Institutional Effects of Economic Integration in Central and Eastern Europe

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Abstract: The paper builds a theoretical model of the effects of economic integration on institutional development. The theory predicts that foreign direct investments and trade openness have beneficial effects while foreign aid has an overall ambiguous effect. Using data on aspects of institutional quality, I estimate the importance of three elements of institutional quality. The findings support the model by suggesting economic integration has indeed had beneficial effects on overall institutional development although working through different channels while the effects of foreign aid are ambiguous.

JEL Codes: F15, F21, F35, O17, P30

Keywords: Foreign aid, economic integration, institutions, transition,

1. Introduction

Institutions play an important role in economic development, as Douglas North and other scientists working within the framework of New Institutional Economics stress. An oft-repeated result of this literature is that the quality of institutions measured by different proxies for economic freedom is a source of economic growth by e.g. providing protection from theft and contractual violation and thus lowering transaction costs.[1] The post-communist countries in Eastern Europe provide a natural experiment of this theory, as communist legal structures, bureaucracies and political institutions suddenly became unsuitable for the realities of the emerging market economies after the communist regimes finally collapsed. Indeed, much of the transition from communism to modern market economy can be viewed as an entirely institutional transition to be analyzed within New Institutional Economics.

This transition has been everything but smooth and while it seems to have stalled in some countries, others such as Estonia and Slovenia have done very well and can now be grouped with certain Western European countries when appraising the standard of formal and informal institutions (Bjørnskov and Svendsen, 2002). Yet, although it may seem politically convenient for certain politicians hostile to reforms to claim so, the West cannot be blamed for these differences. Political support to the new regimes was swift from Scandinavia in particular and foreign aid soon followed, as Western politicians adopted the same way of thinking development in Eastern Europe, as they were accustomed to in the Third World. Private firms simultaneously began trading

with Eastern Europe as well as getting more directly involved economically, thereby integrating the former communist countries into the world economy.

In a broad perspective, the total foreign involvement from the Western countries can be said to consist of two things: the politically motivated official foreign aid – a one-way integration, and the economically motivated 'aid' provided through foreign direct investments (FDI) and trade, i.e. real economic integration. By now, the level of foreign aid and FDI received by Eastern European countries are about the same size, being approximately two percent of GDP, while the countries have on average become remarkably open with trade shares that are now typically around 85 percent of GDP. The institutional literature suggests that institutional quality is an important source of growth and as such, the three elements of economic integration could influence growth indirectly through their effect on the development of institutional quality. Their impact may nevertheless not be equal. Experiences from e.g. the economics of growth show that: 1) foreign aid have had a very small effect (Boone, 1996; Burnside and Dollar, 2000); 2) FDI can have a sizeable impact when certain conditions are met (Borensztein et al., 1998); and 3) trade is a potent source of growth (Frankel and Romer, 1999; Dollar and Kraay, 2003). The point of this paper is therefore to build a simple informal model of the effects of the economic integration in terms of all three types – foreign aid, foreign direct investments and trade – to formalize the way in which they have affected the transition towards better institutions. I substantiate the theory by summarizing empirical results from a companion paper.

The rest of the paper is organized as follows: section 2 presents a theory of institutional development and economic integration; section 3 presents empirical results from a companion paper; and section 4 concludes the paper and draws tentative implications for future transitions.

2. A theory of economic integration and institutional development

There are good *a priori* reasons to distinguish between effects of different types of economic integration, but these reasons are largely ignored in the media. For example, politicians and participants in the (Western) public debate mostly assume that aid is good *per se*, imagining that transferring resources to a foreign country will help unambiguously by way of allowing it to spend more on productive investments. However, it is often forgotten that not all regimes are completely benevolent and that agents have strategic considerations of their own, both of which can affect the impact of aid in various ways. Conversely, the media often bring forward stories about adverse effects of economic integration that seem to be contradicted by standard economic theory. As such, politicians may either act on an erroneous background created by the media or alternatively be wiser than most economists. To clear some of this fog, this section therefore conceptualizes a set of transmission mechanisms interconnecting the three elements of economic integration and institutional development; the mechanisms are summarized in Figure 1.

INSERT FIGURE 1 ABOUT HERE

The model is build around a number of insights from theoretical and empirical literature. First of all, trade and FDI lead to economic growth. This point is trivial, documented by a number of studies (Borensztein et al., 1998; Frankel and Romer, 1999; Dollar and Kraay, 2003). It connects economic integration through growth's effect on tax revenue, which naturally increases with growth, given that tax rates are stable. Trade and FDI thus promote institutional development by furthering growth, which through increasing tax revenues enables investments in institutional quality. Conversely, a number of studies have found that foreign aid has had no growth effects, but only expanded government spending (Mosley et al., 1987; Boone, 1996; Burnside and Dollar, 2000). Foreign aid is therefore not directly connected to growth in the model, but could be associated with institutional development through two channels: aid can contribute to investments in institutional quality by alleviating budgetary constraints and might also be used to bolster political support for institutional reform by alleviating short-term adjustment costs when e.g. people temporarily lose their jobs as a consequence of privatizing state owned enterprises or when people lose privileges held under the former system when monopoly agencies experience competition; many other examples could be mentioned. This need is built into the model by assuming that voters do not like institutional development in itself.

However, aid can also abate institutional development by alleviating opportunity costs of maintaining poor institutional quality, which include (but are not restricted to) poor growth performance, inadequate legal protection and consequences of widespread corruption. It can thus be used to compensate voters for the adverse consequences of *not* developing institutions. As such, early development theory held an optimist view of the

effects by suggesting that increased government resources lead to better institutions while later research is more in line with Bauer's (1984) pessimist view. Knack (2001) for example finds that aid actually leads to postponing reforms toward the implementation of democratic institutions and other research indicates that aid can lead to more corruption (Svensson, 2000; Alesina and Weder, 2002). There may thus be a trade-off between beneficial and detrimental effects of foreign aid due to the fact that the effects depend crucially on the quality of government policy.

A second point follows from new growth theory and has received some support in empirical studies: trade and FDI transfer knowledge, skills, management techniques and technology to open countries (Coe et al., 1997; Adkins et al., 2002; Chuang, 2002). They may also transfer knowledge about how institutions in other countries conduct their business, as particular employees in foreign companies are likely to have experiences with institutions in more than one country. New skills and techniques can often be applied to formal institutions such as public administration while information on the likely consequences of specific regulations and legislation can be transmitted through economic integration. These factors may make investments in institutional development cheaper and/or increase the returns to such investments.

These considerations are formalized in the following simple model. Assume that governments are non-benevolent in the sense that they only have preferences for power, b, which gives them prestige, status and possibly also the scope for attracting bribes, all given their probability of staying in office, σ. Voters, on the other hand, prefer governments that provide disposable income (i.e. total production, y, net of taxes), a

welfare good with no growth effects, *c*, and stability; in other words, voters do not like institutional development in itself, as it implies changes. The model in equations (1)-(4) thus contains a trade-off for governments in every instance, *i*, as investments in institutional quality, *l,* lead to higher growth, but also restrict their discretionary power and have ambiguous effects on the probability of reelection.

$$U_G = \int_0^{\infty} e^{-\delta i} \sigma_i U\left(b_i\right) di, \quad U_b > 0 \tag{1}$$

$$\sigma_i = \sigma\left(\left(1-\tau_i\right) y_i, \dot{\lambda}_i, c_i\right), \quad \sigma_{\dot{y}} > 0, \sigma_{\dot{\lambda}} < 0, \sigma_c > 0 \tag{2}$$

$$\dot{\lambda} = g\left(l_i, E_i\right) - \rho\lambda_i, \quad g_l > 0, g_E > 0 \tag{3}$$

$$y_i = f\left(E_1, \lambda_i\right), \quad f_E > 0, f_\lambda > 0 \tag{4}$$

The remaining notation of the model is the following: λ is institutional quality; economic integration, *E*, and foreign aid, *A*, are exogenous parameters; δ is a time preference rate and ρ is the depreciation rate. Dots above variables denote the derivative with respect to time. Governments optimize their utility by choosing the resources devoted to institutions, *l*, taxes, τ, and *c*, given the fiscal constitution in (5), which with the assumption in (6) leads to (7).

$$A_i + \tau_i y_i = b_i + c_i + l_i \tag{5}$$

$$b_i = \left(1-\lambda_i\right)\left(\tau_i y_i + A_i\right) \tag{6}$$

$$l_i = \lambda_i\left(\tau_i y_i + A_i\right) - c_i \tag{7}$$

Optimizing government utility in this system involves setting up the Hamiltonian in (9). First-order conditions are listed in the appendix.

$$H_i = \sigma_i U(b_i) + \mu_i \left[g(l_i, E_i) - \rho \lambda_i \right] \tag{8}$$

An approximate solution derives from assuming that the reelection function can be approximated within a vicinity of the steady state by a linear form and that the economic growth relation deriving from equation (4) depends linearly on institutional development and economic integration. Solving for the steady state level of institutional development, this becomes (9), and the effects on the steady state level of economic integration and foreign aid are thus given by equations (10) and (11). The simple model developed in this paper thus has some non-trivial implications that can be tested empirically.

$$\dot{\lambda} = \frac{\left[(\delta + \rho)\frac{\sigma_c}{g_l} - \delta\sigma_\lambda - \sigma_y f_\lambda (1-\tau_i) - \sigma_c (\tau_i y_i + A_i) \right] U_i + \sigma_i U_b (\tau_i y_i + A_i)}{B} +$$
$$\frac{\frac{\sigma_c}{g_l^2}\lambda_i \tau_i U_i - \left(\frac{\sigma_c}{g_l} - \sigma_\lambda \right)(1-\lambda_i)\tau_i U_b}{B} f_E E, \tag{9}$$
$$B = \left(\frac{\sigma_c}{g_l} - \sigma_\lambda \right) \left[(1-\lambda_i)\tau_i f_\lambda - (\tau_i y_i + A_i) \right] U_b - \frac{\sigma_c}{g_l^2}(\tau_i y_i + A_i - \lambda_i \tau_i f_\lambda) U_i$$

$$\frac{d\dot{\lambda}}{dE} = \frac{\frac{\sigma_c}{g_l^2}\lambda_i \tau_i U_i - \left(\frac{\sigma_c}{g_l} - \sigma_\lambda \right)(1-\lambda_i)\tau_i U_b}{B} f_E \tag{10}$$

$$\frac{d\dot{\lambda}}{dA} = \frac{-\sigma_c U_i - \sigma_c A_i U_b (1-\lambda_i) + \sigma_i U_b}{B} + \frac{\left(\frac{\sigma_c}{g_l} - \sigma_\lambda\right) + \frac{\sigma_c}{g_l^2} U_i + \frac{\sigma_c}{g_l^2} A_i U_b (1-\lambda_i)}{B^2} \quad (11)$$

Put verbally, the implications of the model are that both economic integration and foreign aid in general may have ambiguous effects on institutional development. However, the denominator, *B*, clearly tends towards being negative for any reasonable parameter values, which implies that the effects of economic integration are positive above some level of institutional quality that is likely to be small (see the appendix). Conversely, the effects of foreign aid remain ambiguous, as the second term of equation (11) is unambiguously negative while the sign of the first term is ambiguous. Yet, both the total effect and the tendency towards a positive first term decrease with institutional quality. It should also be noted that the effects are smaller when surges in foreign aid are perceived to be temporary.

The model thus predicts different effects of economic integration and foreign aid. Both contribute to the budget and effects thus depend on government policy, which is restricted by the institutional framework. Still, the direct budgetary effects of economic integration are substantially smaller, as they work through increasing tax revenue while foreign aid goes directly into the budget. Any adverse effects of government policy are thus likely to be enhanced by foreign aid, as originally proposed by Bauer (1984).[2] This is exactly what is going on in the model where governments can use the increased budgetary resources to either invest in institutional quality, enhance their own status or provide popular welfare goods in return of votes. Economic integration, on the other side, has additional beneficial effects by enhancing growth and possibly also

transferring management techniques and knowledge that contributes positively to institutional development. Still, whether this is a reasonable description of the Eastern European experience is an empirical question.

3. Empirical results

In a companion paper, Bjørnskov (2003), I therefore test the effect of economic integration on the institutional transition in Eastern Europe. The paper uses data on institutional quality and development from the Fraser Institute (2003), an international network of about 50 think tanks that assess various aspects of institutional quality and government policy in a number of countries.[3] These aspects are measured by four indices: an index measuring the size of government through expenditures, taxes and enterprises, denoted GOVSIZE; an index measuring the quality of the legal structure and security of property rights, denoted LEGAL; an index measuring the degree of regulation of credit, labor and business in the economy and hence also the quality of the bureaucracy administering the regulations, denoted REGUL; and the summary index of all indices published by the Fraser Institute, denoted SUMM. The latter thus also includes the remaining aspects - the freedom to trade with foreigners and an aspect called 'access to sound money', which captures economic stability. All indices are constructed so higher scores imply less regulation / greater freedom.[4] Table 1 provides some descriptive statistics on the three indices and the summary index. The Scandinavian average is also reported in order to provide a comparison with one of the institutionally most developed regions in the world.

INSERT TABLE 1 ABOUT HERE

The table illustrates the substantial development of Eastern Europe as a whole as well as overall remaining problems and problem countries. Some of the success stories are that Hungary ranks an impressive number 18 in the world on REGUL and Slovenia ranks number 27 on LEGAL while the fiascos clearly lie in the persistently large government sectors and a few countries with lacking development as well as a remarkable persistence of quasi-communist regulation of labor and credit in most countries.

The total sample size is 27, as all institutional data are measured in both 1995 and 2000.[5] The regressors are measured as five-year averages in the period before this year. Although the sample is very small, it should be stressed that only five countries (Belarus, Bosnia, Macedonia, Moldova and Serbia and Montenegro) are left out due to data availability. In other words, most of the Eastern European countries are covered as well as 90 % of the relevant population. To control for reverse causality, the paper applies values for TRADE and FDI lagged one period as instruments in a two-stage least squares (2SLS) procedure. The lag is five years wherever possible, but when data are not available five years back I use the earliest available observation. Table 2 presents the results. It should be stressed that in a sample of this size, otherwise significant associations may emerge insignificant due to large errors of the estimates. Note also that as the countries started the transition with roughly equivalent institutions that are more or less useless in a market economy, the estimates can be interpreted as changes from a common initial level.

INSERT TABLE 2 ABOUT HERE

Overall, the results fit the model quite well although there are variations across the specific institutional elements. The effects of foreign aid are ambiguous, as AIDGDP is a negative source of the size of the government sector, which is a particularly interesting result as it is the opposite of what is normally found by development economists (e.g. Boone, 1996). Although admittedly weak, there may thus be some evidence that Eastern Europe is different from developing countries in the sense that foreign aid has the effect of making reforms of the government sector easier. Columns two and three in Table 2 show the results of explaining LEGAL with economic integration. The coefficient on AIDGDP is negative, but barely significant at 10 %. However, replacing AIDGDP with AIDGOV has the effect of increasing the estimate by about 50 % and making it significant at 1 % while the R square also increases substantially, which may indicate that Bauer's (1984) concerns may be justified in Eastern Europe. Casella and Eichengreen (1996) may also be right in asserting that aid flows have come too late with a Bauer-like effect. The finding could nonetheless also be consistent with the alternative notion that aid flows out of proportion with the administrative capacity of the recipient country can do harm by simply reinforcing old and obsolete structures, making reforms even more difficult. The same results do not apply to REGUL and SUMM. Although the coefficient on AIDGDP (and AIDGOV) is negative in these regressions, it never reaches significance, and even becomes positive when the summary index is the regressand. In sum, foreign aid given with the aim of helping institutional reforms may work as a two-edged sword in the sense that it can help alleviate short-term economic and social costs associated with reforms, but also seems to counteract some of the reform efforts, which is in line with the theoretical predictions.

Turning to economic integration, the picture is somewhat different. Column one suggests that inflows of FDI may have eased reforms of government sectors. Yet, the coefficient is only significant at 10 % and not entirely robust to the inclusion or exclusion of other variables, and when explaining LEGAL, the coefficient changes sign while remaining altogether insignificant. However, when explaining REGUL, FDI becomes significant at conventional levels and is moreover robust to minor changes in the model, which may indicate that not only does such investments flow to countries with relatively better institutions and less discretionary bureaucratic power, it has also worked as a push factor in furthering the institutional development in Eastern Europe through pushing for deregulation. As such, FDI may have had the effect of counteracting corruption and the substantial remains of obsolete communist regulation. It should also be noted that FDI is significantly associated with the summary index, SUMM, and hence has positive effects over and above the influence on REGUL.

The other element of economic integration, trade, is not significantly associated with GOVSIZE. However, it emerges as a very strong cause of the development of legal institutions and protection of property rights, LEGAL. The coefficient is significant at 5 % when AIDGDP is in the equation and at 1 % in combination with AIDGOV. Although the coefficient is implausibly large, this certainly points to the conclusion that openness furthers legal institutional development. TRADE is also positively associated with REGUL, although it is only significant at 10 %. Finally, it is also associated with overall institutional development as measured by the summary index, SUMM, with a coefficient comparable to that of FDI. Economic integration as such therefore has

positive effects as predicted by the theoretical model. However, the simple model is insufficient if one is to explain the different effects of trade and FDI.

In sum, all three elements of economic integration are found to be associated with the Eastern European institutional transition. The economically motivated elements are nevertheless unambiguously positively associated with the transition while the politically motivated element - foreign aid – has had both positive and negative consequences.

4. Conclusions

This paper has asked whether aid and economic integration in Eastern Europe has helped the institutional transition. Integration was measured along three lines - foreign aid, foreign direct investments and trade – which a priori need not have had the same effect. Combining the results from regression analyses of different aspects of institutional development with a simple theory of institutional development, it is possible to paint an overall picture of the impact of economic integration and aid.

The model posits that governments have preferences for power, but that reelection makes them take economic development, stability and welfare implicitly into account. By making assumptions that are all supported by earlier empirical findings, the model leads to the conclusion that economic integration makes governments invest relatively more in institutional quality, although increased tax revenues may have a partly offsetting impact by enabling resources to be directed towards government policies with adverse effects. This possibility is more imminent with respect to foreign aid, as this is

disbursed directly to the government and therefore eases the budget constraint in a one-to-one way. The model thus predicts that the overall effects of economic integration are positive while the effects of foreign aid are ambiguous.

Empirical results taken from a companion paper supports the main predictions of the model. The findings show that foreign aid is only associated positively with the size of the government sector as there seems to be some evidence that countries receiving more foreign aid have been more likely to reform their government sectors. The reason of this result is probably that the aid has been used to overcome the many short-term costs of transition, which have reinforced popular support for the process. However, foreign aid also seems to contribute negatively to the development of legal institutions, possibly through alleviating costs of maintaining obsolete structures and thereby postponing their reform, and thus cuts both ways. Secondly, FDI have contributed to deregulation efforts by e.g. transferring management techniques and relevant skills, and supported economic growth. Foreign firms may also have been able to use their position in countries where they have established themselves to further the institutional transition by transferring information of international experiences. Although this result seems to support claims of the international anti-globalist movement that such investments have detrimental effects (e.g. Tandon, 2002), they are certainly not detrimental when viewed in the light of the recent literature on economic growth and development. FDI moreover seem to have contributed positively to the overall institutional transition. Lastly, openness to trade has had a clear positive impact on the quality of the legal system and a somewhat weaker effect on the level of regulation. The demonstration effect of openness has thus worked, which also shows in the summary index. As such, openness contributes both

directly and indirectly to economic development. In other words, both economically motivated measures of economic integration have contributed unambiguously positively to the Eastern European transition process. These findings yield a few tentative implications.

Firstly, foreign aid can help alleviate costs during a transition process, but may also imply some negative consequences for the process and it should hence be clearly and precisely targeted for specific purposes. Secondly, the worries of the anti-globalist movement are probably exaggerated, as inflows of FDI seem to be able to exert a positive effect on some aspects of institutional transitions over and above the pull effect of the transition process itself. Finally, openness to trade has had positive effects on the Eastern European transition to better institutions. While economic integration has been directly associated with e.g. growth and corruption, institutional development should probably be added to the list of the merits of openness.

By drawing on lessons from the Eastern European transition, developed and developing countries may be able to ensure faster, more persistent or less painful transition processes in the future through furthering an early economic integration into the world economy. Yet, although all three elements of economic integration in Eastern Europe have made a difference, it seems that the economically motivated components have made a much more essential and unequivocal impact. Nevertheless, the findings in this paper are preliminary, building on an uncomplicated theoretical model and a rather small data set. More research needs to be done for these purposes where the problems of

whether the findings can be generalized to other regions of the world and what the exact transmission mechanisms may be are only some of the lingering questions.

References

Adkins, L.C., Moomaw, R.L. and Savvides, A. (2002). Institutions, efficiency, and technical efficiency. *Southern Economic Journal* 69 (2): 92-108.

Alesina, A. and Weder, B. (2002). Do corrupt governments receive less foreign aid? *American Economic Review* 92 (4): 1126-1137.

Bauer, P.T. (1984). *Reality and rhetoric. Studies in the economics of development*. Cambridge, MA: Harvard University Press.

Bjørnskov, C. 2003. Aiding, trading and investing in Eastern European institutions. Paper to be presented at the VIII Jornadas de Economía Internacional in Ciudad Real, June.

Bjørnskov, C. and Svendsen, G.T. (2002). Why does the northern light shine so brightly? Department of Economics Working Paper 15-02, Aarhus School of Business.

Boone, P. (1996). Politics and the effectiveness of foreign aid. *European Economic Review* 40: 289-329.

Borensztein, E, de Gregorio, J. and Lee, J-W. (1998). How does foreign direct investment affect economic growth? *Journal of International Economics* 45: 115-135.

Burnside, C. and Dollar, D. (2000). Aid, policies, and growth. *American Economic Review* 90: 847-868.

Casella, A. and Eichengreen, B. (1996). Can foreign aid accelerate stabilisation? *The Economic Journal* 106: 605-619.

Chuang, Y-C. (2002. The trade-induced learning effect on growth: cross-country evidence. *Journal of Development Studies* 39 (2): 137-154.

Coe, D.T., Helpman, E. and Hoffmaister, A.W. (2002). North-South R&D Spillovers. *The Economic Journal* 107: 134-149.

Dollar, D., and Kraay, A. (2003). Institutions, trade and growth. *Journal of Monetary Economics* 50: 133-162.

Frankel, J.A., and Romer, D. (1999). Does trade cause growth? *American Economic Review* 89 (3): 379-399.

Fraser Institute. (2003). Database on economic freedom. Available at www.fraserinstitute.ca (consulted February, 2003).

Friedman, M. 1958. Foreign economic aid: means and objectives. *Yale Review* 47: 500-516.

Haan, J. de and Sturm, J-E. (2000). On the relationship between economic freedom and economic growth. *European Journal of Political Economy* 16: 215-241.

Gwartney, J. and Lawson, R. (2002). *Economic freedom of the world: 2002 annual report*. Vancouver, BC: the Fraser Institute.

Knack, S. (2001). Aid Dependence and the Quality of Governance; Cross-Country Empirical Tests. *Southern Economic Journal* 68 (2): 310-329.

Kormendi, R. and Meguire, P. (1985). Macroeconomic determinants of growth. *Journal of Monetary Economics* 16: 141-163.

Mosley, P, Hudson, J. and Horrell, S. (1987). Aid, the public sector and the market in less developed countries. *The Economic Journal* 97: 616-641.

North, D.C. and Weingast, B.R. (1989). Constitutions and commitment: the evolution of institutions governing public choice in seventeenth century England. *Journal of Economic History* 49 (4): 803–32.

Roeder, P.G. (2001). Ethnolinguistic fractionalization (ELF) indices, 1961 and 1985. Available at http://weber.UCSD.edu\~proeder>elf.htm (consulted February 24, 2003).

Svensson, J. (1999). Aid, Growth and Democracy. *Economics and Politics*, 11 (3): 275-297.

Svensson, J. (2000). Foreign aid and rent-seeking. *Journal of International Economics* 51: 437-461.

Tandon, Y. (2002). The role of foreign direct investments in Africa's human development. Paper available at www.attac.org.uk (consulted February 26, 2003).

World Bank. 2003. World development indicators. Database available at www.worldbank.org (consulted February, 2003).

Appendix

The first-order conditions of the Hamiltonian in equation (8) are:

$$\frac{dH_i}{dc_i} = 0: \ \left(\sigma_c - \sigma_\lambda g_l\right) U_i = \mu_i g_l \tag{A.1}$$

$$\frac{dH_i}{d\tau_i} = 0: \ \left(\sigma_y - \sigma_\lambda \lambda_i g_l\right) U_i - \sigma_i \left(1-\lambda_i\right) U_b = \mu_i g_l \lambda_i \tag{A.2}$$

$$\begin{aligned} \frac{dH_i}{d\lambda_i} = \delta\mu_i - \dot{\mu}_i: \ & \left[\sigma_y \left(1-\tau_i\right) f_\lambda + \sigma_\lambda \left(\left(\tau_i y_i + A_i\right) g_l - \rho\right)\right] U_i \\ & - \sigma_i \left(\tau_i y_i + A_i\right) U_b + \mu_i \left(\left(\tau_i y_i + A_i\right) g_l - \rho\right) = \delta\mu_i - \dot{\mu}_i \end{aligned} \tag{A.3}$$

The maximum level of institutional quality that guarantees positive effects of economic integration follows from (A.4):

$$\lambda_i^* = \frac{g_l \left(1 - \frac{\sigma_\lambda}{\sigma_c} g_l\right) U_b\left(\lambda_i^*\right)}{g_l \left(1 - \frac{\sigma_\lambda}{\sigma_c} g_l\right) U_b\left(\lambda_i^*\right) + \tau_i U_i\left(\lambda_i^*\right)} \tag{A.4}$$

To provide an example and solve this equation, I assume that government utility is quadratic, i.e. that $U_i = \sqrt{b_i}$. The nominator in equation (10) then becomes (A.5).

$$\left(\frac{\sigma_c}{g_l} - \sigma_\lambda\right)\left(1-\lambda_i\right) \frac{1}{2\left(1-\lambda_i\right)\left(\tau_i y_i + A_i\right)} - \frac{\sigma_c}{g_l^2}\left(1-\lambda_i\right) + \frac{\sigma_c}{g_l^2} > 0 \tag{A.5}$$

Rearranging the expression yields (A.6), which shows that the effects of economic integration are positive for all values of λ, since the nominator is negative.

$$\lambda_i > \frac{g_l\left(\sigma_\lambda \frac{\sigma_y}{\sigma_c} g_l - 1\right)}{2\left(\tau_i y_i + A_i\right)} \tag{A.6}$$

Figure 1. Transmission mechanisms

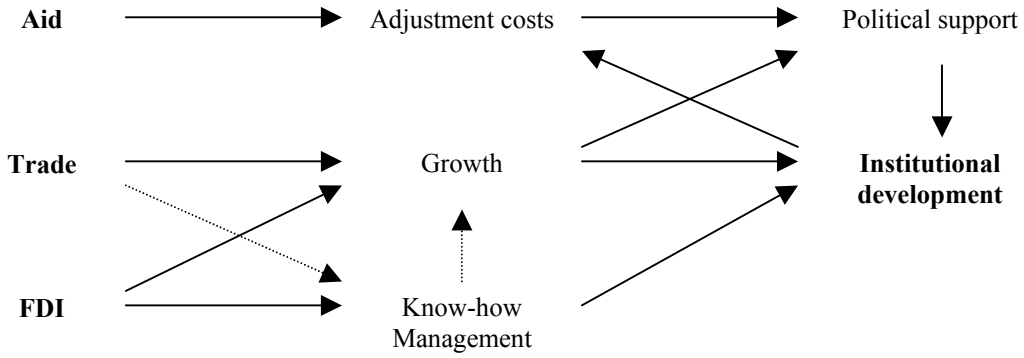

Table 1. Institutional quality in Eastern Europe, 2000

	GOVSIZE	LEGAL	REGUL	SUMM
Albania	6.2 (53)	4.7 (76)	5.0 (103)	5.5 (97)
Bulgaria	4.9 (89)	5.4 (69)	5.5 (82)	5.5 (97)
Croatia	3.3 (19)	7.1 (30)	5.5 (79)	5.6 (92)
Czech Republic	5.3 (83)	6.9 (39)	5.7 (68)	7.0 (38)
Estonia	5.9 (66)	6.7 (43)	6.5 (37)	7.1 (35)
Hungary	5.4 (80)	7.0 (38)	7.0 (18)	6.7 (51)
Latvia	5.9 (65)	6.8 (41)	5.6 (65)	6.8 (47)
Lithuania	6.1 (58)	6.6 (44)	5.6 (76)	6.5 (60)
Poland	3.9 (108)	6.5 (52)	5.6 (74)	5.7 (89)
Romania	4.7 (92)	6.4 (53)	5.4 (86)	4.8 (114)
Russia	6.4 (50)	4.4 (83)	4.4 (114)	4.7 (116)
Slovak Republic	3.5 (118)	6.3 (54)	5.2 (94)	5.8 (82)
Slovenia	3.2 (121)	7.3 (27)	5.7 (66)	6.1 (73)
Ukraine	3.8 (111)	4.8 (75)	4.5 (111)	4.5 (119)
Average	4.9 (89)	6.2 (56)	5.5 (82)	5.9 (82)
Scandinavia	3.9 (110)	9.2 (9)	6.9 (21)	7.5 (15)

Note: numbers in parenthesis are rankings out of the 123 countries covered in 2002; the rankings of the Eastern European and Scandinavian averages are estimates.

Table 2. 2SLS regressions

	GOVSIZE	LEGAL		REGUL		SUMM	
FDI	0.597	-0.076	-0.444	0.589*	0.679**	0.536*	0.585**
	(1.614)	(0.151)	(-1.257)	(2.410)	(3.311)	(2.317)	(3.176)
TRADE	-0.329	1.232*	1.555**	0.492	0.430	0.535*	0.505*
	(-0.838)	(2.234)	(3.674)	(1.899)	(1.743)	(2.180)	(2.286)
AIDGDP	0.369	-0.391		-0.106		0.017	
	(1.589)	(-1.161)		(-0.691)		(0.115)	
AIDGOV			-0.696**		0.039		0.082
			(-3.056)		(0.279)		(0.648)
ELPOWER	0.071	-0.753	-1.167**	-0.030	0.075	-0.061	-0.006
	(0.059)	(-1.560)	(-3.232)	(-0.160)	(0.398)	(-0.341)	(-0.035)
ELF	0.229	-0.721**	-0.799**	-0.464**	-0.427*	-0.439**	-0.428*
	(0.930)	(-3.050)	(-3.536)	(-2.854)	(-2.476)	(-2.853)	(-2.763)
Observations	27	23	23	27	24	27	24
Adjusted R square	0.122	0.485	0.541	0.679	0.634	0.676	0.658
F statistic	1.750	5.336	5.708	12.406	9.312	12.268	10.237
Standard error	1.020	0.9310	0.9187	0.4862	0.4932	0.4795	0.4808

Note: all regressions include a constant term; * denotes significance at 5 % (** at 1 %). FDI is foreign direct investments as a percentage of GDP; TRADE is imports plus exports as a percentage of GDP; AIDGP is foreign aid as a percentage of GDP; AIDGOV is foreign aid as a percentage of government expenditure; ELPOWER is electrical power consumption per capita, which proxies for GDP; ELF is ethnolinguistic fractionalization. All data are obtained from World Bank (2003) except ELF, which is from Roeder (2001).

Endnotes

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[1] See e.g. North and Weingast (1989) and Kormendi and Meguire (1985). De Haan and Sturm (2000) conduct an extreme bounds analysis to test the robustness of these conclusions and find most of them to be fragile. They do, however, conclude that changes in economic freedom are robustly associated with economic growth.

[2] Milton Friedman proposed the mechanisms as early as 1958 (Friedman, 1958), but Bauer further developed the argument in length in the period between the late 50's and the 80's. Bauer was very unpopular in his time, but the literature on growth empirics and institutional economics have found considerable support for his ideas. See e.g. Knack (2001), Svensson (1999, 200) and Alesina and Weder (2002).

[3] The index is documented in Gwartney and Lawson (2002); by 2000, 123 countries are covered. Most of the think tanks involved in the project advocate a free market orientation, however, it can hardly be said to be a purely ideological project without academic value as the group of researchers include Nobel Prize winners Milton Friedman, Douglas North and Gary Becker. As such, researchers of all political convictions have used the data.

[4] It should be noted that de Haan and Sturm (2000) criticize the Fraser Institute for including GOVSIZE in the overall measure, both due to methodological shortcomings of the index and because the impact of government expenditure depends critically on how it is spent.

[5] I chose not to use standard measures such as GDP or GNI to control for economic development. Instead, I include a measure of electric power consumption (kWh per capita), denoted ELPOWER, due to certain problems with official GDP figures. My choice has the benefit of not being biased by the substantial errors in national accounts due to the unofficial economy and the dismantling of the military-industrial complex in early transition. It also performs consistently better in the empirical analyses.