

Institutions and Economic Growth: What Model of Capitalism for Central and Eastern Europe?

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Abstract

This paper investigates from an empirical perspective the main determinants of economic growth focusing on the specific role played by institutional factors. The first part of this paper critically reviews the literature on models of capitalism. The second part works out an econometric model based on panel data regression analysis for ten transition economies from Eastern Europe (including the Baltic countries). Various economic and institutional indicators are tested for their impact on growth rates in the Central and Eastern European countries (CEECs). The evidence so far suggests a link between the quality of institutions and growth, but the evidence is by no means robust on the influence of various models of capitalism on economic growth.

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1. Introduction

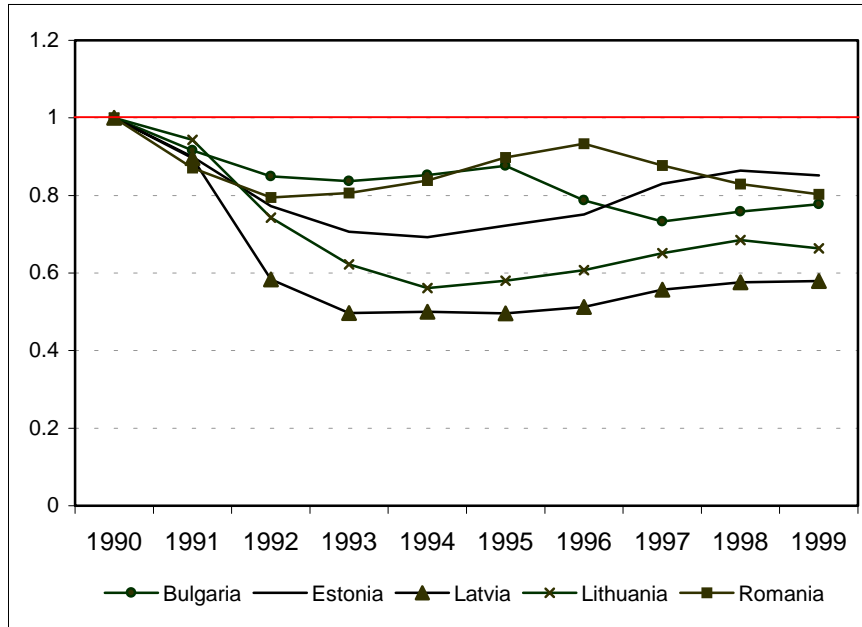
The dismantling of the former central planning regime and movement toward a market economy started in East-Central Europe in 1990 and has been continued throughout the decade. Market-oriented reforms have encompassed the liberalisation of prices, the privatisation of state enterprises, the opening of the economy to foreign investment, the liberalisation of the foreign exchange market, and the relaxation or elimination of foreign trade restrictions. Nevertheless, led by the collapse of export demand from former key trading partners, and with a decline in domestic demand, most of these economies underwent a severe economic contraction during the early 1990s (see figure 2.1.)

The economic evolution across the region was however uneven, with some countries being more successful than others in transforming their economy without a persistent decline in output. As it can be seen in Figure 1a, for a number of countries (Bulgaria, Estonia, Latvia, Lithuania, Romania) the initial years of transition have triggered a significant decline in economic growth, followed by a slow and partial recovery. After ten years of transition, most of these countries have yet to reach the 1991 GDP level (the red line in figure 2.1a). For others, the forerunners of transition and EU accession (the Czech Republic, Hungary, Poland, Slovakia and Slovenia), the initial economic decline was significantly smaller and followed by a rapid and fairly stable recovery with output values above the 1991 level (figure 2.1b).

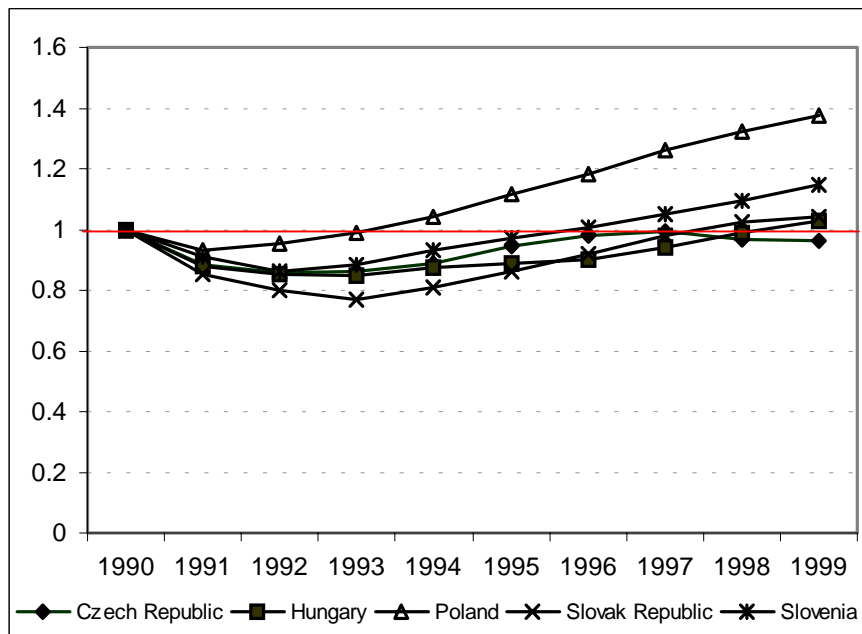
Against this background, a significant body of comparative political economy literature has been concerned with the question of whether political and institutional factors have a determinant impact on economic growth. Particularly influential among descriptive growth studies was North (1990) who underlined the importance of institutional settings in creating an environment conducive to economic growth¹.

¹ For an earlier work on the importance of institutions for economic development see for instance Scully (1988). Posen (1998) is a more recent one. For a historical account see for instance David (1994). Empirical analyses of growth and institutions are found in Barro (1991), Brunetti (1997), Knack (1996), Knack and Keefer (1995). For a general survey of the studies on growth and institutions, see for instance Aron (2000).

Figure 2.1: Growth in selected transition economies
(Real GDP Index, base 1.00 in 1991. Source: UN/ECE Secretariat
a) Bulgaria, Estonia, Latvia, Lithuania and Romania



b) Czech Republic, Hungary, Poland, Slovak Republic, Slovenia



The institutional framework affects growth because it is integral to the amount spent on both the costs of transactions and the costs of transformation (in the production process). Transaction costs, for example, are far higher when property rights or the rule of law are not reliable. In such situations private firms typically operate on a small scale, perhaps illegally in an underground economy, and may rely on bribery and corruption to facilitate operations. Transformation costs, too, can be raised substantially because unenforceable contracts mean using inexpensive technology and operating less efficiently and competitively on a short-term horizon.

Until recently, empirical studies measuring how important institutions are for growth have been rather scarce, mainly because of lack of data concerning the quality of institutions. In the 1990s major efforts have been made in this direction, both by academics and international organisations.²

Generally, these empirical studies shared many common features and followed some distinct lines of thought. While most of the empirical studies agree on the definition and measurement of the dependent variable, there is a wide range of approaches towards defining, selecting and measuring key institutional factors that are thought to influence economic performance. Some studies looked at the importance of democracy, social capital and political rights, in particular in developing countries, on economic performance (Helliwell 1994, 1996). Others have tried to evaluate the role of bureaucratic efficiency and corruption (Mauro 1995) or the role of informal institutions such as interpersonal trust and civic norms (Knack and Keefer 1997). Most of these empirical investigations however were conducted on large samples including most often developing countries from different geographical regions and at different level of development. Exception to this trend are Brunetti, Kisunko and Weder (1997) and particularly the work conducted by the EBRD who focused its attention solely on transition economies in Eastern Europe. These studies use subjective institutional measures constructed either from experts' opinions or surveys of private entrepreneurs in the region. Thus, EBRD Transition Reports of various

² The most notable ones are the research projects conducted under the auspices of the World Bank and EBRD. Gathering data through surveys and research on the ground a significant number of publications produced by these institutions have spurred the debate about institutions and economic performance.

years construct a series of transition indicators providing suggestive evidence for the importance of institutional transformation as the one happening in Eastern Europe on economic performance.

Based on these institutional indicators one key conclusion of the EBRD 1999 Transition Report was that state-society institutional arrangements in transition economies vary quite significantly not only in terms of quality but also in terms of their structure and forms. Furthermore, the role of the state remain central in determining the business environment in which industry, banks and other economic agents perform their activity and consequently in understanding the differences in economic performance across the region (EBRD 1999:115-26).

Although not explicitly addressed in the EBRD report, their discussion on institutional arrangements, state-society interaction, the role of banks and industry resonate very well with another debate about Western political economies: the debate on models of capitalism. An extensive body of studies have addressed in recent years these questions identifying national variations across macro-institutional arrangements and corporate governance and industrial relations practices. Each of these variables was considered responsible for the international economic competitiveness of national capitalist institutional arrangements. Thus, it has been argued that varieties of capitalism represent a major factor determining national economic performance.

In addition to the transition process itself and the societal transformations associated with it, the globalisation of the economy and the Europeanisation process advanced in the 1990s has drawn renewed interest in the persistence of national specificities with regard to capitalist system and their institutional arrangements. Taking these elements as its starting point, this paper extends the models of capitalism debate to transition economies, given the fact that these countries are in the process of building or rebuilding market economies.

The remainder of the paper is divided in 3 sections. In order to identify the emerging type of state-societal relations in post-communist countries, Section 2 introduces the literature on models of capitalism. Section 3 presents the regression analysis performed. Concluding comments follow in section 4.

2. Models of capitalism

After the collapse of the socialism in Eastern Europe, the debate about different types of capitalism has been extended to cover the emerging capitalist systems in Eastern Europe. Several models of capitalism have been considered in the post-WWII history as important points of reference. Among varieties of capitalism Michel Albert's typology captured for many years the attention during the debate about types of capitalism (Albert 1993). However, one important argument against his 'Anglo-Saxon' 'Rhineland model' and 'étatist' model was that the functioning of economy became increasingly globalised and many authors argued that globalisation will only spare the most fitted species of capitalism, both in terms of business-state relations and corporate governance. Corporate governance represents not only a crucial difference among varieties of capitalism but also a major factor determining their economic performance.

Table 2.1. Varieties of capitalism: main characteristics

| Models of capitalism | | | |
|-------------------------------------|---|---|---|
| Factors | Anglo Saxon | Continental | Developmental |
| Macroeconomic | | | |
| Role of the state | Minimal state | Regulatory state | Embedded autonomy Pro-developmental Interventionism |
| Cooperation between social partners | Conflictual or minimal contact | Extensive at national level | Formal and informal state-business networks |
| Labour organisations | Fragmented and weak | Strong, centralised unions | Relatively weak |
| Microeconomic | | | |
| Shareholder sovereignty | Widely dispersed ownership; dividends prioritised | Banks and other corporations are major shareholders; dividends less prioritised | The role of individuals, banks and inter-corporate shareholders are somewhere in between. |
| Employee influence | Limited | Extensive though works councils and co-determination | Strong shop floor participation |
| Role of stock exchange | Strong role in corporate finance | Reduced | Intermediate |
| Role of banks | Banks play a minimal role in corporate ownership | Important both in corporate finance and control | Important in corporate finance but less in corporate control |

Source: Adapted from Rhodes and Apledoorn (1997: 174-5).

Rhodes and Apledoorn (1997) offer one of the best descriptions of various Western capitalisms. Starting from Albert's distinction between Atlantic and Rhenish

capitalism, Rhodes and Apeldoorn made further steps towards the operationalisation of these concepts. The two main dimensions along which various national capitalist systems can be placed are the corporate governance and macroeconomic institutional environment (see table 1.1.).

2.1 The Anglo-Saxon capitalism

It is apparent that capitalism is not a homogenous social and economic entity but it exists in a variety of forms. One of these variants of capitalism is what Albert (1993) has called 'Atlantic' capitalism, or in other authors' categorisation the Anglo-Saxon model of capitalism. Generically, this model is based on several fundamental institutional characteristics. The main ones relate to the three main actors involved in the state-societal interactions at the core of a capitalist system: the state, capital and labour. To characterise the role of the state, several dimensions are important: the policy objectives of the state, the policy instruments, and the features of state bureaucracy³. As a general rule, the main role of the state was to maintain a stable environment for markets to operate freely from any political or social interference.

The main policy instruments are in accordance with the neoclassical economics and political liberalism. Therefore, in the Anglo-Saxon model the main actions the state is willing to take are those enforcing the rule of law and macroeconomic stabilisation policies with regard to inflation, unemployment, exchange rate, and public deficits (Albert 1993).

The Anglo-Saxon system also has a low and declining rate of unionisation Pryor (1996). In contrast with the Continental and developmental capitalism, the labour market in the Anglo-Saxon capitalism is its poor internal flexibility due to a fragmented training system and poor skills (Rhodes and Apeldoorn 1997: 174). These negative features are partially balanced by a higher mobility (both across professional groups and geographically) and by more flexible wages than the ones characterising the Continental model. In the Anglo-Saxon capitalism the most prominent actor is business. Based on the conception of market capitalism, the Anglo-Saxon system is

³ For good overviews and empirical applications of the theories of the state see the classical work of Block (1987), Evans, Reuschmeyer, and Skocpol (1985). A very comprehensive collection of studies on the role of the state in the economy may be found in Samuels (1989).

founded on the belief that self-interest and decentralised markets can function in a self-regulating, equilibrated manner. It comes to little surprise that these institutional settings are based and reinforce a profit-oriented behaviour and a struggle for material success by individual entrepreneurs and managers. This short-term profit oriented behaviour and individualism are coupled with a set of appropriate institutions to enhance their effectiveness in the Anglo-Saxon model. Probably the most distinguishing feature is the structure of corporate ownership. As seen in table 1.2, in 1990 in the US (the exponent economy for the Anglo-Saxon capitalist model) individual shareholders account for 50% of total outstanding shares owned.

This differs markedly from the other two exponent countries of Continental and developmental capitalism, Germany and Japan. From the ownership structure it results that the Anglo-Saxon corporate governance system is one where share ownership is widely dispersed and shareholder influence on management is weak. In this system a well functioning stock market is vital for unsatisfied shareholder to be able to sell their shares. Also, the individual shareholder is protected by strict regulations on information disclosure and against insider trading.

Table 2.2. Major non financial shareholders of stocks 1990 in the US, Germany and Japan (in %)

| Shareholder | US | Germany | Japan |
|-------------|------|---------|-------|
| Individuals | 50.2 | 17 | 22.4 |
| Banks | 0 | 10 | 18.9 |
| Enterprises | 14.1 | 42 | 25 |

Sources: US Federal Reserve Flow of Funds, Japanese Flow of Funds, Deutsche BundesBank Annual Report. Also in Dittus and Prowse (1996).

2.2. The Continental model of capitalism

In sharp contrast to the Anglo-Saxon capitalist system based on a minimalist state, a weak labour and a short-term profit oriented business approach, the Continental model is characterised by close coordination between political parties, trade unions and industry associations. While the role of the state varies from more

dirigist, centralised state (in the case of France) to less prominent smaller states (the Netherlands, Belgium, Denmark) or larger federal states as Germany, both in terms of objectives and policy instruments European states played a more proactive role in governing the economy than typically their Anglo-Saxon counterparts.⁴

As depicted in table 2.1, the Continental capitalism is generally associated with a neocorporatist pattern of interest intermediation, featuring strong voice for organised labour in policy making. It is also generally the case that collective bargaining determines wages at sectoral level and a minimum national wage level, thanks to high trade union membership rates and representative peak associations. The role of labour is important not only at macro level but also at firm level through workers' councils and the principle of co-determination, although the latter is not found throughout Europe as a whole. There are well established and institutionalised business-labour forms of cooperation and information exchange, whether in supervisory boards or at a more decentralised level in works councils.

The same logic of interest intermediation also applies to business interest groups. German business peak associations have close working relationships with both land and federal governments. These peak associations are key players in the public policy formulation. Other important distinctive features of the Continental model of capitalism are to be found in its corporate governance structures. Unlike the Anglo-Saxon system and resembling the developmental capitalist model, the Continental capitalism is based on a prominent role of banks in corporate finance and control (see table 1.2). It is quite common for banks in this model to own significant proportions of shares in their portfolios as a way to control the economic activities of their major clients (Dittus and Prowse 1996: 24). Bank representatives also often are found on the boards of directors of the companies they offered large loans. These organisational features and banking-enterprise close interaction creates a more secure economic environment that allows firms to seek higher profits on the long run, as opposed to the short-term view imposed by stock markets on Anglo-Saxon companies (Albert 1993, Smyser 1992). Furthermore, German banks are allowed to conduct business in all branches of banking (universal banking), while Anglo-Saxon countries

⁴ On the features of the French capitalism that places it within the Continental capitalism model see Grosse and Luger (1994) and Adams and Stoffaes (1986). For an opposite view, see for instance Woolcock (1996).

strictly separate certain banking activities (Albert 1993). Both features make European banks more attractive than stock markets for companies who wish to raise their capital for new investment.

2.3. The developmental capitalism

Another perspective from which the role of political institutions on the economic performance were analysed focuses on the role of the state in promoting the economic development at national level, and industrial advancement in particular. With the collapse of the communist regimes, the consequent change in world politics and, last but not least, the lessons derived from the miraculous economic success of the mercantilist states of East Asia, the time seems to have come to re-examine the theory of developmental state and economic nationalism.

At the core of this body of literature lays the attempt to characterise different types of states their 'strength' or their historical evolution. Relying on the state - the major political institution - as the explanatory variable, many studies have sought to explain patterns of economic change over time at national level or cross-country analyses. The studies were carried out to explain both the emergence of various Western European countries as economic powers or to describe the developmental experiences of Latin American or East Asian countries.

The developmental state perspective centres around the key role played by the state in the process of national development. This renewed interest in capitalist models is not entirely new. Early institutionalist accounts have explained how states can provide a suitable environment for capital accumulation (Gerschenkron 1962) and have analysed the states' capabilities to organise financial markets. The crisis of the Fordist development model in the 1960s and 1970s and in particular the demise of the Soviet Union and thereby the socialist alternative at the end of the 1980s revealed the diversity within the capitalist mode of production itself. Hence, the transformation to a capitalist economy is, in theory, not such an unequivocal process for the countries in Central and Eastern Europe. It is not only a very intricate process of transformation, in which historical and cultural factors play a important role, but it also entails the fact that there is a choice to be made in which way society should develop.

2.4. Models of capitalism in CEECs

Identifying the features of emerging capitalisms in Eastern Europe is not an easy task. The difficulty of such attempt is due not only to the dynamic nature of institutional change from socialism to market capitalism but also to the scarcity of information about specific state-society interactions. Yet, having said this, the existence of these inherent difficulties does not preclude at least some attempts to categorize the types of capitalism emerging in these countries, based on certain more quantifiable indicators. Such indicators may capture for instance certain aspects of state-labour or business-labour relations, as well as the role of the banking sector in the economy.

Table 2.3. below includes several measure of different key elements identified in the models of capitalism literature. Thus, in the first column is presented the predominant type of wage bargaining is used as a proxy for the existence of elements specific to the Continental model of capitalism. This of course is a very rough indicator that does not capture entire complexity of tripartite relations found in the Continental capitalism model.

Table 2.3. Proxy variables for models of capitalism

| Country | State intervention ^a | Dominant type of labour bargaining ^b | Domestic credit as a percentage of GDP ^c (1992-98 average) | Stocks traded as a percentage of GDP ^c (1992-98 average) |
|------------------------|---------------------------------|---|---|---|
| Bulgaria | 17.4 | National level | 84.9 | 0.03 |
| Czech Republic | 23.4 | Company level | 70.5 | 7.20 |
| Estonia | 11.8 | | 18.3 | 12.34 |
| Hungary | 43.9 | | 62.7 | 8.00 |
| Poland | 16.4 | | 35.5 | 3.58 |
| Lithuania | 20.8 | National level | 14.6 | 0.97 |
| Latvia | n.a. | | 16.7 | 0.49 |
| Romania | 25.1 | | 23.8 | 0.34 |
| Slovak Republic | 54.2 | Company level | 65.7 | 5.08 |
| Slovenia | 29.8 | National level | 33.8 | 2.22 |

Sources: a. Average state intervention index, EBRD (1999); b. ILO (1997); c. World Bank (2000)

What can be said however is that the existence of centralised, national bargaining systems give us reasons to believe that such a capitalist system is closer to the Continental model than the Anglo-Saxon one. The first column in table 2.3 provides an overall indicator of state intervention in the economy in transition economies. It encompasses measures affecting prices, wages, employment, sales and investment decisions by companies surveyed by the EBRD and World Bank throughout the region. The second and third column in table 5.3 provides data on another key dimension of models of capitalism: the role of financial institutions and the banking sector. According to these indicators, economic systems where the reliance on stock markets (measured as the share of stocks traded in total GDP) are closer to the Anglo-Saxon model rather than developmental or Continental model. Similarly, those that show a higher dependence on banks as a source of capital for investment are farther away from the Anglo-Saxon model. Higher reliance on banks for financing is however common to both Continental, corporatist model and the statist-developmental one. This information alone cannot make the distinction. Hence, countries showing high reliance on the banking system need to be distinguished by corroborating this information with the data on industrial relations. Thus, countries with strong labour movements and bank-dependence will be closer to the Continental model, while countries with weaker labour movements will fall closer to the developmental model.

Table 2.4. Models of capitalism

| Model of capitalism | Dummy variable | Countries |
|----------------------------|-----------------------|----------------------------------|
| Anglo-Saxon | AS | Estonia, Czech Republic, Hungary |
| Continental | CONT | Latvia, Lithuania |
| Developmental | DEV | Poland, Slovak Republic |
| ‘Cocktail capitalism’ | MIX | Bulgaria, Romania, Slovenia |

According to the general analytical framework described in the first part and based on the data provided in table 5.3, the ten CEECs under comparative scrutiny in this paper can be assigned some indicators capturing their *propensity* to evolve towards one capitalism model or another. Apart from the three models of capitalism described at length above, a fourth one (‘cocktail capitalism’) has direct relevance for transition

economies engaged in major systemic transformation of their institutional arrangements. In this model transition countries, instead of adopting a coherent transition program that would lead them to a full working version of one of the three classical models, combine features from all three models. Although in theory, one might argue that a 'pick and choose' strategy that combines the best features of each model would produce a better alternative than choosing an existing blueprint, the likely result of this process is the emergence of an inefficient 'cocktail capitalism' where key institutions necessary for the efficient functioning of the system are lacking or replaced by inconsistent features typical to another model.

The results of this classification are reported in table 2.4. These propensity indicators will then be the basis for the constructions of dummy variables used in the regression to capture the impact of capitalist models on economic growth.

3. The econometric model

It follows from the previous discussion that, empirically, the different experiences in CEECs both in terms of types of capitalism and economic performances give full legitimacy to the research question whether capitalist institutions (markets, hierarchies, networks, various state and private actors) can be related to various economic outcomes. Such empirical studies on growth determinants are most often regression analyses, more or less related to the Solow (1956) theoretical growth model of and its more recent versions (e.g. Mankiw et al., 1992).

A number of studies have tangled with the challenge posed by simultaneity. Jung and Marshall (1985), Hutchison and Singh (1987, 1992) apply Granger-causality tests to the problem. Esfahani (1991) attempts a simultaneous equation approach. Despite these attempts, as so often in macro-econometrics, however, the simultaneity problem has remained largely intractable. Yet, despite these shortcomings, the estimates from single equations are still good indicators of the type of relationships at work.

When cross-country analyses are performed, usual explanatory variables are the level of human or physical capital and beginning-of-period values for income. As a proxy for human capital, many studies include for instance education (Barro 1991, 1997).

However, in the case of Eastern European countries the level of education (expressed as various schooling ratios) would not add much to the explanatory power of the model since these countries are very homogenous on this dimension. For this reason and for the sake of parsimony, the level of education was not included in the analysis. In a panel data analysis – using both cross-section and time series data – the emphasis has to fall on those regressors which vary significantly from one year to another or from one country to another. In a fixed effects specification, the contribution of country specific differences due to variables not included explicitly are nevertheless captured by the country dummy variables.

3.1. Data and variables

Using cross sectional analysis for a sample of 10 CEE countries over the period 1992-1998, this paper explores the political and economic determinants of economic growth during the last decade of transition from centrally planned economies to market-based economic systems.

The present analysis is limited to ten East and Central European countries. The sample has been limited to a rather homogenous group of transition economies, having as a common feature their inclusion in the EU accession process. For this study data has been collected on these countries in the period from 1992 to 1999. This period encompasses several phases of significant economic transformation from centrally planned economies to market economies.

The data used in this analysis comes from a variety of sources.¹ Data for output growth, investment, FDI, and inflation were taken from the UNECE Database. The exports to the EU are based on data available from UN-Comtrade Database and IMF Direction of Trade Statistics (2000). Import duties were calculated from national statistics on budget revenues from international trade.

The right-hand variables included a set of economic and institutional variables. Among the economic variables, domestic investment (and even more so foreign direct investment) is a crucial ingredient of economic growth, especially in economies like the ones examined where capital is scarce. Given that the extent to which investment is an engine for economic growth, it is important to include variables that capture the

importance of domestic and foreign direct investment, not only as source of capital, but also as a dynamic factor with positive spillovers into the host economy. As mentioned previously, to account for the variation in labour relations across the region, the regression analysis incorporated a dummy variable LAB, taking the value of one if national bargaining and wage formation, and zero otherwise.

Other variables that were mentioned in the literature on economic growth as relevant were included in regression. One economic indicator that is highly correlated with economic growth is the rate of unemployment, UR. This variable should be negatively correlated with the rate of economic growth. Also another included explanatory variable was inflation, INF. While in the 1990s some economists criticised what they perceived as an exaggerate focus of CEEC policymakers and international organisations (IMF, The World Bank) on macroeconomic stabilisation, our results show that an increase in the inflation rate is well associated to a reduction in output.

The financial variables included that measure the level of financial development. CREDIT stands for domestic credit (as percentage of GDP) provided by the banking sector includes all credit to various sectors. Higher values for this indicator signals a tendency towards a Continental or developmental model. Claims of deposit money banks on private sector equals deposit money bank credits to the private sector as a share of GDP. This measure excludes credit to the public sector (central and local governments and public enterprises). The variable STOCK equals the ratio of traded stocks as percentage of GDP. It is a general indicator of the size of stock market relative to the size of the economy and is used as an overall measure of Anglo-Saxon capitalism.

Another variable tested was the initial level of economic development. Some authors, using a path-dependent approach, underlined that one important factor in determining the path and success of economic transition in Eastern Europe is the initial departure point. Therefore, to test this argument about the initial level of development one of the explanatory variables included in the regression was the GDP per capita (average of 1987-88 levels), considered as the best available measure of initial level of economic development at the beginning of the transition period.

3.2. The regression results

Several equations were estimated with the variables described above. The regression model is linear in parameters and all variables are measured so that all effects in the model are contemporaneous, no lagged variable being introduced, due to the limited number of time-series observations.

Four dummy variables were assigned as indicated in table 5.4. AS is a dummy variable taking the value of 1 for Anglo-Saxon capitalist features, and zero otherwise. DEV is a dummy variable taking the value of 1 when features of developmental are detected, and zero otherwise. CONT is a dummy variable taking the value of 1 for Continental capitalist features, and zero otherwise. MIX is a dummy variable taking the value of 1 for countries showing a propensity towards a ‘cocktail’ capitalist model, and zero otherwise. These institutional dummy variables varied only in the cross-section, being constant over time. This constraint is based on the assumption that throughout the last decade the countries included in the sample engaged on singular path of transformation from socialism towards a particular model of capitalism. In order to disentangle the impact of certain key dimensions of capitalist models, the dummy variables AS, CONT, DEV, and MIX were replaced by variables specifically capturing the role of key institutions for each model of capitalism: the stock market (STOCK) for Anglo-Saxon capitalism, the banking system (CREDIT) for developmental and labour (LAB) for Continental capitalism.

The results are presented in Tables 5.5. Several general comments can be made about the results from all estimated equations. Firstly, as Levine and Renelt (1992) we find that the results are quite sensitive to the specifications of the model used. Secondly, the explanatory power of the model might be probably further improved, given the fact that only 55 to 67% of the variation in GROWTH is explained by the regressors included in the various models tried. Thirdly, not surprisingly, the values for the Durbin-Watson suggest that serial correlation was likely to affect the results. Consequently, two of the models estimated in table 5.5. (5 and 8) were also estimated separately by including an AR(1) term (4 and 9).

Table 5.5. OLS estimates

| Dependent variable: | GROWTH | | | | | | | |
|-----------------------|--------------------|-------------------|-------------------|----------------------|---------------------|--------------------|---------------------|--------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Independent variables | | | | | | | | |
| C | | -4.13 (2.21) | -2.32 (1.74) | -3.56 (5.5) | -6.64** (2.98) | -10.05** (4.37) | | |
| INVSH | | | | | 0.27*** (0.09) | 0.22* (0.11) | | |
| FDI | 0.4*** (0.22) | 0.41 (0.25) | | | | 0.5 (0.28) | 0.4 (0.22) | 0.05 (0.2) |
| INF | -0.014* (0.003) | -0.02* (0.002) | -0.02* (0.002) | -0.014*** (0.007) | -0.02*** (0.004) | -0.02*** (0.00) | -0.01*** (0.003) | -0.004* (-1.67) |
| UR | 0.48* (0.13) | 0.65* (0.15) | 0.6* (0.13) | 0.42 (0.33) | 0.56*** (0.14) | 0.71*** (0.17) | 0.5*** (0.11) | -0.13 (0.15) |
| CREDIT | | -0.06* (0.02) | -0.06* (0.02) | -0.09** (0.05) | -0.06*** (0.017) | -0.06*** (0.02) | | |
| STOCK | | 0.30* (0.09) | 0.33* (0.09) | 0.09 (0.05) | | 0.24*** (0.08) | | |
| LAB | | | | | | 0.79 (1.15) | | |
| Log(GDPPC87-89) | | | | | | | -0.41 (0.35) | 0.16 (0.32) |
| AS | -2.05 (1.64) | | | | | | 0.29 (2.45) | 3.97** (1.98) |
| CONT | -5.07* (1.76) | | | | | | -2.71 (2.83) | 2.72 (3.25) |
| DEV | -3.95** (1.99) | | | | | | -1.87 (2.45) | 3.56* (2.17) |
| MIX | -7.69* (1.78) | | | | | | -5.84*** (2.08) | 1.4 (1.54) |
| AR(1) | | | | 0.52*** (0.12) | | | | 0.5*** (0.05) |
| Sample | 1991-99 | 1991-98 | 1990-98 | 1990-98 | 1990-98 | 1991-98 | 1991-99 | 1991-99 |
| Panel obs. | 86 | 71 | 74 | 66 | 76 | 71 | 86 | 76 |
| Adj. R ² | 0.59 | 0.66 | 0.66 | 0.61 | 0.64 | 0.67 | 0.58 | 0.55 |
| F-test | 21.31 | 28.67 | 37.28 | 22.19 | 33.56 | 24.8 | 18.44 | 12.54 |
| D-W test | 1.41 | 1.24 | 1.32 | 1.89 | 1.36 | 1.29 | 1.32 | 1.82 |

Standard errors are in parentheses. White Heteroskedasticity-consistent standard errors and covariance. *** for 1% or greater level; ** for 5%; * for 10% levels.

Lastly, another general comment refers to several variables reported in the economic growth literature that did not surpass the level of statistical significance in virtually none of the estimated regressions. Thus, the share of trade in GDP (as a measure of economic openness), the share of exports to the EU in total exports (as a measure of regional economic integration), and population, all did not yield significant results when regressed against growth rates. One possible explanation for this outcome may

be related to the use of panel data, as opposed to most other analyses that generally use cross-section samples.⁵

More specifically, if we turn our attention to the models of capitalism dummy variables the results are inconclusive. The dummy variables were used in 3 of the 8 regressions (1, 7, and 8). The difference between regression 1 and regressions 7 and 8 was that the last two had Log (GDPPC87-89) as a control variable for initial level of development. Although the coefficient for this control variable was unstable and insignificant in both specifications, this new variable showed once again the fragility of some coefficients. While FDI and INF are significant statistically in regression 1 and these variables seem to be quite robust and stable, UR changed its sign when AR(1) was added in regression 8.

Regression 3 tested only the role of domestic variables in explaining the evolution of economic growth. The results are statistically significant, even though the D-W test suggests the existence of slight serial correlation of the residuals. While the coefficient for INF has once again the expected sign and is statistically significant, the coefficients for UR, CREDIT and STOCK need some further explanation. Unemployment, as in virtually all other regressions was positively correlated with growth, unlike what common sense would predict. This may be a spurious relation picking up the effect of some omitted variable but it may also be explained by the characteristics of transition economies who needed to cut the number of redundant workers in state-owned enterprises and improve labour productivity.

There are several explanations possible for the fact that CREDIT was systematically negatively correlated with GROWTH. Although there may be other factors accounting for this outcome, this result suggests that there is a misallocation of resources in the credit market, most likely due to non-performing loans given to state-owned enterprises.⁶ For instance, the negative effect of CREDIT may explained by the specific state-banks relations in transition economies that induced these high ratio on non-performing loans. If this is the case, then higher values for CREDIT do not

⁵ It should also be noted that these variables did showed significant effects when growth was measured as a GDP index with fixed base. However, these results were not reported here due to the fact that GFP index time-series, unlike growth rates or indexes with mobile base, are not stationary. For an empirical analysis of trade openness and economic growth, see for instance Cernat and Vranceanu (2001).

necessarily mean the presence of developmental or Continental strategies but on the contrary an anti-developmental effect. In contrast, STOCK is positively correlated with GROWTH suggesting the importance of stock-markets as an alternative source of funding and investment to bank-based finance.

Regression 2 added FDI as an external factor influencing growth prospects but despite the importance of FDI to growth underlined in the literature, the impact of FDI although positive was insignificant statistically in most regressions (with the exception of regression 1).

Compared to regression 3 and 4, regression 5 and 6 a series of other variables. Regression 5 added INVSH which turned out, not surprisingly, to be positively correlated and highly significant statistically. Regression 6 added FDI and the dummy variable LAB (1 for national collective bargaining and 0 otherwise). Both of them seemed to have a positive impact but none of them turned out statistically significant.

The overall conclusion was that most of the economic variables included (INVSH, FDI, INF) kept their signs and levels of significance throughout different specifications. In contrast, the institutional variables (especially the dummy variables) used seemed more fragile. However the results seem to suggest that STOCK, as a measure of the presence of Anglo-Saxon features had a positive impact on growth rates. Similarly, higher unemployment (UR), which is most often positively correlated with an Anglo-Saxon type of transition, had also a positive effect on growth. On the other hand, higher values of CREDIT (usually associated with developmental and Continental models of capitalism) were negatively associated with annual growth rates.

4. Conclusion

From the empirical investigations carried out in this paper the evidence is mixed, especially when it comes to attribute clear effects of institutional variables such as the ones describing Anglo-Saxon, Continental, and developmental models. Thus, given these shortcomings, the panel data analysis carried out in this paper does not support

⁶ This argument is also supported by the findings of several EBRD and World Bank reports. See for instance EBRD (1999).

unambiguously one view or another from the ones advance in the debate about the impact of models of capitalism on economic growth. However, the approach used in this paper differed from the vast majority of empirical studies of economic growth in Eastern Europe by testing the applicability of the debate about models of capitalism to transition economies, where major systemic transformations took place during the last decade.

The indicators used in this paper tried to assess quantitatively each country's key institutional settings, but the results of this paper remain preliminary. One reason for this is that exact measurement of institutions is still elusive. One way to expand the analysis would be to explore these relationships further and test rigorously against alternative measurement methods, such as GLS or SUR. Therefore, one way to advance our understanding of the transition process and its final destination would be to supplement quantitative studies based on cross-sectional and time-series with more qualitative assessments of policies, laws, and regulations, analysing the overall functioning of these transition economies. In doing so, quantitative and qualitative research may supplement each other and reach more meaningful conclusions.

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