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## ABSTRACT

### Crises, What Crises?\*

Recent research convincingly shows that crises beget reform. Although the consensus is that economic crises foster macroeconomic stabilization, it is silent on which types of crises cause which types of reform. Is it economic or political crises that are the most important drivers of structural reforms? To answer this question we put forward evidence on trade and labour market liberalization from panel data on more than 100 developed and developing countries from 1950 to 2000. We find important differences in the effects of the two types of crises on the two reforms across regions and even from one measure of crisis to another. Yet, in general, we consistently find that political considerations (political crises as well as political institutions) are more important determinants of these reforms than economic crises. This finding is robust to the inclusion of interdependencies between the two types of crises, feedbacks between the two types of reform, the use of alternative measures of political and economic crises and whether or not the data are pooled across all countries or only across regions.

JEL Classification: H11, K20, E32, O40

Keywords: economic reform, economic crisis, political crisis, trade liberalisation, labour market reform

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## 1. Introduction

In the last two decades or so, unprecedented changes in economic policy have been implemented the world around, key elements of which being stabilization, privatization, and trade and labour market reforms. The recent experience, however, has suggested (to some at least) that the benefits of these reforms may have been smaller and more concentrated than initially expected. It has also been shown that the implementation of these reforms has varied greatly across countries and over time, suggesting that their determinants differ in important and so far very imperfectly understood ways. In some countries, reforms have been rapid and comprehensive whereas in others they have been extremely slow, partial or even non-existent. Indeed, we lack a comprehensive assessment across a large number of countries of both the actual extent of those reforms and their main determinants.

Although the literature on political economy of reform is large, prominent and fast-growing, most of it remains at the theoretical level. Despite some recent work on the subject, empirical testing of the various hypotheses remains rare. Two book-length authoritative reviews comment that the empirical evidence has yet to materialize (Drazen, 2000, and Persson and Tabellini, 2000), while Acemoglu, Johnson and Robinson (2005) show that the evidence on institutions (in this case, labour market liberalization) is also still scanty. Although one would have expected that research on developing countries to provide this empirical evidence at once, to date the most comprehensive studies of this type (e.g., International Monetary Fund, 2003) limit their investigation of the determinants and effects of reforms to industrial countries.

A seminal theoretical paper on reform determinants is that by Drazen and Grilli (1993) demonstrating the beneficial role of crises for reforms.<sup>1</sup> Tommasi and Velasco indicate how influential these results have been: “That economic crises seem either to facilitate or outright

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<sup>1</sup> Drazen and Grilli (1993) develops the normative implications of the Alesina and Drazen (1991) war-of-attrition model. See also Labán and Sturzenegger (1994), Acemoglu and Robinson (2001), Acemoglu et al. (2003), Persson (2002) and Giavazzi and Tabellini (2005).

cause economic reforms is part of the new conventional wisdom on reform” (1996 p. 197). The intuition is that a crisis increases the cost of waiting for (or inversely, decreases the implementation delay of) an agreement among the different groups in society on who will bear the larger share of the costs of reform:

“crises and emergencies may be welfare-enhancing and hence desirable. When ongoing social conflict implies that an economy has settled in a Pareto-inferior equilibrium, radical changes are often needed to break the stalemate and put the economy on a welfare-superior path. The necessary introduction of drastic measures (...) is usually unpopular and forcibly resisted because of distributional concerns... The extreme welfare loss that each agent suffers in a crisis dwarfs the loss he may associate with an unfavourable distribution of the burden of a major policy change” (Drazen and Grilli, 1993, p. 598.)

It is important to highlight the centrality in these models of the need for an agreement among the different groups on who will bear the costs of reform. Indeed, it is the lack of such agreement that delays implementation and allows a war of attrition between the various groups in society to endure. Most of the discussion is phrased in terms of economic stabilization since Drazen and Grilli illustrate their model by showing that hyperinflation (in contrast to indexation) would support agreement on the implementation of tax reform. Yet, for this type of reform, internal agreement may be rendered less necessary by the strong conditionality of foreign loans, or even more fundamentally by the near absence of losers (Rodrik, 1996).

Following Rodrik’s logic, one would think that inter-group agreement could be a more important determinant of *structural* reforms, like trade and labour market liberalization, in which typically there may be more losers, each with more immediate losses.<sup>2</sup> According to this view, by triggering a re-alignment of the different social groups, political considerations

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<sup>2</sup> Drazen notes that “it is useful to distinguish between those reforms which are expected to be of general benefit (for example, macroeconomic stabilization) from those for which there are clearly defined losers ex ante (for instance, breaking up a monopoly). (...) The former, associated with the launching of reform programs, have more immediate payoffs and widely distributed political costs; from an economic and political point of view, they are easier to implement. The latter are associated with the consolidation of a reform program and generally concern deeper structural reforms. Their benefits accrue only over the longer term and require the elimination of advantages of some special interests; from both a technical and a political point of view, they are more difficult” (2000, p. 405).

(political crises as well as political institutions) can foster agreement and, consequently, may play an even more substantial role than economic crises in explaining the successful implementation of structural reforms.<sup>3</sup> This is the central hypothesis of our paper. Below, we present empirical support for it based on panel data of more than 100 countries over the years 1950-2000.

As noted above, tests of these theoretical models have been limited largely to examining the effects of economic crises on macroeconomic stabilization. One early empirical paper of this sort is Bruno and Easterly (1996) which shows that hyperinflation (or at least high inflation rates) is a more successful driver of macroeconomic stabilization than say indexation mechanisms (see also Bruno, 1996). Drazen and Easterly (2001) provide what is arguably the first direct test of the ““crisis begets reform”” hypothesis. Using data for more than 150 countries in the last 30 years or so and five year lags, they find only mixed evidence for the hypothesis. More specifically, although episodes of extremely high inflation or black market premiums are indeed followed by periods of better performance than episodes of only moderately high inflation or black market premiums, similar results do not obtain for high current account or budget deficits or negative rates of per capita growth.

A recent important development in the literature on the determinants of macroeconomic stabilization is that by Alesina, Ardagna and Trebbi (2006). Using yearly data on a large sample of developed and developing countries from 1960 to 2003, they find that successful macroeconomic stabilization (in terms of inflation and budget deficits) is more likely to occur not only following a crisis but also at the beginning of term of office of a new government, in countries with presidential systems and with large majorities, and when the executive faces less binding constraints. This suggests the relevance of political crises and institutions for economic

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<sup>3</sup> Another advantage of this hypothesis is that it somewhat mitigates Rodrik’s critique that the relationship is tautological: “There is a strong element of tautology in the association of reform with crisis. Reform naturally becomes an issue only when current policies are perceived to be not working. A crisis is just an extreme instance of policy failure. That policy reform should follow crisis, then, is no more surprising than smoke following fire” (Rodrik, 1996, p. 26-27).

reform. Note, however, that, for a sample of Latin American countries since the mid-1980s, Lora (1998) finds that economic (not political) crises have played an important role in the dynamics (and composition) of structural reform.<sup>4</sup>

One especially relevant paper is that of Tornell (1998). Although his main contribution is theoretical, Tornell presents empirical evidence on the relationships among: (a) drastic political change, (b) a major economic crisis and (c) trade liberalization. He estimates probit models for the start of trade liberalization in a large panel on annual data beginning in 1970 based on the occurrence of economic and political crises and controlling for a number of other factors. His main finding is that in those years in which both an economic crisis and a political crisis take place, the probability of launching trade liberalization is twice as high as from their individual occurrences. These ideas are operationalized through dummy variables for the two crises and the one reform, taking the value of 1 in the year the corresponding event occurs, and zero otherwise. The author recognizes two main risks in this strategy: one due to possible mistakes in identifying the exact year in which each of the events take place,<sup>5</sup> and the second, somewhat related, due to the possibility of reform reversals.<sup>6</sup> Our data shows that such reform reversals occur despite the fact that ours are 5-year averages (in which they would be less likely than in higher frequency (e.g., yearly) data).

The approach we adopt in this paper is rather different, *inter alia*, because we use continuous variables to measure political and economic crises, on the one hand, and reform on the other. Additional differences from both Tornell (1998) and Lora (1998) are that we (1) use

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<sup>4</sup> There is also an emerging literature on the broader economic effects of democratic transitions examining, *inter alia*, whether or not changes in the political regime (from dictatorship to democracy) generate economic crises. Notably, Rodrik and Wacziarg (2005) provide evidence suggesting that democratic transitions do not produce such crises. This is an important result for our argument as it suggests that the possibility of endogeneity of economic crises *vis-à-vis* political crises is remote.

<sup>5</sup> In other words, the year attributed to the trade liberalization may not correspond to the year of maximum severity of crisis or maximum implementation of the reform in question.

<sup>6</sup> These problems arise for any one or more of the following reasons: (1) that trade liberalization takes time to be fully implemented, (2) that governments often adopt only partial reforms, and (3) that governments may later decide to reverse the reforms.

various alternative measures to capture political and economic crises, (2) focus on both trade and labour market liberalization (and the interactions between the two), (3) consider various political and other institutional conditions and (4) cover a larger sample of countries and a longer period of time (which allow us to use homogeneity tests which reject the hypothesis that we can pool all the regions together).

In this paper, we focus on the following questions: What are the determinants of labour market deregulation on the one hand and trade liberalization on the other? Are these reforms related to each other in any way and, if so, how?<sup>7</sup> How do political institutions affect the extent of reform in a given country and how do their effects compare with those of political instability? Is it economic or political crises that are the most important drivers of structural reforms?

After laying down the theoretical framework and discussing the construction of our measures and data set, we estimate the determinants of the reforms in two ways: first, as if the decisions to implement each type of reform are made independently, second, allowing for feedback effects between them. One important result (when we estimate the two reform indexes separately) is that homogeneity tests strongly reject pooling across regions. This highlights, what many certainly suspect, that reform efforts differ markedly across regions of the world because of the radically different institutional and political settings in which they are implemented. With respect to labour market deregulation, our fixed-effects panel estimates show its main determinants to be regime durability, political instability, and for the Asia region institutional constraints (in the form of party fractionalization). For trade reform, the main determinants are the level of per capita GDP, again party fractionalization, political instability and regime durability. On the other hand, the measures of economic crises (the maximum fall in GDP during a five year period (Max Fall GDP), currency crises and the current account balance

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<sup>7</sup> Huang and Temple (2005) is one of the first papers to look at this issue empirically, while Giavazzi and Tabellini (2005) is one of the first to study the relationship between political reforms and economic liberalization (the latter proxied by an index of trade liberalization similar to ours).



(an inverse measure of crises)) do not appear to have any significant impact on the implementation of reforms. Neither do we find any evidence of simultaneity between the two reforms. But we do find that lagged labour market deregulation tends to promote trade reform and that lagged trade reform tends to discourage labour reform deregulation, thus suggesting that the sequencing of reforms matters. However, the basic results that economic crises do not beget reform and that the effects of political crises on reform are stronger and vary from one region to another and from one reform to another remain even if we estimate these two equations jointly or use lagged feedbacks from one reform to another. We therefore conclude that political crises, as well as political institutions, contribute more to structural reform efforts than economic crises.

The paper is organized as follows. Section 2 briefly presents the Drazen-Grilli model and makes the case that political crisis may be a better way to understand its workings. Section 3 discusses how we measure trade and labour reforms and political and economic crises over time and across a large sample of countries. It also examines the relationship between these reforms and economic performance over time and across regions presenting basic statistics of the other variables used in our analysis. Section 4 discusses the main determinants of the various components of labour market liberalization and trade reform, including lags in these relationships and robustness tests. Section 5 concludes with suggestions for further research.

## **2. Theoretical framework**

In this section, we summarize the theoretical framework developed in Drazen and Grilli (1993) and make the case that political crises would provide a better (or at least, alternative) way to set the model in motion. As noted above, the Drazen and Grilli model develops the normative implications of Alesina and Drazen (1991). While the earlier model is framed in terms of a war-of-attrition in which social groups disagree on the implementation of a tax reform or

macroeconomic stabilization (reducing both inflation and accumulation of government debt), in the more recent model government debt is assumed to be constant (indeed, zero for simplicity).

In Drazen and Grilli, therefore, government expenditures are covered by either monetization of the deficit or (non-distortionary) taxation. The monetization of a fraction  $\gamma$  of the government budget arises because social groups do not agree on which (group) will bear the costs of the tax reform. The delay in agreeing on the burden of reform propels inflation. It can be shown that before macroeconomic stabilization, the equilibrium rate of inflation is a function of the fraction of government expenditures financed by seigniorage.

The model assumes two groups which share equally the distortionary burden until stabilization happens at time  $T$ . The group that concedes must agree to pay a larger share of the costs than the other (non-conceding) group.<sup>8</sup> The utility functions of the individuals in each of the two groups increase with consumption and decrease with inflation, but differ on the losses each group attaches to inflation. The war-of-attrition is driven by asymmetric information: each group knows its own loss, but of the other group only the distribution of the loss. The representative individual chooses a time path of consumption as well as a date on which to bear a larger share of the cost of reform (the optimal time to concede depending on the group-specific loss from inflation). Differentiating expected utility with respect to the optimal concession time, yields the following first-order condition:

$$\left[ -\frac{f(\theta)}{F(\theta)} \frac{1}{T'(\theta)} \right] (2\alpha - 1) \frac{g}{r} = w(\theta, \pi) - \left( \alpha - \frac{1}{2} \right) g \quad (1)$$

where  $F(\theta)$  is the cumulative distribution of  $\theta$  (the loss each group assigns to inflation),  $f(\theta)$  is the associated density function,  $r$  is the discount rate,  $g$  is government expenditures,  $\alpha$  is the share of the burden paid by the group that conceded first, and  $\pi$  is inflation.

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<sup>8</sup> Drazen and Grilli recognize that this is an important assumption: “If the policymaker is biased in favour of one of the two groups, he could use distortionary taxes not just to induce agreement, but also to produce an outcome in favour of its constituency. The social desirability of crises in this case becomes questionable” (1993, p. 606). Note that in this case crises refer exclusively to economic (not political) crises.

The term in brackets on the left-hand side is the probability that the other group concedes at time  $T(\theta)$  (conditional on its being the first to concede), while the second term is the present (discounted) value of  $T(\theta)$ . The left-hand side therefore shows the expected benefit the social group enjoys from waiting to concede. The right-hand side shows the associated costs, where the first term is the loss from inflation in the absence of a reform package and the second term reflects the inflow of taxes generated once the group concedes.<sup>9</sup>

Equation (1) can be rearranged to give an expression for the optimal concession time as a differential equation, which in turn can be solved for the optimal concession time for each representative agent in each group. The solution supports the war-of-attrition interpretation of delays in adopting a welfare-enhancing change in policies (a “reform”): the group that benefits from reform tries to “wait the other group out” in the expectation that the other group would benefit even more from the reform. Put differently, in this framework one group tries to learn about the costs that the other group suffers (or believes it suffers) from the continuation of the distortions associated with the delay in implementing the reform at hand.<sup>10</sup> The war-of-attrition ends when one of the groups agrees to bear a larger share of the burden of reform.

It is important to stress that one implication from the Drazen and Grilli (1993) model is that the higher the rate of inflation (that is, the greater the distortions in the economy or the larger the scope for reform), the larger will be the losses each group assigns to the perpetuation of the *status quo* and the faster one group will concede (by agreeing to pay a larger share of the costs). The comparative statics is straightforward: a deterioration of the *status quo* (a crisis) shortens the implementation delay in the reform. Drazen and Grilli show that crises can be welfare-enhancing because they speed up reforms, accelerating agreement among the social groups on who will bear the larger share of the costs of reform. A crisis fosters reform because

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<sup>9</sup> The impossibility of ex-post compensation is crucial in this case as it would imply equal sharing of the burden of reform and therefore that the reform would be implemented without delay (that is, without the two groups need to endure a war-of-attrition).

<sup>10</sup> An associated boundary condition makes the group that knows for sure that it assigns a heavier weight than all other groups to the losses from inflation, to concede at the outset.

it “convinces” one specific group to bear a larger share of the costs. In this light, we suggest that a political crisis, or a realignment of the political power of the different groups in society, would serve the same end of “convincing” one of the groups to bear a disproportionate share of the costs. Although this would hold for any type of reform, we think such realignment would be especially needed for the structural reforms under study in this paper.

### **3. Measuring Trade Liberalization, Labour Market Deregulation and Crises**

In light of existing data availability constraints, to accomplish our objectives we have had to make several limiting choices. First, because most of the labour market reform data (e.g., Blanchard and Wolfers, 2000, and Forteza and Rama, 2001) is available only for five year periods, we have to settle for using five years as the minimum period length.

Second, since stabilization reforms have already been analyzed rather extensively and are perhaps the easiest to accomplish because there are likely to be few losers, we focus on the two key structural reforms mentioned above, namely, labour market and trade liberalizations.<sup>11</sup> In the case of trade liberalization, being unaware of any single data set that contains the required information for the entire period, we use several different data sets to further extend the Sachs and Warner (1995) measure of trade openness (0 for “closed” and 1 for “open”), that was already corrected and extended by Wacziarg and Welch (2003).<sup>12</sup> In extending each country series back to the 1950s (wherever possible), for the most part we made use of additional raw data on each of the various components of the Sachs-Warner index, together with the same criteria for distinguishing between “open” and “closed”. In some cases, however, when the raw data was incomplete, we also made use of information available from similar indexes from the

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<sup>11</sup> Loyaza and Soto (2004) provide a thorough discussion of the issues underlying the measurement of economic reforms.

<sup>12</sup> Specifically, these authors defined a country as closed (i.e., open =0) if it had any one of the following: (1) an average tariff rate of 40 per cent or more, (2) non-tariff barriers covering 40 per cent or more of trade, (3) a black market exchange rate that is depreciated by 20 percent or more relative to the official exchange rate, (4) a state marketing agency or board for major exports, and (5) a socialist economic system (as defined by Kornai 1992). Rodrik and Rodríguez (2001) provide a critique of these efforts.

Economic Freedom in the World surveys published by the Fraser Institute (Gwartney, Lawson and Damira, 2000) and openness measures from the Penn World Tables. We have extended the country coverage slightly based on additional country-specific information for several of the criteria when confirmed by extremely open (“Free”) or closed (“Repressed”) for relevant years in the Trade openness component of the Index of Economic Freedom reports.<sup>13</sup>

Third, with respect to labour market liberalization, since we find no single series that covers a large number of countries and goes back to anything like the 1950s in time, we make use of several different but closely related measures of labour market regulations and rigidities. Although they capture somewhat different aspects, we make use of different indexes for different regions in each case choosing the one that we feel is the most satisfactory for that region: Blanchard and Wolfers (2000) for the OECD, Heckman and Pages (2000) for Latin America,<sup>14</sup> and Botero, Djankov, La Porta, Lopez-de-Silanes and Shleifer (2003) and extended by World Bank (2004) for the remaining regions.<sup>15</sup>

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<sup>13</sup> Specifically, previously non-classified Bahrain, Iceland, Lebanon, Oman, Qatar and UAE are classified as “open” for some years based on scores of 1 (“Free”) or at most 2 (“Mostly Free”), while Cambodia, Laos, Libya, Sudan and Suriname were classified as “closed” based on scores of 5 (Repressed) on the same Trade openness component of the index for some years.

<sup>14</sup> This index reflects the costs of job security regulation and is computed as the expected discounted cost at the time a worker is hired of dismissing the worker at some time in the future based on existing labour law (but excluding the costs of court actions). It makes use of a common discount rate of 8 percent, an assumed turnover rate of 12 percent and cost (inclusive of those related to seniority) of dismissing a worker for either justified or unjustified reasons).

<sup>15</sup> According to Djankov et al. in the *Doing Business* project: the Rigidity of Employment Laws index is the average of three sub-indices: a Difficulty of Hiring index, a Rigidity of Hours index, and a Difficulty of Firing index. All sub-indices have several components and take values between 0 and 100, with higher values indicating more rigid regulation. The Difficulty of Hiring index measures (i) whether fixed term contracts can only be used for temporary tasks; (ii) the maximum duration of term contracts; and (iii) the ratio of the mandated minimum wage (or apprentice wage, if available) to the average value-added per working population. The Rigidity of Hours index has five components: (i) whether night work is restricted; (ii) whether weekend work is allowed; (iii) whether the workweek consists of five-and-a-half days or more; (iv) whether the workday can extend to 12 hours or more (including overtime); and (v) whether the annual paid vacation days are 21 days or less. If the answer is “no” on any of these questions, the country is assigned a score of 1, otherwise a score of 0 is assigned. The Difficulty of Firing index has eight components: (i) whether redundancy is not grounds for dismissal; (ii) whether the employer needs to notify the labour union or the labour ministry for firing one redundant worker; (iii) whether the employer needs to notify the labour union or the labour ministry for group dismissals; (iv) whether the employer needs approval from the labour union or the labour ministry for firing one redundant worker; (v) whether the employer needs approval from the labour union or the labour ministry for group dismissals; (vi) whether the law mandates training or replacement prior to dismissal; (vii) whether priority rules apply for dismissals; and (viii) whether priority

An important shortcoming of the World Bank's Rigidity of Employment Laws Index (2004) is that its time coverage is restricted to the years after 1995. For comparability with the OECD and Latin America for labour reforms and with all other countries for trade liberalization, it is desirable to extend the World Bank index backwards. One way to accomplish this is through the use of the various backdating and imputation techniques developed in the context of business cycles analysis (Angelini et al., 2004). Therefore, based on the following regression equation we extend this index to other countries and time periods:

$$\begin{aligned}
 \text{Rigidity of} \\
 \text{Employment laws} = & \text{French} * 10.34878 + \text{Socialist} * 19.21761 - \text{English} * 6.9012 + \text{German} * 6.09 + \\
 & (5.6717) \qquad (9.114) \qquad (5.85) \qquad (5.89) \\
 & + \text{chldlb} * .1917 - \text{abolfl} * 1.648489 - \text{eqlrem} * -2.66 + \text{discrm} * 4.74 + \\
 & (2.57) \qquad (2.27) \qquad (3.28) \qquad (3.14) \\
 & - \text{loggdp} * 2.34 + \text{agr ratio} * 40.01 + - \text{agratsq} * 42.21 + 60.09 \qquad (2) \\
 & (1.97) \qquad (16.79) \qquad (16.89) \qquad (21.56)
 \end{aligned}$$

$$R\text{-squared}=0.5312, \text{ Adj } R\text{-squared}=0.4680, \text{ Root MSE} = 10.04$$

where *French*, *Socialist*, *English* and *German* are dummy variables for the respective legal traditions as defined in La Porta et al. (1998), *chldlb*, *abolfl*, *eqlrem*, and *discrm* are dummy variables for whether or not the country has signed ILO conventions on child labour, forced labour, equal remuneration by gender and discrimination from the data base of Rama and Forteza (2001), and *agr ratio* and *agratsq* are the share of agriculture in total employment and its square, respectively. The rationale for the first two types of determinant comes from Botero et al. (2004) which shows that regulatory rigidity is directly related to the use of French and other civil law traditions and inversely related to the GDP per capita. The share of agriculture in total employment and its square are included because labour regulations in this sector tend to be especially light. This equation was estimated with cross section data for 102 countries.

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rules apply for re-employment. If the answer to any question is "yes", a score of 1 is assigned; otherwise a score of 0 is given. Questions (i) and (iv) have double-weight in the construction of the final index. The Cost of Firing indicator measures the cost of advance notice requirements, severance payments and penalties for firing a worker, expressed in terms of weekly wages.

The results (with standard errors in parentheses under the respective regression coefficients) are for the inverse of labour market flexibility (i.e., labour market rigidity). While the explanatory power is not especially high ( $R^2 = 0.53$ ), the effects of most determinants are of the expected signs and several are statistically significant. Note that, as expected, the dummy variables for French civil law and Socialist legal traditions both have positive and significant effects of the labour market rigidity index. Neither the German civil law nor the English or common law dummy variables has a significant effect (relative to the excluded category Scandinavian). Three of the ILO convention variables have positive effects (as expected) on the index but only one of these (the convention on discriminatory practices) is close to being significant at the 10 percent level. Per capita GDP is shown to have its expected negative effect on the index and the share of agriculture in the labour force a nonlinear effect.

As noted, the main purpose of this auxiliary regression is to generate our time-varying indexes of labour market reform. While the legal regime type dummy variables do not change over time, all of the other determinants do change. Since we have the time series data on these, this allows us to “backcast” the indexes in time for each country. Indeed, the resulting index shows not only substantial variation across countries but also in quite a few countries considerable variation over time.<sup>16</sup>

Fourth, with respect to political crises of which innumerable definitions might be constructed, we limit attention to the following three indicators. The first is a principal components index of social and political instability formed from the number of revolutions, coups *d'Etat*, and political assassinations (per million people) during each five year period.<sup>17</sup> The second is an inverse measure, i.e., reflecting the absence of crisis, specifically the duration (in years) of the existing regime’s leadership (Regime Durability). The third and last is a

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<sup>16</sup> It is important to highlight that the estimates based on the “backcasted” data for 130 countries does not differ from those based on the original data (for only 68 countries). These results are available upon request.

<sup>17</sup> This is an up-date of the index used in Alesina and Perotti (1996), Campos and Nugent (2003) and Campos, Nugent and Robinson (2001).

measure of the intensity of civil war. The data for constructing the first measure is taken from Banks (2005), the second from *Polity IV*, and for the last from the *Correlates of War* project at the University of Michigan.

Fifth, for economic crises we include several different measures,<sup>18</sup> namely the largest single year GDP fall in percentage points that occurred in each five-year period (Max fall GDP), the current account balance (CAB)<sup>19</sup>, the number of years in debt and currency crises within each five year period (Currency Crisis and Debt Crisis).<sup>20</sup>

Sixth, given the importance we attach to the need for reaching a political agreement on reform, we include measures for political institutions that we believe might influence the government's ability to achieve agreement among the different groups on the reforms under study here. One of these measures is the Party Fractionalization index. The more fractionalized are the political parties the more difficult it could be to put together a coalition supporting reform. But, on the other hand, knowing that coalitions would be needed to approve anything, it might stimulate the willingness to compromise and cooperate.<sup>21</sup> (We also use of a measure of the degree of checks and balances within the government (Political Constraints Index) constructed and used by Henisz (2000)) but the results with this indicator are not presented since the results were almost identical with those for party fractionalization).

Since countries with higher levels of per capita income might be more or less likely to practice liberalization of markets, we also include real GDP per capita (in log terms) as an

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<sup>18</sup> For a review, see Furman and Stiglitz (1998) and Ishihara (2005).

<sup>19</sup> CAB is, of course, an inverse measure of crisis.

<sup>20</sup> The "Currency Crisis Indicator" is constructed as follows: 1- Nominal official exchange rate against the U.S. dollar is used as an indicator for currency crises. 2- Moving averages and standard deviations on a basis of five years are calculated. 3- Standardized scores are calculated using these moving averages and standard deviations, where the standardized score is equal to the value of the nominal exchange rate in a given year minus the average over the last five years (up to the given year) divided by the standard deviation over the same period. 4- A threshold value for the crisis is chosen arbitrarily. IMF (2003) suggests using the value (2.0) but I preferred to use (1.5) since I found almost no variation between the periods and across the countries when using (2.0) as the threshold. More specifically, using (2.0) makes almost all the countries having no crises. 5- A dummy variable is constructed taking the value (1) when the standardized score exceeds the threshold (1.5), and zero otherwise.

<sup>21</sup> As suggested by Montalvo and Reynal-Querol (2005), the influence of fractionalization (although in their context in terms of ethnic fractionalization) may be benign relative to polarization.



additional control variable.

The trade liberalization measures are in the form of strengthening the operation of the market but the labour deregulation measures are often in the form of job security regulations which tend to make the labour market more rigid. To transform both measures into indices of strengthening the operation of market, we use a formula suggested by Lora (1998), which involves subtracting each value from the series maximum and dividing this by the series range (maximum minus minimum value). Once all the variables are collected, they are aggregated and transformed using the following aggregation of reform indexes proposed by Lora (1998) into a 0 to 1 scale (with 1 indicating further reform):

$$I_i = \frac{1}{m_i} \frac{1}{n_i} \sum_{j=1}^{m_i} \sum_{t=1}^{n_i} \left[ \frac{(V_{j \max} - V_{jit})}{V_{j \max} - V_{j \min}} \right] \quad (3)$$

where  $V$  is a value of  $j$ -th variable in  $i$ -th country in time  $t$ ,  $n$  stands for the number of the years and  $m$  for the number of variables. Such transformation allows the two reform series to be measured over the same scale. It leaves the trade reform measure as a measure of trade liberalization but transform the labour market regulation indexes into ones of labour market deregulation, so that higher values of both reflect greater liberalization effort.

Figures 1 to 6 show the behaviour of our indexes of trade and labour market deregulation per region since 1950. Overall, our indexes suggest that there has been greater progress in trade liberalisation than in labour market deregulation. Indeed, only in the highly developed North America, Australia, New Zealand and Japan region and to a lesser extent the Middle Eastern and North African (MENA) region has labour market liberalization occurred at all in the last decade or so. In the case of trade liberalization, the pace of reform has increased markedly since 1990. Across regions, OECD countries (Figures 2 and 6) show the greatest progress in trade liberalisation (but with Latin America catching up in the last 10 years or so). Note that labour market deregulation has loosened in Africa, probably due to the declining share of agriculture. Africa also stands out in trade liberalization by its extremely late start.

#### **4. Econometric results**

In this section, we discuss our main econometric results with respect to the dynamics of both trade reforms and labour market deregulation in a large sample of developed and developing countries. Our hypothesis is that political crises (by realigning political forces) may cause one group to accept a larger portion of the costs of reform more readily than would economic crises (which would mainly increase the costs of delay in reaching agreement). We first estimate panel data models in which we specify our indexes of labour and trade reform to be separate functions of economic and of political crises (as well as the other standard controls identified above.) A crucial result in dictating our estimation strategy is derived from parameter homogeneity or poolability tests (e.g., see Hsiao and Sun, 2000, Hsiao, 2003.) We find that these tests strongly reject the hypothesis that data can be pooled across all regions. This is of course an important result in that it indicates that reform efforts differ markedly across regions (in part, as our results also show, because of the different institutional and political settings in which they are implemented). In this light, while we report results for all countries together, we suggest that more weight should be given to the separate results for each region (developed countries, Africa, Asia, Latin America and the Caribbean (LAC), MENA and Transition).

Subsequently, we subject our results to two types of sensitivity analysis: (1) changing the set of variables used to capture economic as well as political crises, and (2) changing the estimation procedure to one in which feedbacks between the two reform equations are accounted for. In no case do we find the main results concerning the relative importance of the two types of crises to be sensitive to these differences. For no region do we find evidence of within-period interdependence between the two reforms though we do find several instances of lagged effects of one type of reform on the other. The results from the joint estimation, if anything, strengthen our finding that political crises are more important than economic crises in bringing about these two structural reforms.

We begin by using the fixed-effect panel least squares estimator to investigate the relative roles of political and economic crises in explaining the dynamics of trade liberalization and labour market deregulation. Our econometric model takes the form:

$$R_{itc} = \alpha + \beta_1 P_{itc} + \beta_2 E_{itc} + X_{itc1} + \varepsilon \quad (4)$$

where  $R_{itc}$  is reform  $i$  at time period  $t$  in country  $c$ ,  $P_{itc}$  reflects the intensity of political crises at time period  $t$  in country  $c$ ,  $E_{itc}$  reflects the intensity of economic crises at time period  $t$  in country  $c$ , and  $X_{itc}$  is a vector of control variables. As noted, we examine two reforms so  $i$  can refer to labour market deregulation or to trade liberalization and, as for  $t$ , we use the following 5-year periods to generate our observations (which are averages over these specific periods): 1960-1964, 1965-1969, 1970-1974, 1975-1979, 1980-1984, 1985-1989, 1990-1994 and 1995-2000.<sup>22</sup>

Tables 1 and 2 provide our baseline estimates regarding Trade Liberalization and Labour Market Reform, respectively. We begin with the effects of the economic crisis variables, follow this with a discussion of the effects of the political crisis variables and finally discuss the effects of the remaining variables.

To confirm the ‘crisis begets reform’ hypothesis in the case of economic crises, we would need to find positive effects for the first two economic crisis measures (Max fall GDP, Currency crisis) and negative ones for the third (the inverse measure CAB) in the two tables. Yet, the only case for which such a result is obtained is the positive and significant effect (at the 10 percent level) of Max fall GDP on trade liberalization in the Latin America region (LAC) in Table 1.<sup>23</sup> In the case of currency crises, the effects are generally negative and significant for “All” regions, developed countries, Africa and Latin America in Table 1. Similarly, instead of

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<sup>22</sup> It is important to keep in mind that the main reason for this somewhat limiting choice is that most of the labour market reform data (e.g., Blanchard and Wolfers, 2000, and Forteza and Rama, 2001) is available only averaged over five year periods.

<sup>23</sup> Lora (2000) finds support for an important role of economic crises on various reform indicators using annual data for a sample of Latin American countries between 1985 and 2000. We tried to re-estimate his specifications using our data set with and without enlarging them with our measures of political crises. Although we do find some effect of economic crises on our reform indicators for Latin American countries using our data, these effects vanish once we introduce our measures of political crises (with the resulting coefficients on the later highly statistically significant).

being negative, the effects of CAB on both trade and labour market reforms are generally positive (and significant for “All” regions and for Africa in Table 1) and for “All”, Developed, and African countries in Table 2. This constitutes rather stunning evidence against this hypothesis, with the possible single exception of Max fall GDP in Latin America. Note, however, that because the sample sizes are rather small for both MENA and Transition countries, the results for these regions are certainly not definitive.<sup>24</sup>

Next, we turn to the results for our first two measures of political crisis, the inverse measure Regime Durability (the length in years of the life of the regime) and the Political Instability index described above. For these, confirmation of the ‘crisis begets reform’ hypothesis requires negative coefficients in the case of Regime Durability and positive ones for Political Instability. As can be seen, in the case of Trade Liberalization, the coefficients are generally of the expected sign and statistically significant. This is especially true in the case of “All” countries (for both variables), Africa (for Regime Durability), Developed and LAC countries (for Political Instability). There is one exception, the case of Regime Durability in Developed countries for which the effect goes against the hypothesis.

In contrast with the results for trade liberalization, Table 2 shows that political crises generally do not stimulate labour market deregulation. Indeed, counter to the political crisis begets reform hypothesis, the coefficients of regime durability is positive and significant effects in “All”, developed, Asian and MENA countries, and Political Instability has negative and significant effects in “All” and African countries. Only in the transition economies, do we still find that Political Instability has a positive effect. In general, therefore, with the exception the transition economies, neither economic or political crises stimulate labour market deregulation.

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<sup>24</sup> We have also investigated whether the lagged values of these economic crises variables would have an effect on reform. For CAB in Africa for the two reforms and “All” countries for labour reform, and Regime Durability for Africa for labour market reform, the effects are negative instead of positive. In all other respects, however, the use of lagged values for the economic reforms does not affect the results. These results are available from the authors upon request.

Further, note that Log GDP per capita has positive and significant effects on trade liberalization in most regions (Table 1) but a negative and significant effect on Labour market deregulation in developed countries (Table 2). Party fractionalization (for which the effects were a priori ambiguous) has rather consistently positive effects on trade liberalization but negative ones on labour market deregulation.<sup>25</sup>

Of special interest is the difference in the effects of the political crisis, party fractionalization and GDP per capita variables between the two types of reform. Our explanation for these differences is based on experience from around the world suggesting that labour market deregulation is more difficult to accomplish than trade liberalization. This is consistent with the fact that Figures 1-6 consistently show much less variation over time in the labour market deregulation indexes than in trade liberalization. The ability of the relevant economic agents to foresee losses arising from trade reforms may well be considerably greater than those arising from labour market liberalization, implying that more elaborate and stronger compensation mechanisms would have to be arranged and likely involving coordination among more groups (e.g., unions, employer's associations, various ministries, local governments, etc.). As a result, higher levels of development, stronger institutional constraints (party fractionalization) and political crises of the type captured by Regime Durability and Political Instability are sufficient to trigger trade reforms but not labour market reforms.<sup>26</sup>

Naturally, these results showing the greater impact of political crisis variables than economic crisis variables in the case of trade reform and the powerless of either type of crisis to

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<sup>25</sup> The former are statistically significant in the case of "All" countries, Africa, Asia and Transition while the latter is significant only in Asia.

<sup>26</sup> A critic may charge that the political and economic crises do not need to be independent over time or, more strongly put, that the chain of events should not be from either political or economic crises to reform. Consider the case in which the occurrence of a severe economic crisis de-stabilizes the government (thereby generating a political crisis) which responds to the new pressures by implementing economic reform packages. This led us to investigate the temporal relationship among our various types and examples of crises. Of all possible combinations, we only found evidence of a relationship between (one-period lagged) currency crises and political instability. For a large number of other types of economic and political crises, we were not able to uncover any signs of similar relationships. Again, maybe the 5-year framework is to blame for this and as such we leave further investigation of this interesting issue for future work.

affect labour market deregulation are specific to the particular indicators of economic and political crises used. Would the results change if different measures of the two types of crises were used?

To answer this question, in tables 3 and 4 we present the corresponding results for trade liberalization and labour market deregulation, respectively, when we use one alternative measure of both economic and political crises. Specifically, for economic crises, we substitute Debt Crisis for Currency Crisis (for which the previous results had been most adverse to the economic ‘crisis begets reform’ hypothesis) and a very different measure of political crisis, Civil War Intensity for Regime Durability. Comparing the numbers of observations in Tables 3 and 4 with those in Tables 1 and 2, it can be seen that there is a price to be paid for these changes. The number of available observations in each region is reduced quite substantially. Indeed, separate estimates for Transition economies can no longer be obtained.

Despite the changes in these key variables and in sample size, the results for the economic crisis variables remain largely unaffected. For only one such crisis measure, Max fall GDP, and one region, Latin America, is there any evidence to support the economic ‘crisis begets reform’ hypothesis. Just as with Currency Crises, the Debt Crises variable seems to hinder, rather than stimulate, economic reform in “All” countries, Africa, Asia and Latin America. The effects of GDP per capita and party fractionalization are also similar. The effects of the Political Instability measure also remain virtually identical to those obtained in Tables 1 and 2. The one notable change is for the new political crisis variable, Civil War Intensity. For this variable the effect on trade liberalization is negative and significant for “All” countries, Africa, Asia and Latin America. Its effects on labour market deregulation are also generally negative but not significant. This finding suggests that the effects of political crises are likely to vary not only between reforms as shown by comparing the effects of each such measure between Tables 1 and 2 and 3 and 4 but also from one measure to another. At least the influence

on reform of Civil War Intensity seems to be quite different from those of Regime Durability and Political Instability. Whereas the latter measures of political crises seem to stimulate trade but not labour market reform, the former seems to hinder both reforms.

As another sensitivity check, in Tables 5 and 6 we allow for (lagged) feedbacks from one reform to the other. Since the use of lags reduces sample size, to preserve as many degrees of freedom as possible, we return to the specification in Tables 1 and 2 but with the lagged reform added to the right hand side. This implies the addition of an  $R_{j,t-1,c}$  term on the right hand side of our estimating equation (4) for  $R_{itc}$  above.

One important conclusion from Table 5 is that, even allowing for a 5-year lagged response, there seems to be little evidence of a positive feedback going from labour market deregulation to trade liberalization. Indeed, in two regions (Africa and LAC) the effects are negative and significant, suggesting that labour market deregulation seem to hinder trade reform. A second important lesson from table 5 is the further confirmation of lack of empirical support in the preceding tables for the ‘economic crisis begets reform’ hypothesis. Indeed, once again, our data seems to support the opposite story: the *absence* of currency crises and a *positive* current account balance foster economic reform. A third important finding of Table 7 is that, once we take into account the lagged effect of trade reform, the effects of regime durability and political instability remain strong: more political instability is positively associated with the implementation of trade reform.

Finally, the corresponding results allowing for the lagged effect of trade reform on labour market deregulation show something a bit different. In particular, they reveal a *positive* and significant effect of lagged trade reform on labour market deregulation for “All” countries (the fully pooled sample), and for the countries in the African and Asian samples. Taking the results of Tables 5 and 6 together, they support the notion that the sequence in which the governments choose to implement these reforms may matter a great deal. In particular, for the

African countries, while a preceding labour market deregulation deters trade reform, a preceding trade reform has a positive effect on labour market liberalization. Note also that with two other minor exceptions (Currency Crisis for the Asia and CAB for the Transition economies region) the general rule that economic crises have no effect on reform is again confirmed.

Tables 7 and 8 further probe the sensitivity of our key results. They report on another important robustness check, namely the joint estimation of the two reform equations using two-stage panel least squares estimators. This implies adding still another term,  $R_{jtc}$ , to the right hand side of equation (4). Note that because we have so far specified the two reform equations with an identical set of explanatory variables, this requires changes in the specification in order to achieve identification. Hence, for the trade liberalization equation, we exclude the Max fall GDP (and of course include labour market liberalization), while for the labour market deregulation equation we exclude Currency Crises and CAB (and include trade liberalization).<sup>27</sup>

Table 7 shows the determinants of trade reform when we treat labour market liberalization as endogenous. In terms of economic crises, we can see that the results still provide little support for the economic ‘crises beget reform’ thesis. Indeed, the evidence on Currency Crises and CAB strongly contradicts it: the fewer years under a currency crisis, the more likely the country is to open up the economy to international trade, with such results obtaining for “All” countries, OECD and Africa. Notice that the evidence for CAB (of a positive and statistically significant effect for the pooled data) also undermines the notion of economic crises as a main driver of trade reform. On the other hand, the evidence on the role of political crises is strong: Regime Durability is negatively and significantly related to trade reform in Africa. Although seldom statistically significant, most coefficients on Political Instability are positive, suggesting that this sort of instability (surely reflecting political crises)

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<sup>27</sup> The basis for such an exclusions are that one would suppose that the international policy variables reflected in the trade reform index would seem much more likely to be affected by the international dimension of crises but labour reform indicators more likely to be affected by domestic macroeconomic variables related to unemployment.



foster trade reforms. Finally, we again obtain some strong results for the level of fractionalization of political parties in the lower house. For the whole sample, as well as for the Africa and transition economies, the evidence supports the view that the more divided is the lower house (that is, the lower is the probability that two randomly selected members of the lower house are from the same political party), the more trade reform one observes.

Table 8 repeats this sensitivity check but inverts the reforms: in this case examining the determinants of labour market liberalization when we treat trade reform as endogenous. Once again, there seems to be little support for the role of economic crises in fostering reforms: using all countries together in the estimation yields the result that smaller declines in real per capita GDP are associated with further implementation of reform (and not the opposite). Interestingly, for the OECD countries alone, we do observe that economic crises have the expected positive impact on labour market deregulation. With respect to our political crises variables, the results are again very similar to the ones discussed above (notably, political instability seems to foster trade reform but to hinder labour market deregulation).

Since the presence of so many variables including the instruments in the estimation of this simultaneous equation approach introduces some inevitable multicollinearity in these estimates, the lack of evidence for interdependencies between the two reforms in our results does not necessarily imply the total absence of feedbacks between them. Yet, given the substantial literature concerning the prominence of feedbacks from one reform to another, the result is in fact surprising.

In sum, by re-estimating our baseline specifications from Tables 1 and 2 after subjecting them to sensitivity analysis with respect to the use of different measures of economic and political crises in Tables 3 and 4, with lagged feedbacks between the two types of reforms in Tables 5 and 6, and simultaneous feedbacks in Tables 7 and 8, the initial results are generally sustained. In particular, political conditions (political crises as well as political institutions)

seem to be significantly more important determinants of structural reforms, especially of trade reforms, than economic crises.

## **5. Conclusions**

This paper contributes to the debate on the effectiveness of reform programs across the world by attempting to measure and explain (to the best of our knowledge for the first time) two important structural reforms (trade liberalization and labour market deregulation) over several decades across developing, transition and developed countries alike. To that end we construct indicators of both labour market deregulation and trade liberalization for more than 100 developed and developing countries (in 5-year averages) and put together equally extensive data on various potential determinants of these reform efforts (including various indicators of political and economic crises and institutions). We try to explain the two reform indexes separately and find that our measures of political crisis seem to have more important effects than those of economic crises. Indeed, with a couple of minor exceptions of specific measures in one region, the effects of economic crises on the two structural reforms are either weak and non-significant or more frequently perverse, i.e., they inhibit reform. In the case of political crises, these effects on reform vary between reforms and between indicators. With a few minor exceptions, the results are rather robust to a number of sensitivity checks, such as the use of alternative measures of economic and political crises and institutional constraints. They are also robust to the use of simultaneous determination of the two reforms as well as the introduction of lags in the effects of the economic crises on the two reform measures and of each reform measure on the other.

One important finding is that there is considerable heterogeneity in the results across regions, suggesting that the common procedure of pooling across countries in different regions may not be justified. Especially in the case of political crises and institutions, the effects are

found to vary considerably between trade reform and labour market deregulation and from one type of political crisis to another. Yet, despite these differences, the results rather strongly support our conjecture that political considerations (political crises as well as political institutions) may be a more important trigger of reforms than economic crises.

On the basis of these and the other more detailed findings of the previous section, we put forward the following suggestions for future research. (1) Since the current analysis has been conducted in such a way as to determine the level of trade and labour market liberalization attained in each country and time period, it would be desirable to supplement this by analyzing the effects of their implementation speeds, i.e., the extent to which each general type of policy has changed in each period.<sup>28</sup> (2) Given the differences in the effects of political crises on reforms from one region to another, it would be useful to undertake detailed case studies of political, institutional and other developments in individual countries in the attempt to explain such differences. (3) Although trade and labour market liberalization are important structural reforms, there are certainly others (e.g., privatization and financial sector reform). Future research would do well to investigate these, especially since for these reforms annual data is more likely available, thereby permitting more detailed analysis of their interdependencies, interactions and sequencing which help us identify the reforms that are most important and the circumstances in which their effects would be strongest.

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<sup>28</sup> Godoy and Stiglitz (2006) discuss this issue in the specific context of transition economies.

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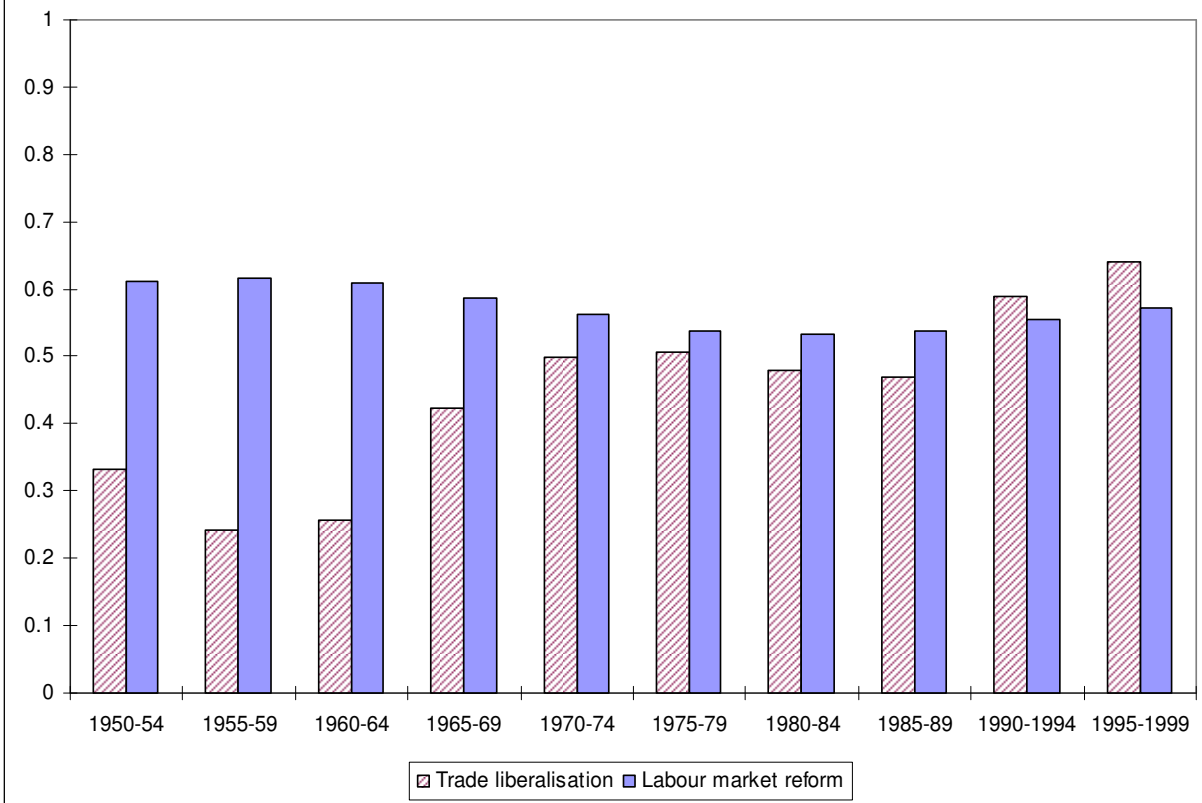
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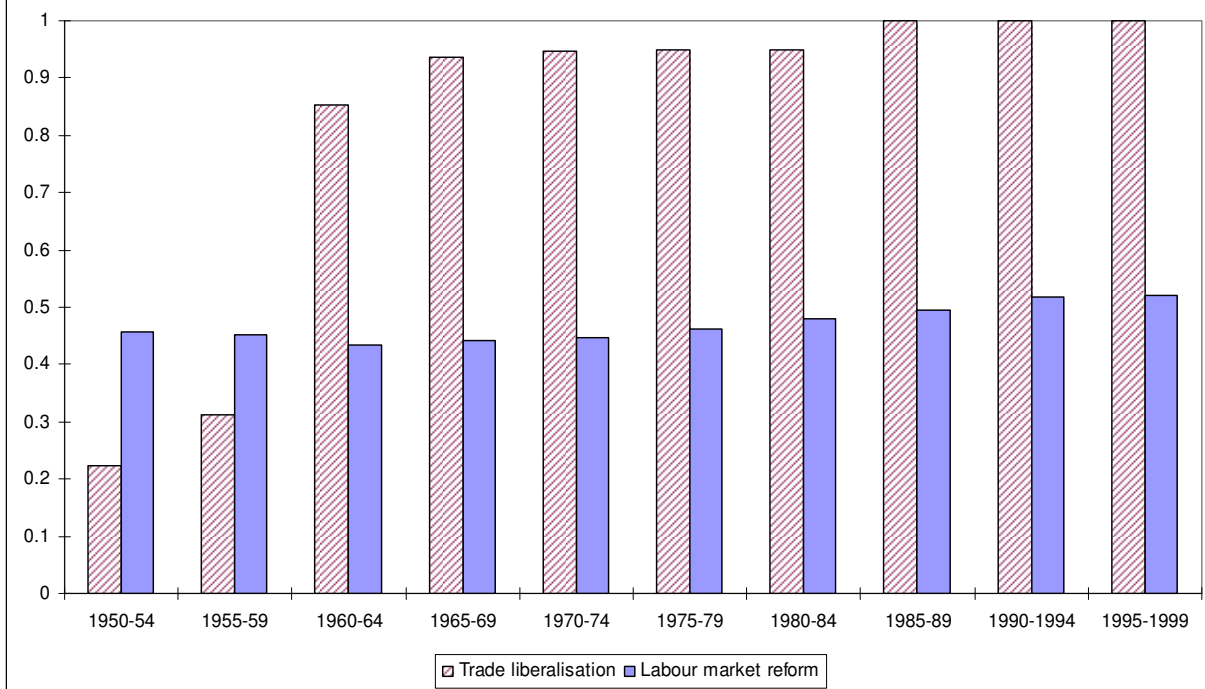
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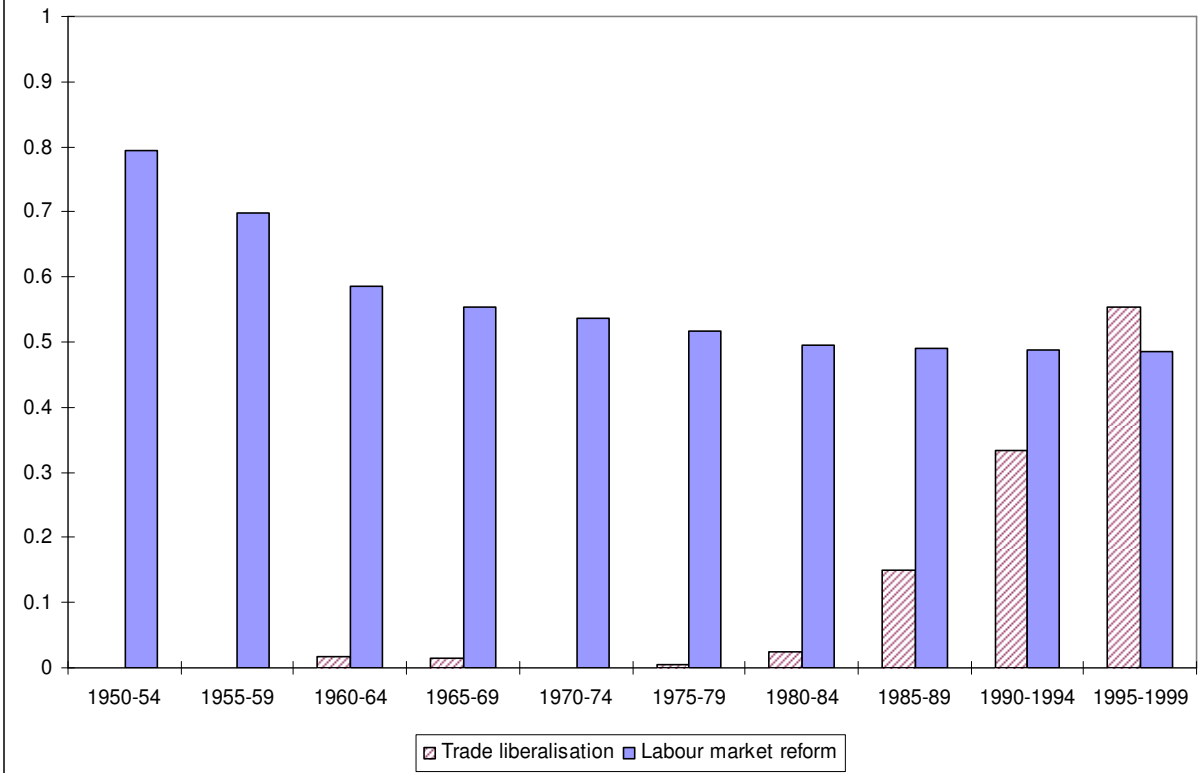
**Figure 1. Trade Liberalisation and Labour Market Reform in Asia (n max=19)**



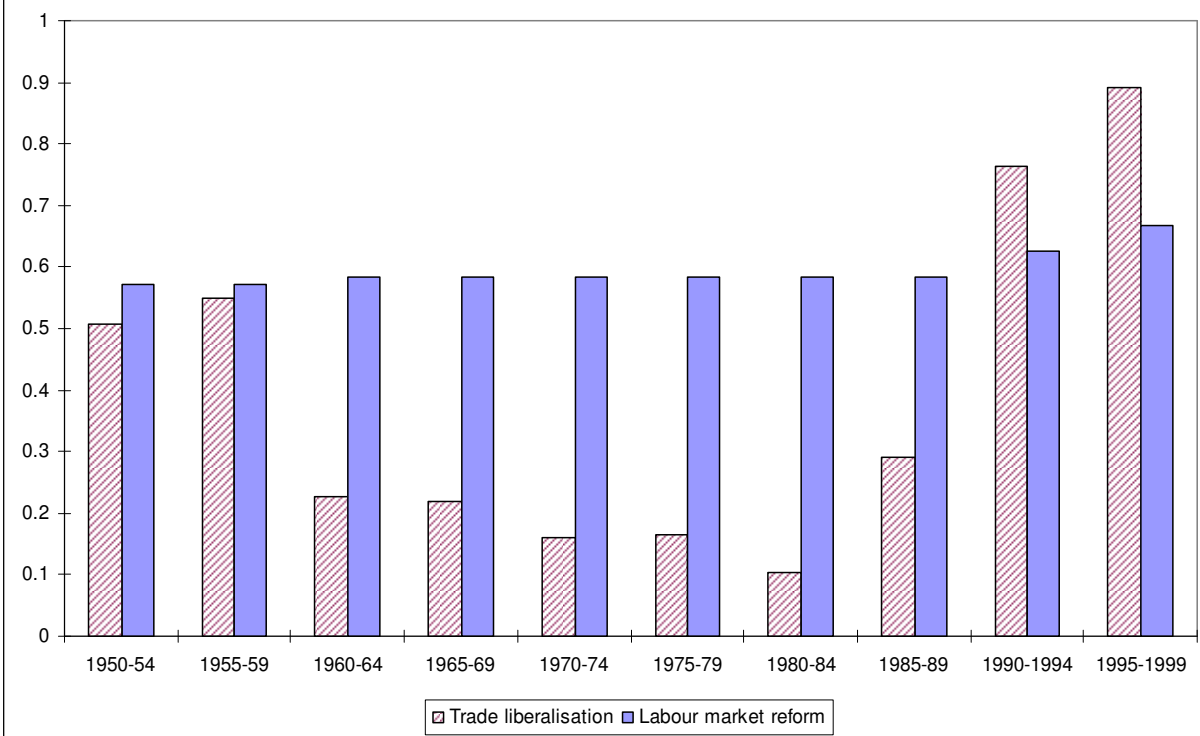
**Figure 2. Trade Liberalisation and Labour Market Reform in Europe (n max=21)**



**Figure 3. Trade Liberalisation and Labour Market Reform in Africa (n max=44)**  
 Note: in 1950-54, 1955-59 and 1970-74 the average for trade liberalisation is zero.

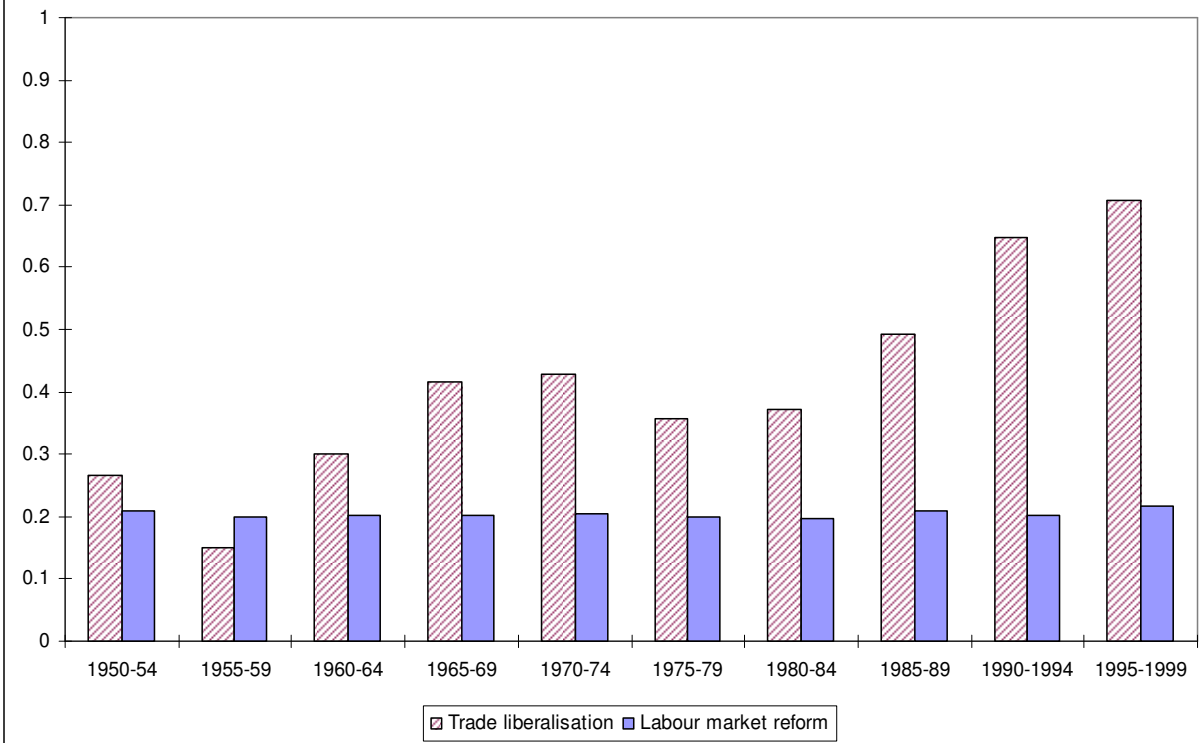


**Figure 4. Trade Liberalisation and Labour Market Reform in Latin America (n max=24)**





**Figure 5. Trade Liberalisation and Labour Market Reform in MENA (n max=18)**



**Figure 6. Trade Liberalisation and Labour Market Reform in USA, Canada, New Zeland, Australia (n max=4)**

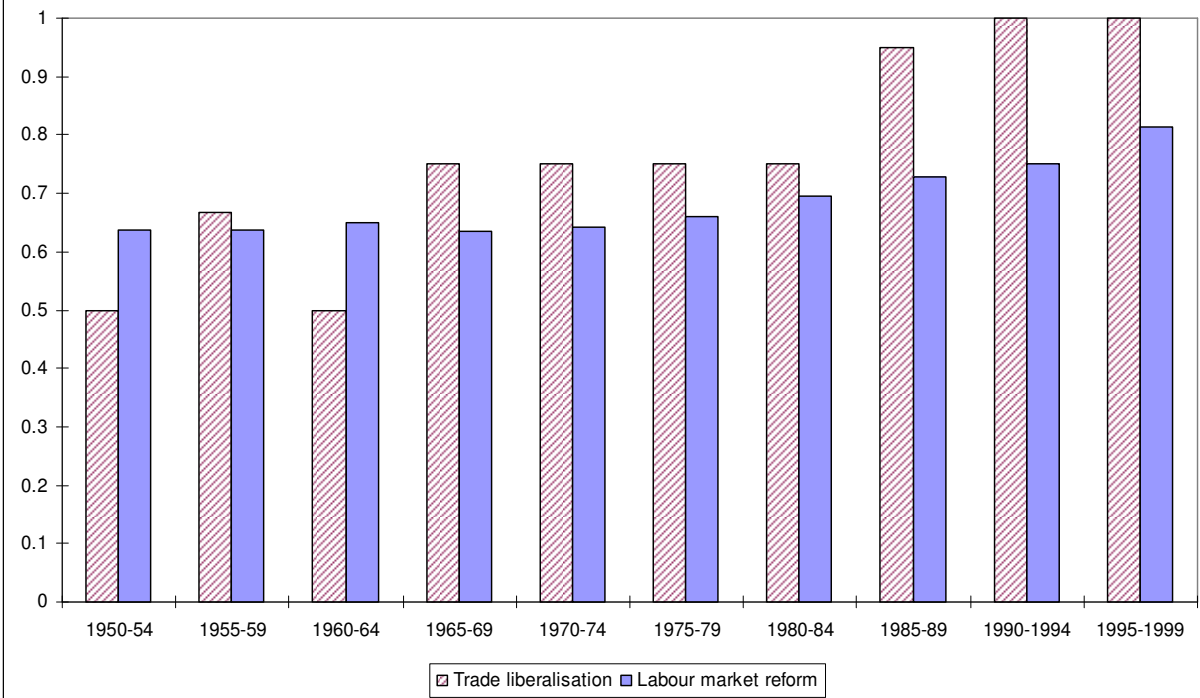


Table 1  
The Effects of Political and Economic Crises on Trade Liberalization  
Panel fixed-effects estimates

	All	Developed	Africa	Asia	LAC	MENA	Transition
Log real per capita GDP	0.171***	-0.00735	0.299***	0.0998**	0.323***	0.192**	0.000325
	[0.022]	[0.046]	[0.055]	[0.046]	[0.051]	[0.080]	[0.47]
Max fall GDP	1.72E-05	0.000052	-1.3E-05	2.87E-06	0.000206*	-5E-05	9.59E-06
	[0.000012]	[0.000047]	[0.00014]	[0.000012]	[0.00011]	[0.00027]	[0.000071]
Currency crises	-0.0442***	-0.0415**	-0.0543**	-0.0126	-0.0648**	-0.054	-0.0872
	[0.012]	[0.019]	[0.022]	[0.027]	[0.028]	[0.065]	[0.061]
CAB	0.00546**	-0.00804	0.00807**	-0.00228	0.00534	0.00969	-0.0299
	[0.0027]	[0.0064]	[0.0035]	[0.0070]	[0.0081]	[0.014]	[0.021]
Regime Durability	-0.00352**	0.00634**	-0.00939***	-0.00355	0.00142	0.000895	-0.00137
	[0.0015]	[0.0031]	[0.0028]	[0.0046]	[0.0034]	[0.0068]	[0.013]
Political Instability	0.0819**	0.125*	-0.135	0.0405	0.104*	0.252	-0.209
	[0.032]	[0.067]	[0.089]	[0.078]	[0.053]	[0.15]	[0.67]
Party fractionalization	0.0286***	0.0208	0.0293**	0.0407***	0.00563	0.0239	0.101*
	[0.0067]	[0.019]	[0.012]	[0.015]	[0.015]	[0.021]	[0.053]
Constant	-0.834***	0.536***	-1.614***	-0.331	-2.085***	-1.282**	-0.102
	[0.14]	[0.19]	[0.35]	[0.28]	[0.34]	[0.60]	[4.03]
Observations	712	171	182	97	162	60	40
No. countries	130	22	36	17	21	12	22
R-squared	0.23	0.18	0.38	0.26	0.32	0.35	0.79

Note: Standard errors in brackets. \* significant at 10%; \*\* significant at 5% ; \*\*\* significant at 1% levels.

Table 2  
The Effects of Political and Economic Crises on Labour Market Deregulation  
Panel fixed-effects estimates

	All	Developed	Africa	Asia	LAC	MENA	Transition
Log real per capita GDP	0.00176	-0.0569***	-0.00263	-0.00077	-0.00207	-0.00152	0.0378
	[0.0033]	[0.017]	[0.0078]	[0.0073]	[0.0065]	[0.0054]	[0.084]
Max fall GDP	-0.000003*	1.41E-06	2.13E-05	-0.000004**	3.67E-06	2.95E-05	-0.00004***
	[0.0000019]	[0.000018]	[0.000019]	[0.0000019]	[0.000014]	[0.000019]	[0.000013]
Currency crises	0.00147	-0.00402	0.00155	0.00541	0.000628	-0.00324	-0.00296
	[0.0019]	[0.0072]	[0.0031]	[0.0043]	[0.0036]	[0.0044]	[0.011]
CAB	0.00130***	0.00407*	0.00145***	0.000237	0.000493	0.0002	-0.00664
	[0.00034]	[0.0024]	[0.00037]	[0.0011]	[0.0010]	[0.00094]	[0.0038]
Regime Durability	0.00079***	0.00218*	0.000268	0.00271***	-0.00022	0.00101**	-0.00183
	[0.00023]	[0.0012]	[0.00040]	[0.00072]	[0.00043]	[0.00046]	[0.0022]
Political Instability	-0.0106**	0.00101	-0.0288**	-0.00124	-0.003	0.000364	0.253*
	[0.0050]	[0.025]	[0.013]	[0.012]	[0.0068]	[0.010]	[0.12]
Party fractionalization	-0.00052	0.00209	-0.00066	-0.0106***	-0.00014	0.00228	-0.00578
	[0.0010]	[0.0073]	[0.0017]	[0.0024]	[0.0019]	[0.0015]	[0.0093]
Constant	0.232***	0.762***	0.306***	0.321***	0.679***	0.183***	-0.144
	[0.021]	[0.071]	[0.050]	[0.044]	[0.044]	[0.040]	[0.71]
Observations	732	171	193	106	162	60	40
No. countries	138	22	41	20	21	12	22
R-squared	0.08	0.23	0.17	0.43	0.01	0.31	0.59

Note: Standard errors in brackets. \* significant at 10%; \*\* significant at 5% ; \*\*\* significant at 1% levels.

Table 3  
The Effects of Political and Economic Crises on Trade Liberalization  
Panel fixed-effects estimates

	All	Developed	Africa	Asia	LAC	MENA
Log real per capita GDP	0.212***	0.0676**	0.429***	0.140*	0.591***	0.390***
	[0.030]	[0.028]	[0.088]	[0.071]	[0.094]	[0.11]
Max fall GDP	1.52E-05	5.13E-07	-7E-05	0.000429	0.000262**	-0.00016
	[0.000024]	[0.000015]	[0.00018]	[0.00029]	[0.00011]	[0.00027]
Debt crises	-0.0692**	0	-0.0804*	-0.107*	-0.116**	-0.11
	[0.027]	[0]	[0.047]	[0.060]	[0.058]	[0.086]
CAB	0.00391	0.00531	0.00986**	-0.00645	-0.00522	0.0072
	[0.0035]	[0.0066]	[0.0048]	[0.012]	[0.011]	[0.013]
Civil war intensity	-0.0464***	0.0021	-0.0657**	-0.0350**	-0.112*	-0.00309
	[0.014]	[0.056]	[0.032]	[0.017]	[0.064]	[0.066]
Political Instability	0.125***	0.111*	-0.0743	0.0718	0.142**	0.154
	[0.037]	[0.065]	[0.12]	[0.10]	[0.065]	[0.16]
Party fractionalization	0.0321***	-0.00232	0.0430***	0.0615***	-0.0168	0.00208
	[0.0075]	[0.013]	[0.014]	[0.019]	[0.020]	[0.023]
Constant	-1.303***	0.34	-2.704***	-0.801*	-4.132***	-2.937***
	[0.23]	[0.24]	[0.60]	[0.47]	[0.68]	[0.89]
Observations	490	138	127	62	101	48
No. countries	102	25	27	13	17	11
R-squared	0.25	0.09	0.36	0.43	0.44	0.49
Note: Standard errors in brackets. * significant at 10%; ** significant at 5% ; *** significant at 1% levels.						

Table 4  
The Effects of Political and Economic Crises on Labour Market Deregulation  
Panel fixed-effects estimates

	All	Developed	Africa	Asia	LAC	MENA
Log real per capita GDP	0.0143***	-0.0104	0.0014	0.0156	-0.00685	0.00781
	[0.0049]	[0.0073]	[0.012]	[0.013]	[0.012]	[0.0094]
Max fall GDP	-1E-06	-5.8E-06	0.000033	4.38E-05	-7.5E-06	2.73E-05
	[0.0000038]	[0.0000038]	[0.000024]	[0.000051]	[0.000015]	[0.000023]
Debt crises	-0.0064	0	-0.0002	-0.0133	0.00634	0.00123
	[0.0043]	[0]	[0.0065]	[0.011]	[0.0077]	[0.0073]
CAB	0.00158***	0.00417**	0.00133***	0.00395*	0.000496	0.000761
	[0.00041]	[0.0017]	[0.00046]	[0.0021]	[0.0014]	[0.0011]
Civil war intensity	-0.00046	-0.0035	0.00181	-0.00166	-0.00145	-0.00104
	[0.0023]	[0.015]	[0.0045]	[0.0030]	[0.0085]	[0.0056]
Political Instability	-0.0123**	-0.0123	-0.0395**	0.0193	-0.00291	-0.00634
	[0.0060]	[0.017]	[0.017]	[0.018]	[0.0086]	[0.014]
Party fractionalization	-0.00177	-0.00046	-5.4E-05	-0.0123***	-0.0026	0.00192
	[0.0012]	[0.0035]	[0.0019]	[0.0034]	[0.0027]	[0.0020]
Constant	0.157***	0.456***	0.270***	0.264***	0.713***	0.122
	[0.037]	[0.063]	[0.084]	[0.082]	[0.090]	[0.076]
Observations	502	138	136	65	101	48
No. countries	107	25	31	14	17	11
R-squared	0.07	0.07	0.19	0.37	0.05	0.23

Note: Standard errors in brackets. \* significant at 10%; \*\* significant at 5% ; \*\*\* significant at 1% levels.

Table 5  
The Effects of Political and Economic Crises on Trade Liberalization  
Panel fixed-effects estimates

	All	Developed	Africa	Asia	LAC	MENA	Transition
Lagged Labour Market	-0.311	0.00198	-0.678**	-0.525	-1.572*	2.117	1.01
Deregulation	[0.19]	[0.22]	[0.33]	[0.58]	[0.87]	[1.68]	[0.70]
Log real per capita GDP	0.172***	-0.00733	0.308***	0.106**	0.319***	0.168**	0.25
	[0.022]	[0.046]	[0.054]	[0.047]	[0.051]	[0.082]	[0.48]
Max fall GDP	1.77E-05	5.21E-05	-8.7E-06	2.62E-06	0.000209*	-2.7E-05	-5.2E-05
	[0.000012]	[0.000047]	[0.00013]	[0.000012]	[0.00011]	[0.00027]	[0.000081]
Currency crises	-0.0435***	-0.0415**	-0.0487**	-0.0146	-0.0667**	-0.0686	-0.0604
	[0.012]	[0.019]	[0.022]	[0.027]	[0.028]	[0.065]	[0.061]
CAB	0.00565**	-0.00804	0.00835**	-0.00253	0.00433	0.00704	-0.0344
	[0.0027]	[0.0065]	[0.0035]	[0.0070]	[0.0081]	[0.014]	[0.021]
Regime Durability	-0.00359**	0.00634**	-0.00940***	-0.00374	0.00179	0.00125	0.00117
	[0.0015]	[0.0031]	[0.0028]	[0.0046]	[0.0034]	[0.0068]	[0.012]
Political Instability	0.0822**	0.125*	-0.126	0.0448	0.106**	0.318*	-0.29
	[0.032]	[0.067]	[0.088]	[0.078]	[0.053]	[0.16]	[0.64]
Party fractionalization	0.0277***	0.0208	0.0267**	0.0379**	0.00474	0.0322	0.101*
	[0.0067]	[0.019]	[0.012]	[0.015]	[0.015]	[0.022]	[0.050]
Constant	-0.757***	0.535**	-1.480***	-0.19	-1.015	-1.632**	-2.596
	[0.15]	[0.21]	[0.36]	[0.32]	[0.68]	[0.65]	[4.22]
Observations	712	171	182	97	162	60	40
No. countries	130	22	36	17	21	12	22
R-squared	0.23	0.18	0.4	0.27	0.34	0.38	0.83

Note: Standard errors in brackets. \* significant at 10%; \*\* significant at 5% ; \*\*\* significant at 1% levels.

Table 6  
The Effects of Political and Economic Crises on Labour Market Deregulation  
Panel fixed-effects estimates

	All	Developed	Africa	Asia	LAC	MENA	Transition
Lagged Trade Liberalization	0.0162**	-0.0274	0.0401***	0.0419**	0.0161	0.0116	0.0444
	[0.0065]	[0.023]	[0.015]	[0.020]	[0.011]	[0.011]	[0.056]
Log real per capita GDP	0.000281	-0.0525***	-0.011	-0.00767	-0.00572	-0.00305	-0.121
	[0.0036]	[0.018]	[0.0091]	[0.0082]	[0.0072]	[0.0056]	[0.15]
Max fall GDP	-0.0000035*	1.54E-06	1.81E-05	-0.0000037*	3.51E-07	2.98E-05	-5.1E-05
	[0.0000019]	[0.000018]	[0.000019]	[0.0000020]	[0.000015]	[0.000019]	[0.000040]
Currency crises	0.00325	-0.00459	0.00428	0.00800*	0.00054	-0.0031	-0.0203
	[0.0020]	[0.0072]	[0.0033]	[0.0045]	[0.0042]	[0.0044]	[0.021]
CAB	0.000786*	0.00431*	0.000940*	0.000616	0.000144	6.31E-05	-0.0145*
	[0.00045]	[0.0025]	[0.00055]	[0.0012]	[0.0011]	[0.00094]	[0.0063]
Regime Durability	0.0008***	0.00218*	0.000646	0.00277***	-0.00024	0.00103**	-0.001
	[0.00023]	[0.0012]	[0.00043]	[0.00075]	[0.00045]	[0.00046]	[0.0035]
Political Instability	-0.0125**	0.00348	-0.0270**	0.00431	-0.00346	-0.00219	0.065
	[0.0052]	[0.025]	[0.013]	[0.013]	[0.0076]	[0.011]	[0.32]
Party fractionalization	-0.0004	0.00139	-0.00019	-0.0106***	-0.00025	0.00226	-0.00864
	[0.0010]	[0.0075]	[0.0017]	[0.0025]	[0.0020]	[0.0015]	[0.016]
Constant	0.234***	0.751***	0.346***	0.358***	0.701***	0.183***	1.248
	[0.023]	[0.074]	[0.058]	[0.048]	[0.049]	[0.040]	[1.25]
Observations	684	169	175	96	152	59	33
No. countries	128	22	36	17	21	11	21
R-squared	0.08	0.24	0.15	0.47	0.03	0.33	0.72

Note: Standard errors in brackets. \* significant at 10%; \*\* significant at 5% ; \*\*\* significant at 1% levels.

Table 7  
The Effects of Political and Economic Crises on Trade Liberalization  
2SLS Panel fixed-effects estimates

	All	Developed	Africa	Asia	LAC	MENA	Transition
Labour market deregulation	-4.655	1.837	-1.022	-0.769	56.01	2.481	-0.232
	[4.18]	[1.74]	[10.7]	[3.33]	[210]	[14.5]	[1.73]
Log real per capita GDP	0.178***	-0.0117	0.297***	0.0989**	0.439	0.222	0.0091
	[0.029]	[0.048]	[0.063]	[0.048]	[0.64]	[0.18]	[0.47]
Currency crises	-0.0370**	-0.0410**	-0.0524*	-0.00761	-0.1	-0.039	-0.0879
	[0.017]	[0.020]	[0.028]	[0.038]	[0.23]	[0.10]	[0.061]
CAB	0.00952*	-0.00659	0.00919	-0.00205	-0.0223	0.00942	-0.0315
	[0.0055]	[0.0067]	[0.012]	[0.0078]	[0.12]	[0.015]	[0.020]
Regime Durability	0.000394	0.00374	-0.00907**	-0.00141	0.0135	-0.00407	-0.0018
	[0.0040]	[0.0042]	[0.0044]	[0.010]	[0.051]	[0.030]	[0.013]
Political Instability	0.0335	0.114	-0.167	0.0413	0.271	0.227	-0.15
	[0.059]	[0.070]	[0.37]	[0.080]	[0.76]	[0.26]	[0.71]
Party fractionalization	0.0272***	0.0115	0.0290**	0.0325	0.0133	0.0198	0.0992*
	[0.0086]	[0.023]	[0.012]	[0.039]	[0.11]	[0.032]	[0.051]
Constant	0.238	0.195	-1.306	-0.0768	-40.12	-1.951	-0.136
	[0.96]	[0.40]	[3.26]	[1.12]	[143]	[4.19]	[3.99]
Observations	712	171	182	97	162	60	40
No. countries	130	22	36	17	21	12	22
R-squared	0.0104	0.0024	0.1373	0.0894	0.0043	0.1295	0.1097

Note: Standard errors in brackets. \* significant at 10%; \*\* significant at 5% ; \*\*\* significant at 1% levels. The first-stage regression has labour market reform as a function of per capita GDP, currency crises, max fall GDP, CAB, regime durability, party fractionalization, and political instability.



Table 8  
The Effects of Political and Economic Crises on Labour Market Deregulation  
2SLS Panel fixed-effects estimates

	All	Developed	Africa	Asia	LAC	MENA	Transition
Trade liberalization	0.0151	0.0225	0.0469	-0.396	0.000503	0.0691	0.125
	[0.035]	[0.12]	[0.045]	[0.84]	[0.051]	[0.12]	[0.14]
Log real per capita GDP	-0.00087	0.00342	-0.0161	0.0391	-0.00237	-0.0258	0.00561
	[0.0063]	[0.012]	[0.016]	[0.084]	[0.015]	[0.022]	[0.10]
Max GDP fall	-0.000004**	0.0000265*	9.65E-06	-2.1E-06	3.43E-06	-1.6E-05	-0.00005**
	[0.0000019]	[0.000014]	[0.000021]	[0.0000065]	[0.000018]	[0.000037]	[0.000015]
Regime Durability	0.0009***	0.0012	0.000819	0.00126	-0.00019	0.00187**	-0.00107
	[0.00024]	[0.0011]	[0.00060]	[0.0037]	[0.00045]	[0.00092]	[0.0028]
Political Instability	-0.0112**	0.00309	-0.0263*	0.0176	-0.00292	-0.0107	0.212
	[0.0057]	[0.023]	[0.015]	[0.049]	[0.0086]	[0.033]	[0.15]
Party fractionalization	-0.00073	0.00435	-0.00149	0.00539	-0.00015	3.41E-06	-0.0138
	[0.0015]	[0.0058]	[0.0023]	[0.035]	[0.0019]	[0.0041]	[0.021]
Constant	0.239***	0.172**	0.373***	0.199	0.680***	0.365**	0.144
	[0.035]	[0.082]	[0.094]	[0.29]	[0.10]	[0.15]	[0.88]
Observations	712	171	182	97	162	60	40
No. countries	130	22	36	17	21	12	22
R-squared							

Note: Standard errors in brackets. \* significant at 10%; \*\* significant at 5% ; \*\*\* significant at 1% levels. The first-stage regression has trade liberalization as a function of per capita GDP, currency crises, max fall GDP, CAB, regime durability, party fractionalization, and political instability.