

# THE POLITICAL ECONOMY OF FINANCIAL REFORM: ARE ABIAD AND MODY RIGHT?\*

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## Abstract

Motivated by the questions “Financial Reform: What Shakes It? What Shapes It?” raised by Abiad and Mody (2005), this paper studies the forces that induce governments to undertake financial sector reform. Rather than their ordered logit technique, it uses a within groups approach allowing for error dependence across countries and over time. This analysis shows that some of the AM findings are not robust to error dependence and the estimation method. It has shed new light on the political economy of financial reform.

**Keywords:** Financial liberalization; Financial reform; Political economy; Cross country dependence

**JEL Classification:** D72, F36, G18

## 1 INTRODUCTION

Abiad and Mody (2005) (AM hereafter) introduce an analytical framework to examine the factors that induce governments to undertake financial reforms. Using an ordered logit technique to estimate their specifications, AM argue that policy change in a country is positively related to its level of liberalization and any liberalization gap from the regional leader. The pace of reform is found to be affected by shocks or discrete changes such as a balance-of-payment crisis, a banking crisis, a new government’s first year in office,

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participation in an IMF program and a decline in US interest rates. However, they find that ideology and political and economic structures have “limited influence” on the likelihood of reform.

The AM analytical framework is attractive in many respects, but some aspects of their empirical analysis merit further attention. Firstly, the ordered logit technique they apply may not be appropriate for this context, although the discrete and ordinal nature of the financial liberalization level,  $FL_{i,t}$ , and policy change,  $\Delta FL_{i,t}$ , may render the ordered logit method a natural choice at first glance. In the AM analysis, the dependent variable is *not the level of financial liberalization, but the change in the level of liberalization*. AM treats a movement from score 1 to 3 of the underlying index the same as a movement from 16 to 18, among many other possibilities for a specific change (say +2). However, the lack of cardinality in the scale of their original measure implies that movements along the scale for a specific change are not equivalent. Given this particular nature of the dependent variable, resorting to the ordered logit technique may not lead to the expected gains.<sup>1</sup>Second, like most cross country research, AM do not take into account the effects of common trends and the possibility of error dependence across countries and over time. The importance of error dependence seems especially relevant when the effects of domestic learning and regional diffusion are investigated, and is confirmed by the results of this analysis, including a formal test of dependence due to Pesaran (2004).

In this analysis, three innovations are introduced. The first is that, rather than their ordered logit technique, this analysis centers on the Pesaran (2006) common correlated effect pooled (CCEP) approach that allows for the possibility of error dependence across countries. Second, to adjust for serial correlation in individual errors, the panel-robust standard errors due to Arellano (1987) are computed for the CCEP estimates.<sup>2</sup> Third, it adds the extent of democracy into the AM framework. It is the Polity indicator, “polity2”, in the PolityIV Database (Marshall et al. 2003), seeking to measure institutional quality. The level of democracy is a potentially important variable that reflects the political environment in which new policies are approved or rejected, and policy changes take place.

The CCEP estimator due to Pesaran (2006) is a generalization of the fixed effects estimator adapted for the possibility of cross section correlation for large heterogeneous panels.<sup>3</sup> More specifically, the CCEP approach augments the one-way fixed effects model

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<sup>1</sup>In addition, the ordered logit approach imposes strong distributional assumptions relative to a linear model, and the estimates of individual effects and other parameters may be inconsistent because of an incidental parameter problem.

<sup>2</sup>Other ways to address either cross section correlation or serial correlation in this context have also been done (results are available from author upon request).

<sup>3</sup>However, a limitation of this approach is that the CCEP estimator is unlikely to eliminate all the cross sectional error dependence that is present in this context since the AM models are non-linear in the lag of

with the (weighted) cross sectional means of the dependent variable and the individual specific regressors, analogous to a two-way fixed effects model. In this context, the cross sectional means of  $\Delta FL_{it}$ ,  $FL_{i,t-1}$ ,  $GDP_{i,t-1}$  and  $OPEN_{it}$  are considered since these variables may be especially likely to reflect common effects. To allow the effects to be heterogeneous across regions, the models are augmented with the interactions between regional dummies and cross sectional means of the above variables, and time dummies.

## 2 EMPIRICAL EVIDENCE

This paper presents the empirical results in Table 1, Table 2, and Table 3 corresponding to Tables 7, 8 and 9 in AM, respectively.<sup>4</sup> The normal one-way fixed effects WG estimates (with nonrobust standard errors) are reported in contrast to Pesaran (2006) CCEP estimates (with panel-robust standard errors), with the former assuming that the errors are serially uncorrelated and independent across countries, while the latter allowing for error dependence both across countries and over time.

Table 1 reports the WG and CCEP estimates of the benchmark specification (Equation 4 in AM). To present a direct link between policy change,  $\Delta FL_{it}$ , and the level of liberalization,  $FL_{i,t-1}$ , Table 1 reports  $FL_{i,t-1}$  and  $FL_{i,t-1}^2$  separately. The within  $R^2$  associated with the CCEP estimates is much larger than those for the WG estimates, hinting at the importance of error dependence. With satisfactory finite sample properties, the CCEP estimates in Table 1 show that policy change is negatively rather than positively associated with the lagged level of financial liberalization,  $FL_{i,t-1}$ , and the regional liberalization gap,  $REG\_FL_{i,t-1} - FL_{i,t-1}$ . The CCEP estimates confirm the AM finding on a negative effect of  $BANK_{it}$ , and positive effects of  $BOP_{it}$  and  $FIRSTYEAR_{it}$  on policy change. It also provides strong evidence for a negative effect of  $DEMO_{it}$ , indicating that the extent of democracy tends to hinder the pace of reform.

(Table 1 about here)

Table 2 presents the within groups estimates, WG and CCEP, for the alternative specifications (Equations 5 and 6 in AM).<sup>5</sup> The CCEP estimates confirm the previous observations of Table 1 in terms of the negative effects of the level of liberalization, regional liberalization gap, a banking crisis, and the extent of democracy, and positive effects of a balance-of-payment crisis and a new government's first year in office. A positive effect of  $USINT_{it}$  is also observed.

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the extent of financial liberalization.

<sup>4</sup>A minor problem has been detected in their empirical results in which Singapore is wrongly coded as an African country while South Africa is coded as an East Asian country. The corrected results are reported by Huang (2006).

<sup>5</sup>Table 2 is not reported here due to limited space, but available from the author upon request.

Next proceed to Table 3 which presents the within groups estimates of the most general specification (Equation 8 in AM). Note that the corrected Table 9 in AM shows that  $FL_{i,t-1}$ ,  $OPEN_{it}$  and  $OPEN_{it} \times FL_{i,t-1}$  are insignificant in the presence of country fixed effects. Similarly, the CCEP estimates of Table 3 find less evidence for  $FL_{i,t-1}$ ,  $OPEN_{it}$  and  $OPEN_{it} \times FL_{i,t-1}$ . It confirms the negative effect of  $REG\_FL_{i,t-1} - FL_{i,t-1}$  on policy reform.<sup>6</sup> A positive effect of  $FIRSTYEAR_{it}$  and a negative effect of its interaction term with  $FL_{i,t-1}$  are observed, highlighting that new governments in their first year are likely to trigger reform, especially when the extent of financial liberalization is still at its early stage. The effect of the interaction between  $LEFT_{it}$  and  $FL_{i,t-1}$  is also shown to be positive.

(Table 3 about here)

The discrepancy between the WG estimates and CCEP estimates in the above study points to the fundamental significance of relaxing assumptions on the error term. One may wonder which is more important, controlling for serial correlation in the errors or adjusting for cross section error dependence? By reporting the WG estimates with panel-robust standard errors, controlling for serial correlation of errors only, and the CCEP estimates with nonrobust standard errors, controlling for cross section error dependence only, we find that allowing for cross section error dependence is an especially crucial step for this context (results available from the author upon request).

### 3 CONCLUDING REMARKS

This paper studies the forces that lead governments to undertake reforms to enhance financial development, based on Abiad and Mody (2005). Given the particular nature of the dependent variable, it suggests replacing the ordered logit technique used by AM with a within groups approach, allowing for the possibility of error dependence across countries and over time, which seems of especial importance when the effects of domestic learning and regional diffusion in the process of financial liberalization are studied. Based on these innovations, the analysis shows that some of the AM findings are not robust to error dependence and the estimation method. It has produced the following significant findings, shedding new light on the political economy of financial reform.

This paper finds that policy change in a country is negatively rather than positively associated with the initial extent of liberalization level, and the distance behind the regional leader. This indicates convergence in the extent of financial liberalization, in the sense that

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<sup>6</sup>Although the coefficients on  $REG\_FL_{i,t-1} - FL_{i,t-1}$  and its interaction term are negative and positive, respectively, the range of  $FL_{i,t-1}$  from 0 to 1 determines the derivative of  $\Delta FL_{it}$  with respect to  $REG\_FL_{i,t-1} - FL_{i,t-1}$ ,  $-0.147 + 0.094 \times FL_{i,t-1}$ , is always negative.

countries with highly repressed financial sectors have more potential to embark on reform, while countries with a highly liberalized financial sector have greater status quo bias. This analysis suggests that some of AM findings on the effects of shocks and crises are robust while others are fragile. Furthermore, it shows that economic and political structure and ideology can have a substantial influence on policy change, and the extent of democracy, the added variable, has a significantly negative effect on policy reform.

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**Table 1. Within Estimates: Benchmark Specification (Equation 4)**

Estimators	WG	WG	WG	CCEP	CCEP	CCEP
$FL_{i,t-1}$	0.081 [0.038]**	0.096 [0.038]**	0.074 [0.040]*	-0.208 [0.058]***	-0.178 [0.061]***	-0.202 [0.071]***
$(FL_{i,t-1})^2$	-0.104 [0.043]**	-0.113 [0.043]***	-0.113 [0.043]***	-0.154 [0.066]**	-0.175 [0.065]**	-0.174 [0.064]***
$REG_{i,t-1} - FL_{i,t-1} - FL_{i,t-1}$	0.059 [0.022]***	0.058 [0.022]***	0.058 [0.023]**	-0.144 [0.042]***	-0.133 [0.047]***	-0.148 [0.053]***
$BOP_{it}$		0.016 [0.006]***	0.011 [0.006]*		0.014 [0.006]**	0.014 [0.005]**
$BANK_{it}$		-0.024 [0.007]***	-0.020 [0.007]***		-0.019 [0.010]*	-0.018 [0.009]*
$RECESSION_{it}$		-0.010 [0.008]	-0.009 [0.008]		-0.002 [0.007]	-0.004 [0.008]
$HINFL_{it}$		-0.003 [0.011]	-0.002 [0.011]		-0.014 [0.017]	-0.012 [0.018]
$FIRSTYEAR_{it}$			0.011 [0.006]*			0.011 [0.006]*
$IMF_{it}$			0.012 [0.007]*			0.008 [0.008]
$USINT_{it}$			-0.003 [0.001]***			0.003 [0.004]
$LEFT_{it}$			0.002 [0.010]			0.010 [0.009]
$RIGHT_{it}$			0.003 [0.009]			0.008 [0.008]
$OPEN_{it}$			0.000 [0.000]*			0.000 [0.000]
$DEMO_{it}$			-0.011 [0.014]			-0.038 [0.022]*
Observations	805	805	805	805	805	805
Number of countries	35	35	35	35	35	35
R-squared	0.03	0.05	0.08	0.20	0.22	0.24
CSD test (p-value)	0.00	0.00	0.00	0.03	0.02	0.01

Note: 35 countries (original dataset), 1973-1996. Dependent variable is  $\Delta FL_{it}$ . Using normal one-way within groups estimator (WG) and Pesaran (2006)'s CCEP estimator, this table presents new results corresponding to models in Table 7 in AM with the addition of  $DEMO_{it}$ . The within R-squared is reported. Nonrobust standard errors are reported for WG estimates, while panel-robust standard errors are reported for CCEP estimates. CSD tests the null hypothesis of cross section independence in the panel data models using the test due to Pesaran (2004). \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

**Table 3. Within Estimates: Alternative Specification (Equation 8)**

Estimators	WG	CCEP
$FL_{i,t-1}$	-0.009 [0.072]	-0.175 [0.121]
$(FL_{i,t-1})^2$	-0.011 [0.073]	-0.143 [0.076]*
$REG_{it} - FL_{i,t-1} - FL_{i,t-1}$	0.025 [0.023]	-0.147 [0.055]**
$(REG_{it} - FL_{i,t-1} - FL_{i,t-1}) \times FL_{i,t-1}$	0.330 [0.086]***	0.094 [0.098]
$BOP_{it}$	0.020 [0.010]**	0.014 [0.010]
$BOP_{it} \times FL_{i,t-1}$	-0.029 [0.019]	-0.009 [0.022]
$BANK_{it}$	-0.023 [0.013]*	-0.023 [0.016]
$BANK_{it} \times FL_{i,t-1}$	0.004 [0.027]	0.011 [0.026]
$RECESSION_{it}$	-0.015 [0.012]	-0.006 [0.014]
$RECESSION_{it} \times FL_{i,t-1}$	0.020 [0.023]	0.008 [0.024]
$HINFL_{it}$	0.030 [0.015]*	0.014 [0.026]
$HINFL_{it} \times FL_{i,t-1}$	-0.156 [0.043]***	-0.105 [0.073]
$FIRSTYEAR_{it}$	0.028 [0.010]***	0.027 [0.012]**
$FIRSTYEAR_{it} \times FL_{i,t-1}$	-0.049 [0.020]**	-0.046 [0.027]*
$IMF_{it}$	0.020 [0.009]**	0.011 [0.008]
$IMF_{it} \times FL_{i,t-1}$	-0.050 [0.026]*	-0.024 [0.018]
$USINT_{it}$	-0.003 [0.001]***	-0.001 [0.005]
$LEFT_{it}$	-0.025 [0.014]*	-0.019 [0.014]
$LEFT_{it} \times FL_{i,t-1}$	0.068 [0.034]**	0.076 [0.039]*
$RIGHT_{it}$	0.006 [0.012]	0.008 [0.012]
$RIGHT_{it} \times FL_{i,t-1}$	0.020 [0.032]	0.025 [0.039]
$OPEN_{it}$	0.001 [0.000]***	0.001 [0.001]
$OPEN_{it} \times FL_{i,t-1}$	-0.001 [0.000]***	-0.001 [0.001]
$DEMO_{it}$	-0.030 [0.018]*	-0.043 [0.031]
$DEMO_{it} \times FL_{i,t-1}$	0.002 [0.002]	0.001 [0.003]
Observations	805	805
Number of countries	35	35
R-squared	0.14	0.27
CSD test (p-value)	0.00	0.01

Note: This table, based on the original dataset, presents new results corresponding to models in Table 8 in AM except for the addition of  $DEMO_{it}$ . See Table 1 for further notes.