

Beyond Trade – Is Reform Effort Affected by the Exchange Rate Regime?

A Panel Analysis for the World versus OECD Countries*

Ansgar Belke*, Bernhard Herz**, Lukas Vogel***

**University of Duisburg-Essen and IZA Bonn*

***University of Bayreuth*

****OECD Paris*

This version May 27th, 2009

Abstract

This paper examines the contemporaneous relationship between the exchange rate regime and structural economic reforms over a period of 30 years. Using panel data techniques, we look at both a broad (“world sample”) and an OECD country sample. We investigate empirically whether structural reforms are complements or substitutes for monetary commitment in the attempt to improve macroeconomic performance. Our results suggest that, on average, an exchange rate rule positively correlates with the overall structural reforms and trade liberalization in particular. We do not find a significant and robust impact of exchange rate commitment on labor and product market reform, on the other hand. The results are similar for both the wider, more heterogeneous world sample and the panel of OECD economies. They contradict the hypothesis that exchange rate commitments may have slowed down the pace of structural reform, but neither provide robust evidence that losing the possibility of an exchange rate adjustment promotes labor and product market reforms.

JEL Classifications: D78, E52, E61

Keywords: exchange rates, monetary policy regime, liberalisation, panel data, political economy of reform.

*The views expressed in this article are those of the authors and do not necessarily reflect those of the OECD. The work was largely undertaken before Lukas Vogel joined the organization. We are grateful for valuable comments from Dennis Snower.

1. Introduction

Addressing unsatisfactory economic performance with low growth as well as high and persistent unemployment by means of structural reforms and an appropriate monetary policy strategy is an important challenge for academics and policy-makers alike. Although public debates often connect both the implementation of structural reforms and macroeconomic policies, the academic discussion has for a long time neglected to provide rational arguments for such an interrelation. Until the mid-nineties, the incentives and disincentives for labor, product and financial market reforms and liberalization, on the one side, and the costs and benefits of monetary policy rules, on the other side, had usually been analyzed in isolation. In the absence of a unified approach it was impossible to analyze whether monetary rules and structural reforms act either as complements or as substitutes in improving macroeconomic performance.

In the following we present an empirical analysis of the relationship between monetary commitment in the form of an exchange rate peg and structural economic reforms. We investigate whether empirically the implementation of structural reforms and an exchange rate commitment constitute either alternative or complementary policy choices. Theoretical arguments exist for both relations. On the one hand, exchange rate flexibility is a possible shock absorber that could substitute for structural change and real wage adjustment. An exchange rate commitment may then increase the pressure and the incentive to increase real flexibility by implementing structural reforms. More generally, monetary commitment may force labor unions to lower wage demands, as monetary policy does not accommodate the negative employment effect of excessive wage claims. Monetary commitment and structural reforms should then occur together.

In the Barro and Gordon (1983, 1983a) and Kydland and Prescott (1977) framework, on the other hand, structural reforms that improve the economic performance reduce the central bank's incentive to exploit the short-run Phillips curve trade-off. Consequently, they also reduce inflationary expectations. From this perspective, structural reforms re-

duce the costs of monetary discretion and the benefits of commitment. Monetary commitment and structural reforms may then appear as alternative policy choices.

What do we add to the literature and what results do we obtain? The empirical examination of the relationship between monetary policy strategies and structural economic reforms may be based either on cross-country event studies or on formal econometric evidence. Cross-country event studies are less encompassing and yield contradicting results, however. The U.S., for instance, are a monetary union with labor market institutions that encourage low structural unemployment. Another example of reform enhancing exchange rate commitment might be the European Monetary System that has apparently promoted reform processes in Denmark and the Netherlands, as it was the case for Austria under the Deutschmark peg. In contrast, the U.K. and New Zealand have implemented far-reaching labor market reforms without adhering to an exchange rate arrangement (Hochreiter and Tavlas, 2005).

Given the above contrasting case-study results, we conduct an econometric analysis for a large sample of countries that goes beyond the EMU focus in van Poeck and Borghijs (2001), Bertola and Boeri (2001), Duval and Elmeskov (2005) and IMF (2004), which are rare examples of empirical investigations in this field.¹ We define market-oriented structural reforms as economic liberalization in the definition of the *Economic Freedom of the World (EFW) index* and the sub-indices *money and banking system*, *government size*, *labor market*, *credit and business regulation*, and impediments to *international trade*, respectively (Gwartney and Lawson 2003, Gwartney et al. 2003). We thus investigate a wider range of economic reforms than Duval and Elmeskov (2005). The latter study, which in terms of empirical strategy and theoretical motivation is closest to ours, limits itself to different aspects of labor market reforms and investigates changes in unemployment benefit systems, labor taxation, employment protection legislation, product market regulation and retirement schemes.

The remainder of the paper is structured as follows. Section 2 discusses the main theoretical links between monetary autonomy and structural reforms. In section 3 we extend our analysis to the multi-reform and the open economy case and derive testable hypotheses on the relationship between exchange rate commitment and the extent of economic reforms. Panel estimates are presented in section 4. The regressions include a set of

additional variables and a number of robustness checks. Section 5 summarizes the results and concludes.

2. Theory: Conflicting views on the relationship between monetary rules and structural reforms

The discussion on monetary policy autonomy and structural reforms is characterized by a wide spectrum of conflicting views. We start with a sketch of the literature on monetary policy autonomy and reforms and refer to a prominent example of loss of monetary autonomy: the irrevocable fixing of exchange rates under European Monetary Union (EMU). In the run-up to EMU a number of studies tried to assess the incentive effects of alternative monetary policy strategies on labor market reforms.²

According to the proponents of a liberal view, EMU as a classical variant of a rule-based monetary policy should have a disciplinary impact on national labor markets. EMU enhances the credibility of monetary policy and thereby lowers inflation expectations. Negative employment effects as a result of (too) high wage claims can no longer be accommodated by discretionary monetary policy. The responsibility of wage setters for unemployment increases significantly, because they no longer negotiate nominal but *real* wages. In contrast, autonomous discretionary monetary policy makes it more difficult to remove market rigidities because there is still one option to solve or at least to shift the unemployment problem onto third parties –an *expansionary monetary policy*.

Insofar as the single currency increases transparency, the costs of structural rigidities, as reflected in relative prices, become more evident. Lower trading costs and higher transparency jointly tend to foster competition in goods markets, which in turn reduces the available product market rents. With shrinking rents the incentive to resist reforms should also decline.

Taken together, if changes in monetary policy and the nominal exchange rate are not available, and if labor is immobile as is the case in most parts of the Euro area, there is no other option than to undertake reforms in order to facilitate the market-based adjustment to shocks. Hence, a credible currency peg has often been interpreted as a version of Mrs. Thatcher's There-Is-No-Alternative (TINA) strategy.³

However, there are also important arguments against a positive impact of monetary rules on economic reform. First, based on OECD macro model simulations it was often argued with respect to EMU that the so-called up-front costs of structural reforms may be larger within a currency union. Removing restrictions in financial markets tends to stimulate demand more than labor market reforms and hence allows an easier and quicker “crowding-in” of the positive supply side effects of reforms (Bean, 1998, Duval and Elmeskov, 2005: 10-12, Saint-Paul and Bentolila, 2000). The prior in this case would be that rule-based monetary policy regimes like European Monetary Union lead to more reforms in the financial market than in the labor market.

Secondly, Calmfors (1997) and Sibert and Sutherland (1997) argue that monetary policy with its mainly short-run real effects is not likely to diminish structural unemployment significantly. Hence, rule-based monetary policy does not necessarily imply more reform pressure. In the same line, empirical analysis indicates that the capability of exchange rates to absorb asymmetric shocks to labor and goods markets is rather low. Hence, flexibility of exchange rates does not seem to be a good substitute for reforms and the degree of reforms is not necessarily higher under fixed exchange rates (Belke and Gros, 1999).

Thirdly, some analysts support the view that rule-based monetary policy, at least if implemented via a fixed exchange rate regime, has no disciplinary effects on the wage setting process, but leads to centralization processes and strengthens the incentives to claim high wages on the part of unions. Also, the limited evidence of price convergence for instance among core-EMS countries does not point to any significant impact of exchange rate stabilization on product market competition. There are still product market rents to be captured and there is still resistance to reforms (Haffner et al., 2000).

During the discussions about the pros and cons of EMU at the end of the nineties it was also argued that market-oriented reforms could achieve a 'double dividend' if monetary policy was discretionary (autonomous). As a first effect reforms reduce –like a rule-based monetary policy – the costs of structural unemployment. They also lessen equilibrium inflation since they diminish the credibility problem of discretionary monetary policy. This second effect is absent in the case of rule-based monetary policy as a rule-based monetary policy does not suffer from a credibility problem by definition.

The usual result of this literature is that for individual member countries a fixed exchange rate rule like EMU implies a lower degree of reforms than an autonomous monetary policy, where reforms reduce both unemployment and the inflation bias. In contrast, a rule-based monetary policy inside EMU limits the benefits of reforms to a positive impact on employment. Expressed more generally, the degree of reforms is therefore higher in the case of autonomous policy (discretion) and lower in the case of commitment (Calmfors, 1997, 1998; Gruener and Hefeker, 1996).

Finally, fixed exchange rate pegs as a special case of a monetary rule eliminate the exchange rate risk, which should enhance capital inflows. Having access to more foreign capital might reduce the incentive to reform financial markets. In this sense, fixed exchange rates tend to lower the degree of reforms as well.

Hence, our central question relates to the correlation between reform intensity and the degree of autonomy of monetary policy, which in turn might be determined to a large degree by the exchange rate regime, at least if the country is small and open (Duval and Elmeskov, 2005: 9 and 23 ff.). We focus on the notion of monetary policy autonomy instead of discretion since we consider autonomy as an important prerequisite of discretionary monetary policy. In this respect, our approach strictly follows Duval and Elmeskov (2005: 25) who measure the loss of monetary autonomy by the degree of commitment to a fixed exchange rate. From these introductory remarks it should be clear that the implementation of specific monetary policy rules for instance by EMU a priori changes the conditions for and the efficiency of structural reforms significantly. The results from our empirical exercise might also shed some light on the theoretical foundations of positive employment impacts of currency unions or other exchange rate pegs often found in empirical studies for different regions of the world – additional to the Dixit-type EXR uncertainty effect on employment (Belke and Gros, 2001, 2002, 2002a, Belke and Goecke, 2005, Belke and Kaas, 2004).

3. Extensions

3.1 Extension to the multi-reform case

A first extension of our simple Calmfors-type considerations relates to our approach to not only take into account labor market reforms but also to include liberalizations in other policy fields. One potential caveat is that it might not be possible to test the Calmfors-type hypotheses with an aggregated reform index, since the above derivation of this hypothesis – at least implicitly – relates to labor market reforms. We cannot exclude a priori that the aggregation of different types of reforms into one composite indicator introduces some noise. Indeed, structural reforms can cover a large set of areas and reforms. Hence, the aggregate level can hide some internal counter-acting movements. For example, we can have liberal reforms on one side, e.g. on the labor market, and on the other side an increase of government consumption, to lower the political cost of the reforms (complementarity). In this extreme case, both effects would neutralize each other and no reform would be depicted at the aggregate level.

However, it might be appropriate to combine reforms in different sub-areas to a few composite reform indicators which are aggregated on the medium level since at this level there exist a lot of different reform approaches and possibilities with comparable effects. Hence, reform activity might be captured better to a certain extent by aggregated indicators. Moreover, both theoretical and empirical evidence suggest that policy interactions can be important and that comprehensive reform packages in general tend to be more effective than “piece-meal” reforms in improving labor market outcomes (Duval and Elmeskov, 2005: 21).

Already these introductory statements indicate that it is necessary to further discuss the question how to appropriately measure structural reforms. We use the Economic Freedom of the World index to quantify structural reforms. This overall index measures “the consistency of a nation’s policies and institutions with economic freedom” by utilizing 37 distinct pieces of data. Each component is placed on a zero-to-ten scale that reflects the distribution of the underlying data. These components are gathered in five major areas: i) money and banking system, ii) government size, iii) freedom to trade, iv) market regulation and v) labor-market regulation.

It cannot be excluded that this wide index is not appropriate to test the Calmfors hypothesis. However, there is tentative evidence that product market deregulation could pave the way for subsequent liberal labor market reforms, which both tend to lower unemployment. This evidence is consistent with the view that reducing rents may progressively curb the support for rent-seeking labor market institutions (Blanchard and Giavazzi, 2003; Duval and Elmeskov, 2005: 25; or Ebell and Haefke, 2004).⁴

Product market reforms may also create better conditions to loosen employment protection legislation via two other channels: i) they have a direct positive impact on overall employment, thereby reducing the incentives for incumbent workers to protect their jobs through strict employment protection legislation (Koeniger and Vindigni, 2003); and, ii) they increase the marginal employment gains that can be expected from less strict employment protection (Kugler and Pica, 2004). By stimulating labor demand, product market deregulation can be a useful complement to labor market reforms aimed at increasing labor utilization. This supports theoretical research claiming that, at least in the long run, increasing competitive pressures should be a priori good for employment. Nicoletti and Scarpetta (2005) find that anti-competitive regulations tend to be costlier for employment when labor market policies and institutions protect insiders and enhance their bargaining power. Thus, the long-run employment gains from deregulation are larger in situations in which workers' insider power is strong.⁵ Hence, we feel legitimized to generalize our notion of reforms from a view strictly focused on labor markets to a broader indicator of reforms.

A further caveat might be relevant. To be consistent with the specific Calmfors model, structural reforms should reduce the equilibrium unemployment. While this condition is satisfied for labor market reforms it could be questionable for several other policy fields covered by the EFW index. As a first example, the relation between taxes and equilibrium unemployment is not well-established in the literature (Calmfors and Holmlund, 2000). It also seems difficult to predict the effect of a reduction of the "top marginal tax rate" (post D Area I of the EFW index), i.e. an increase of structural reforms in the EFW index, on unemployment. However, there is quite robust evidence in favor of increased labor taxes having a negative impact on the employment record. High marginal tax rates

can generate inactivity traps in the low income-low productivity segment (Buscher et al., 2005: 9; and Daveri and Tabellini, 2000).

As a second example, some factors that indicate structural reforms according to the EFW index may, in fact, increase the unemployment rate. This might be the case for the “share of labor force whose wages are set by centralized collective bargaining” (post B Area V of the EFW index, Gwartney and Lawson, 2003: 413). If the share of centralized bargaining increases, *ceteris paribus*, the index decreases indicating less reforms and we should expect increased unemployment. However, there is no consensus on the effects of industry-wide bargaining. While some authors like Calmfors and Homlund (2000) predict that “... centralized wage bargaining is conducive to wage moderation and is therefore beneficial for employment”, other authors relate unemployment to centralized wage bargaining (Berthold and Fehn, 2006, Lindbeck and Snower (1997) or emphasize a non-linear relation, the so-called “Calmfors-Driffill hump” (Duval and Elmeskov, 2005; Nicoletti and Scarpetta, 2005).

While we cannot rule out that the use of the overall EFW index may introduce some noise, we would like to point out that in our context it is exactly the *net* reform effect which is of interest for us. To control for the effects of more specific reforms we use sub-indices of the EFW to address specific areas of reforms. Finally, since the effects of each particular institution depends on other institutions in place (reform complementarities) and in view of many interconnections between institutions and shocks, it is nearly impossible to agree on a specific set of hypotheses about the direction of the employment impact of reforms in some controversial cases a priori (Blanchard, 2006).⁶ As an empirical matter, our indicator of labour market reforms (5B of the EFW index) is relatively close to the aggregated or reform-package variable used by Duval and Elmeskov (2005).

3.2 Extension to the open economy case

Economic openness is generally related to the share of exports and imports in GDP. A stronger exposure of firms to international competition is often assumed to increase the pressure and the incentives for market-oriented reforms. In open economies, output and employment tend to be highly responsive to price competitiveness so that there are

stronger incentives to reform (Katzenstein, 1985, and Nickell, 2005: 2-3). However, empirical evidence is not especially supportive of the view that open economies are more likely to liberalize. Although Pitlik and Wirth (2003) report a positive impact of economic openness on market-oriented reforms, Herz and Vogel (2005) and Pitlik (2004) do not find robust significant coefficients of economic openness for their overall reform indicator. Only in the case of trade policy do they find a positive effect of economic openness on liberalization. Our theoretical discussion in section 2 seems to indicate a possible solution to this empirical puzzle. The key insight borrowed, for instance, from the political economy literature on openness, size of governments and reform efforts (Rodrik, 1996, and other papers by this author) is that more open economies are more likely to implement rule-based exchange rate stabilization and, hence, generally implement less reforms. But is this really true?

Table 1 illustrates the empirical relation between economic openness and exchange rate policy in the overall sample of 123 countries. Exchange rate flexibility is measured on a scale from 1 (hard peg) to 4 (free float). The average and median statistics indicate that less open economies tend to have relatively flexible exchange rate regimes, whereas very open economies tend to favor currency pegs.

- Table 1 about here -

In the following we continue to assume that the main aim of reforms is to lower structural unemployment, and generalize the term monetary policy to include monetary and exchange rate policy. We equate the case of flexible exchange rates with an autonomous and discretionary monetary policy and use the notion of a fixed exchange rate system in cases which we originally addressed as rule-based monetary policy. But is this generalization legitimate? Can we interpret our model in terms of exchange rate regimes instead of monetary policy regimes?

As a stylized fact, money in an open economy is not controlled autonomously by the central bank but is determined endogenously by the exchange rate regime (Annett, 1993: 25; Krugman and Obstfeld, 2003, chapters 16 and 17). From early political business cycle research it is well-known that especially in the case of small open economies there is little evidence of high and increasing inflation rates under left-wing governments and

low and diminishing inflation rates under right-wing regimes as a pattern of rational partisan cycles (e.g. Alesina and Roubini 1992: 680 and Annett 1993: 25 and 42). In the standard literature, the failure to establish partisan cycles is generally traced back to the fact that small open economies tend to have fixed exchange rates and, hence, the ability of these countries to exert an ideologically motivated impact on the inflation rate is limited.⁷ If the limited degree of monetary policy autonomy under fixed exchange rates is raised by choosing a flexible exchange rate regime, there is more scope for partisan-oriented monetary policies. Wage negotiating parties tend to anticipate and account for different preferences of political parties only if exchange rates are flexible. Only in this case, incumbent governments are able to manipulate the inflation rate by monetary and exchange rate policies. Hence, higher inflation rates under left-wing governments induced by a dynamic inconsistency problem can only arise, if exchange rates are flexible.⁸

A second argument underpins this view. Assume the existence of an international business cycle. In more open economies partisan considerations that arise at the domestic level are more likely to affect policymakers' incentives to engage in international cooperation. Left-wing governments cannot credibly commit themselves to international cooperation and prefer beggar-thy-neighbor policies so that the inflation bias of left-wing governments even increases in open economies. International cooperation by means of fixed exchange rate arrangements tends to eliminate the inflation bias via the same mechanism (Lohmann, 1993: 1374 ff.). The final argument in favor of our approach is that the hypothesis of a loss of monetary autonomy under fixed exchange rates rests on the assumption of capital which is perfectly mobile. International capital mobility has increased dramatically since the 1970s, the beginning of our estimation period.

Empirical studies of the rational partisan theory clearly show that - assuming a monetary model of the exchange rate - party-specific trajectories of money growth and inflation rates go along with proportional movements of the exchange rate. For instance, left-wing governments are more likely to experience inflation, capital flight, current account deficits and currency devaluation.⁹ Hence, we feel justified to equate a flexible exchange rate system with a regime of autonomous and discretionary monetary policy and a system of fixed exchange rates with a rule-based monetary policy regime. Accordingly, the

arguments that have been elaborated for the concepts ‘rule-based versus discretionary monetary policy’ are transferred to the discussion of ‘fixed versus flexible exchange rate systems’ and can be tested empirically in a straightforward fashion.

4. Empirical analysis

4.1 Hypotheses

In the following we investigate, whether a significant positive correlation between exchange rate flexibility and market liberalization exists if the usual impact factors like the macroeconomic environment or political and institutional impediments to economic reforms are controlled for. Hence, we test for a significant coefficient of our measure of exchange rate flexibility in regressions using reform indices as the dependent variable and check for robustness of the results. In accordance with section 2, the following hypotheses are expected to hold:

- (1) If the view of excessive reforms under monetary policy autonomy which also implies that exchange rate rules and reforms are substitutes is correct, the degree of reforms will be higher under more flexible exchange rates, net of other factors.
- (2) However, if the view of exchange rate fixing as a structural whip and, hence, of complementarity between exchange rate rules and reforms is valid, one should expect the contrary, namely a negative correlation of exchange rate flexibility with the degree of reforms, net of other factors.
- (3) If third factors like the initial need for reforms, the so-called problem pressure, dominate the relationship, the exchange rate regime should turn out to be less significant.

Note that (1) to (3) should be valid not only for labor market reforms but also for complementary structural reforms in the goods and the financial markets.

4.2 Data and Definitions

We estimate and test the conjectured correlation of the exchange rate regime with the degree of market-oriented reforms based on a panel of 123 countries and two different

subsets of countries. The first subsample covers 105 countries with more than one million inhabitants. Excluding the 18 smallest states might help to remove the noise due to their specific economic and political structure. The second subset comprises 23 OECD economies, which represent a relatively homogenous group of countries.¹⁰ Our samples cover the period 1970 to 2000 in order to exploit all available data information. In line with our theoretical model, our empirical analysis focuses on the pattern of the correlation between the exchange rate regime and the contemporaneous degree of market-oriented reforms.¹¹

As dependent variable we use the extent of economic liberalization as measured by the Economic Freedom of the World (EFW) index: the index of overall liberalization and the sub-indices for *international trade, money and banking system, government and labor market, credit and business regulation* (Gwartney and Lawson 2003, Gwartney et al. 2006). Additionally, we consider the regulation of labor markets, which is itself a sub-index of the more comprehensive regulation measure. These indices range from one to ten, with a high value corresponding to a high level of economic freedom. We use data from the 2006 report, which is the most recent data vintage. The EFW index and the sub-indices are available in five-year intervals over the period 1970-2000.¹²

Among the explaining variables, our discussion focuses on the measure of exchange rate flexibility. In section 2, we argued that we prefer to measure the loss of monetary autonomy by the participation in fixed exchange rate agreements. This approach allows exploiting a wider cross-country / time-series dataset of structural reforms than would otherwise be possible. As a result, we feel justified to apply an econometric analysis of reform determinants which includes the degree of exchange rate flexibility as one of the explanatory variables.

However, one obvious drawback of our analysis is that it does not cover some of the idiosyncratic characteristics of currency unions compared with other fixed exchange-rate arrangements. Obviously, the argument that a credible exchange rate rule fosters liberalization, as emphasized in section 2, is even more compelling in the case of a currency union like EMU than in the case of a reversible fixed exchange-rate regime. We therefore use the Reinhart and Rogoff (2002) index of *de facto* exchange rate arrangements to account for the wide spectrum of exchange rate regimes.¹³ Reinhart and Rogoff (2002)

distinguish between exchange rate pegs (1), limited flexibility (2), managed floating (3), and freely floating (4).¹⁴ Thus, the higher the index value the higher is the *de facto* flexibility of exchange rates. For our purpose and due to the time structure of the EFW data, we average the Reinhart and Rogoff (2002) index values over five-year intervals.

- Table 2 about here -

Table 2 contains some summary statistics on the indicators of economic reform and the exchange rate regime as our key variables. It quantifies the share of reform and no-reform events across our different country samples. Equivalently, the table also indicates the percentage shares of shifts and persistence in exchange rate policy, respectively. The numbers show a fairly high amount of changes in either direction, whereby in most cases increases clearly dominate decreases in economic freedom. Exchange rate policy appears much more persistent, on the other hand. In about half the cases, countries keep their exchange rate regimes over a horizon of five years. In cases, where the exchange rate regime was changed, the numbers indicate a slight dominance of more flexibility over stronger exchange-rate pegs.

The additional control variables that we consider include inflation, economic growth, openness and the log of real per-capita GDP as proxies of the pressure to reform. Data are available from the World Development Indicators database (World Bank, 2002). Economic openness is defined as exports plus imports relative to GDP. To account for the potential endogeneity and in accordance with other contributions (Herz and Vogel, 2005; Pitlik 2004; Pitlik and Wirth, 2003; Lora 2000), we take these variables in first lags. Since we introduce the four proxies of reform pressure in lagged form, we are controlling for endogeneity, but at the same time we are also testing for Granger-causality. Hence, the results gained in the empirical analysis can also be read in this framework.

A final set of controls accounts for political and institutional barriers to policy reforms. Here we include POLCON5 and the number of government changes. POLCON5 (Henisz, 2000, 2002) measures the effective political restrictions on executive behavior. It accounts for the veto powers of the executive, two legislative chambers, the sub national entities and an independent judiciary. The index ranges from zero to one, with higher values indicating stronger political constraints on the government. Given the time struc-

ture of our dependent variable, we take average values of POLCON5 for the respective five-year interval. GOVCHANGES counts the number of government changes that entail a significant programmatic reorientation. The data are taken from Beck et al. (2001). The credibility and reliability of economic policy is assumed to decrease with the number of government changes. Frequent changes shorten the administration's time horizon and lead to a stronger discounting of positive future payoffs from reforms.¹⁵

4.3 Empirical model and results

4.3.1 Empirical model

To investigate the empirical relationship between reforms on the one side and the exchange rate regime and political as well as institutional characteristics on the other side, we estimate the equation

$$\Delta EFW_{it} = \alpha_0 + \alpha_1 EFW_{i,t-1} + \alpha_2 EXR_{it} + \alpha_3' X_{i,t-1} + \alpha_4' Y_{it} + \lambda_t + \varepsilon_{it},$$

where ΔEFW represents the change in economic freedom as our index of reforms. EXR is our measure for exchange rate flexibility, X is the vector of macroeconomic variables (growth, inflation, openness, per-capita GDP), Y captures the political and institutional determinants of reforms, and i is a country index. Lagged EFW accounts for the prevailing status of economic freedom or put differently the prevailing reform gap. Most importantly, we expect $\alpha_2 > 0$ to hold, if a high degree of exchange rate flexibility leads to more reforms (see section 2). However, if the hypothesis of more reforms under a regime of fixed exchange rates is valid, one should expect the contrary, namely $\alpha_2 < 0$. To account for unobserved heterogeneity across time, we add time-specific effects (λ_t).

Although individual specific effects are a key advantage of panel data analysis, we do not include them to capture the impact of unobserved variables that may otherwise bias the other coefficient estimates. We exclude individual country dummies, because the short time-series dimension of the panel (six observations at maximum) would render any country-dummy estimate very imprecise and consume many degrees of freedom. Furthermore, country-specific effects drop out under the GMM first-difference estimator. Instead, we argue that the distinction and separate estimation of our world sample, a

large-country and an OECD country sample and the introduction of structural and macroeconomic variables in the regression equation should capture some structural country heterogeneity.

The lagged dependent variable figures among the regressors in our empirical model. This leads OLS estimates of the coefficients to be biased (Baltagi, 2005; Hsiao, 2003). We therefore estimate our dynamic equation with the GMM difference estimator of Arellano and Bond (1991) and report the one-step estimates in Tables 3 to 8 (1-step GMM DIFF). The GMM estimator uses lagged values of the explanatory variables as instruments and thus accounts for potential endogeneity of the regressors. Thus the GMM estimation includes, e.g., lagged values of our measure of exchange rate flexibility as instrument for the contemporaneous realization of exchange rate flexibility to achieve consistent estimates even if the variable is endogenous or not strictly exogenous, at least. It hence mitigates the issue of reverse causality among reforms and exchange rate flexibility appearing in our context.¹⁶

To check the robustness of the results we also apply the GMM system estimator of Arellano and Bover (1995) and Blundell and Bond (1998). GMM system uses the regression equation in levels and in first differences and thus exploits the information in both levels and differences of the variables. It uses past lagged differences and levels of the regressors as instruments, respectively. The Sargan test indicates the validity of the instrument choice. GMM system yields substantial efficiency gains over the GMM difference estimator in panels with a short time dimension and for α_1 close to zero (see Baltagi, 2005). The tables 3 to 8 report the two-step estimates of GMM system with the Windmeijer (2000) extension that corrects for the downward bias in two-step standard errors.

Arellano and Bond (1991) found the one-step Sargan test to over-reject in the presence of heteroskedasticity. Inference on the model specification should thus prefer the two-step Sargan results (2-step GMM SYS). AR(1) and AR(2) are the empirical realizations of the test statistics of first and second order residual autocorrelation. Significance means that the null hypothesis of no autocorrelation is rejected – as is often the case for AR(1) but never for AR(2).¹⁷

4.3.2 Results

This section presents the regression results for our broad country sample and for the sample of high-income OECD economies, respectively. We report the regression results for overall liberalization, and liberalization in the sub-areas international trade, money and banking system, government, market regulation, and labor market regulation as dependent variables. Tables 3 to 8 display the GMM estimates for each of the indicators of economic liberalization. A robust result, which is strongly significant in the large majority of the regressions, is the negative impact of the initial level of economic freedom on the extent of subsequent market-oriented reforms. The higher the initial level of economic freedom, the lower is the scope and the need for further liberalization. The negative coefficient values also imply a conditional convergence in economic policy (Duval and Elmeskov, 2005: 23 ff.). Labor market regulation is a notable exception.

The GMM-DIFF results in the Tables are 1-step whereas those for GMM-SYS are 2-step. This fits with the observation that the Sargan results are worse for GMM-DIFF. According to our remarks in the last paragraph of section 4.3.1, this means that the 1-step Sargan results should not be dramatized. In the case of 1-step GMM-DIFF we used 1-step because the standard errors are not biased as is the case with AR(2). However, in the case of GMM-SYS there is a (Windmeijer) correction of the 2-step bias available which we applied. Hence, we tabulate 2-step GMM-SYS in our tables.¹⁸ AR(1) and AR(2) are untouched by these considerations and only the absence of AR(2) is important. The main interest of our paper lies in the correlation of the exchange rate system with market-oriented reforms, however.

- Table 3 about here -

Here, we find a robust negative impact of higher exchange rate flexibility on overall liberalization, as measured by the chain-linked EFW index, in our world-wide sample. This result indicates complementarity between exchange rate rules and reforms. In the OECD sub-sample this relationship loses the robust significance found in the larger samples, however.

For *trade liberalization* we obtain a robust and negatively significant correlation between exchange rate flexibility and economic reform for both the world-wide and the

OECD country sample. The result is compatible with the idea that the exchange-rate peg can be a complementary measure to facilitate cross-boarder exchanges and to reap the gains from international trade. Furthermore, the GMM system estimates in Table 5 provide some evidence for a complementarity between exchange rate commitment and *money and banking sector* reform at the world level.

- Tables 4 and 5 about here -

The exchange-rate variable is across the board insignificant in our regressions for *government-sector reform, labor market, credit and business regulation*, and its sub-index *labor market reform*. Hence, the estimates provide no empirical evidence for any relationship between the adoption of an exchange rate rule and the extent of structural reforms in these important fields of economic policy. This is compatible with our view that the up-front costs of reforms in the areas of product and labor markets are higher than in other areas and that insider-outsider forces are at work in these areas which might hamper significant reform progress (see section 2). Our results again confirm that it is easier to overcome reform resistance in areas which cannot be controlled by labor market insiders like, for instance liberalization in the areas of trade and money and banking. None of our estimates provides evidence for hypothesis (1) and the idea that exchange rate rules and structural reforms might be substitutes.

- Tables 6 and 7 about here -

How can we reconcile the negative coefficient values for the overall index on the one hand, and the insignificance of the exchange rate indicator for the sub-indices *government size* and *market (i.e., labor, credit and business) regulation* on the other hand? One candidate explanation is that the observed complementarity between fixed exchange rates and market-oriented reforms is entirely driven by the positive correlation between the exchange rate commitment and the liberalization of trade and to a certain extent – at the world level - also by the complementarity between the exchange rate commitment and *money and banking sector* reform. The positive correlation between the exchange rate commitment and trade liberalization coincides with the view of the exchange rate peg as an instrument to facilitate international trade and to reap the full benefits of economic integration. Indeed, the complementarity between trade and exchange rate com-

mitment was a prominent argument in the context and in favor of European Monetary Union (Emerson et al. 1992). The complementarity between the exchange rate commitment and *money and banking sector* reform can be related to the positive impact of the exchange rate commitment on price stability and the credibility of monetary policy. Low inflation is itself an important component of the reform sub-indicator. A sound banking system should strengthen the credibility and lower the risk of exchange rate crises. Given that the later argument applies especially for developing countries, it is not particularly surprising to see the nexus between exchange rate regime and financial system to vanish for the group of high-income OECD economies.

A second point to keep in mind is that, contrary to the overall indicator, the indices for *trade, money and banking, government size, market regulation* and *labor market reform* are not chain-linked. Missing data in the construction of these indicators may therefore distort their values. The latter will then distort the results and diminish the accuracy with which the extent of reforms is measured.¹⁹

Taken together, the finding of no positive correlation between exchange rate flexibility and structural reforms contradicts the hypothesis that the exchange rate commitment and reforms are substitutes. Instead, the robust negative correlation between exchange rate flexibility and *trade* liberalization as well as the negative relationship between exchange rate flexibility and both overall reform and *money and banking sector* reform at the world level point to a complementarity of the exchange rate commitment and structural reforms in several areas of economic policy. The exchange rate indicator is insignificant for *government sector* reform, *market regulation*, and *labor market regulation*, indicating that the exchange rate regime plays no particular role in these areas of structural reform. Note however that the non chain-linked nature of our sub-indicator data may bias our results in the direction of finding no significant relationship.

Concerning the other control variables, we find a significant negative impact of the initial level of economic freedom on subsequent reforms, except for labor market regulation and for banking and government sector reform in the OECD. For the world sample we furthermore find a positive impact of political constraints on overall reform and trade liberalization and a negative impact of government instability on overall liberalization, *government size* and *money and banking sector* reform. The macroeconomic con-

trol variables play only a limited role in our regressions. High inflation and economic growth both have a robust and positive impact on *money and banking sector* reform in the world sample, but not in the high-income OECD economies. Within the world sample a ten percentage-point higher inflation is associated with an additional improvement in the reform index of about 0.02-point. In contrast, economic growth does not seem to promote a further liberalization of international trade. The negative impact of initial per-capita income on overall liberalization and public sector reform as well as the positive impact on money and banking sector reform and the reduction of trade and market regulation in the world sample are not robust across the estimators. Also the positive impact of growth on overall reform and the negative impact of openness on *trade* liberalization are not robust. GMM in differences gives a negatively significant coefficient for openness on overall liberalization, a negatively significant coefficient for openness, inflation and initial income levels on *regulatory* reform, and a negative impact on openness on *money and banking sector* reform for OECD countries. The GMM system estimator does not confirm their significance however.

Since we control for the endogeneity of our four proxies of reform pressure by introducing them as lagged values we are also testing for Granger-causality. Inflation, economic growth and openness are not robustly significant in many of our specifications. Hence, they do not appear to Granger-cause economic freedom. The only notable exception is the robust positive impact of inflation and growth on *money and banking sector* reform at the world level. A detailed discussion of similar results in a different model context can be found in Herz and Vogel (2005) and Pitlik (2004).

In a companion paper (Belke, Herz and Vogel, 2006), we focus more specifically on labor market reforms and a limited sample of OECD countries. The structural reforms are again proxied by the Economic Freedom of the World index whereas the monetary policy constraint is measured by a monetary commitment index. In that paper, we also find no evidence for the Calmfors hypothesis, which claims a positive relationship between exchange rate flexibility and structural reforms. The result is entirely compatible with our findings in this section.

4.3.3 Robustness Checks

As already mentioned we have checked the robustness of our results by applying both the GMM difference and the GMM system estimator to our dynamic panel equation. The complementarity of exchange rate commitment and structural reforms for *overall* liberalization and *trade* liberalization is robust across both estimators, as is the insignificant exchange-rate coefficient in the regressions for *government-sector* and *market-regulation* and *labor-market* reform. The only differences appear for *overall* reform in the OECD. Again, none of the estimators suggests a positive relationship between exchange rate flexibility and structural reform.

A second robustness check relates to the heterogeneity in the world sample of 123 economies. The countries included in the sample differ a lot with respect to their economical, political and institutional conditions. The OECD economies present a much more homogenous sub-sample. To check the robustness of our broad-sample estimates we rerun the regressions for another data set where we excluded all countries with less than one million inhabitants. This way, we should reduce the noise introduced by very small and “atypical” political entities. We drop the 18 countries and end up with a sample of 105 economies. The estimates for the reduced sample are presented in columns 3 and 4 of tables 3 to 8. They are very similar to the full 123-country sample. Most importantly, they reach the same conclusions on the relationship between the exchange rate regime and structural reforms as the full world sample. There is one notable exception only. The negative relationship between exchange rate flexibility and banking sector reform turns insignificant once we remove the 18 smallest countries from our world-wide sample. Furthermore, the introduction of lagged per-capita income and economic openness in our regression already accounts for important sources of structural heterogeneity within our broad country sample and legitimates the use of the latter.

In its original formulation, the Calmfors hypothesis focuses on regulatory and especially on labor market reform. The results in table 8 do not support the conjectured relationship. Neither do they provide evidence for the TINA argument. Surprisingly, not only the exchange rate, but all other economic and institutional variables are insignificant. Labor market reform thus seems to follow a kind of random walk. One important variable, unemployment, has been neglected, however. The reason is little availability and

poor quality of unemployment data at the world level. For better comparability we have excluded unemployment from the regressors also in the OECD estimates of our baseline equation in tables 3 to 8. None the less, we have rerun the regressions for the OECD country sample including the initial rate of unemployment and its change, once at a time, among the regressors and using standardized unemployment rates from the OECD *Economic Outlook* (OECD 2006) database. The results are robust and suggestive. Unemployment has no significant effect on overall reform, trade liberalization, money and financial sector and government sector reform, but it affects market regulation. An *increase* in unemployment apparently weakens overall regulatory reform, without affecting the reform of labor markets.²⁰

5. Conclusions

In this paper, we have investigated the relationship between the exchange rate regime and the degree of structural reforms using panel data techniques. We looked at a broad sample of countries (the “world sample”) and a sample of OECD economies. As dependent variable we have used the degree of market-oriented reforms. As independent variables we have introduced an indicator of exchange rate flexibility and a number of control variables, such as economic performance, to account for reform pressures and for the institutional impediments to reform.

Our empirical results suggest a positive contemporaneous correlation between the adoption of an exchange rate rule and the degree of both overall structural reforms and trade liberalization, in particular. The finding applies to both the world and the OECD country sample. From this perspective, the exchange rate rule and structural reforms have been complements rather than alternative policy choices. The finding of a negative correlation between exchange rate flexibility and reforms in the monetary and banking sector is less robust. Finally, we do not find any significant coefficient for the government sector and market regulation. In this sense, our results are strikingly similar to the huge amount of non-results that Duval and Elmeskov (2005) obtain in their analysis of the impact of EMU on labor market reform. None of our estimates indicates a negative correlation between exchange rate rules and the amount of structural reforms, however.

Taken together, our results do not back the hypothesis that exchange rate rules and structural reforms might be substitutes. Some of our estimates are, in contrast, compatible with a complementary relationship between the exchange rate commitment and structural reforms. Limiting monetary autonomy via an exchange rate rule on average strengthens liberalization in certain fields. However, the positive correlation is not replicated for labor and product market reforms. It is especially in these areas, however, that we would expect the exchange rate commitment to induce the strongest pressure and the largest incentives for painful, but in the long run beneficial structural change.

Our analysis thus leaves us with two results. Firstly, it provides no evidence for monetary commitment and structural reforms being substitutes or alternative policy choices. Secondly, one should not exaggerate the complementarity of exchange rate rules and the degree of structural reforms in view of the large status-quo bias and the path-dependence of the political process. The results provide no empirical justification to favor monetary autonomy in open economies on the ground of its allegedly positive impact on structural reforms, however. In our view, this insight constitutes the most robust empirical result of the analysis.

Endnotes

¹ Van Poeck and Borghijs (2001) argue that the prospect of qualifying for EMU should provide as big an incentive for labor-market reform as EMU membership itself. They conclude that EMU countries did not reform more than other countries and, unlike elsewhere, their progress on reform seemed unrelated to the initial level of unemployment. For a period from the early nineties up to 1999, Bertola and Boeri (2001), they only focus cash transfers to people of working age (unemployment benefits) and on job protection. They arrive at exactly opposite conclusions: reforms accelerated more in the euro area than outside.

The IMF (2004) looks at the impact of a range of factors including macroeconomic conditions, political institutions, reform design and variables aimed to capture attitudes towards structural reform on different policy areas across OECD countries from the mid-1970s up to the late 1990s. It finds that EU membership leads to faster moves towards liberalization of product markets. However, it does not clarify whether this represents an effect of EMU and/or policies to prepare for EMU. See also Duval and Elmeskov (2005), p. 10.

² For a recent survey of the arguments and further specific references see Duval and Elmeskov (2005) and Hochreiter and Tavlas (2005).

³ See, Bean (1998), Calmfors (1998: 28); Duval and Elmeskov (2005: 5) and Saint-Paul and Bentolila (2000).

⁴ Consistent with the implications of the imperfect competition/bargaining model of Blanchard and Giavazzi (2003) the estimates by Nicoletti and Scarpetta (2005) suggest that restric-

tive regulations have curbed employment rates significantly in countries where no product market reforms were implemented. These effects appear to have been magnified by the interaction of such regulations with labour market settings that provide a strong bargaining power to insiders, suggesting that rent sharing tends to depress employment. The implication is that significant employment gains can be obtained by deregulating product markets in overly regulated countries. Moreover, these employment gains are likely to be higher in countries that have rigid labour markets.

- ⁵ A possible explanation is that, in the wake of liberalisation, employment is boosted both by the expansion of activity and entry and by a shrinking wage-productivity gap, as insiders lose their leverage on rents. When labour markets are more flexible, employment gains are smaller because they are obtained only through the first channel. This evidence is consistent with recent computable general equilibrium studies showing that the employment effects of deregulation are stronger in centralised bargaining settings than in decentralised ones.
- ⁶ Since we do not exclude complementarities among reforms *ex ante*, we see a clear need of controlling the starting institutional conditions in each country – the need for reforms.
- ⁷ See Alogoskoufis, Lockwood and Philippopoulos (1992: 1384) and Ellis and Thoma (1990: 17 and 24).
- ⁸ See Alesina and Roubini (1992: 673-674), Alogoskoufis and Philippopoulos (1992: 397), Alogoskoufis, Lockwood and Philippopoulos (1992: 1370-1371) and Annett (1993: 25 and 33).
- ⁹ See Simmons (1994: 59), Ellis and Thoma (1990) estimate rational partisan theory approaches for open economies. In their study, party-specific inflation rates lead to party specific differences in exchange rate movements.
- ¹⁰ The 23 OECD economies correspond to the category high-income industrialized countries in the World Development Indicators database (World Bank, 2002) and cover Australia, Canada, the former EU-15, Iceland, Japan, New Zealand, Norway, Switzerland and the United States.
- ¹¹ One might ask whether it makes sense to model the impact of exchange rate flexibility on reforms as a contemporaneous and not as a lagged one, for instance with an eye on the well-known political decision and implementation lags of reforms. If one interprets EXR flexibility as a imminent restriction or incentive to reform, the use of the contemporaneous realisation of exchange rate flexibility makes more sense than the use of a lag. A statistically significant impact of exchange rate policy which is lagged 5 to 10 years on contemporaneous reform effort is clearly less convincing. Only if we had annual time series of reform indicators, the exchange rate variability variable could be implemented with lags.
- ¹² We use the chain-weighted EFW index (Gwartney et al., 2003), which corrects for the limited availability of some components over time. This chain-linked index is only available for the summary indicator, however. For the sub areas *government size* and *market regulation* we have to rely on uncorrected data.
- ¹³ The *de facto* measure improves on the *de jure* classification of IMF (2003) since it takes into account that *de jure* exchange rate regimes are not necessarily applied in practice (see Hochreiter and Tavlas (2005)).
- ¹⁴ Reinhart and Rogoff (2002) include freely falling rates as an additional category. We add the cases of freely falling rates to the free-float category, however.
- ¹⁵ We have applied panel unit root test to the different samples and find see no strong indication for spurious correlations to drive our results. Furthermore, none of the tests indicates unit roots in first differences of any sample variable.

-
- ¹⁶ There is an additional argument speaking against reverse causality. In what way should a supranational variable like exchange rate flexibility be influenced by a national variable as the change in the EFW index at all? As far as at least two parties are necessary to agree upon a peg, this appears to be a good argument in favour of an at least partial exogeneity of exchange rate policy.
- ¹⁷ It is important to note that the absence of AR(2) is the necessary condition for unbiased and efficient estimation with GMM-DIFF and GMM-SYS, but not of AR(1). First order residual autocorrelation in the starting equation is no problem since both estimators work with first differences. Hence, the significance of AR(1) does not limit the validity of our results.
- ¹⁸ In the case of the 1-step estimators, heteroskedasticity tends to strengthen the bias towards the significance of the Sargan test. Hence, one could readily interpret our results as evidence of heteroskedasticity. However, both estimators (GMM-DIFF and GMM-SYS) use heteroskedasticity-robust standard errors. This should make the estimated coefficients quite robust.
- ¹⁹ For labor market regulation data availability is limited almost entirely to the OECD country sample. The world sample coverage thus converges towards the OECD country group in this case.
- ²⁰ The estimates are not reported here, but available upon request.

References

- Alesina, A. (1992). Political Models of Macroeconomic Policy and Fiscal Reform. Policy Research Working Papers, The World Bank, WPS 970.
- Alesina, A. and Rosenthal, H. (1989). Partisan Cycles in Congressional Elections and the Macroeconomy. *American Political Science Review* 83: 373-398.
- Alesina, A. and Roubini, N. (1992). Political Cycles in OECD Economies. *Review of Economic Studies* 59: 663-688.
- Alogoskoufis, G.S. (1994). On Inflation, Unemployment and the Optimal Exchange Rate Regime. In F. van der Ploeg (Ed.), *The Handbook of International Macroeconomics*, 192-223. Cambridge, Oxford: Blackwell.
- Alogoskoufis, G.S. and Philippopoulos, A. (1992). Inflationary Expectations, Electoral Uncertainty and the Exchange Rate Regime - Greece 1958-1989. *European Journal of Political Economy* 8(3): 375-399.
- Alogoskoufis, G.S., Lockwood, B., and Philippopoulos, A. (1992). Wage Inflation, Electoral Uncertainty and the Exchange Rate Regime – Theory and UK Evidence. *Economic Journal* 102: 1370-1394.
- Annett, A.M. (1993). Elections and Macroeconomic Outcomes in Ireland – 1948-1991. *The Economic and Social Review* 25: 21-47.
- Arellano, M. and Bond, S. (1991). Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations. *Review of Economic Studies* 58: 277-297.
- Arellano, M. and Bover, O. (1995). Another Look at the Instrumental Variables Estimation of Error-Component Models. *Journal of Econometrics* 68: 29-51.
- Baltagi, B. (2005). *Econometric Analysis of Panel Data*, Chichester: John Wiley and sons.
- Barro, R.J. and Gordon, D.B. (1983). Rules, Discretion and Reputation in a Model of Monetary Policy. *Journal of Monetary Economics* 12(1): 101-121.
- Barro, R.J. and Gordon, D.B. (1983a). A Positive Theory of Monetary Policy in a Natural Rate Model. *Journal of Political Economy* 91: 589-610.
- Bean, C. (1998). The Interaction of Aggregate-demand Policies and Labor-market Reform. *Swedish Economic Policy Review* 5(2): 353-382.
- Beck, T., Clarke, G., Groff, A., Keefer, P. and Walsh, P. (2001). New Tools in Comparative Political Economy: The Database of Political Institutions. *World Bank Economic Review* 15(1): 165-176.
- Beetsma, R. and Bovenberg, L. (1998). The Optimality of a Monetary Union without a Fiscal Union. *CEPR Discussion Paper* 1975, September. London.
- Belke, A. and Goecke, M. (2005): Real Options Effects on Employment: Does Exchange Rate Uncertainty Matter for Aggregation?. *German Economic Review* 6(2): 185-203.

- Belke, A. and Gros, D. (1999). Estimating the Costs and Benefits of EMU: The Impact of External Shocks on Labor Markets. *Weltwirtschaftliches Archiv* 135: 1-48.
- Belke, A. and Gros, D. (2001). Real Impacts of Intra-European Exchange Rate Variability: A Case for EMU?. *Open Economies Review* 12(3): 231-264
- Belke, A. and Gros, D. (2002). Monetary Integration in the Southern Cone. *North American Journal of Economics and Finance* 13: 323-349.
- Belke, A. and Gros, D. (2002a). Designing EU-US Monetary Relations: The Impact of Exchange Rate Variability on Labor Markets on Both Sides of the Atlantic. *The World Economy* (25/6): 789-813.
- Belke, A. and Kaas, L. (2004). Exchange Rate Movements and Employment Growth: An OCA Assessment of the CEE Economies. *Empirica* 31(2-3): 247-280.
- Belke, A., Herz, B. and Vogel, L. (2006). Reforms, Exchange Rates and Monetary Commitment: A Panel Analysis for OECD Countries. Paper presented at the 10th International Conference on Macroeconomic Analysis and International Finance, Session "Foreign Exchange Markets", May 25 to 27, 2006 in Rethymno/Greece.
- Berthold, N. and Fehn, R. (2006). Unemployment in Germany - Reasons and Remedies, in: Werding, M. (ed.), Unemployment in Europe, CESifo Seminar Series, MIT Press.
- Bertola, G. and Boeri, T. (2001). *EMU Labor Markets Two Years On: Microeconomic Tensions and Institutional Evolution*. Paper presented at the Workshop "The Functioning of EMU: Challenges of the Early Years" organized by the Directorate General for Economic and Financial Affairs, European Commission, Brussels, 21-22 March 2001, April 27th 2001 version.
- Blanchard, O. (2006). European Unemployment – The Evolution of Facts and Ideas. *Economic Policy* 45: 5-47.
- Blanchard, O. and Giavazzi, F. (2003). Macroeconomic Effects of Regulations and Deregulation in Goods and Labour Markets. *Quarterly Journal of Economics* 118(3): 879-907.
- Blundell, R. and Bond, S. (1999). Initial Conditions and Moment Restrictions in Dynamic Panel Data Models. *Journal of Econometrics* 87: 115-143.
- Buscher, H., Dreger, C., Ramos, R. and Surinach, J. (2005). The Impact of Institutions on the Employment Performance in European Labour Markets. *IZA Discussion Paper* 1732, Institute for the Study of Labor, Bonn.
- Calmfors, L. (1997). Unemployment, Labor-Market Reform and EMU. IIES Seminar Paper 639. Institute for International Economic Studies, Stockholm.
- Calmfors, L. (1998). Macroeconomic Policy, Wage Setting and Employment - What Difference Does the EMU Make?. *Oxford Economic Policy Review* 14: 125-151.
- Calmfors, L. (2001). Unemployment, Labor-Market Reform and Monetary Union. *Journal of Labor Economics* 19(2): 265-289.
- Calmfors, L. and Holmlund, B. (2000). Unemployment and Economic Growth: a Partial Survey. *Swedish Economic Review* 7: 107-153.

- Castrén, O., Takalo, T. and Wood, G. (2004). Labor Market Reform and the Sustainability of Exchange Rate Pegs. *ECB Working Paper Series* No. 406, November. European Central Bank, Frankfurt.
- Dornbusch, R. and Favero, C.A. (1998). A Red Letter Day?. *CEPR Discussion Paper* 1804, February. London.
- Duval, R. and Elmeskov, J. (2005). The Effects of EMU on Structural Reforms in Labor and Product Markets. *OECD Economics Department Working Papers* 438.
- Ebell, M. and Haefke, C. (2003). Product Market Deregulation and Labour Market Outcomes. *Swiss National Bank Working Papers* 02.08.
- Ellis, C.J. and Thoma, M.A. (1990). The Implications for an Open Economy of Partisan Political Business Cycles: Theory and Evidence. University of Oregon. *Department of Economics Working Paper* 90/2.
- Emerson, M., Gros, D., Italianer, A., Pisani-Ferry, J. and Reichenbach, H.: One Market, One Money. An Evaluation of the Potential Benefits and Costs of Forming an Economic and Monetary Union, Oxford University Press, 1992.
- Freytag, A. (2005). The Credibility of Monetary Reform: New Evidence. *Public Choice* 124(3): 391-409.
- Gruener, H.S. and Hefeker, C. (1996). Militant Labor and Inflation Aversion - The Impact of EMU on Labor Union Interaction. University Bonn, *SFB 303 Discussion Paper A-539*.
- Gwartney, J. and Lawson, R. (2003). The Concept and Measurement of Economic Freedom. *European Journal of Political Economy* 19(3): 405-430.
- Gwartney, J., Lawson, R., Park, W. and Skipton, C. (2006). Economic Freedom of the World: 2003 Annual Report. Fraser Institute, Vancouver.
- Haffner, R.C.G., Nickell, S., Nicoletti, G., Scarpetta, S., Zoega, G. (2000). *European Integration, Liberalisation and Labor Market Performance*: Report for the Fondazione Rodolfo DeBenedetti.
- Henisz, W. (2000). The Institutional Environment for Economic Growth. *Economics and Politics* 12(1): 1-31.
- Henisz, W. (2002). The Institutional Environment for Infrastructure Investment. *Industrial and Corporate Change* 11(2): 355-389.
- Herz, B. and Vogel, L. (2005). Determinants of Market-Oriented Policy Reforms: An Empirical Analysis. Mimeo.
- Hochreiter, E. and Tavlas, G.S. (2005). The Two Roads to the Euro: The Monetary Experiences of Austria and Greece. In S. Schadler (Ed.), *Euro Adoption in Central and Eastern Europe – Opportunities and Challenges*. Washington/DC: International Monetary Fund.
- Hsiao, C. (2003). *Analysis of Panel Data*. Cambridge: Cambridge University Press.
- IMF (2003). International Financial Statistics. CD-ROM. International Monetary Fund, Washington DC.

- IMF (2004). *Fostering Structural Reforms in Industrial Countries*. Chapter III in World Economic Outlook. Advancing Structural Reforms, International Monetary Fund, Washington D.C.
- Jimeno, J. (2005), Comments on Duval, R., Elmeskov, J. “*The Effects of EMU on Structural Reforms in Labor and Product Markets*,” Paper prepared for the Conference on “What Effects is EMU Having on the Euro Area and its Member Countries?” organised by the European Central Bank in Frankfurt. June.
- Katzenstein, P. (1985). *Small States in World Markets*. Ithaca: Cornell University Press.
- Krugman, P. and Obstfeld, M. (2003). *International Economics - Theory and Policy*, Boston, Mass.: Addison Wesley.
- Koeniger, W. and A. Vindigni (2003). Employment Protection and Product Market Regulation, *WZB Economics Seminar Series*, Wissenschaftszentrum Berlin.
- Kugler, A. and Pica, G. (2004). Effects of Employment Protection and Product Market Regulation on the Italian Labor Market. Paper presented at the CEPR/ECB Workshop, June.
- Kydland, F.E. and Prescott, E.C. (1977). Rules Rather than Discretion: The Inconsistency of Optimal Plans. *Journal of Political Economy* 85: 473-491.
- Lindbeck, A., and Snower, D. (1997). Centralized Bargaining, Multi-Tasking and Work Incentives. *CEPR Discussion Paper* 1563, Center for Economic Policy Research, London.
- Lohmann, S. (1993). Electoral Cycles and International Policy Coordination. *European Economic Review* 37(7): 1373-1391.
- Lora, E. (2000). What Makes Reforms Likely? Timing and Sequencing of Structural Reforms in Latin America. *Inter-American Development Bank Working Paper* 424. Washington.
- Méltitz, J. (1997). The Evidence about the Costs and Benefits of EMU. *Swedish Economic Policy Review* 4(2): 191-234.
- Nicoletti, G. and Scarpetta, S. (2005). Product Market Reforms and Employment in OECD Countries. *OECD Economics Department Working Paper* 472, Paris.
- Nicoletti G., Golub, S., Hajkova, D., Mirza, D. and Yoo, K.-Y. (2003). Policies and International Integration: Influences on Trade and Foreign Direct Investment. *OECD Economics Department Working Papers* 359.
- Nickell, S. (2005). Comments on Duval, R., Elmeskov, J. “The Effects of EMU on Structural Reforms in Labor and Product Markets,”. Mimeo. Paper prepared for the Conference on “What Effects is EMU Having on the Euro Area and its Member Countries?” organised by the European Central Bank in Frankfurt. June.
- OECD (2005). *Economic Policy Reforms. Going for Growth*. Paris: OECD.
- OECD (2006). *Economic Outlook 79 Database*. Paris: OECD.
- Persson, T. and Tabellini, G. (1993). Designing Institutions for Monetary Stability. *Carnegie-Rochester Conference Series on Public Policy* 39: 53-84.

- Pitlik, H. and Wirth, S. (2003). Do Crises Promote the Extent of Economic Liberalization?. *European Journal of Political Economy* 19(3): 565-581.
- Pitlik, H. (2004). Are Less Constrained Governments Really More Successful in Executing Market-Oriented Policy Changes?. Diskussionsbeiträge aus dem Institut für Volkswirtschaftslehre der Universität Hohenheim 255/2005. University Hohenheim, Stuttgart.
- Reinhart, C.M. and Rogoff, K.S. (2002). The Modern History of Exchange Rate Regime Arrangements: A Reinterpretation. *NBER Working Paper* 8963, National Bureau of Economic Research. Cambridge, Mass.
- Rodrik, D. (1996). Understanding Economic Policy Reform. *Journal of Economic Literature* 34(1): 9-41.
- Rodrik, D. (1998). Why Do More Open Economies Have Bigger Governments? *Journal of Political Economy*, 106(5): 997-1032.
- Saint-Paul, G. and Bentolila, S. (2000). Will EMU Increase Eurosclerosis?, *International Macroeconomics and Labor Economics, CEPR Discussion Paper* 2423, April, London.
- Sibert, A.C. and Sutherland, A. (1997). Monetary Regimes and Labor Market Reform. *CEPR Discussion Paper* 1731, November. London.
- Simmons, B.A. (1994). *Who Adjusts? - Domestic Sources of Foreign Economic Policy During the Interwar Years*. Princeton: Princeton University Press.
- Svensson, L. (1997). Optimal Inflation Targets, "Conservative" Central Banks, and Linear Inflation Contracts. *American Economic Review* 87: 98-114.
- van Poeck, A., Borghijs, A. (2001). *EMU and Labor Market Reform: Needs, Incentives and Realisations*. Oxford: Blackwell Publishers.
- Walsh, C. (1995). Optimal Contracts for Independent Central Bankers. *American Economic Review* 85: 150-167.
- Windmeijer, F. (2000). A Finite Sample Correction for the Variance of Linear Two-Step GMM Estimators. *IFS Working Paper* W00/ 19.
- World Bank (2002). *World Development Indicators*. Washington, DC: World Bank Publications.

Data and Variables

Variable	Source
Economic freedom - Summary indicator - Money and banking system - Government size - Regulation	Gwartney et al. (2003)
Exchange rate regime	Reinhart and Rogoff (2002)
Monetary commitment	Freytag (2005)
Inflation	OECD (2002), World Bank (2002)
Economic growth	OECD (2002), World Bank (2002)
Economic openness (trade/ GDP)	OECD (2002), World Bank (2002)
Political constraints (POLCON5)	Henisz (2000, 2002)
Number of government changes (GOV-CHANGES)	Beck et al. (2001)

Tables

Table 1. Economic openness and exchange rate regimes 1970-2000

Degree of openness (Trade/ GDP)	Average	Median	Observations
< 0.25	2.69	3.00	57
0.25-0.75	2.30	2.00	446
0.75-1.25	1.84	2.00	142
> 1.25	1.50	1.00	43

Sources: The data on exchange rate flexibility are taken from Reinhart and Rogoff (2002). We measure economic openness as the sum of exports plus imports relative to GDP). The data are extracted from the World Development Indicators database (World Bank 2002).

Table 2. Summary statistics on economic reforms and exchange rate policy 1970-2000

Sample	Indicator	Change of reform and exchange rate indicator		
		= 0	> 0	< 0
All 123 countries	Overall reform index	0.00	0.68	0.32
	Government sector reform	0.00	0.52	0.48
	Monetary sector reform	0.01	0.55	0.44
	Trade policy reform	0.01	0.64	0.35
	Regulatory reform	0.03	0.56	0.41
	Labour market reform	0.08	0.44	0.48
	Exchange rate regime	0.53	0.27	0.20
105 countries (more than 1 mio. inhabitants)	Overall reform index	0.00	0.67	0.33
	Government sector reform	0.00	0.53	0.47
	Monetary sector reform	0.01	0.56	0.43
	Trade policy reform	0.01	0.64	0.36
	Regulatory reform	0.02	0.56	0.41
	Labour market reform	0.08	0.44	0.48
	Exchange rate regime	0.51	0.28	0.21
23 OECD countries	Overall reform index	0.00	0.75	0.25
	Government sector reform	0.00	0.45	0.55
	Monetary sector reform	0.00	0.59	0.41
	Trade policy reform	0.00	0.69	0.31
	Regulatory reform	0.02	0.63	0.35
	Labour market reform	0.10	0.42	0.48
	Exchange rate regime	0.55	0.26	0.20

Table 3. Panel estimates for overall liberalization (t-values in parentheses, significance levels: 10% *, 5% **, 1% ***)

	World sample		Population > 1.000.000		OECD	
	GMM-DIFF	GMM-SYS	GMM-DIFF	GMM-SYS	GMM-DIFF	GMM-SYS
EXR flexibility	-0.32** (-2.66)	-0.18** (-2.13)	-0.28** (-2.40)	-0.17** (-1.98)	-0.17* (-1.93)	0.02 (0.54)
EFW (t-1)	-0.47*** (-4.18)	-0.22** (-2.33)	-0.48*** (-4.27)	-0.22** (-2.20)	-0.46*** (-3.34)	-0.42** (-2.54)
Inflation (t-1)	0.04 (1.17)	0.06 (1.20)	0.04 (1.18)	0.06 (1.35)	0.53 (0.69)	0.06 (0.07)
Growth (t-1)	0.99 (0.88)	0.18 (0.15)	1.54 (1.27)	0.46 (0.34)	1.58 (0.39)	-2.60 (-0.55)
Openness (t-1)	0.73* (1.78)	-0.17 (-0.89)	0.75* (1.81)	-0.13 (-0.46)	-1.90*** (-2.79)	0.09 (0.79)
LnRGDPpc (t-1)	-0.62*** (-2.71)	0.08 (1.13)	-0.74*** (-2.99)	0.09 (1.12)	-0.98 (-1.56)	-0.01 (-0.03)
POLCONV	0.79*** (3.41)	0.72*** (3.42)	0.83*** (3.42)	0.72*** (2.94)	0.41 (0.64)	1.26** (2.36)
GOVCHANGES	-0.16*** (-4.08)	-0.13*** (-2.94)	-0.18*** (-4.83)	-0.15*** (-3.71)	-0.11 (-1.55)	-0.04 (-0.65)
Constant	0.04 (0.48)	0.90* (1.90)	0.04 (0.40)	0.85* (1.73)	0.08 (0.96)	1.97 (0.80)
Time effects	28.2***	17.4***	32.7***	21.3***	30.3***	17.6***
AR (1)	-3.46***	-4.27***	-3.21***	-4.01***	-3.31***	-2.87***
AR (2)	-1.29	-0.76	-1.56	-1.04	-0.94	-0.95
Sargan test (p-value)	0.02**	0.15	0.02**	0.13	0.02**	0.72
Observations	326	420	304	392	89	112

Table 4. Panel estimates for trade liberalization (t-values in parentheses, significance levels: 10% *, 5% **, 1% ***)

	World sample		Population > 1.000.000		OECD	
	GMM-DIFF	GMM-SYS	GMM-DIFF	GMM-SYS	GMM-DIFF	GMM-SYS
EXR flexibility	-0.42** (-2.35)	-0.34*** (-3.15)	-0.43** (-2.36)	-0.40*** (-3.58)	-0.32** (-2.15)	-0.10* (-1.86)
T (t-1)	-0.60*** (-6.60)	-0.58*** (-6.82)	-0.59*** (-6.05)	-0.55*** (-6.31)	-0.67*** (-4.07)	-0.37* (-1.80)
Inflation (t-1)	-0.02 (-0.49)	-0.05 (-1.05)	-0.02 (-0.49)	-0.05 (-1.16)	-1.36 (-1.39)	-1.23 (-1.15)
Growth (t-1)	-3.60 (-1.54)	-4.30** (-2.08)	-4.45* (-1.77)	-5.11** (-2.25)	1.65 (0.31)	-6.77 (-1.01)
Openness (t-1)	-1.78*** (-2.77)	-0.13 (-0.41)	-2.08*** (-3.05)	-0.18 (-0.43)	-1.48 (-1.44)	0.22 (1.03)
LnRGDPpc (t-1)	0.11 (0.28)	0.24** (2.18)	0.28 (0.64)	0.29*** (2.58)	-1.28 (-1.06)	-0.34 (-0.65)
POLCONV	0.83** (2.21)	1.01*** (3.48)	0.89** (2.20)	0.77*** (2.68)	1.85 (1.18)	1.28 (1.07)
GOVCHANGES	-0.10 (-1.23)	-0.03 (-0.39)	-0.12 (-1.45)	-0.06 (-0.80)	-0.11* (-1.83)	-0.03 (-0.64)
Constant	-0.02 (-0.18)	2.17*** (2.74)	-0.05 (0.36)	1.91** (2.30)	0.11 (0.63)	5.85 (1.12)
Time effects	20.6***	22.2***	18.7***	22.3***	9.42*	24.8***
AR (1)	-3.77***	-3.60***	-3.68***	-3.55***	-2.18**	-2.45**
AR (2)	0.70	0.19	0.54	0.15	-0.89	-0.50
Sargan test (p-value)	0.01***	0.45	0.01***	0.35	0.14	0.96
Observations	334	426	311	397	89	112

Table 5. Panel estimates for money and banking sector reform (t-values in parentheses, significance levels: 10% *, 5% **, 1% ***)

	World sample		Population > 1.000.000		OECD	
	GMM-DIFF	GMM-SYS	GMM-DIFF	GMM-SYS	GMM-DIFF	GMM-SYS
EXR flexibility	-0.46* (-1.79)	-0.25* (-1.67)	-0.26 (-1.09)	-0.14 (-0.94)	-0.30 (-1.01)	-0.25 (-1.53)
M (t-1)	-0.26*** (-2.61)	-0.20*** (-2.70)	-0.36*** (-3.61)	-0.19*** (-2.49)	-0.20 (-1.41)	-0.01 (-0.04)
Inflation (t-1)	0.14*** (2.62)	0.15*** (3.41)	0.15*** (2.61)	0.16*** (2.82)	3.35 (1.02)	10.8 (1.28)
Growth (t-1)	15.1*** (4.64)	9.91*** (3.92)	15.9*** (4.60)	9.77*** (3.25)	-0.27 (-0.02)	11.0 (0.88)
Openness (t-1)	2.75** (2.49)	0.14 (0.46)	3.69*** (2.88)	0.37 (0.78)	-4.02* (-1.74)	-0.47 (-1.47)
LnRGDPpc (t-1)	-2.76*** (-4.64)	-0.12 (-0.78)	-2.88*** (-4.18)	-0.11 (-0.64)	1.68 (0.91)	-1.24 (-1.17)
POLCONV	1.21 (1.61)	1.56*** (3.12)	1.19 (1.61)	1.37*** (2.81)	0.41 (0.23)	11.6 (1.56)
GOVCHANGES	-0.52*** (-3.99)	-0.37*** (-3.13)	-0.54*** (-4.15)	-0.35*** (-2.76)	-0.18 (-0.79)	0.01 (0.05)
Constant	0.32* (1.66)	2.36** (2.24)	0.22 (1.08)	1.99* (1.76)	-0.11 (-0.32)	2.93 (0.75)
Time effects	25.8***	13.4***	28.4***	11.9**	14.1***	9.16*
AR (1)	-5.54***	-5.11***	-5.14***	-4.85***	-3.17***	-2.58***
AR (2)	-1.29	-1.61	-1.28	-1.55	1.57	1.10
Sargan test (p-value)	0.02**	0.30	0.01***	0.18	0.04**	0.65
Observations	365	460	337	425	89	112

Table 6. Panel estimates for government-sector reform (t-values in parentheses, significance levels: 10% *, 5% **, 1% ***)

	World sample		Population > 1.000.000		OECD	
	GMM-DIFF	GMM-SYS	GMM-DIFF	GMM-SYS	GMM-DIFF	GMM-SYS
EXR flexibility	-0.21 (-1.51)	-0.08 (-0.82)	-0.16 (-1.16)	-0.05 (-0.43)	-0.14 (-1.16)	-0.01 (-0.06)
G (t-1)	-0.58*** (-6.31)	-0.36*** (-4.95)	-0.64*** (-6.65)	-0.36*** (-4.95)	-0.61*** (-6.09)	-0.03 (-0.09)
Inflation (t-1)	0.01 (0.34)	0.03** (1.99)	0.01 (0.37)	0.03 (1.32)	1.34 (1.29)	0.61 (0.38)
Growth (t-1)	-1.29 (-0.80)	-0.36 (-0.24)	-1.27 (-0.75)	-0.03 (-0.02)	-2.61 (-0.40)	-22.9 (-1.64)
Openness (t-1)	0.81 (1.48)	-0.39* (-1.70)	1.40** (2.03)	-0.33 (-0.96)	-2.34 (-1.17)	-0.16 (-0.39)
LnRGDPpc (t-1)	-0.11 (-0.30)	-0.18** (-1.98)	-0.23 (-0.56)	-0.22** (-2.25)	-1.39 (-0.94)	0.60 (0.44)
POLCONV	0.45 (1.42)	0.62** (2.16)	0.42 (1.27)	0.65** (2.06)	-0.06 (-0.05)	-0.19 (-0.12)
GOVCHANGES	-0.15** (-2.26)	-0.09 (-1.34)	-0.18*** (-2.78)	-0.11* (-1.66)	-0.17*** (-2.65)	-0.10 (-1.22)
Constant	0.20 (1.34)	3.21*** (3.60)	0.07 (0.48)	3.47*** (3.57)	0.39** (2.41)	-5.24 (-0.39)
Time effects	21.8***	62.0***	26.7***	70.3***	7.91*	12.1**
AR (1)	-3.74***	-3.16***	-3.45***	-2.93***	-1.31	-1.55
AR (2)	0.44	0.63	0.51	0.74	-1.24	-0.95
Sargan test	0.92	0.73	0.77	0.69	0.21	0.98
Observations	360	455	332	420	89	112

Table 7. Panel estimates for market liberalization (t-values in parentheses, significance levels: 10% *, 5% **, 1% ***)

	World sample		Population > 1.000.000		OECD	
	GMM-DIFF	GMM-SYS	GMM-DIFF	GMM-SYS	GMM-DIFF	GMM-SYS
EXR flexibility	-0.08 (-0.78)	0.02 (0.25)	-0.06 (-0.57)	0.03 (0.43)	-0.06 (-0.45)	0.17 (1.49)
R (t-1)	-0.45*** (-4.01)	-0.30*** (-3.94)	-0.46*** (-3.78)	-0.30*** (-3.47)	-1.57*** (-8.21)	-0.80*** (-2.84)
Inflation (t-1)	0.07* (1.74)	0.05 (1.30)	0.06* (1.69)	0.06 (1.27)	-1.21* (-1.81)	-0.48 (-0.66)
Growth (t-1)	-0.52 (-0.48)	0.06 (0.07)	-1.37 (-1.28)	-0.40 (0.46)	-2.38 (-0.77)	-13.3* (-1.86)
Openness (t-1)	0.33 (0.84)	0.10 (0.63)	0.52 (1.21)	0.20 (0.95)	-1.92** (-2.38)	0.26 (0.96)
LnRGDPpc (t-1)	0.08 (0.27)	0.16*** (3.22)	0.17 (0.52)	0.17*** (3.18)	-2.59** (-2.58)	0.18 (0.27)
POLCONV	0.14 (0.62)	0.23 (1.61)	0.11 (0.44)	0.18 (1.20)	-2.01** (-2.59)	0.69 (0.60)
GOVCHANGES	-0.05 (-1.10)	-0.03 (-0.86)	-0.06 (-1.15)	-0.03 (-0.72)	0.07 (1.58)	-0.02 (-0.32)
Constant	-0.00 (-0.05)	0.10 (0.25)	-0.06 (-0.70)	-0.06 (-0.16)	0.54*** (4.46)	2.09 (0.31)
Time effects	54.2***	74.8***	52.8***	53.2***	112.7***	44.7***
AR (1)	-3.79***	-4.44***	-3.52***	-4.21***	1.01	-1.23
AR (2)	0.09	-0.33	0.49	0.01	-0.20	-0.85
Sargan test	0.16	0.58	0.16	0.58	0.81	0.97
Observations	314	408	311	380	89	112

Table 8. Panel estimates for labor market liberalization (t-values in parentheses, significance levels: 10% *, 5% **, 1% ***)

	World sample		Population > 1.000.000		OECD	
	GMM-DIFF	GMM-SYS	GMM-DIFF	GMM-SYS	GMM-DIFF	GMM-SYS
EXR flexibility	0.07 (0.49)	0.18 (1.34)	0.04 (0.29)	0.15 (1.14)	-0.09 (-0.60)	0.09 (0.57)
LR (t-1)	-0.50** (-2.21)	-0.19 (-0.89)	-0.45* (-1.98)	-0.18 (-0.85)	-0.22 (-0.84)	-0.16 (-0.93)
Inflation (t-1)	0.10 (0.86)	0.02 (0.12)	0.13 (1.14)	0.01 (0.09)	-1.41 (-0.80)	-0.50 (-0.13)
Growth (t-1)	3.15 (0.75)	0.62 (0.21)	3.30 (0.79)	-0.22 (-0.04)	5.43 (0.70)	4.25 (0.41)
Openness (t-1)	0.45 (0.41)	0.14 (0.46)	0.57 (0.51)	0.14 (0.44)	-0.03 (-0.02)	0.18 (0.45)
LnRGDPpc (t-1)	-0.82 (-0.81)	-0.03 (-0.17)	-0.69 (-0.69)	-0.07 (-0.34)	-1.53 (-0.93)	-0.66 (-0.31)
POLCONV	-0.53 (0.50)	-0.09 (-0.14)	0.50 (0.48)	-0.05 (-0.09)	0.83 (1.14)	0.65 (0.43)
GOVCHANGES	-0.04 (-0.47)	-0.06 (-0.56)	-0.05 (-0.52)	-0.04 (-0.35)	-0.08 (-0.70)	-0.03 (-0.27)
Constant	0.02 (0.13)	0.73 (0.37)	-0.00 (-0.04)	1.10 (0.46)	0.13 (0.60)	6.21 (0.32)
Time effects	18.5***	10.5**	19.6***	7.12	5.96	1.99
AR (1)	-1.78*	-2.19**	-1.92*	-2.19**	-1.82*	-2.28**
AR (2)	-0.40	-0.85	-0.28	-0.65	-0.65	-0.91
Sargan test	0.02**	0.78	0.04**	0.81	0.06*	0.79
Observations	99	138	98	136	79	112

