Central and Eastern Europe and Central Asia, the paths of inequality, economic liberalisation and political reform have varied considerably. The task of this paper is to subject these relationships to a detailed empirical examination in the unique ‘experimental’ context conferred by the ‘transition’ of countries emerging from the Soviet block since 1989¹.

The exceptional scale and pace of this unique historical ‘experiment’ stems from the distinct features of these countries at the onset of ‘transition’, which were semi-autarchic command-economy systems remote from the coordinating mechanism of the market. From the late 1980s the transition economies have encountered the introduction of economic *and* political reform as the region has both globalised and democratised to varying degrees. During the subsequent years, the countries of the region have, on average, lived through rising inequality, a J-curve of economic growth and a progressive increase in both political liberalisation and economic reform (see

¹ Following the established tradition, we include the former republics of Yugoslavia, and Albania. This yields the set of twenty-seven countries labelled by the European Bank of Reconstruction and Development (EBRD) as ‘transition economies’ (see: EBRD 1994-2005, and for recent discussion - Mickiewicz, 2005).

Figure 1 below). These parallel processes allow us to address recent developments in the literature that bestow greater emphasis on political and economic institutions².

In this paper, we match a rigorously selected panel of compatible income inequality figures, drawn from the UN WIID2a dataset, with the Freedom House indicators of political rights and civil liberties, macroeconomic indicators from the World Bank and human capital indicators derived from the TransMonee database. The nature of the data prevents us from applying panel methods based on first-differencing. Accordingly, we investigate income inequality through the application of ‘effects models’, with our choice of estimators based on appropriate specification tests. This approach allows us to go some way towards articulating the tangled relationship between economic reform, political reorganisation and income inequality in the context of post-communist transition.

We find that full political freedom is associated with lower levels of income inequality. There is a strong negative relation between the capacity for the political regime to raise taxation and inequality – an effect which is significantly stronger for more authoritarian regimes. Additionally, we find that transition countries undertaking early programmes of macroeconomic stabilisation now enjoy lower levels of inequality; we confirm that education fosters equality and the proposition of Commander *et al* (1999) that larger countries are prone to higher levels of inequality. Finally, the countries experiencing a longer period under the communist regime find themselves less able to utilise fiscal tools to engage effectively in the collection and redistribution of tax revenue.

We proceed as follows. Section 2, in surveying the relevant literature, highlights some political economy approaches to the study of inequality and considers how these relate specifically to the transition countries. In section 3, we discuss our data, paying special attention to methodological nuances concerning the measurement of inequality and institutions. We then explain our specifications and consider some of the econometric issues associated with our estimations. The penultimate section presents the detail of our results and we recap our findings in section 5.

{Figure 1 about here}

² See, for example, Kapstein and Milanovic, 2003; Mickiewicz, 2005; Havrylyshyn, 2006.

2. Motivation and Literature

2.1 *The Political Economy of Inequality*

The modelling of inequality has evolved considerably in recent years, though the point of departure for much analysis remains the somewhat mechanistic approach, reflected in the “Kuznets hypothesis” (Kuznets, 1955, 1963; see also the discussion in Aghion *et al.*, 1999). The Kuznets approach associates the initial stage of industrialisation with high levels of inequality observed as the gap between the unskilled (old, agricultural) sector and the skilled (new) sector of the economy reaches a peak. Subsequently, the distribution becomes less dispersed as the economy develops. That is, as the sectoral structure of employment proceeds from the dominance of agriculture, through the industrial phase towards eventual convergence on a service sector structure, the measures of income inequality map out an inverted U-shaped curve³. This is deterministic in so far as income differentials emerge over time in response to the shifting structure of production.

Yet interpretations of this type have been subjected to a number of empirical and theoretical criticisms. Relating inequality chronologically to economic development fails empirically in so far as it offers no explanation either for the global surge in inequality experienced in the 1980s and 1990s or for the diversity of inequality patterns experienced within and between regions. More generally, even where one can establish a correlation between economic development and inequality, both phenomena themselves may be driven by some other factor. This prompts the theoretical critique that deterministic and descriptive accounts of inequality shed little light on the role of diverse economic processes and institutions evolving across space and time⁴. The recent literature witnesses a shift from the quest for unearthing uniform patterns of development to the increased recognition of the role played

³ A related version of this story identifies the role of a narrow class of capitalists at the first phase of the industrialisation process, with a high propensity to save and invest. The resultant inequality emerging during this early stage is seen as a necessary price for economic growth. Kuznets (1963) hints at this interpretation when pointing out that “a smaller proportion of the population amasses savings consistently” in developing countries (*ibid.*, p.48).

⁴ Kuznets (1963) chose to emphasise the role of technology and the structure of production though was fully aware of the interplay between the technological and institutional factors, and between income and wealth distribution and political power relations.

by political institutions and economic policies. Nevertheless, it remains a theoretical and empirical challenge to isolate distinct causal effects and transmission mechanisms.

The ‘new’ strand of literature departs from the detail of the traditional approach in several respects. The customary emphasis placed on the role of concentrated savings in fuelling investment and growth is recast in the context of its dependence on both the level of financial sector development and the willingness of economic actors to invest. In turn, the efficient transmission from savings to investment is conditional on financial market characteristics and on the stability of property rights. Where little legal protection is offered, investment capacity will tend to remain concentrated in the hands of the richest and most influential at the expense of entrepreneurs with potentially more profitable investment projects (Glaeser *et al.*, 2003). Thus, under the latter and more recent approach, the concentration of economic power (and typically a corresponding claim to political power) is no longer seen as beneficial, even in the earlier stages of economic development.

In addition, new themes emerging in the globalisation – inequality realm highlight the impact of skill-biased technological change (Katz and Murphy, 2002), evolving terms of trade, and factors affecting labour supply. Empirical evidence on the effects of liberalisation in developing countries is very mixed. It is now generally accepted that the potential impact of external openness on inequality is smaller than expected and may be counterbalanced by policy driven elements, such as education (Anderson, 2005a; Lundberg and Squire, 2003; Atkinson, 2000). Moreover, if economic theories of globalisation are able to identify the potential effects of liberalisation and changing terms of trade then, implicitly or otherwise, they are identifying economic policies, processes and institutions which create ‘winners’ and ‘losers’ and hence impact the income distribution. As the latter lies at the heart of the political landscape, it follows that economic policies are conditioned by the prevailing political edifice. The quality of the democratic process is therefore a key characteristic affecting income inequality, *both* through the orbit of economic policies adopted and, more explicitly, via efforts towards redistribution.

Despite this, the early empirical work linking democracy to inequality was typically inconclusive. Sirowy and Inkeles (1991), surveying the then published work, found limited evidence that democracy lowers inequality. The ambiguity of these early findings may though be a function of the quality of the data then available (Atkinson and Brandolini, 2001). More recent studies, recapped in Gradstein and Milanovic (2004), find democracy to benefit

those in the bottom quintile of the distribution. Even where imperfect, the mechanism of democratic mediation increases the likelihood of the poor sharing in the benefits of economic development.

2.2. Transition and the Political Economy of Inequality

Aghion and Commander (1999) present a dynamic general equilibrium model examining inequality in the transition economy context. The model illustrates the shift from the rigid wage grids of the state sector (characterised by insider rent appropriation) to the private sector in which wages reflect the marginal product of labour. One feature of the model is the distinction drawn between the short-term and long-term (equilibrium) effects of reforms on inequality. In particular, faster restructuring, privatisation methods focused on outsiders, greater fiscal equality between the state and private sectors and more generous welfare provision are associated with both steeper initial increases in inequality and with lower long-term (equilibrium) inequality.

While the political economy dimension is not addressed in Aghion and Commander's (1999) modelling, it is straightforward to recast their findings in this context. First, consistent with our discussion above, democratic regimes are more likely to engage in pro-poor redistribution through welfare provision. Second, in so far as the maintenance of soft budget constraints is associated with deficit-based or inflationary finance, and is eliminated by macroeconomic stabilisation, early stabilisation becomes an important indicator of the state of reforms and, in line with the model's prediction, is likely to be associated with lower long-term inequality.

The link between the political system and inequality is further discussed in Acemoglu (2006). The author models an authoritarian political system in which the elite acts to defend its privileged share in the income distribution from both the middle class (entrepreneurs) and the working class. Two possible economic policies emerge, contingent on the institutional framework. The first (a more efficient route to income redistribution) involves manipulating the fiscal system to produce a combination of taxes and subsidies such that sufficient relative gains for the elite are generated while still leaving the entrepreneurial class with the incentives to produce, with beneficial effects for the workers. However, where the fiscal system is underdeveloped, the best available option for the authoritarian elite is to hamper entrepreneurial activity through explicit entry barriers and so achieve the desired income distribution (favourable to the elite) via factor price manipulation. In particular, by restricting entry for new entrepreneurs and depressing aggregate output and labour demand, the wages of workers are driven down,

furnishing the incumbent elite producers with relative advantages. Greater inequality pertains in the second case⁵. This is also consistent with the empirical evidence for transition economies (Berkowitz and Jackson, 2006) which stresses the link between entry and the alleviation of inequality.

While the political system may be one important mechanism affecting income inequality, the technical capacity of the state to redistribute may be of still greater importance. As highlighted by Kapstein and Milanovic (2003, p.1): “the weakness of fiscal policy makes it difficult for governments to redistribute public benefits to those at the bottom of the income distribution.” (see also Aghion and Commander, 1999)⁶. Accordingly, the nexus of democratic institutions and public finance environment may have critical implications for the distribution of income. Examining the correlations between income inequality and political freedom (figure 2) and between the

⁵ In addition, given the low wages (resulting from the insufficient number of active entrepreneurs), workers may not face incentives to invest in human capital. This, in turn, propagates ‘bad equilibria’ characterised by low education and low wages (see Dias and McDermott, 2006). One can link Acemoglu (2006) with an earlier seminal paper on regulation of entry by Djankov *et al.* (2002). In the latter, the elite pursue less efficient policies (via entry barriers) to protect its interests instead of efficient policies (through incentives in the fiscal system which allow for the entrepreneurial sector to grow, in order to tax it later) because their time horizon is shorter (see also: De Long and Shleifer, 1993). In contrast, according to Acemoglu (2006) the policy choice is conditional on the overall quality of the fiscal system (i.e. on the level of deadweight cost of fiscal redistribution), where the latter is seen as exogenous with respect to the contemporaneous policy choice. For our purposes, we refer to Section 3 of the Acemoglu (2006) paper. The model is general enough to allow for different interpretations of restricted entry. In particular, it is consistent with an interpretation emphasising the weak protection of property rights, inadequate judiciary systems and corruption, in which only the rich and influential have the resources to protect themselves and small entrepreneurs are discouraged from entry and investment. This results in “King John’s” redistribution of income rather than “Robin Hood’s” redistribution (see Glaeser *et al.* (2003), Sonin (2003) and Hellman and Kaufmann (2003)). The link between entrepreneurship (self-employment) and exit from poverty is also easily made compatible with the Aghion and Commander (1999) model discussed above. It is sufficient to reinterpret hiring to the ‘new sector’ as a policy parameter affected by entry barriers.

⁶ The issue may be of a more general nature. Aidt *et al.* (2006) argue that the worldwide surge in public spending in middle and high income countries in the 1960s may be associated with improvements in tax-raising technology, i.e. enhanced administrative capacities of the government (*Ibid.*, pp. 274-275).

share of tax revenues and income inequality (figure 3) in transition economies aptly illustrates the potential for this link.

{Figures 2 and 3}

With respect to tax revenue, there are marked differences between the transition countries. In particular, leaving aside the idiosyncratic case of neo-socialist Belarus, the Commonwealth of Independent States (CIS) experienced a dramatic implosion of tax collection relative to the countries of Central and Eastern Europe (CEE). Schaffer and Turley (2001) demonstrate that the ratio of effective to statutory taxation has been significantly lower in the CIS than in Central Europe. While this measure is of limited availability, a wider comparison is possible using the ratio of tax revenue to GDP (as also applied in Anderson, 2005b). This clearly demonstrates the tax implosion in the CIS countries during the 1990s (see Figure 4). The EBRD (1998) attributes this situation to the weakness of tax administration and corruption, which led to low levels of enforceability. Similarly, Lopez-Claros and Alexashenko (1998) point out that “the complex institutional set-up underlying the operations of the modern tax system, including modern accounting practices, computer facilities, and management expertise, simply did not exist when Russia embarked on reform” (*ibid.*, p.8)⁷. The CIS countries are typically those that endured communist regimes for the longest period of time and therefore were also least prepared for the fiscal reform.

{Figure 4 about here}

It is also possible to conceive of feedback effects operating between the political system, inequality and the efficiency of the tax system. Widespread tax avoidance was fuelled by a legitimacy deficit, as supported by empirical evidence provided by Hellman and Kaufmann (2003). In turn, low legitimacy can be attributed to factors such as low effectiveness of the state “in providing public order, socio-economic stability, reduced elite corruption and social stratification” (Sil and Chen, 2004. p. 363). Thus, the combination of low legitimacy with an inefficient fiscal administration may form a vicious circle.

⁷ The ratio of taxes to GDP decreased in all transition economies *temporarily* following liberalisation and the initial fall in output (see Mickiewicz, 2005). However, these effects should be distinguished from the longer-term cross-country variation which refers to the institutional capacities of the fiscal system as discussed here.

To summarize, aside from the lack of means to alleviate poverty, under authoritarian governments, the collapse in tax collection may have additional indirect effects. Specifically, in the absence of effective fiscal instruments, the authoritarian elite may seek to protect its interests through more crude policy measures such as entry barriers. This serves to undermine the civil relationship between the people and their government and in so doing, further embeds the authoritarian regime and correspondingly weakens redistribution. Indeed, as documented by Johnson *et al.* (2000) and others, new private businesses faced serious institutional obstacles in some CIS countries. These measures not only depress output but also widen income gaps through the labour market.

With respect to the latter, there are marked differences between the transition countries. In the 1990s, the CIS countries were confronted by a collapse of public revenue (and therefore expenditure) as the tax system appropriate for the new market environment proved difficult to implement. Soft budgeting of industrial enterprises through continued state control of energy prices, cheap credit and tax payment arrears substituted for formal income redistribution through the state budget and entry barriers facing new firms remained firmly embedded. It is well documented that the ensuing policy establishment, blighted by the leverage of special interests, was unable (or unwilling) to efficiently target those in need of redistribution. Indeed, though the subsidisation of industry was frequently justified by appeal to social concerns, in practice it often amounted to the protection of privileged industrial interests. The association of the CIS countries with generally higher inequality lends some weight to this interpretation. However, such generalisations tend to over simplify. As evidenced by Figures 2 and 3, there are marked differences between the CIS countries. In the 1990s, Ukraine and Russia enjoyed far more political freedom than that experienced in the Central Asia republics, though often similar levels of inequality, suggesting a more complicated transmission mechanism. Thus, political dimension alone cannot explain differences in inequality. However, we learn more from looking to the fiscal system. Figure 3 differentiates between the Central Asian republics in which the tax system effectively collapsed and those 'neo-socialist' regimes, such as Belarus, which have preserved key elements of the old fiscal regime. The latter have maintained high levels of taxation and lower inequality despite the absence of political reform.

We turn next to the endeavour of realising some of the above insights empirically. Specifically, drawing from our discussion above we formulate the following testable hypotheses:

i/ Political liberalisation, in promoting a closer civil relationship between the people and their government, is associated with lower equilibrium levels of income inequality.

ii/ Under authoritarian regimes, there is an important distinction to be drawn between fiscally efficient and inefficient regimes. We expect to observe higher levels of inequality in regimes, where the powerful elites are unable to manipulate the fiscal apparatus effectively.

3. Data and empirical approach

3.1. Measuring Inequality

An outcome of any particular estimation is likely to be misleading if it is based on low quality data. This trivial, if often neglected, conclusion is particularly true for inequality data. Atkinson and Brandolini (2001) survey the cross-country empirical literature on income inequality and identify a number of problem areas. At the heart of these concerns is the issue of measurement. The majority of inequality studies centre on income, but inequality can also be measured in terms of consumption, wealth, health or any other sensible proxy for well-being. Once collected, the data may refer to net or gross figures, it may be measured at the unit of the household or of the individual, it may be equivalised to account for the heterogeneity of household structure and it may be representative of different populations or sub-populations. In this context, without due care being taken in selection, cross-country differences may easily be reflective of artefacts in measurement technique as much as actual differences in the distribution. Atkinson and Brandolini demonstrate the kind of bias that can arise, not least when measurement methods are clearly correlated with country characteristics, as is the case for example with consumption-based measures, which are more typical for poor developing countries.

In this study we constructed our inequality dataset in the following way. All data are drawn from the June 2005 version of the World Income Inequality Database (WIID2a) produced by the World Institute for Development Economics Research (WIDER), at the United Nations University⁸. This dataset incorporates data obtained by the World Bank, UNICEF, OECD, and various individual research teams, in each case providing information on the origin of the data point, the coverage and the methodology employed. The WIDER dataset compiles all alternative assessments for given time-country data points. Not only do these sometimes differ considerably but, given the

⁸ Accessed online in January 2006 and used in concert with the user guide produced by WIDER (2005).

different methodologies utilised in their creation, are sometimes also incompatible and so the approach to constructing a dataset for analysis is far from trivial. With this in mind, we extracted what we believe to be a consistent set of inequality data, according to the following algorithm.

First, we retained income-based data and eliminated all data based on consumption measures⁹ as well as all data points not based on representative coverage of the whole population¹⁰. Where possible we have preferred data emanating from studies based on the Canberra group definition (see WIDER 2005) where income includes production, barter and other non-cash income. The income in question is disposable income, not gross income (therefore, incorporating the impact of redistributive policies of the government). The preferred methodology identifies households as the appropriate sampling units, corrected with equivalence scales. Where two results based on a similar methodology were available, we have taken the source that was (i) more recent, and (ii) covered a longer time series. As a supplementary criterion, we also used the quality ranking of studies, available from the WIDER database, which to large degree confirms the criteria enumerated above. Last but not least, the coefficients retained for analysis are, where applicable, those recalculated by WIDER, rather than those originally reported¹¹.

⁹ There are two reasons for doing this. First, the consumption based measures lead to problems of interpretation when used to assess short/medium-term effects (as in this paper). This is because consumption smoothing over time distorts the short-term impact of different economic policies and it is not clear how to value the use of durables in the consumption set. Second, more practically, the comparable consumption-based inequality data-set for transition economies is much smaller, making application of any formal tests very difficult. An example of robust consumption-based inequality data for transition economies is presented in Mitra and Yemtsov (2006). Comparing the data sets suggests that the (positive) gap between income and consumption measures of inequality are greater in less developed transition countries, where consumption data may overstate economic wellbeing at the lower end of the distribution.

¹⁰ Our only exceptions to this second criterion were to retain some estimates for the Communist period based on wage earner only households. We justify this on the basis that comparisons clearly indicate that – given the dominance of this category of income – the results were not sensitive to such a restriction. Moreover, we retained only the cases where such comparisons were possible.

¹¹ The full resulting dataset is available on request from the authors.

3.2 Measuring Liberalisation

In the quest to control distinctly for economic policy, our preferred solution is to focus on macroeconomic policy. Aside from being associated with fewer problems of measurement and reliability than reform indicators (Campos and Horwath 2006), the macroeconomic policy variables are less correlated with the democracy-autocracy dimension, which is critical for testing our hypotheses. In addition, we may reasonably suspect that the impact of macroeconomic policy on economic outcomes may be as strong as that of structural reforms (see Rodrik, 1996). We therefore include an indicator variable, early stabilisation, reflecting the successful implementation of a stabilisation programme by 1993¹² (as in Mickiewicz 2005; see also EBRD, 1999-2005) as well as a time-variant variable measuring government budget balance as a percentage of GDP.

With respect to their centrality to our hypotheses as well as to the clear imbrication of the usual economic and political liberalisation measures, we make our primary focus that of political institutions. The institutional political indicators have a long empirical tradition. The early empirical work tended to rely on comparisons either between ‘distinct’ regional blocks or between ‘stable’ and ‘unstable’ democracies (Lipset, 1959). Subsequent authors have used empirically realisable concepts such as the percentage participation in national elections. These rather crude measures have been widely criticised. Fortunately, we now have more sophisticated measures of democracy in our toolbox. While they are not without problems (Munck and Verkuilen, 2002), we are now able to examine the complexities of the relationships with greater authority.

The measure of democracy we utilise in this paper is based on the widely used, subjective indicators of political rights and civil liberties deriving from work by Gastil (1990) and published by Freedom House. Gastil’s separate subjective indices for political rights and civil liberties are each recorded on a scale from 1 to 7, with 1 indicating the ‘most’ democracy and 7 the ‘least’. We believe these to be particularly appropriate in the transition context where the inclusion of civic liberties may be critical and makes the Freedom House measure the preferred one in comparison with the Polity IV indicators (Marshall and Jaggers, 2002), which focus only on the formal political institutions of democracy. In our empirical work we utilise measures of political reforms in two ways. First, we follow Persson and Tabellini (2003) in taking a simple average of the political rights and civil liberties indices as our proxy for democracy. There is sufficient annual variation in our data to render this approach meaningful.

¹² The choice of 1993 split the sample in even way between “early stabilisers” and “late stabilisers”.

Second, we look at the more fundamental regime differences between the transition countries, as represented by the Freedom House classification between free, partly free and non-free regimes. Here, the first of these three categories is our empirical proxy of what we have referred to in the literature section as democracy, and the latter two categories taken jointly correspond to our concept of the authoritarian regime. One observes that, where there was a regime switch from the communism to democracy, it happened in the early 1990s and broadly speaking, the political regimes have remained remarkably stable subsequently. Three exceptions, relating to Latvia, Estonia and Slovakia in the early 1990's, merit discussion¹³. In each case the early variation in the Freedom House measures reflects initial uncertainty in classification rather than genuine regime switches. In the case of the two Baltic States mentioned above, the initial variation in classification is likely to relate to controversy over the granting of citizenship to ethnic minorities that was subsequently resolved. In the case of Slovakia, the variation refers to the period of the populist Prime Minister Vladimir Meciar and the perceived threats to democracy that his rule invited. With the benefit of hindsight (and the subsequent removal of Meciar via democratic elections), these threats can be characterised as more apparent than real. Notwithstanding these observations, we construct a time-invariant dummy variable, 'early democracy', distinguishing between the countries that introduced (and retained) full democracy in early 1990s and those that did not. We include the three countries discussed above in the first category, even if there was some subsequent variation in classification, as discussed. As a result, we label the following countries as "early democracies": Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic and Slovenia.

3.3. Specifications and estimation

Given the necessity, outlined above, for applying a rigorous selection method when extracting the inequality data, the dataset that emerges inevitably comes with gaps. As a consequence, the application of panel methods based on first differencing and a longer time dimension is not possible. We are left then with simple unobserved effects models as the feasible alternative approach.

In order to properly subject our central hypotheses to empirical examination we supplement our core variables with additional important variables associated with inequality. It is well documented that human capital is key to economic development (Barro (1997, 2001), among others), not least through its capacity to aid technology-

¹³ Romania switched to full democracy in late 1990s and Serbia and Montenegro in 2002.

absorption. However, human capital is likely to be of equal importance for political reform and for inequality. To this end, Aghion, Caroli and Garcia-Penalosa (1999) argue that higher levels of human capital, promote improved governance and good health, which in turn prompt a greater leaning towards redistribution. We therefore add a variable capturing the initial upper secondary education enrolment rate. In the expectation that it may alleviate inequality, we also control for (lagged) economic growth, while, with the opposite expectation, we include the (lagged) dependency ratio, as a proxy for the size of the tax base. A weaker tax base diminishes the opportunity for redistribution. Further, since regional inequality (often linked to the distribution of natural resources) would seem to have a decisive impact on country level inequality (see esp. Commander *et al.* 1999), as a crude proxy, we introduce an explanatory variable reflecting geographic area. Finally, we introduce another time-invariant control, years spent under communism, as in Fisher and Sahay (2000). This variable represents our attempt to capture, albeit crudely, some proxy for initial institutional conditions. Countries that remained under communism longer experienced a far more radical eradication of their existing liberal institutions and a destruction of their stock of democratic capital. In particular, this reflects the difference between Central Europe and the Baltic States, where communism arrived after the Second World War, and the countries of Eastern Europe and Central Asia, which became Soviet republics in the early 1920s and went through the full cycle of the Stalinist (pre-1950s) regime.¹⁴

In all of our estimations we take time variant explanatory variables in lags to alleviate possible endogeneity problems and control for common time-specific shocks using annual dummies. The first variant (I) applies a GLS estimator assuming the correlation between unobservable individual effects and explanatory variables to be zero (i.e. it is a ‘(time) random effects’ model)¹⁵. Specifically, (1) incorporates time-invariant dummy variables defined as early stabilisation and early democratisation (see discussion in Sections 3.1 and 3.2) as well as the initial education control. To interrogate hypothesis (ii), we include a term interacting government revenue with our early democracy indicator.

Correspondingly, our first specification takes the following form:

¹⁴ We also experimented with resource endowment (which correlates positively with both “years under communism” and size of the country). It did not perform better than variables we retained in reported specifications.

¹⁵ We also estimate this regression in a time fixed effects form replacing the time-invariant variables with country fixed effects. See next section.

$$\begin{aligned}
(Gini)_{i,t} = & \alpha_1(Democracy)_{i,t-1} + \alpha_2(Gov_Revenue/GDP)_{i,t} + \alpha_3(GDP_Growth)_{i,t-1} + \alpha_4(Gov_Balance)_{i,t-1} + \\
& \alpha_5(Dependency_Ratio)_{i,t-1} + \alpha_6(Early_stabilisation)_i + \alpha_7(Early_democracy)_i + \\
& \alpha_8(Early_democracy*Gov_Rev/GDP)_{i,t} + \alpha_9(Initial_Education)_i + \alpha_{10}(Area)_i + \alpha_{11}(Communism_years)_i + t_i \\
& + u_{i,t} \quad (1)
\end{aligned}$$

To account for possible problems of endogeneity through the use of government revenue, we instrument both government revenue and the associated interactive term taking the ratio of exports to GDP and the infant mortality rate as instruments. Following Wooldridge (2002), we also add two interactive terms as additional instruments, replacing democracy in the interaction between fiscal revenue and our indicator of democracy with the export rate and mortality rate correspondingly. The resulting GLS (random effects) three-equation model (2a – 2c) is as follows:

$$\begin{aligned}
(Gini)_{i,t} = & \alpha_1(Democracy)_{i,t-1} + \alpha_2(Gov_revenue/GDP)_{i,t} + \alpha_3(GDP_growth)_{i,t-1} + \alpha_4(Gov_Balance)_{i,t-1} + \\
& \alpha_5(Dependency_Ratio)_{i,t-1} + \alpha_6(Early_stabilisation)_i + \alpha_7(Early_democracy)_i + \\
& \alpha_8(Early_democracy*Gov_rev/GDP)_{i,t} + \alpha_9(Initial_education)_i + \alpha_{10}(Area)_i + \alpha_{11}(Communism_years)_i + t_i + u_{i,t} \\
& (2a)
\end{aligned}$$

$$\begin{aligned}
(Gov_revenue/GDP)_{i,t} = & \beta_1(Democracy)_{i,t-1} + \beta_2(GDP_growth)_{i,t-1} + \beta_3(Gov_Balance)_{i,t-1} + \\
& \beta_4(Dependency_Ratio)_{i,t-1} + \beta_5(Early_stabilisation)_i + \beta_6(Early_democracy)_i + \beta_7(Initial_education)_i + \beta_8(Area)_i \\
& + \beta_9(Communism_years)_i + \beta_{10}(Export_gdp)_{i,t} + \beta_{11}(Export_gdp*Early_democracy)_{i,t} + \beta_{12}(Infant_mortality)_{i,t} + \\
& \beta_{13}(Infant_mortality*Early_democracy)_{i,t} + t_i + u_{i,t} \quad (2b)
\end{aligned}$$

$$\begin{aligned}
(Early_democracy*Gov_rev/GDP)_{i,t} = & \gamma_1(Democracy)_{i,t-1} + \gamma_2(GDP_Growth)_{i,t-1} + \gamma_3(Gov_Balance)_{i,t-1} + \\
& \gamma_4(Dependency_Ratio)_{i,t-1} + \gamma_5(Early_stabilisation)_i + \gamma_6(Early_democracy)_i + \gamma_7(Initial_education)_i + \gamma_8(Area)_i + \\
& \gamma_9(Communism_years)_i + \gamma_{10}(Export_gdp)_{i,t} + \gamma_{11}(Export_gdp*Early_democracy)_{i,t} + \gamma_{12}(Infant_mortality)_{i,t} + \\
& \gamma_{13}(Infant_mortality*Early_democracy)_{i,t} + t_i + u_{i,t} \quad (2c)
\end{aligned}$$

Finally (model 3), as an alternative method of tackling the potential endogeneity and as a further robustness test, we run a specification similar to (1), but instead use the *lagged* values of government revenue and the corresponding interactive term. However, we see the link between income inequality and the size of the

government as essentially contemporaneous. It is the *present* size of the budget, which affects (net) income inequality via government spending. Therefore we see this specification as supplementary only.

In the above equations:

- *Gini* refers to the Gini coefficient of income inequality (see discussion in 3.1),
- *Democracy* refers to the simple average of the Freedom House political rights and civil liberties indices (see discussion in 3.2)
- *Government_revenue* ratio to GDP, *Government_balance*, and *GDP_growth*, are taken from World Bank *World Development Indicators* 2005 (see definitions therein),
- *Early_democracy* assumes the value of one for countries labelled as free in early 1990s by Freedom House (see discussion in Section 3.2),
- *Early_stabilisation* takes the value one for countries that stabilised in 1993 or earlier (see discussion in Section 3.2)
- *Communism_years* corresponds to the length of communist period in each country (taken from Fisher and Sahay, 2000),
- *Area* is the area of each country in square kilometres,
- *Initial_education* is the enrolment rate in upper secondary school in 1990, taken from the TransMonee database,
- *Infant_mortality* rate and *Dependency_ratio* (the ratio of number of individuals aged below 15 or above 64 to the number of individuals aged 15 to 64) are also taken from the TransMonee database,
- *Export_GDP*: this is an instrument for *Gov_revenue* (time-variant), defined as the ratio of exports to GDP,
- *c* refers to individual country effects,
- *u* is an error term, and
- the *i* and *t* subscripts relate to countries and years respectively.

The results of all these specifications are reported in Table 1 and discussed in the following section.¹⁶

¹⁶ In addition, we also run specifications where the democracy indicators were replaced by the EBRD reform indicator (short run liberalisation indicator constructed as in Falcetti *et al.* (2002), and early (economic)

{Table 1 - about here}

4. Results

For all equations we run multiple Hausman specification tests. In particular, the difference in coefficients between random and fixed effects is highly insignificant (models 1a and 1b), given that we control for a sufficient number of time invariant variables in the former specification. Given the Hausman test results and the likelihood of measurement errors (see the discussion in Section 3 above), we see the fixed effects coefficients as being of little value. The bias in the latter estimator is large in the case of measurement errors (Griliches and Hausman, 1998; Hauk and Wacziarg, 2004) so we prefer the more efficient random effects estimates.

In addition, the Hausman specification test indicates that a less efficient but more consistent instrumental variable technique is not necessary¹⁷. Notwithstanding this, we report the latter results, noticing that the variation in coefficients is small and keeping in mind that the estimates given by specification 1a represent our preferred ones. Since our key results are robust to the variations in specification and estimation technique, we discuss them here without reference to specific coefficients or marginal variations and comment only briefly on the results from instrumenting. Instead we concentrate on interpreting the qualitative results in the context of our two hypotheses, outlined in Section 2.

Our hypotheses situate the democracy-inequality relationship, in the context of political liberalisation and fiscal capacity, at the core of our focus. Our findings suggest a significant difference in the short-run and longer-run

liberalisation, as in Mickiewicz (2005)), including the interactive term with fiscal revenue. All the results hold and are available on request.

¹⁷ Our instrumental variable model is based on overidentifying restrictions (four instruments for two endogenous variables). Correspondingly, we performed another specification test comparing the reported specification with the one using two instruments (i.e. only the export to GDP ratio and its interactive term). We could not reject the more efficient specification, which uses four instruments. It was the latter, which was next compared with the model without instrumenting.

effects of liberalisation as well as a concrete relationship with the fiscal regime¹⁸. Firstly, we find evidence that liberalisation is associated with higher short-run inequality. Our speculative interpretation of this result is that the transfer to democracy and market economy is associated with institutional discontinuities, which result in (temporarily) more unequal distributions of income. Another obvious interpretation links our results with the literature relating the impact of economic liberalisation on inequality. In the transition context, it could be interpreted in line with Aghion and Commander (1999). Second however, we garner evidence intimating that countries achieving full democracy early in the transition process and maintaining it are characterised by *lower* levels of inequality. The ‘early democracy’ variable is marginally insignificant when considered alone, but the evidence is stronger when significance of the “early democracy” variable is evaluated jointly with its interactive effect. Thus, we tentatively claim empirical support for our hypothesis (i): embedding political freedom early on, through establishing a more predictable relationship between the government and its people, results in a more equal distribution.

Countries implementing successful macroeconomic stabilisation programmes early would appear to reap long run social benefits in the form of lower inequality. Persistent inflation results in redistribution from the poor to the rich, as the latter are typically better equipped to protect their cash balances and hedge their incomes. This is consistent with the findings of Aghion and Commander (1999) and is highly significant across specifications. On the other hand, the short-run effects of government balance, for a given fiscal capacity (see below), are marginally insignificant, though with the expected sign.

Last but not least, we consider evidence for hypothesis (ii). The more intriguing aspect of hypothesis (ii) invoked the possible distinction between authoritarian regimes of differing fiscal capacity. As anticipated, across all specifications, we observe a strong positive association between the state’s capacity to raise revenue and *equality*¹⁹.

¹⁸ A note on interpretation may prove helpful. For the lagged democracy indicator a negative coefficient implies *increased* inequality, since higher numbers in the Freedom House index refer to lower levels of democracy, while for the time invariant democracy indicator, a negative coefficient implies *decreased* inequality.

¹⁹ Since we consider government expenditure to be constrained by the government’s ability to collect taxes, rather than vice versa, we report our specifications with the ratio of revenue to GDP. The results, available on request, using an expenditure measure do not qualitatively differ. More generally, it would be better to have a direct measure of the quality of the fiscal system. However, such measures are simply not available for our sample.

However, as the value of the interactive term with the democracy dummy demonstrates, there is a significant difference between democratic and authoritarian countries in this respect. In particular, the link is substantially stronger for more authoritarian regimes. That is, autocracies better able to raise revenue enjoy lower levels of inequality. This is entirely consistent with figures 2 and 3 which place the 7 least democratised countries (figure 2) neatly along a downward sloping inequality-fiscal capacity relation (figure 3).

Thus, the results are suggestive of two different effects. In democratic regimes, the capacity to raise revenue was seen as functionally linked to a greater propensity to redistribute through social transfers (Persson and Tabellini, 1994). However, we find only weak evidence supporting this effect, apart from the (also weak) direct positive effect of democracy on *equality*. A much stronger effect may be at work in authoritarian regimes. Where authoritarian governments have greater control of their fiscal levers, transfers may act to protect the interests of the incumbents at a smaller social cost in terms of distribution, than the alternative, which is to use some form of entry barrier to protect incumbents from competition. This effect is entirely consistent with our ‘fiscal capacity hypothesis’ (ii) based on Acemoglu (2006).

We interpret the results in the light of our earlier discussion of liberalisation in transition economies unleashing conflicting forces on the distribution of income. Subsequent to the initial thrust given to inequality through the freeing up of wages and the relaxation of regulations (Milanovic, 1998), the relevant contrast becomes that of countries based on democracy rather than autocracy. In the latter, barriers to entry protect the interests of incumbent economic actors and act as a rein on the economic advancement of those in the lower half of the income distribution. More subtly, as discussed above, the fiscal capacity of the authoritarian government is a defining characteristic influencing the observed level of inequality.

Turning to our other control variables, consistent with the literature, we find strong evidence that transition countries, starting the period, with more comprehensive education systems have been able to achieve greater equality in income distribution, while as expected and accordant with Commander *et al.* (1999), we find bigger countries to be less equal. The dependency ratio is clearly associated with higher inequality, confirming that a lower tax base works against redistribution and the alleviation of inequality. Years spent under the communist

Anderson (2005b), who focuses on fiscal reforms in transition countries faces the same problem, and analogous to us uses the ratio of tax revenue to GDP as a proxy for the quality of the fiscal system.

regime do not affect inequality directly, but as indicated by the instrumental variables regression may have another, equally interesting, indirect effect. We turn to this below.

Referring to equation 2a, we find that more democratic, better educated, healthier and geographically bigger countries as well as those with a higher share of exports in GDP have a greater fiscal capacity. However, more interestingly, in the context of our discussion, the variable with the most significant negative impact, is ‘years under communism’. Here, our results are entirely consistent with the assessment and interpretation presented by EBRD and others, as discussed above. Government revenue collapsed dramatically in the reforming transition countries with the most pronounced problems in implementing efficient tax administration and regulation (e.g. Georgia). Our results indicate that this in turn was affected by the inherited level of institutional distortions, as proxied by the time-span under communist rule. Moreover, this is congruent with the recent work of Persson and Tabellini (2006) who emphasise the importance of historical experience with democracy and the accumulation of a ‘stock of democratic capital’. It is difficult to argue that our findings result from a specification error, as the ‘years under communism variable’ appears in the second stage equation as well, where it is highly insignificant. This is interesting, as one would expect the link between ‘years under communism’ and inequality to come with a significant negative sign, reflecting stronger social preferences towards equality. This result though, reminds us that the communist regime has not necessarily been associated with greater equality²⁰.

5. Conclusions

In this paper, informed by the prevailing literature, we revisit the determinants of income inequality in the context of the transition and the ongoing process of economic liberalisation. In particular, we motivate and investigate two important hypotheses, derived from models presented in Acemoglu (2006) and Aghion and Commander (1999), referring to political and economic liberalisation as well as to fiscal capacity.

We find evidence that political reform has a direct short-term effect, increasing income inequality. This however is counter-balanced by a longer-term effect working in the opposite direction: the transition countries that achieved

²⁰ To check the latter hypothesis directly, we run a model for the worldwide sample using the same set of inequality indicators and controlling for a standard set of variables. The Communism dummy was insignificant in our estimation (results available on request) and this is robust to variation in specification.

stable democracies are characterised by lower levels of income inequality, perhaps due to a more embedded and active civil society. Furthermore, macroeconomic stabilisation, perceived as a crucial strand of economic reform, would appear to be just so: early successful stabilisations bestowed a positive legacy of greater longer-term equality.

To the extent that democratic countries are able to effectively raise revenue, they are better equipped to offset inequality through targeted redistribution. Interestingly however, the positive link between fiscal capacity and *equality* is much stronger for authoritarian regimes than for democracies. This is the central empirical finding of this paper, which we interpret in line with Acemoglu (2006). An authoritarian elite unable to protect its interests via the fiscal mechanism may resort to policies (discouraging entries via legal restrictions and/or weak protection of property rights), which are even more distortionary and come with higher social costs.

In the final throes of the command economy system, the communist countries were in crisis, output was falling, markets were in disequilibria and support for democratisation and reforms was widespread and growing. Our results suggest tentatively that those countries most effectively embracing democracy were most able to build and embed the required consensus around reforms and growth, regardless of their immediate distributional implications. This does not imply that the more democratic countries in the region are characterised by higher levels of social injustice. Quite the contrary, the democratic system enables the voters to accept growth promoting reforms at the cost of a short-term negative effect on income distribution. Within the democratic framework, they are open to the possibility (or promise) that these policies may be outweighed by other compensating policy elements. Our findings regarding the longer-term effects of early democratisation may suggest that this promise was not disingenuous.

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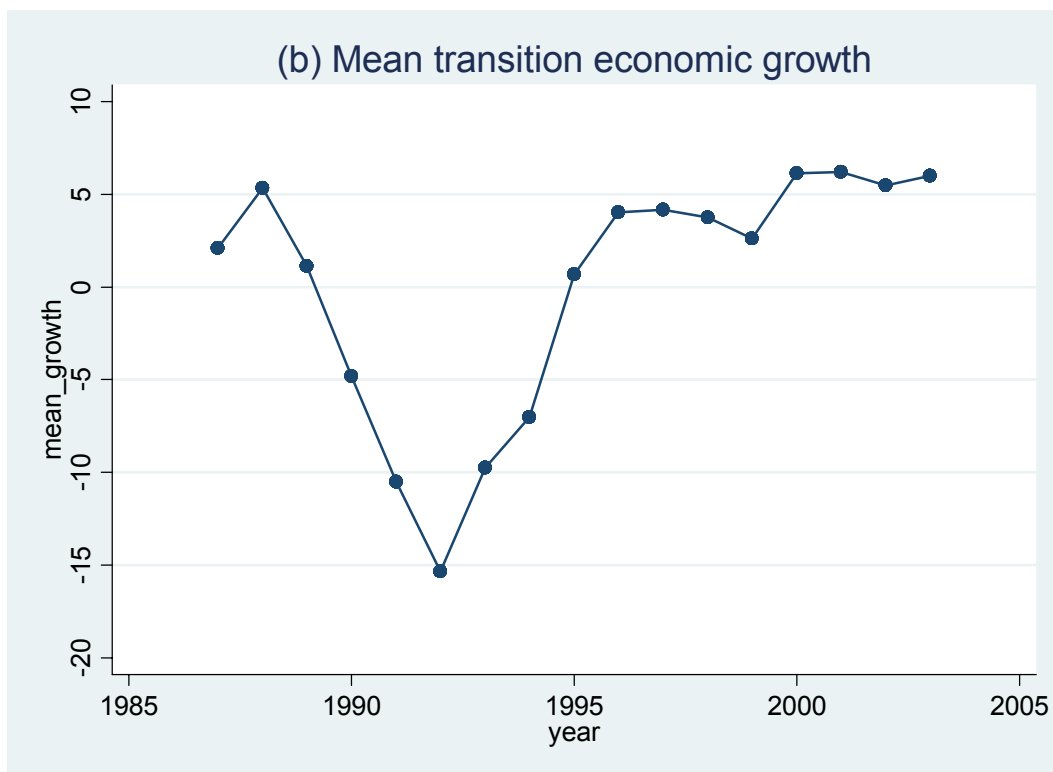
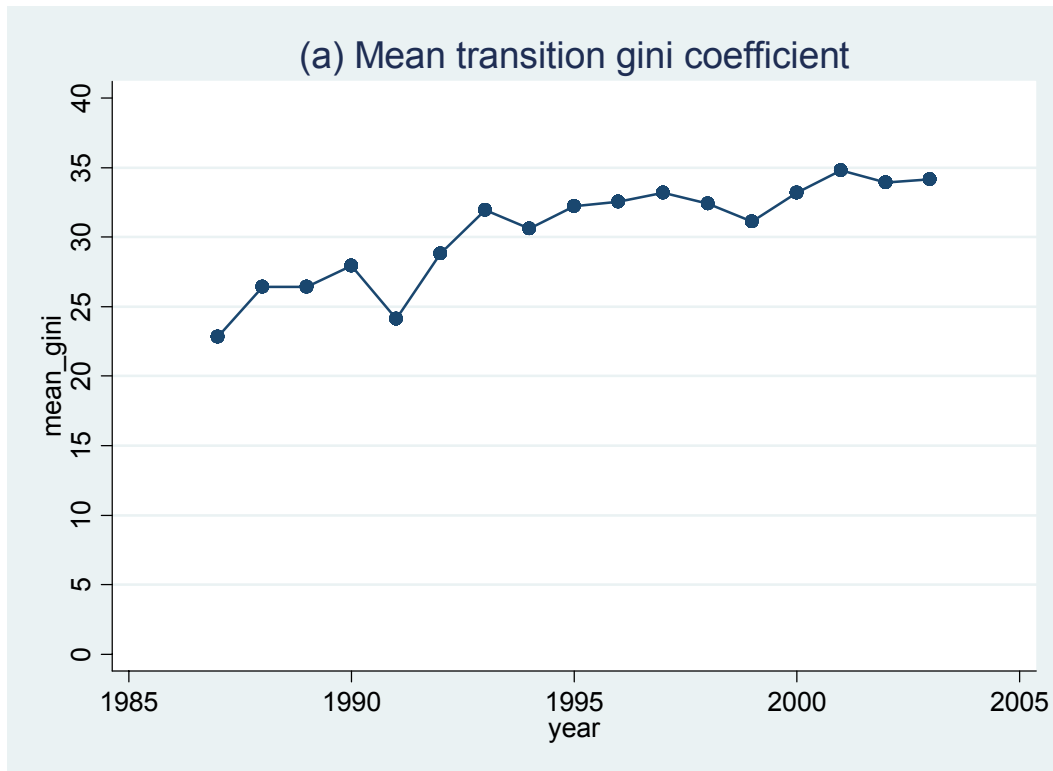
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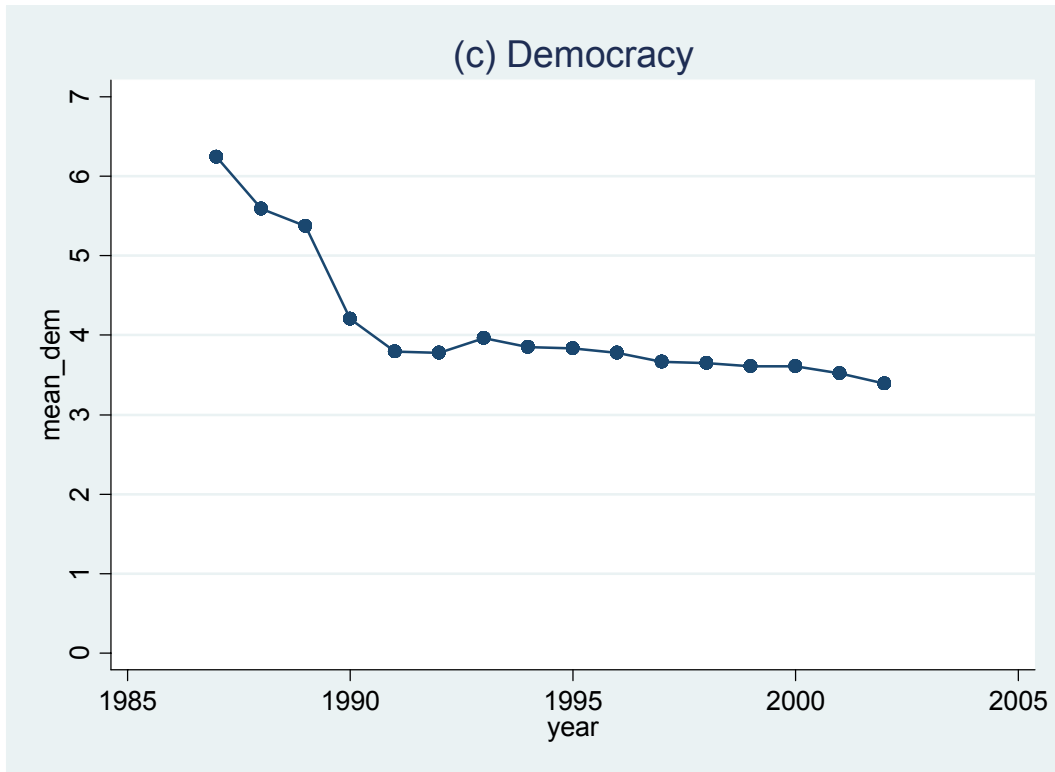
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Figure 1: Inequality, Growth and Democracy in Transition Countries: averages





Note: Democracy increases as the value of the Freedom House democracy index *falls*.

Figure 2. Political Freedom and Income Inequality (1992-2000 averages)

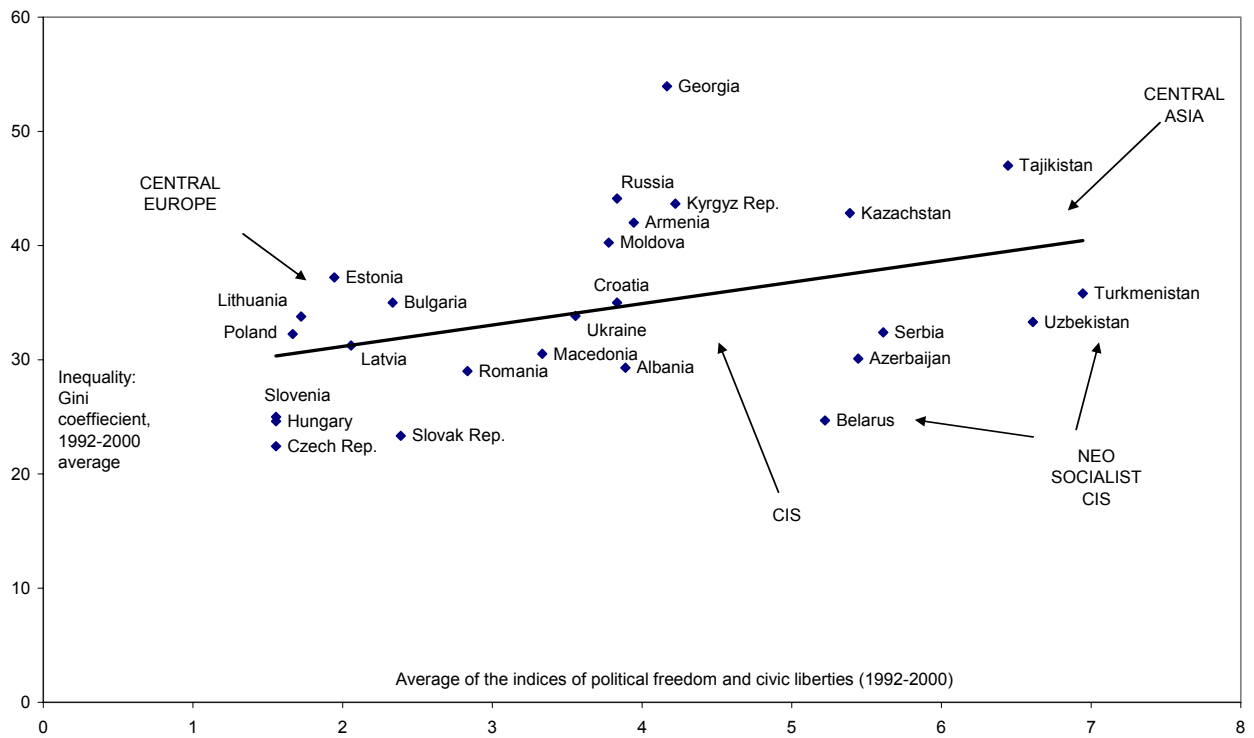


Figure 3. Fiscal Revenues and Income Inequality (1992-2000 averages)

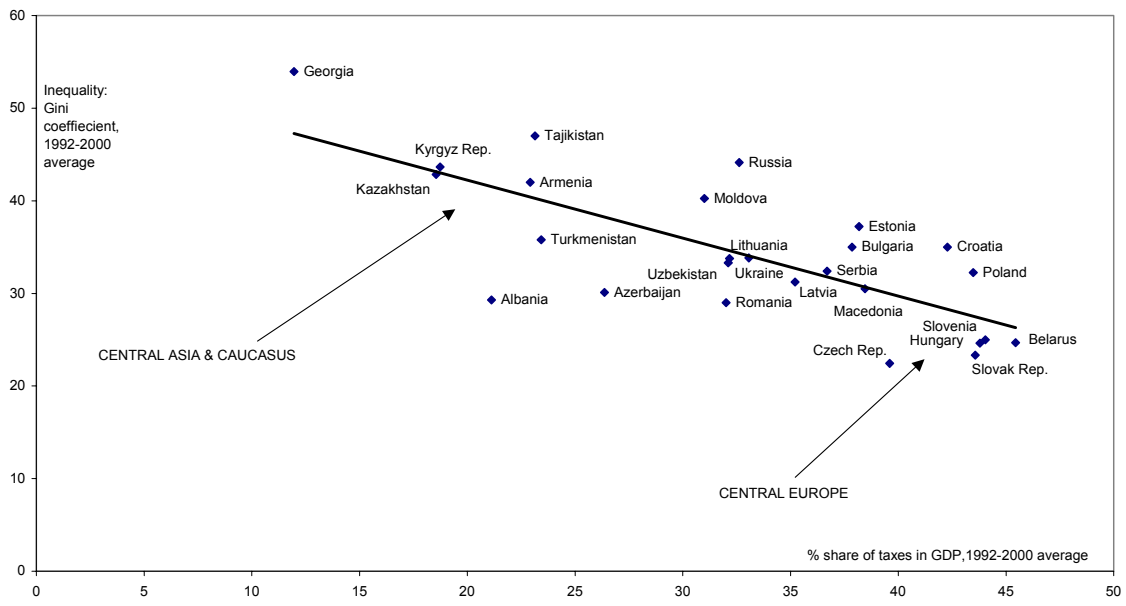


Figure 4. Government Revenue as % of GDP: CIS v. CEE

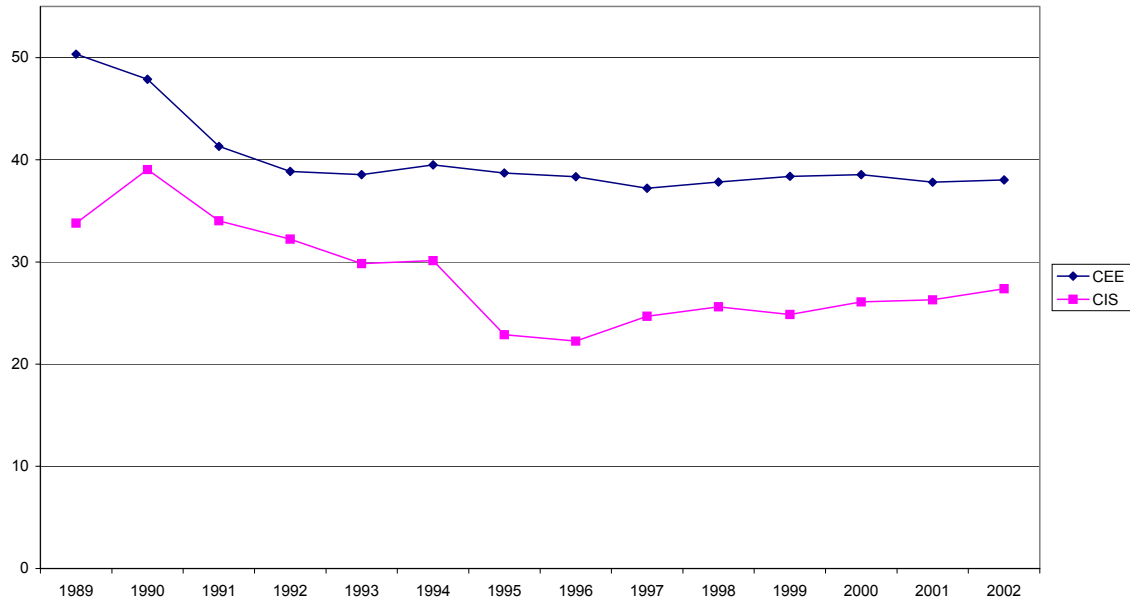


Table 1. Estimation results

	Model 1a: 'random effects' GLS	Model 1b: 'fixed effects'	Model 2a: 2stage 'random effects' GLS	Model 2b: 2stage 'random effects' GLS	Model 2c: 2stage 'random effects' GLS	Model 3a: 'random effects' GLS	Model 3b: 'fixed effects'
Dependent variable	Gini	Gini	Government revenue	Gov. revenue x Early Dem	Gini	Gini	Gini
Independent variables:							
Gov. revenue	-.42*** (.10)	-.12 (.14)			-.53*** (.14)		
Gov. revenue lagged 1 year						-46*** (.09)	-.18 (.13)
Gov. revenue x Early democracy	.24* (.11)	.26* (.13)			1.21† (.71)		
Gov. revenue x Early dem.lag 1y						.26** (.10)	.30* (.12)
Democracy lag 1y	-1.27* (.57)	-.42 (.63)	.77 (.58)	.93* (.43)	-2.07* (.90)	-1.01† (.57)	-30 (.61)
Gov. balance lagged 1year	.13 (.08)	-.05 (.08)	.13 (.10)	-.13† (.07)	.29† (.16)	.20* (.10)	.01 (.09)
GDP growth lagged 1year	-.10 (.09)	-.07 (.08)	.09 (.08)	.17** (.06)	-.28† (.16)	-.14 (.11)	-.11 (.08)
Dependency ratio lagged 1 year	.44*** (.12)	.02 (.16)	.07 (.15)	-.16 (.11)	.53*** (.15)	.42*** (.12)	.04 (.17)
Early stabilis.	-6.46(1.06)***		.40(1.71)	2.04(1.28)	-8.44*** (2.88)	-6.06*** (1.05)	
Early democracy	-5.03(3.85)		3.23(4.96)	45.4*** (3.71)	-42.03 (27.2)	-5.87 (3.85)	
Init. education	-.12** (.04)		.12* (.06)	-.02 (.04)	-.12* (.06)	-.10* (.04)	
Years under Communism	-.02 (.05)		-.31*** (.06)	-.07† (.04)	.03 (.07)	-.05 (.05)	
Area	8.58*** (1.11)		4.27** (1.45)	0.20 (1.08)	8.87*** (1.61)	8.21 (1.07)	
Inf. mortality			-.80*** (.15)	.04 (.11)			
Inf. mortality x Early dem.			.36† (.20)	-.17 (.15)			
Export / GDP			.24*** (.05)	.05 (.04)			
Export / GDP x Early dem.			-.22*** (.06)	-.10* (.04)			
Constant	29.3** (.1)	23.4* (.1)	49.7*** (9.3)	15.1* (7.0)	23.2 (14.4)	38.5*** (9.55)	22.5* (11.1)
R ²	.69	.03			.55	.70	.01
Wald χ^2	449.18***		392***	5001***	208***	462***	
F statistics		7.33***					6.12***
No of obs	176	176	175	175	175	175	175
No of groups	24	24	24	24	24	24	24

Notes to Table 3:

- (a) time effects (annual dummies) included in each specification but not reported;
- (b) reported standard errors are robust standard errors;
- (c) *** significant at .001; ** significant at .01; * significant at .05; † significant at .10;
- (d) for Model 1b: gov. revenue & interactive term with democracy jointly significant at .10 level;
- (e) Hausman specification test for Models 1a and 1b: χ^2 (18) = 13.38, insignificant at .10 level;
- (f) Hausman specification test for Models 1a and 2: χ^2 (22) = 2.17, insignificant at .10 level

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