FINANCIAL CRISES, LIBERALIZATION, AND GOVERNMENT SIZE
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There is a broad consensus among economists that financial crises are costly, as evidenced by the Asian currency crisis in 1997 and other systemic crises during the 1990s (Hawkins 1999; Klingebiel and Laeven 2002). However, there is little agreement on the cause of financial fragility, not to mention the policy prescriptions for financial stability. A perennial heated controversy is the role of government versus the market in promoting and maintaining financial stability. Against the background of frequent outbreaks of financial crises following the global trend of financial liberalization over the past quarter of a century, many economists have pointed to financial liberalization as an important source of financial instability. For example, Jomo (1998) argues that the Malaysian crisis in 1997 was due to financial liberalization rather than excessive regulation. Empirically, such a view is to some extent supported by certain studies that show that financial liberalization has induced excessive risk taking by financial institutions and ultimately precipitated financial crises (Demirguc-Kunt and Detragiache 2001, 2005; Noy 2004).

Since the Asian crisis, many economists and policymakers have called for stronger regulation of financial markets. A popular view is that global financial markets are now beyond the control of governments and that financial crises are the consequence (Strange 1998, 2002). Adherents of that view call for tighter state control over financial markets.

The literature on financial instability has been expanding rapidly over the last decade, and the literature on the relationship between the state and the market has an even longer history. In this article, I employ categorical data analysis techniques to examine whether there

are statistically significant associations among financial crises, liberalization, and government size. If there are associations, I proceed to ask: Does financial liberalization have a significant impact on financial stability? And, more important, does a large government avert financial crises? Does the impact of one factor, say financial liberalization on financial stability depend on the other factor (i.e., the size of government), and vice versa? The answer to that question can potentially shed light on the role of the state versus the market in promoting and maintaining financial stability. The main conclusion of this article is that the popular belief that financial crises are due to governments being outgrown by markets cannot be substantiated by the data.

Financial Deregulation, Government Size, and Financial Stability

To examine the relationship between financial deregulation, government size, and financial instability during the past three decades, I employ contingency table analysis and log-linear models. Financial instability is regarded as a response variable, whereas financial deregulation and government size are treated as factors or explanatory variables.

A country is defined as having experienced financial instability if it had at least one systemic banking crisis or borderline case during the period under study. Caprio and Klingebiel (1996, 1999, 2000) documented countries with systemic crises or borderline cases during the past three decades. For countries that experienced more than one financial crisis during the period under study, the following criteria apply: (1) when there is a systemic crisis and a borderline case for a country the systemic crisis will be selected; (2) when financial crises for a country are the same in terms of severity the choice will depend on the availability of data on financial deregulation and government size; and (3) when financial crises fall into the same category of severity and data availability is not a problem the country's latest financial crisis will be chosen.

After a country's status regarding financial instability has been determined, I consider the changes in that country's government size and in the extent of its financial regulation over a long period—say, a decade or more, depending on data availability—prior to the outbreak of the financial crisis. This approach assumes that financial stability responds to the state of financial deregulation and government size, and that policy or regime changes take time before they fully exert

their impacts on the financial sector. Data on government size and financial regulation are from the dataset compiled by James Gwartney and Robert Lawson (2005a, 2005b).[1] Since these authors report their data on a five-year basis starting in 1970, the data on changes in government size and financial regulation used in this article are in most cases not the changes over the decade prior to the outbreak of a financial crisis. For instance, Hong Kong experienced a borderline case of financial crisis during 1982–86, and hence changes in government size and in financial regulation over the period 1970–80 are used in this study because data for 1971–81 are not reported in Gwartney and Lawson's dataset.

In a small number of cases, the time span is shortened to less than a decade because the relevant data over a longer period are unavailable. Such variations in the data are expected to have little, if any, distortions in reflecting the long-term trends in government size and financial regulation among the sample countries. The reason is that our empirical analysis is based on categorical data rather than on actual changes in the numerical values of those variables.

From Gwartney and Lawson's dataset, general government consumption expenditure as a percentage of total consumption is used as a proxy for government size.[2] One may argue that this proxy understates the actual size or scope of government because it omits transfer payments, which have been growing dramatically in many countries. But as long as government consumption and transfer payments follow the same long-run growth trend, this proxy should not result in any serious bias because our empirical analysis is based on categorical data. All other things equal, higher government consumption expenditure as a percentage of total consumption represents a larger government sector. It also reflects a more powerful or influential government because political choice is substituted for private choice. For those countries that have experienced financial crises, changes in the size of government before the outbreaks of financial crises are computed. Based on the calculated changes, countries are classified as having either smaller or larger government sectors.

Gwartney and Lawson's dataset also includes three indexes reflecting

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[1]The database entitled "2004 Dataset" is available free-of-charge for researchers at www.freetheworld.com.

[2]The proxy used is Area 1A in their database. I do not include other components, such as transfers and subsidies as a percentage of GDP, used by Gwartney and Lawson in constructing their index for government size because raw data on those components for many countries are not available. Raw data on government consumption expenditures as a percentage of total consumption are more comprehensive in coverage. They are also the actual values rather than the ratings.

the extent of financial regulation or restrictions.[3] These include freedom to own foreign currency bank accounts domestically and abroad, international capital market controls, and credit market regulations. For each country I take the average of these indexes as a proxy for the overall level of financial regulation and then compute the corresponding changes in financial regulation over time. Similarly, countries are classified as having either deregulated or controlled their financial markets.

Finally, for countries that did not experience any financial crisis during the period under study, changes in government size and financial regulation over the decade 1980–90 are computed in a similar way for the purpose of statistical analysis and comparison.

The Empirical Results

Based on the available data, our sample includes 113 countries. Those countries' experiences regarding financial crises, government growth, and financial deregulation are summarized in Table 1. Of the 67 countries that experienced financial crises, 35 had deregulated their financial systems and had larger government sectors at the same time during the decade or so prior to the outbreaks of their financial crises. Meanwhile, 15 countries with the same characteristics did not experience financial crises. Other combinations can be read from Table 1 in a similar way.

To test if financial crises, the size of government, and deregulation are mutually independent, a χ^2 goodness-of-fit test is performed. The value of the χ^2 statistic is 8.6, which is not statistically significant at the conventional 5 percent level but is significant at the 10 percent level.[4] This finding suggests a weak association among the three variables or combinations of any two variables. The conventional decision rule at the 5 percent level of significance suggests that both financial deregulation and growth in the government sector are not associated with financial crises. However, applying that decision rule routinely may not only fail to reject the null hypothesis (no association among

[3]These are, respectively, Areas 3D, 4E, and 5A in their database. Area 4E includes two subareas: (4Ei) Access of Citizens to foreign capital markets/foreign access to domestic capital markets (GCR), and (4Eii) Restrictions in Foreign Capital Market Exchange/Index of capital controls among 13 IMF categories. Area 5A includes the following subareas: (5Ai) Ownership of banks, (5Aii) Competition in domestic banking, (5Aiii) Extension of credit, (5Aiv) Interest rate regulations (leading to negative rates), and (5Av) Interest rate controls.

[4]The p-value is 0.067, which is only marginally higher than the 5 percent level of significance.

TABLE 1

FINANCIAL CRISES BY FINANCIAL LIBERALIZATION AND BY
GOVERNMENT SIZE

Financial Liberalization	Larger Government Sector	Systemic Financial Crises		
		Yes	No	Total
Yes	Yes	35	15	50
	No	17	15	32
No	Yes	10	6	16
	No	5	10	15
Total		67	46	113

SOURCES: Caprio and Klingebiel (1996, 1999, 2000); Gwartney and Lawson (2005b).

the variables) when it is actually not true but also overlook certain interesting findings. Therefore, I reject the null hypothesis and proceed with further analysis.

On the surface, one may tend to conjecture from Table 1 that the source of association arises mainly from financial deregulation and financial instability, because 52 countries had financial crises following liberalization—more than three times the number of countries (15) that had financial crises without liberalization.

To verify that conjecture and analyze the possible combinations of associations among the variables in a systematic way, I fit the hierarchical log-linear models with the given data.[5] The goodness-of-fit results are tabulated in Table 2. A comma is used to denote independence. For example, the first model in Table 2, denoted as (G, F, C), represents complete independence of the three variables—namely, government size (G), financial deregulation (F), and financial crises (C). The second model, denoted as (GC, F), represents single-factor independence: there is an association between government size and financial crisis, but that association is unrelated to financial deregulation. The next two models can be interpreted in a similar way. The third type of model allows for two-factor independence. For example, the model denoted (GC, FG) represents the conditional

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[5]By definition, hierarchical models mean that whenever a higher-order effect is included in a model, the lower-order effects are also included. For example, if the three-factor interaction effect is included, then the second-order interaction effects between any two variables and the first-order main effects of the variables will also be included. For technical details of the log-linear model, see Agresti (2002) and Wickens (1989).

independence of financial crisis and financial deregulation, given government size.

TABLE 2

LOG-LINEAR ESTIMATION RESULTS OF THE
HIERARCHICAL MODELS

Model	Likelihood Ratio (L^2)	Degrees of Freedom	P-value
(G, F, C)	7.94	4	0.0937
(GC, F)	2.75	3	0.4323
(FC, G)	5.86	3	0.1186
(FG, C)	7.14	3	0.0676
(GC, FC)	0.66	2	0.7173
(GC, FG)	1.94	2	0.3789
(FC, FG)	5.06	2	0.0798
(GC, FC, FG)	0.30	1	0.5851
(GFC)	0	0	—

NOTES: The likelihood ratio test statistic follows a chi-squared distribution with the given degree of freedom. A statistically significant L^2 or a low p-value means that a model fits the data poorly.

The penultimate model (GC, FC, FG), sometimes also known as the homogeneous association model, allows for a fundamental association between each pair of factors but no conjoint three-variable interaction. The final model (GFC) allows any pattern of association among the three variables, including the conjoint three-factor interaction. In the literature, this model is known as the saturated model, whereas all the other models are known as unsaturated models. This model represents the frequencies we actually observe (i.e., the data given in Table 1). The fit is perfect but the model is not testable.[6]

Following the literature, the likelihood ratio test statistic L^2 is employed as a criterion to judge which of the above models fit the data better.[7] A higher numerical value of the test statistic (or a lower p-value) reflects a poorer fit. Thus, the four unsaturated models (F,G,C), (FC, G), (FG, C), and (FC, FG) can be rejected as the other

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[6]Though untestable, the saturated model is treated as the most general alternative hypothesis for the other unsaturated, testable models. It is also the resort when all the unsaturated models fail.

[7]I use L^2 to denote the likelihood ratio test statistic, although it is more commonly denoted as G^2 in the literature. This notation is simply to avoid confusion, as G has already been used to denote government size.

models fit the data better.[8] Based on meaningful economic interpre-
tations, we can further exclude the model (GC, FC) as the final
candidate of choice. This model implies there is no association be-
tween government size and financial deregulation, given the state of
financial stability or instability. In this article, however, financial crises
are regarded as a response variable rather than an explanatory vari-
able or a given factor.

Therefore, the possible candidates as the fitted model that explains
the observed data are (GC, F), (GC, FG) and (GC, FC, FG), which
all fit the data satisfactorily according to the likelihood ratio test.
However, the first two models have an advantage over the last one
because they are simpler to interpret. In particular, the first model
indicates that financial deregulation is unrelated to financial crises
and government size, whereas the second model means that financial
crises are statistically unrelated to financial deregulation, given the
size of the government sector. In either case, there is no systematic
statistical association between financial deregulation and financial cri-
ses.

In comparison, the associations in the model (GC, FC, FG) are
more complex and difficult to interpret. In this case, financial de-
regulation and financial crises are related, and so are the other pairs.
Although the first two models are simple to interpret and do not
"over-fit" the data in the sense that they have higher degrees of
freedom than the last model, I do not rule out the last model because
doing so may be subject to the criticism that such a selection is biased
in favor of financial deregulation. Thus, I take all these three models
as admissible models and proceed with the subsequent analysis.[9]
Even though there may not be a consensus on the "best" model, the
following conclusion can still be drawn from the empirical findings in
Table 2: Omitting the association between government size and fi-
nancial crises leads to models that all fit the data poorly.

That conclusion does not answer the question whether a larger or
a smaller government sector is more prone to financial crises. To do

[8]Rejection of the model (F,G,C) is expected as the χ^2 statistic reported for the data in Table
1 already suggests that the three variables are not mutually independent.

[9]I may be overly conservative in not selecting the "best" model. If we use the forward
selection process by adding terms sequentially to the simplest model (F,G,C) until further
additions do not improve the fit, then the model (GC, FC) will be selected as the "best"
model because it has the highest p-value (see Table 2). If a backward elimination process
is followed instead and terms are sequentially removed from the most complex model
(FGC) until further deletion leads to a significantly poorer fit (i.e., a statistically significant
change in L^2), then the "best" model selected is indeed the simple model (GC, F). See, for
example, Agresti (2002) for technical details.

so we must calculate the odds ratios for the nested admissible models. Those results are reported in Table 3. The marginal odds ratio shows the association between the response variable (financial crises) and one factor when the other factor is ignored, whereas the partial odds ratio describes the association when the other factor is controlled. Consider the first model (GC, F), both the marginal and partial odds ratios for the association between financial crises and financial deregulation are 1.00, implying that a country is equally vulnerable to financial crises whether it has deregulated its financial sector or not. However, both the marginal and the partial odds ratios for the association between financial crises and government size are 2.44. This result means that the association remains unaffected whether the effect of financial deregulation is controlled or not. All these findings are expected as this model represents that financial deregulation is independent of the other two variables. More important, the odds ratios for the association between financial crises and the size of government suggest that the odds of a financial crisis is 2.44 times higher for a country with a growing government sector than for a country keeping government growth under control.

TABLE 3
ESTIMATED ODDS RATIOS FOR THE SELECTED MODELS

Model	Partial Association		Marginal Association	
	GC	FC	GC	FC
(GC, F)	2.44	1.00	2.44	1.00
(GC, FG)	2.44	1.00	2.44	1.09
(GC, FC, FG)	2.36	1.75	2.44	1.85
(GFC): Level I	2.06	1.40	2.44	1.85
Level II	3.33	2.27	—	—

NOTES: For the saturated model (GFC), Levels I and II represent the controlled variable in the "Yes" and "No" category, respectively. For example, the odds ratio of 2.06 measures the partial association between financial crises and government size, given financial liberalization.

The interpretations of the estimated odds ratios for the second model are largely the same except that the marginal and partial odds ratios for the association between financial crises and financial deregulation are not exactly the same as in the previous case. In this case the partial odds ratio is still 1.00, implying that financial crises and financial deregulation are unrelated after controlling for the impact of government size. Even without controlling for the effect of

government size, the marginal odds ratio, at 1.09, only deviates slightly from 1.00. By contrast, the marginal and partial odds ratios for the association between financial crises and government size remain significantly different from 1.00, implying that a larger government sector is more prone to financial crises.

The marginal and partial odds ratios are not the same in the remaining two models, reflecting the complex interactions among the variables. While the relationships cannot be easily disentangled as in the previous two cases, the odds ratios clearly suggest that a country with a larger government sector is at least twice as vulnerable to financial crises as a country with more limited government. Financial deregulation also slightly aggravates a country's vulnerability to a financial crisis, but by a lesser extent than the size of government, as indicated by the odds ratios.[10] To be sure, the actual relationships are more complicated than the above descriptions because all pairs of variables are conditionally dependent in these two models.

In sum, two common findings emerge from the above models. First, the unsaturated models all fit the data satisfactorily because of the inclusion of the association between financial crises and government size. Second, a country is more vulnerable to financial crises if its government sector has expanded in size.

State-Market Relations and Financial Stability

The interpretations of our findings have so far focused on statistical associations. Nonetheless, it is highly unlikely that our empirical findings are merely results by chance without any relevance to economics. This section provides briefly some theoretical justifications for our empirical findings.

Let us first consider the role of financial liberalization in financial instability. Contrary to the prevailing belief that financial deregulation leads to financial instability, there have been several studies showing

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[10]It should be pointed out that the odds ratios are not the estimated risks of financial crisis due to financial deregulation or a larger government sector. This study is a case-control or retrospective study in which countries known to have financial crises or not are followed backward in time to determine whether or not the two factors of interest to us have been present or not. For such a study, estimation of the risks of concern is simply not possible. The odds ratio acts as an approximation to the relative risk. But the risk of financial crisis here is for the presence of one factor (say, financial deregulation) relative to its absence. It is not the risk of one factor relative to another factor. Even though the odds ratios in the association between the government sector and financial crises are found to be higher than their counterparts in the association between financial crises and financial deregulation, we cannot conclude that a larger government sector increases the risk of financial crisis more than financial deregulation does.

that financial crises are not necessarily market phenomena or the consequence of financial deregulation (see Selgin 1994). Theoretically, financial liberalization enables financial institutions to reduce their portfolio risk through product and geographical diversifications. This famous theoretical result in modern finance, of course, relies crucially on the assumption of perfect financial markets. In reality, there still exist certain barriers or frictions, be they institutional or political, in financial markets that hinder financial institutions from fully exploiting the benefits of portfolio diversification. Such impediments can plausibly explain why we do not find empirically any stabilizing effect of financial deregulation even though the theory predicts that financial liberalization should enhance financial stability through portfolio diversification. At best, as our empirical results indicate, financial liberalization is independent or conditionally independent of financial crises. Nonetheless, this finding contradicts the prevailing result of many recent empirical studies that show increases in the risk of financial fragility by financial liberalization (see Demirguc-Kunt and Detragiache 2005). One plausible reason for this discrepancy is that our financial liberalization variable differs from theirs.[11] However, our findings and interpretations by no means imply that financial crises were due to inadequate financial liberalization. Nor do they suggest that financial liberalization is a panacea for financial crises. After all, it is recognized that there is a limit to risk reduction through diversification—diversification can potentially reduce or eliminate individual risk but not systemic risk. That fact leads to the question: What are some of the possible sources that raise systemic risk?

In an attempt to answer that question, we need to examine the possible economic theory behind the statistical association between government size and financial crises. Many financial crises have been "twin crises"—that is, the simultaneous occurrence of a banking crisis and a currency crisis (Breuer 2004). Moreover, many financial crises originated from huge current account deficits, although the sources of current account deficits vary from country to country. One well-known debate in the literature is whether financial crises are related to "twin deficits"—that is, to the existence of both a government deficit and a current account deficit. Krugman (1979) suggested one

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[11]Most of these studies use variables such as credit growth, change in the money multiplier, real interest rate, and spread between lending and deposit rates as proxies for financial liberalization. As Demirguc-Kunt and Detragiache (2001) correctly point out, these proxies, for example, real interest rates, can be potentially misleading because they are likely to be affected by a variety of factors besides financial liberalization. Of course, my financial liberalization variable also has its limitations.

mechanism through which a government deficit could lead to a speculative attack on a currency—the so-called first-generation model of a currency crisis. In reality, the Russian financial crisis in 1998 illustrated how a large government deficit can lead to a current account deficit and ultimately precipitate a financial crisis (Gup and Nam 1999, Desai 2003).[12]

In sum, a larger government sector and, hence, larger fiscal deficits can lead to macroeconomic instability. Macroeconomic instability in turn causes financial instability and may even trigger a financial crisis. As pointed out by Schwartz (1988), Goldstein and Turner (1999), and Demirguc-Kunt and Detragiache (2005), macroeconomic stability and price stability in particular, are essential for financial stability. Recently, Boris (2005) and Laidler (2005) have reiterated the importance of a macroprudential approach to promoting financial stability, in contrast to the predominant view of a microprudential approach that emphasizes the soundness of individual financial institutions.

Thus, both economic theory and, more important, our empirical findings indicate that a larger government sector tends to destabilize rather than to stabilize the financial system. Admittedly, how a larger government sector aggravates financial instability remains a topic for further research, as does the case for the impact of financial liberalization on financial stability. Against the prevailing view that financial liberalization induces financial crises, it is highly unlikely that the findings of this study—namely, financial liberalization is, statistically speaking, independent or conditionally independent of financial crises—alone can change the common belief until more empirical results indicate that the prevailing view is erroneous or incomplete. Our findings by no means deny the possibility that financial liberalization is a factor or source of financial instability. Rather, they suggest that the answer to the question whether financial liberalization causes financial crises is not a simple "yes" or "no." Some countries have experienced financial crises following financial deregulation but some have not. As failures are roughly offset by successes on average, we are not able to detect a strong statistical association between financial liberalization and instability.

Undeniably, the relationships among financial liberalization, government size, and financial instability are complicated. Financial liberalization can potentially increase the risk of financial instability, as reflected by the fact that financial crises are mostly found among

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[12]Desai (2003) provides details of other examples of financial crises due to fiscal imbalances like Argentina, Brazil, and Turkey.

countries with larger government sectors and financial deregulation. However, it does not follow that the risk of financial fragility would be minimized or eliminated in the absence of financial deregulation. This case can be revealed by the two partial odds ratios, namely 2.06 and 3.33, for the association between government size and financial crises as shown in the last two rows in Table 3. The first figure means that a country with growth in government size is about twice as likely to suffer from a financial crisis than a country without growth in its government sector, given that both countries have undertaken financial liberalization. The second figure means that the former country is more than three times as likely to run into a financial crisis than the latter country, given that neither country has undertaken financial liberalization. Put differently, financial liberalization lowers the risk of financial crisis if government is growing. One plausible explanation for this finding is that inflation is higher in countries with greater income inequality and slower financial development (Carr and Chu 2005). Higher inflation implies greater price instability and, hence, higher financial instability.[13] Financial liberalization is also conducive to financial development, thus reducing the government's monopoly power to extract an inflation tax because the public can hedge against inflation by holding assets other than money.

Consequently, financial liberalization is a double-edged sword. It can increase risk when financial institutions are allowed to take excessive risk in the absence of adequate and appropriate prudential regulation and supervision. But it can also reduce risk as a result of financial institutions' portfolio and geographical diversifications, not to mention its other benefits as a result of financial development, such as higher economic growth (Levine, Loayza, and Beck 2000) and reductions in poverty and income inequality (Beck, Demirguc-Kunt, and Levine 2004). Based on the lessons drawn from numerous studies, it is fair to conclude that the outbreaks of financial crises in many deregulated financial systems in the last decade or so were mainly due to mismanaged financial liberalization rather than financial liberalization. Moreover, the absence of an adequate supporting infrastructure and poor sequencing contribute to systemic instability (Caprio, Honohan, and Stiglitz 2001; World Bank 2001).

To build up the supporting infrastructure, however, does not necessarily require a larger government sector. Strange (1998: 191, n.1) erroneously denied the increased state power, as reflected by the

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[13]Similarly, Demirguc-Kunt and Detragiache (2005) also find inflation a statistically significant determinant of banking crises in all their model specifications. They also find that a fiscal surplus contributes to banking fragility (see Table 1 in their study).

dramatic rise in the average government spending in advanced economies from 15 percent of GNP in 1913 to 45 percent in 1996, by arguing that government debts and sales of the nation's capital assets to finance increased spending were all signs of weakness rather than strength.[14] Official data indicate that most, if not all, governments have not been outgrown by markets. The plain truth is that many countries were not immune from systemic financial crises despite their growing government sectors, not to mention our findings that growth in government size makes a country more prone to financial instability. Simply put, a larger government sector is no guarantee for financial stability.

Conclusion

By applying categorical data analysis techniques to a sample of 113 countries over the last two decades or so, this study has examined the associations among financial crises, government size, and financial liberalization. Given the complexity of financial crises and also the omission of other possible explanatory factors, our findings should be considered as exploratory more than confirmatory. Nevertheless, they shed some light on the relationship between financial crises and these two important factors.

First of all, the result of one of our estimated log-linear models indicates that financial crises and financial liberalization are independent of each other, whereas that of another estimated log-linear model reveals that they are independent of each other conditional on government size. Those findings suggest that financial crises are, on average, equally likely to occur in countries with or without financial liberalization. More important, they differ from the findings of many other empirical studies that conclude financial liberalization increases financial fragility. The discrepancy can partly be attributable to the different proxies used for financial liberalization. Nevertheless, our results by no means imply that financial liberalization is not risk-free, especially if the financial sector is deregulated in the absence of an adequate supporting infrastructure. What they suggest is that we have to reassess accurately the risk of financial liberalization. We should also bear in mind that the consequences of financial crises are in most cases due to mismanagement rather than financial liberalization. Therefore, policymakers may throw away the baby with the bath

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[14]If governments were weak, why would citizens in these democratic societies allow their weak governments to take up an increasing share of their national income over so many decades?

water if they eschew financial liberalization simply because they misperceive or miscalculate the risk of financial liberalization and totally ignore the benefits of financial development such as higher economic growth and reductions in poverty and income inequality.

Our findings further indicate that a growing government sector increases a country's vulnerability to financial crises, which refutes the popular belief that financial crises are due to government being outgrown by markets. Admittedly, that finding is not entirely novel as there are already both economic theories and empirical evidence indicating that government deficits are a source of financial instability—notably, the first-generation models of currency crises introduced more than two decades ago.

But as the late Nobel laureate F. A. Hayek correctly remarked, "In economics you can never establish a truth once and for all but have always to convince every generation anew." Moreover, "Knowledge once gained and spread is often, not disproved, but simply lost and forgotten" (Hayek [1944] 1999: 133, 136). The findings of this study can perhaps remind both economists who are doing research on the fourth-generation models of financial crisis as well as policymakers not to forget the knowledge we have previously gained and also not to overlook the importance of macroeconomic stability in promoting and maintaining financial stability. A larger government sector can be a source of—rather than a cure for—financial instability.

References

Agresti, A. (2002) *Categorical Data Analysis*. 2nd ed. New York: Wiley Interscience.

Beck, T.; Demirguc-Kunt, A.; and Levine, R. (2004) "Finance, Inequality and Poverty: Cross-Country Evidence." World Bank Policy Research Working Paper No. 3338. Washington: World Bank.

Boris, C. (2005) "Towards a Macroprudential Framework for Financial Supervision and Regulation? In F. Milne and E. H. Neave (eds.) *Current Directions in Financial Regulation,* 191–234. Kingston, Ontario: John Deutsch Institute.

Breuer, J. B. (2004) "An Exegesis on Currency and Banking Crises." *Journal of Economic Surveys* 18: 293–320.

Caprio, G.; Honohan, P.; and Stiglitz, J., eds. (2001) *Financial Liberalization.* Cambridge: Cambridge University Press.

Caprio, G., Jr., and Klingebiel, D. (1996) "Bank Insolvencies: Cross-Country Experience." World Bank Policy Research Paper No. 1620. Washington: World Bank.

_____ (1999) "Episodes of Systemic and Borderline Financial Crises." Mimeo. Financial Sector Strategy and Policy Department, World Bank. Washington: World Bank.

_____ (2000) "Bank Insolvency: Bad Luck, Bad Policy, or Bad Banking?" In D. B. Papadimitriou (ed.) *Modernizing Financial Systems*, 267–301. New York: St. Martin's.

Carr, J., and Chu, K. H. (2005) "Inflation, Financial Development and Income Inequality." *Kredit und Kapital* 38: 483–513.

Demirguc-Kunt, A., and Detragiache, E. (2001) "Financial Liberalization and Financial Fragility." In G. Caprio, P. Honohan, and J. Stiglitz (eds.) *Financial Liberalization,* 96–124. Cambridge: Cambridge University Press.

_____ (2005) "Cross-Country Empirical Studies of Systemic Bank Distress: A Survey." *National Institute Economic Review* 192 (1): 68–83.

Desai, P. (2003) *Financial Crisis, Contagion, and Containment*. Princeton, N.J.: Princeton University Press.

Goldstein, M., and Turner, P. (1996) *Banking Crises in Emerging Economies: Origins and Policy Options*. BIS Economic Papers No. 46. Basle: Bank for International Settlements.

Gup, B. E., and Nam, D. (1999) "Russia's Financial Debacle." In B. E. Gup (ed.) *International Banking Crises: Large-Scale Failures, Massive Government* Interventions, 125–33. Westport, Conn.: Quorum Books.

Gwartney, J., and Lawson, R. (2005a) *Economic Freedom of the World: Annual Report 2004*. Vancouver, B.C.: Fraser Institute.

_____ (2005b) "2004 Dataset." Available at www.freetheworld.com.

Hawkins, J. (1999) "Bank Restructuring in South-East Asia." BIS Policy Papers No. 6, *Bank Restructuring in Practice*. Basle: Bank for International Settlements.

Hayek, F. A. ([1944] 1999) "On Being an Economist." An address delivered to the Students' Union of the London School of Economics, 23 February 1944. Reprinted in D. Klein (ed.) *What Do Economists Contribute?* 133–49. Washington: Cato Institute.

Jomo, K. S. (1998) "Financial Liberalization, Crises and Malaysian Policy Responses." *World Development* 26: 1563–74.

Klingebiel, D., and Laeven, L., eds. (2002) "Managing the Real and Fiscal Effects of Banking Crises." World Bank Discussion Paper No. 428. Washington: World Bank.

Krugman, P. (1979) "A Model of Self-Fulfilling Balance of Payment Crises." *Journal of Money, Credit and Banking* 11: 311–25.

Laidler, D. (2005) "Towards a Macroprudential Framework: Comments." In F. Milne and E. H. Neave (eds.) *Current Directions in Financial Regulation,* 235–42. Kingston, Ontario: John Deutsch Institute.

Levine, R.; Loayza, N.; and Beck, T. (2000) "Financial Intermediation and Growth: Causality and Causes." *Journal of Monetary Economics* 46: 31–77.

Noy, I. (2004) "Financial Liberalization, Prudential Supervision, and the Onset of Banking Crises." *Emerging Market Review* 5: 341–59.

Schwartz, A. (1988) "Financial Stability and the Federal Safety Net." In W. S. Haraf and R. Kushmeider (eds.) *Restructuring Banking and Financial Services in America,* 34–62. Washington: American Enterprise Institute.

Selgin, G. (1994) "Are Financial Crises Free-Market Phenomena?" *Critical Review* 8: 591–608.

Strange, S. (1998) *Mad Money: When Markets Outgrow Governments.* Ann Arbor: University of Michigan Press.

_____ (2002) "Finance in Politics: An Epilogue to *Mad Money.*"; In R. Tooze and C. May (eds.) *Authority and Markets: Susan Strange's Writings on International Political Economy*, 103–18. New York: Palgrave Macmillan.

Wickens, T. D. (1989) *Multiway Contingency Tables Analysis for the Social Sciences*. Mahwah, N. J.: Lawrence Erlbaum Associates.

World Bank (2001) *Finance for Growth: Policy Choices in a Volatile World*. Washington: World Bank.