TESTING ALTERNATIVE EXPLANATIONS OF CAPITAL CONTROL LIBERALIZATION

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The literature on why restrictions over capital flows have been liberalized is filled with alternative causal stories (the pluralist, statist and systemic model, and economic explanations). In this article, we provide a test of these models of capital control liberalization within the context of 18 OECD countries from 1967 to 1995. We have avoided the usual practice of aggregating multiple governments in one country within one year into one country-year observation, and use the country-year-government as the unit of analysis instead to correctly test the relationship between government characteristics and liberalization policy. We find that when the government considers lifting or imposing restrictions over capital flows, it responds to both systemic pressures and the key supporters of free capital flows. Governments also consider the current account balance and are heavily influenced by the prior policy choice regarding restrictions on capital transactions. We fail to find support for such explanations as the impact of government ideology, government strength, and central bank independence.

Financial globalization has been proposed as the single most important characteristic of the contemporary international political economy. Financial markets of different nation states are more integrated than ever before. Movement of portfolio and direct investments encounter increasingly fewer barriers and ever lower transaction costs. The literature on why restrictions over capital flows have been liberalized is substantial as shown in the excellent reviews by Cohen (1996) and Andrews and Willett (1997). Even an incomplete list of representative studies reveals how scholars have resorted to different theoretical explanations for the same phenomenon (e.g., Frieden 1991; Epstein and Schor 1992; Goodman and Pauly 1993; Helleiner 1994; Cerny 1994; Sobel 1994; Alesina, Grilli and Milesi-Ferretti 1994; Grilli and Milesi-Ferretti 1995; Haggard and Maxfield 1996; Quinn and Inclan 1997; and Leblang 1997). Surprisingly, these different causal explanations, which include the pluralist model, the statist model, the systemic model and economic explanations, have not been put to an empirical test simultaneously even though some
of them are often portrayed as competing explanations for financial liberalization.

In this article we provide a more encompassing test of different theoretical explanations for why governments liberalize capital controls. Such an empirical analysis is overdue for both theoretical and policy reasons. Without subjecting competing explanations to rigorous empirical tests, it is less likely that our knowledge about the underlying causal process of financial liberalization will develop cumulatively. Being inundated by descriptive facts poses a grave danger to theoretical progress and increases the potential risk that we end up with bad public policy. As argued in many studies, including those in this symposium, a globalizing economy has launched many new economic and political challenges. Without efficient and optimal policy responses, general social welfare is likely to suffer and political backlashes against globalization will follow. It should come as no surprise that optimal policy responses must be based on a solid understanding of the causal mechanisms of a global economy. Our analysis aims at gleaning regular patterns in the process of financial liberalization.

In the first section, we review previous studies of the imposition or liberalization of capital controls and derive testable hypotheses from each theoretical explanation. In the second section, we operationalize relevant theoretical concepts and discuss the methodology we use for empirical assessment. The third section contains a presentation of our findings and a discussion of their theoretical implications. Finally, we conclude with a short summary and point to possible avenues for future research.

THEORETICAL EXPLANATIONS

The Pluralist Model

The pluralist view of democracy argues that policy is a result of
competitions among societal interests and that elected politicians have to meet the demands of their own constituencies in the process of pursuing reelection. When capital liberalization is explained in terms of economic pluralism, it is suggested that the liberalization policy simply reflects the wishes of the dominant interest groups (Goodman and Pauly, 1993; Sobel, 1994). The expected distributional consequences of a liberalization policy will generate an incentive for different domestic interest groups to compete for influence over the policy outcomes.

Frieden (1991) identifies several key societal actors who are affected by financial globalization: owners of capital, owners and workers in specific sectors, producers of traded goods, international investors and producers of nontraded goods. The distributional effects of capital mobility lead to political realignments among these different groups. Thus, he suggests that support for greater financial integration can be expected from owners and managers of financial assets and from multinational corporations with internationally diversified investments. In a comparative analysis of the capital decontrol experiences of Japan, Germany, France and Italy, Goodman and Pauly (1993) also conclude that multinational firms and domestic financial intermediaries in these countries have more and more interest in investing abroad and diversifying their portfolios internationally. Consequently these powerful societal groups find their interest in liberalized capital controls reflected in the adoption of such policies.

We distill the following two hypotheses from the pluralist model regarding the degree to which capital control liberalization is related to the interests of the primary supporters of that policy.

Hypothesis 1: As domestic banks increase their holdings of foreign assets and increasingly support removing restrictions on international capital transactions, policies of capital control liberalization are more likely to be adopted.
Hypothesis 2: As multinational firms increase foreign direct investment abroad and increasingly support removing restrictions on capital flows across borders, policies of capital control liberalization are more likely to be adopted.

The Statist Model

According to this model, state leaders are rational political actors who act to realize their policy preferences within various institutional and environmental/contextual constraints. The question at issue is whether state leaders enjoy some degree of policy autonomy with respect to capital decontrol in the face of systemic changes and societal pressures. More specifically, if they do play some autonomous role, state leaders should be able to take advantage of domestic political institutions and pursue their own policy preferences, regardless of systemic and societal pressures.

State leaders make decisions based on their policy preferences, and their policy preferences derive from their value assumptions and how they think the economic world works. Scholars following this approach have suggested the following sources for leaders' policy preferences: partisan bias, the desire to maximize policy autonomy, and government strength (Alesina, Grilli and Milesi-Ferretti 1994; Mathieson and Rojas-Suarez 1994; Grilli and Milesi-Ferretti 1995; Leblang 1997; Quinn and Inclan 1997; Cerny 1994; Helleiner 1994). Helleiner (1994) argues that shifts in the beliefs of state leaders provide an important explanation of why capital decontrol is adopted. Two kinds of beliefs may be important to the adoption of liberal financial policies. The first is a state leader’s belief about how the economy works. The belief that Keynesian type economic interventionism and demand side management do not work is the driving force behind the policy of financial de-regulation (Cerny 1994). Only when state leaders believe that capital control liberalization is desirable will they act in favor of removing restrictions on capital transactions. Second, state leaders may be ideologically pro-labor
or pro-capital. State leaders who are pro-labor are more likely to impose a higher tax rate on capital and, therefore, are less likely to liberalize capital controls in order to avoid capital flight (Alesina, et al. 1994; Grilli and Milesi-Ferretti 1995). On the other hand, state leaders who are pro-capital tend to adopt policies in line with the interests of their own constituencies, such as multinational corporations and domestic financial institutions. Such leaders are more likely to liberalize capital controls.

The second source of leaders' policy preferences is based on their desire to maximize policy autonomy. By securing a larger domestic tax base and allowing the imposition of both a capital and inflation tax, capital controls provide governments more policy autonomy. Alesina, et al. (1994) and Grilli and Milesi-Ferretti (1995) argue that both strong and weak governments may want to impose/maintain controls, but for very different reasons. A strong (i.e., majority) government may want to extract more seignioriage, and thus prefer to adopt and sustain capital controls. On the other hand, a weak (i.e., minority or coalition) government may also prefer capital controls because it is not strong enough to extract direct or indirect taxes to finance government spending. Both, Alesina, et al. (1994) and Grilli and Milesi-Ferretti (1995) find empirical evidence for the proposition that a strong government is more likely to adopt capital controls (i.e., less likely to liberalize).¹

Scholars of the statist model have also found that the degree of central bank independence as an institutional constraint is positively related to capital control liberalization (Quinn and Inclan, 1997) and negatively associated with capital control imposition (Alesina, et al. 1994; Grilli and Milesi-Ferretti 1995). Greater central bank independence implies stricter monetary discipline and greater bureaucratic policy autonomy. Alesina, et al. (1994:302) argue that under higher central bank independence, the government is less able to manipulate monetary policy and less likely to impose an inflation tax. The government has less incentive to impose capital controls. Quinn and Inclan (1997:785)
argue that voters vote retrospectively only when the political responsibility of the government is clear. Since greater central bank independence implies less clarity of political responsibility, such governments are less likely to be penalized for their performance, and so have less incentive to pursue capital control policies.

The following hypotheses are based on the statist explanations of capital liberalization:

Hypothesis 3: A rightist government is more likely to liberalize capital controls compared to a leftist government.

Hypothesis 4: A strong (majoritarian) government is less likely to liberalize capital controls.

Hypothesis 5: A government facing a more independent central bank is more likely to liberalize capital controls.

Systemic Explanations

In his review, Cohen (1996) suggests that there are two systemic level explanations of capital globalization. They are the "liberal model" and the "realist model" which reflect two fundamental causal forces from international economics and international politics. The liberal model argues that progress in communication and information technologies, greater capital mobility, and growing integration of world financial markets make it more difficult for states to effectively sustain capital controls (Andrews 1994; Martson 1995; Mathieson and Rojas-Suarez 1994; Leblang 1997). These changes nullify independent monetary policy making, increase the capacity of private agents to evade capital controls, raise the costs to financial sectors and the costs to enforce these controls. Capital decontrol is a natural consequence of these changes. The realist model argues that capital decontrol results from policy competition and rivalry among different governments in order to pursue individual state
interests (Helleiner 1994; Sobel 1994). As systemic pressures rise, the competitive diffusion of liberalization policies may also develop.

One problem with testing these two systemic models is that they are difficult to distinguish empirically. Market integration generates competitive pressures among governments, the pressures result in incentives to adopt policies to strengthen their own markets, and such policies have the effect of further deepening market integration. However, in the end, both models point to the empirical implication in the following hypothesis.

Hypothesis 6: Systemic pressures from capital globalization are positively related to the adoption of capital control liberalization policies.

Economic Explanations

Liberalizing capital controls is a political, as well as an economic, decision. The following three economic factors have almost always been considered as relevant in previous studies: a country's current account situation, its degree of trade openness, and its exchange rate regime. First, the greater the surplus in the current account balance, the less likely liberalization will induce unbearable shocks in terms of capital flight and the more favorable the conditions for liberalizing capital controls (Goodman and Pauly, 1993). Second, the degree of trade openness may affect the tendency toward liberalization in two ways. On the one hand, trade openness is often used as a measure of economic interdependence among countries. When a state is more open to trade, it is more dependent upon other countries, and it may have a greater interest in capital decontrol. On the other hand, greater openness to the world economy implies more exposure to international market risks. As a result, state leaders might be reluctant to liberalize capital controls, since freer capital flows could lead to greater volatility and loss of policy autonomy. Finally, the more flexible the exchange rate regime, the more
difficulty a state will have in maintaining stringent capital control policies due to shocks from the foreign exchange markets.

Hypothesis 7: The current account balance is positively associated with capital control liberalization.

Hypothesis 8: Trade openness is related (either positively or negatively) with capital control liberalization.

Hypothesis 9: The flexibility of a country’s exchange rate regime is positively related to capital control liberalization.

OPERATIONALIZATION

Dependent Variable and Unit of Analysis

The three most commonly used measures of a state’s capital control or liberalization policy all rely on the IMF’s *Annual Report of Exchange Arrangements and Exchange Restrictions (AREAER)*. Two of these measures are based on the summary tables in this publication, which present the presence (or absence) of twelve different types of restrictions on exchange rates and payments for capital and current transactions. The first approach to measuring a state’s choice of capital control policy is to focus upon the most essential type of capital restrictions that deal with “restrictions on payments for capital transactions”. This is the most popular measure and the imposition of these restrictions has been carefully studied in Mathieson and Rojas-Suarez (1994), Alesina, et al. (1994), Grilli and Milesi-Ferretti (1995), and Leblang (1997). Such restrictions curtail capital flows across borders and thus, produce stabilizing effects upon national economies with respect to the balance of payments situation and the real sector of the economy.

A second approach is to create an aggregate index to gauge the extent of government restrictions on cross-border financial flows (Rose 1994; Garrett 1995). For example, Garrett’s index
sums across four categories (restrictions on capital account; bilateral payments with members; bilateral payments with nonmembers; import deposits) in the AREAER summary tables. Such an aggregated index uses more information about capital control from the different categories in the summary tables, but it may misrepresent the relative importance of each type of restriction. In fact, we find that “restrictions on capital transactions” are almost always the last to be removed in the process of liberalization. When “restrictions on capital transactions” are finally removed, all other restrictions have already been liberalized.

A third measure of capital liberalization is found in Quinn (1997) and Quinn and Inclan (1997). Instead of the summary tables, they use the detailed country descriptions in the AREAER. They code all of a country’s legal regulations over current account transactions, capital account transactions, and international agreements, and create an additive measure of a country’s overall financial openness. Compared to the summary table information, their measure has the advantage of taking into account not only more categories of restrictions on capital payments but also information on receipts.

In addition to their common data source, the three measures share two additional features. They represent decisions adopted by individual governments to impose or remove restrictions over capital flows, and all three are aggregated over the temporal interval of a year. Indeed, most of these studies use country-year as the unit of analysis in a pooled time series cross sectional design. As long as there is only one government for each year, we can easily identify which government made the decision to alter restrictions on capital transactions. Ambiguity occurs when there is more than one government within a year. Since the data in the AREAER summary tables are coded annually, we cannot identify which government made the decision to change policy concerning capital transactions. The ideological complexion and coalition dynamics may be so different from
government to government that any single ideological score for that country-year can be misleading and bias any tests of the statist model. In this analysis, we attempt for the first time to correct this problem and carry out a fairer test of the alternative models. Instead of country-year, we use country-year-government as the unit of analysis. Derived from Woldendorp, Keman and Budge (1993, 1998), we have, the dates during which each government was in power and from the detailed country reports contained in the AREAER we have determined the date on which a particular change in capital control policy was carried out. Therefore, unlike all previous studies, we can match changes in government policy concerning capital transactions with the government that carried out those policy changes. Our sample includes all governments in 18 OECD countries from 1967 to 1995.4 As a first cut, we use the dichotomous measure of “restrictions on payments for capital transactions” as our dependent variable, which is coded 1 if the restriction is liberalized and zero otherwise.

Measures of the Independent Variables

To test whether the pluralist model explains capital decontrol, we use two different variables to gauge the relative interest of two important domestic actors. The first variable, MNC, is a state’s foreign direct investment as a percentage of its gross domestic investment. It reflects the extent to which multinational firms are interested in liberalizing restrictions over capital flows across borders. The greater the ratio, the more interested multinational firms will be in having capital controls liberalized, and the more active they will be in pushing for such a policy change.

The second variable, BANK, is the domestic money deposit banks’ foreign assets as a percentage of their assets in the (domestic) private sector. It measures the relative interest of domestic financial intermediaries in diversifying their portfolios at home and abroad. The higher the ratio, the more we anticipate domestic financial institutions want to see capital controls liberalized.
Since loosened capital controls may lead to the purchase of more foreign assets by domestic financial institutions and more foreign direct investment flows by multinational firms, causality between these two independent variables and our dependent variable may run in both directions. Using contemporaneous observations of the independent and dependent variables could result in spurious findings. To correct for the possibility that capital decontrol policy may lead to greater capital outflows, we use one-period lagged values for these two variables. Data on these variables are taken from the IMF's *International Financial Statistics Yearbook* and the *Balance of Payments Yearbook*.

To test the statist model, we use one variable, CGP, to capture the left-right ideological difference in state leaders that inform their policy preferences, one variable, SMAJ, for government strength and one variable, CBI, for central bank independence. CGP is an ordinal level measure of government ideological complexion developed by Woldendorp, Keman and Budge (1993, 1998). It is a five-point scale with 1 representing most conservative and 5 representing most liberal. The higher the scale, the more liberal the government and the less likely it will liberalize capital controls.

The government strength dummy variable, SMAJ, is coded one if the government has single party majority and zero otherwise. It is based on the "type of government" measure in Woldendorp, Keman and Budge (1993, 1998). There is no strong theoretical consensus regarding the direction of this variable, but several previous studies (e.g., Alesina, et al. 1994; Quinn and Inclan 1997) found that strong governments are less likely to liberalize capital controls.

Central bank independence, CBI, is measured by the aggregate legal index of central bank independence from Cukierman, Webb and Neyapti (1992). It is expected that greater central bank independence facilitates the adoption of capital liberalization policies.
Systemic level pressure, KL_ALL, is measured by the number of countries in the international system that have already liberalized capital controls for any given year. In order to avoid the potential simultaneity bias, it is lagged one period. As more countries lift restrictions on capital flows, pressures for liberalization are exerted on other countries in the international system. Data are from the IMF AREAER.

The type of exchange rate regime also affects a country’s likelihood of capital liberalization. Since 1967, different states have chosen different types of exchange rate regimes: fixed rates under Bretton Woods, managed floating, target zones, and freely floating exchange rate regimes. The general trend is movement from more fixed to more flexible exchange rate regimes. The more flexible the exchange rate, the more difficulty states will have in maintaining stringent capital control policies. We use two dummy variables to control for the effects of different exchange rate regimes. PEG is coded one if a country is under the Bretton Woods fixed rate system, and zero otherwise. MANAGED is coded one if a country is under some pegged system and zero otherwise. The reference category is a flexible exchange rate regime. Both variables are expected to be negatively related to capital liberalization. Data are from the IMF’s AREAER.

OPEN is the lagged value of exports plus imports divided by GDP, which reflects the effect of trade openness on capital liberalization. The data are from the Penn World Tables (Mark 5.6a) and the Balance of Payments Yearbook. There is no definitive expectation on how a country’s trade openness might affect a state leader’s decision regarding capital liberalization. CUGDP is the lagged current account balance as a percentage of GDP, which accounts for the effect of macroeconomic conditions upon capital liberalization. Current account surpluses provide favorable conditions for capital liberalization whereas the deficits make it more difficult. Data are from the International Financial
Table 1: Variable Description

<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Definition</th>
<th>Sign</th>
<th>N</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>BANK</td>
<td>domestic banks' foreign assets as a percentage of their foreign assets and assets in the private sector</td>
<td>+</td>
<td>772</td>
<td>21.40</td>
<td>18.88</td>
<td>0.00</td>
<td>79.30</td>
</tr>
<tr>
<td>MNC</td>
<td>foreign direct investment abroad as a percentage of gross domestic investment</td>
<td>+</td>
<td>755</td>
<td>4.30</td>
<td>5.75</td>
<td>-12.49</td>
<td>28.46</td>
</tr>
<tr>
<td>CGP</td>
<td>ideological complexion of the government</td>
<td>-</td>
<td>773</td>
<td>2.41</td>
<td>1.55</td>
<td>1.00</td>
<td>6.00</td>
</tr>
<tr>
<td>CBI</td>
<td>legal index of central bank independence</td>
<td>+</td>
<td>774</td>
<td>0.34</td>
<td>0.15</td>
<td>0.15</td>
<td>0.69</td>
</tr>
<tr>
<td>KL_ALL</td>
<td>number of states in the international system that have liberalized capital controls</td>
<td>+</td>
<td>774</td>
<td>30.99</td>
<td>7.07</td>
<td>20.00</td>
<td>52.00</td>
</tr>
<tr>
<td>OPEN</td>
<td>trade openness, import and export as a percentage of GDP</td>
<td>+,-</td>
<td>755</td>
<td>61.33</td>
<td>27.08</td>
<td>15.51</td>
<td>163.86</td>
</tr>
<tr>
<td>CUGDP</td>
<td>current account balance as a percentage of GDP</td>
<td>+</td>
<td>755</td>
<td>-1.02</td>
<td>3.32</td>
<td>-15.96</td>
<td>7.57</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Dummy</th>
<th>N</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>KL</td>
<td>774</td>
<td>456 318</td>
</tr>
<tr>
<td>DEPLAG</td>
<td>+</td>
<td>773 487 306</td>
</tr>
<tr>
<td>SMAJ</td>
<td>-</td>
<td>774 574 200</td>
</tr>
<tr>
<td>PEG</td>
<td>-</td>
<td>774 606 168</td>
</tr>
<tr>
<td>MANAGED</td>
<td>-</td>
<td>774 399 375</td>
</tr>
</tbody>
</table>

Note: The table includes variable name, variable definition, expected sign, number of nonmissing observations, mean, standard deviation, minimum and maximum values for the continuous variables, and the frequencies for the dummy variables.

Statistics Yearbook.

DEPLAG is the one year lagged dependent variable. Its inclusion is based on both theoretical and statistical grounds. Theoretically, public policies exhibit patterns of inertia. They are difficult to get adopted and once adopted, they are difficult to reverse. Such policy inertia is relevant and needs to be taken into account in terms of capital control liberalization because of its distributive consequences. The dependent variable, reflecting such policy inertia, has long periods of zeroes or ones in the data vector, which renders the observations statistically non-
independent. Failure to control for the non-independence is likely to cause spurious results. It is also argued that including the lagged dependent variable as an independent variable helps to prevent any potential omitted variable bias (see, for example, Quinn and Inclan (1997)).

METHODOLOGY

Since the dependent variable is dichotomous, regular regression analysis is not appropriate. We use a logit model that is widely employed in the political science literature. The log odds ratio in the dependent variable is a function of the independent variables, from whose parameter estimates we can compute the probability of the dependent variable taking on a value of 1 or 0 in various scenarios.

With governments from 18 countries for 28 years, we have a pooled time series cross sectional design. Such a design, however, is susceptible to several potential econometric problems: heteroskedasticity, autocorrelation, and unit effects. We control for serial correlation by including the lagged dependent variable in estimation. We control for the temporal unit effects with yearly dummy variables. Finally, we estimate Huber's robust standard errors adjusted for clustering on country that accounts for heteroskedasticity in the error variance.

FINDINGS AND IMPLICATIONS

Table 2 presents the statistical results for a set of alternative model specifications: the economic model alone, the economic model plus the systemic model, the economic model plus the pluralist model, the economic model plus the statist model and the full model. A fair test of these alternative explanations requires that we include them all in the same model to avoid omitted variable bias. Therefore, we focus our discussion of the findings based on the full model, but we include results from the other model specifications for those who are interested in comparing the cross-
Table 2: Logit Parameter Estimates for Alternative Model Specifications

<table>
<thead>
<tr>
<th></th>
<th>Full Model</th>
<th>Economic+Pluralist</th>
<th>Economic+Statist</th>
<th>Economic+Systemic</th>
<th>Economic Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEPLAG</td>
<td>18.564***</td>
<td>10.756***</td>
<td>11.221***</td>
<td>17.390***</td>
<td>10.888***</td>
</tr>
<tr>
<td></td>
<td>(1.810)</td>
<td>(2.150)</td>
<td>(2.505)</td>
<td>(2.075)</td>
<td>(2.165)</td>
</tr>
<tr>
<td>BANK</td>
<td>0.044**</td>
<td>0.048**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.026)</td>
<td>(0.022)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNC</td>
<td>-0.042</td>
<td>-0.046</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.087)</td>
<td>(0.080)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGP</td>
<td>-0.233</td>
<td>-0.251</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.199)</td>
<td>(0.217)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMAJ</td>
<td>0.920</td>
<td>1.722**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.834)</td>
<td>(0.795)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSI</td>
<td>1.569</td>
<td>1.704</td>
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<td>(1.711)</td>
<td>(1.628)</td>
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<tr>
<td>KL_ALL</td>
<td>1.004***</td>
<td>0.923***</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>(0.229)</td>
<td>(0.241)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEG</td>
<td>1.248</td>
<td>0.883</td>
<td>1.120</td>
<td>1.626</td>
<td>0.939</td>
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<tr>
<td></td>
<td>(1.548)</td>
<td>(1.273)</td>
<td>(1.199)</td>
<td>(2.130)</td>
<td>(1.541)</td>
</tr>
<tr>
<td>MANAGED</td>
<td>-1.254</td>
<td>-1.251**</td>
<td>-0.866</td>
<td>-1.331*</td>
<td>-1.096*</td>
</tr>
<tr>
<td></td>
<td>(1.083)</td>
<td>(0.754)</td>
<td>(0.800)</td>
<td>(0.951)</td>
<td>(0.684)</td>
</tr>
<tr>
<td>OPEN</td>
<td>-0.030*</td>
<td>-0.022</td>
<td>-0.011</td>
<td>-0.010</td>
<td>-0.007</td>
</tr>
<tr>
<td></td>
<td>(0.021)</td>
<td>(0.018)</td>
<td>(0.012)</td>
<td>(0.014)</td>
<td>(0.012)</td>
</tr>
<tr>
<td>CUGDP</td>
<td>0.187***</td>
<td>0.106</td>
<td>0.217**</td>
<td>0.182**</td>
<td>0.136*</td>
</tr>
<tr>
<td></td>
<td>(0.114)</td>
<td>(0.089)</td>
<td>(0.097)</td>
<td>(0.104)</td>
<td>(0.088)</td>
</tr>
<tr>
<td>CONSTANT</td>
<td>-42.023***</td>
<td>-6.575***</td>
<td>-7.408***</td>
<td>-39.351</td>
<td>-6.709***</td>
</tr>
<tr>
<td></td>
<td>(8.563)</td>
<td>(1.943)</td>
<td>(2.048)</td>
<td>(9.844)</td>
<td>(2.286)</td>
</tr>
<tr>
<td>N</td>
<td>753</td>
<td>754</td>
<td>753</td>
<td>754</td>
<td>754</td>
</tr>
<tr>
<td>Pseudo R²</td>
<td>0.92</td>
<td>0.90</td>
<td>0.90</td>
<td>0.91</td>
<td>0.89</td>
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<tr>
<td>Wald test (χ²)</td>
<td>848***</td>
<td>697***</td>
<td>19373***</td>
<td>640***</td>
<td>1889***</td>
</tr>
</tbody>
</table>

Note: 1. In parentheses are the Huber robust standard errors adjusted for clustering on country.
2. All models include year dummy variables in estimation and their results are not presented in the table.
3. *** p<0.01, ** p<0.05, * p<0.1. All tests are one tailed.

model robustness of our findings. The statistically significant results in the full model seem to stand up well in the other model specifications.

The goodness of fit for the full model is reasonably strong. The Wald test allows us to reject the null hypothesis that all
coefficients are jointly zero at the .01 level. The pseudo R square is 0.92.

Table 2 shows that DEPLAG is statistically significant at the 0.01 level and has a positive sign. Its parameter estimate is much larger than that of any other independent variable except for the intercept. The choice made by the previous government has a quite sizeable inertial effect.

The pluralist model received some statistical support. BANK is statistically significant at the 0.05 level and in the expected direction. The more domestic financial institutions shift their portfolios toward foreign assets, the more likely a government is to liberalize its capital controls. MNC however is not statistically significant, that is, its parameter estimate is not statistically different from zero.

KL_ALL, which measures systemic pressures, is statistically significant at the 0.01 level and has the expected positive sign. As more states in the international system relax their restrictions on capital flows, pressures for the remaining states to liberalize increase, and governments do appear to respond to these pressures by liberalizing their capital controls.

The statist model does not perform well in these statistical tests. CGP, which measures government ideology along the left-right dimension, is close to being statistically significant at the 0.1 level and it does have the expected sign. SMAJ, a dummy variable for single party majority government, is also close to being significant at the 0.1 level, but is not in the anticipated direction. Finally, CBI, measuring the institutional constraint of central bank independence, also fails to be statistically significant. These results are not consistent with many of the findings in previous works, which may have resulted from differences in model specification, variable measurement, or estimation method. For example, Quinn and Inclan (1997) use a 14-point index as the dependent variable measuring financial openness. Alesina et
al (1994) and Grilli and Milesi-Ferretti (1995) also use logit, but they do not control for (1) the effect of prior policy choice by including the lagged dependent variable, (2) the intra-country correlation with the Huber standard error adjusted for clustering based on country, or (3) the temporal unit effects with the yearly dummies. Indeed, if we simply use the Huber robust standard error without adjusting for clustering on country, we will find that CGP is statistically significant at the 0.1 level. Therefore, we should interpret our findings regarding the statist model with great care. They merely suggest that the statist model does not explain well the dichotomous measure of capital control liberalization when we put the model to an extremely rigorous test. One should not infer an outright rejection of the statist model with respect to capital control liberalization in general. More work in terms of different measures or even theoretical model specifications is in order.

CUGDP is statistically significant at the 0.05 level and has an expected positive sign. A government is more likely to liberalize capital controls when the current account balance is in surplus. OPEN is statistically significant at the 0.1 level and has a negative sign. This seems to be consistent with the explanation that greater trade openness implies greater exposure to international market risks and induces reluctance on the part of the government to liberalize restrictions over capital flows. The two exchange rate regime variables, PEG and MANAGED, however, are not statistically significant.

In the international political economy literature, explanations drawn from pluralist, systemic, and statist approaches have offered the most widely cited explanations for why governments liberalize capital controls. The empirical results in Table 2 have provided support for the first two approaches.

Unfortunately, in logit analysis we cannot directly interpret the coefficient estimates as the marginal effect of the respective independent variable upon the dependent variable as in regression
analysis. The parameter estimate is an increment in the log odds of liberalizing capital controls due to a unit change in the value of the relevant independent variable. Thus, in order to render the significant parameter estimates for BANK and KL_ALL substantively meaningful, we compute the changes in the odds that a government liberalizes capital controls due to changes in the values of BANK, KL_ALL and DEPLAG and present them in Table 3.

\textit{Table 3: Substantive Implications of the Parameter Estimates}

<table>
<thead>
<tr>
<th>BANK</th>
<th>KL_ALL</th>
<th>DEPLAG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase in BANK by</td>
<td>Change in odds (KL=1)</td>
<td>Increase in KL_ALL by</td>
</tr>
<tr>
<td>1%</td>
<td>1.05</td>
<td>1</td>
</tr>
<tr>
<td>10%</td>
<td>1.5</td>
<td>5</td>
</tr>
<tr>
<td>20%</td>
<td>2.4</td>
<td>9</td>
</tr>
</tbody>
</table>

The odds ratio for BANK is the extent to which the odds of liberalizing capital controls increase for every percent increase in BANK. Table 3 shows that for a 1% increase in BANK, the odds of liberalizing capital controls increase by a factor of 1.05. For a 10% increase in BANK, the odds of liberalizing capital controls increase by a factor of 1.5; for a 20% increase in BANK, the odds of liberalizing capital controls increase by a factor of 2.4. The odds ratio of KL_ALL is the extent to which the odds of liberalizing capital controls rises with increases in the number of countries in the international system that have liberalized capital controls. The odds of liberalizing capital controls increase by a factor of 2.73 if one additional country relaxes its restrictions, the odds increase by a factor of 151 if 5 more countries relax restrictions, and the odds increase by a factor of 999 if 9 more
countries relax restrictions. The above results show that the probability of government capital decontrol increases due to: (1) rises in societal interest in unrestricted capital flows across borders; or, (2) accumulation in systemic level pressures. Both societal actors and systemic influences make a difference at the margin.

Table 3 also shows that a government that has capital controls already relaxed is 999 times more likely to continue its liberalized policy relative to the case when the prior policy was one of restrictions. This suggests a characteristic of path dependence or policy inertia in the policymaking regarding restrictions over capital flows. Indeed, for the 18 countries in our sample, only two countries have exhibited repeated policy reversals in our dependent variable.\textsuperscript{6} It is fairly difficult for a government to liberalize capital controls; but once liberalization occurs, it is also difficult to reverse it. This seems a fair conclusion at least in terms of the dependent variable measure we use in this analysis.

CONCLUSION

Using a popular dichotomous measure of restrictions on capital transactions, we have carried out an encompassing test of alternative models of capital control liberalization. We have avoided the usual practice of aggregating multiple governments in one country within one year into one country-year observation. Instead, we use the country-year-government as the unit of analysis such that we may correctly test the relationship between government characteristics and liberalization policy.

Whether referred to as globalization or internationalization, it is widely accepted that barriers to a whole range of international transactions have been falling throughout the post-war period. These systemic changes alter the power and interests of powerful socioeconomic groups within states. In turn, these groups press their government for changes in policy. When the government considers lifting or imposing restrictions over capital flows, it responds to both systemic pressures and the key
supporters of free capital flows. In addition, the government also considers the current account balance and is heavily influenced by the prior policy choice regarding restrictions on capital transactions. This is the picture depicted by the empirical findings of this analysis. Within this picture, however, we fail to find support for statist explanations, such as the impact of government ideology, government strength, and central bank independence. We have conjectured possible explanations for the lack of support for the statist model.

It is important to recognize that our analysis is only part of a larger research program and does not provide the final, definitive evidence. It is limited by the dichotomous nature of the dependent variable and the empirical domain restricted to the OECD countries. We are also aware of the lack of an integrative theory that weaves different theoretical explanations into a coherent story. This accounts for why some of our findings are difficult to explain away within existing theories. For example, commercial banks seem to have more impact on liberalization than MNCs, and greater trade openness brings more resistance to capital liberalization. A theory that incorporates variations in preferences across the financial and the real sectors within certain bank-industry institutional contexts may help to explain our findings, as in the paper by Walsh on French monetary policy in this symposium. These weaknesses definitely offer opportunities for fruitful future research that helps us better understand why state choose to liberalize restrictions on capital transactions.

ENDNOTES

* We thank Peter Dombrowski and two anonymous referees for their helpful comments and suggestions. We also thank Monica Lombana for editorial assistance. Data for replication are available upon request, and all correspondence should be addressed to Quan Li.

1. Quinn and Inclan (1997) argue that the strength of a government can produce distinctive preferences among its leaders. They suggest that the public vote retrospectively only when the political responsibility of the government is high and clear. Since a weak government has less clarity of political
responsibility and is less likely to be penalized or credited by voters for its
economic performance, it has less incentive to pursue stimulative economic
policies and thus less need to maintain capital controls. Consistent with Alesina,
et al. (1994) and Grilli and Milesi-Ferretti (1995), they find that strong
(majority) governments are less likely to ease capital restrictions.

2. Financial globalization has also been empirically assessed using other
measures. Frankel (1993) reviews several measures of capital mobility,
including capital flows, onshore-offshore interest differentials, deviations from
covered interest rate parity, and the Feldstein-Horioka saving-investment
approach. He shows that international financial integration has advanced much
less than the integration of domestic financial markets. However, these analyses
have a different focus than this paper, and their measures are not very good at
capturing changes in governmental policy.

3. Restrictions are defined as “official actions directly affecting the availability
or cost of exchange, or involving undue delay...other than restrictions imposed
for security reasons” (IMF, AREAE).

4. The 18 countries and number of government changes during the sample
period include Australia (17), Austria (10), Belgium-Luxembourg (Belgium
20), Canada (12), Denmark (17), Finland (22), France (23), Germany (14),
Iceland (13), Ireland (13), Italy (34), Japan (21), Netherlands (11), New Zealand
(15), Norway (15), Sweden (16), Switzerland (29), and the UK (10). For
Switzerland, data on the dependent variable is available only since 1992.

5. Cukierman et al. (1992) compose two measures for central bank
independence: central banker turnover rate and the legal independence measure.
They find that the aggregate legal independence index is a better measure for
the industrialized countries, whereas the central banker turnover rate is a better
measure for the developing countries. Since our sample in this paper includes
only the industrialized countries, we use the legal independence index. One
drawback of the measure is that it lacks variation over time for many countries.
Thus, it does not inform us much about over time changes, but it does show
cross-national differences.

6. These policy flip flop cases include three times in 1968 and one time in
the IMF summary table records a policy change toward liberalization for Italy
in 1993, but this is not supported by the country report for Italy which indicates
a much earlier change on October 1, 1988. In addition, the IMF AREAER table has also recorded a policy reversal to capital control for Japan in 1995, but this is not supported in the country report for Japan. In both cases, we follow the country report in our coding and make corrections to the coding in the summary tables.

7. We thank an anonymous reviewer for bringing this point to our attention.

**REFERENCES**


Li/Smith: Testing Alternative Explanations of Capital Control Explanations


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