THE WORLD BANK

Research Observer

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Research Observer

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Tight Money in a Post-Crisis Defense of the Exchange Rate: What Have We Learned?

Peter J. Montiel

Critics of the tight monetary policies pursued by some of the countries hurt by the 1997 Asian financial crisis have questioned the presumption that tight money can help sustain the value of a currency. The issue is actually an empirical one because theory does not unambiguously predict the effect of tight money on the exchange rate under the circumstances faced by the crisis countries. This article reviews the empirical research and shows that the evidence does not yet support strong statements about post-crisis links between monetary policy and the exchange rate. Proposed deviations from a sustainable medium-term monetary policy stance should thus be viewed with skepticism.

The policy advice given by the IMF during the 1997 Asian financial crisis has generated much controversy. Several aspects of the IMF's policy advice have been called into question, but a main focus has been its advocacy of tight monetary policy in countries experiencing recessions and banking crises. This policy prescription seems to run counter both to the standard countercyclical role that monetary policy plays during recessions in industrial countries and to the traditional role of the central bank as lender of last resort in a confidence-driven banking crisis.

The IMF originally advocated a tight-money policy stance to prevent exchange rate depreciation from being "passed through" excessively to domestic prices and to limit the "overshooting" of exchange rate depreciation, thereby mitigating the adverse effects of depreciation on the net worth of domestic financial institutions and firms (see Lane and others 1999). Because many firms and banks in the crisis countries had severe currency mismatches on their balance sheets, the IMF feared that an excessive depreciation of the currency would exacerbate the danger to their solvency, thereby potentially magnifying the economic dislocations and output losses associated with the crisis.

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Critics of this policy prescription assail it on two grounds. First, they claim that even if tight money had been successful in sustaining the value of the currency above what it would have been with a looser monetary policy, the high domestic real interest rates implied by this policy would themselves have probably brought about the adverse real effects the policy sought to avoid. Thus even if it had achieved its goal with respect to the exchange rate, the policy would have been suboptimal (see Krugman 1999).

Second, critics question whether tight monetary policy can ever be successful in defending the value of a currency in crisis circumstances. They argue that because high interest rates imperil the solvency of firms and banks, they reduce the likelihood that domestic agents would be able to service their external debts. Because of their adverse effects on credit risk, high domestic interest rates actually reduce the attractiveness of acquiring claims on the domestic economy and consequently may actually result in a depreciation of the currency.

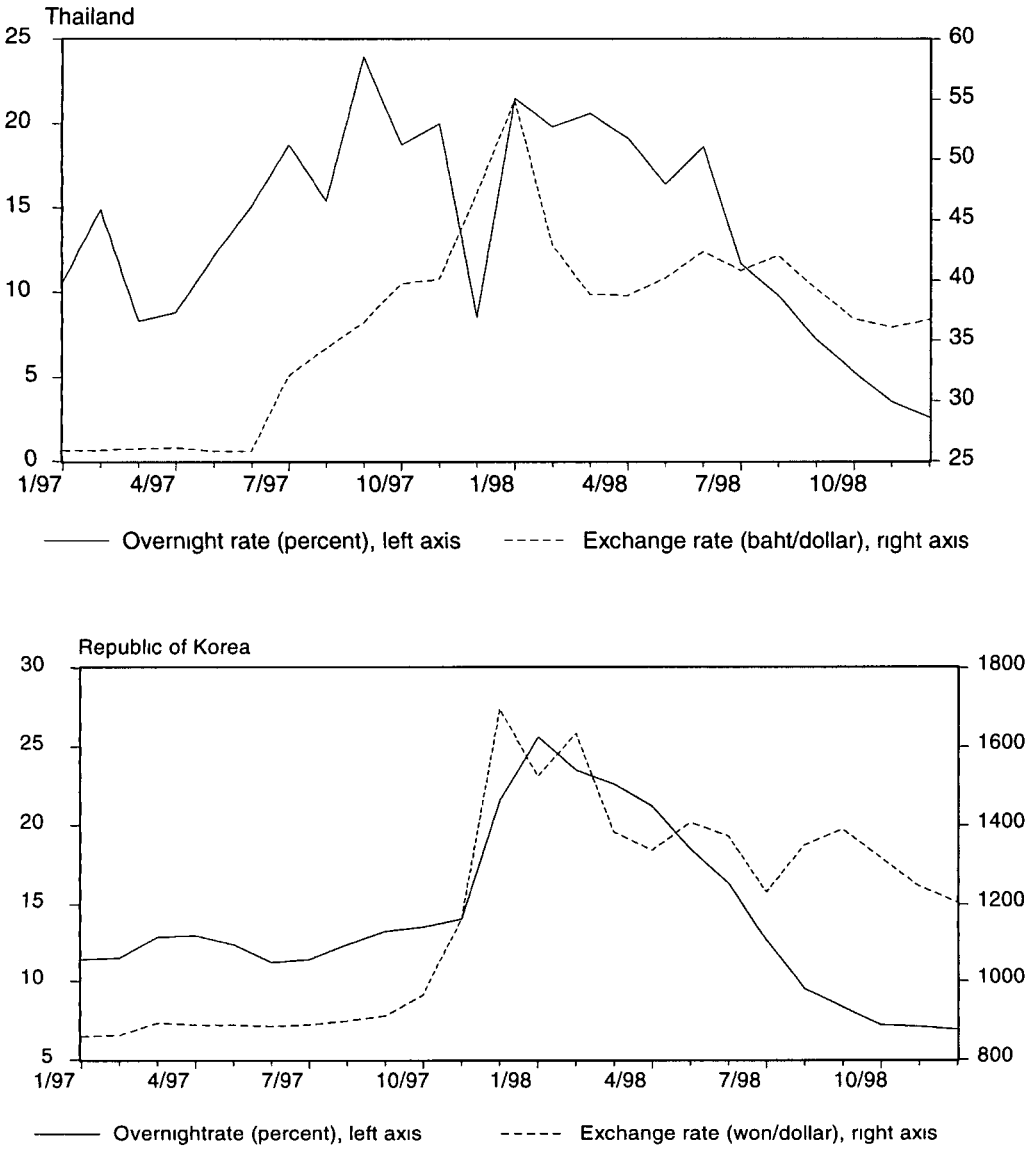
To see the empirical appeal of this view, consider the monthly time-series data for interest rates and exchange rates for the Republic of Korea and Thailand during 1997–98 (figure 1).[1] Both countries are acknowledged by the IMF to have attempted a tight-money defense of the exchange rate in the wake of the Asian crisis. The data suggest why the second criticism may be difficult to dismiss. Interest rates and exchange rates appear to have been positively correlated in Thailand during the second half of 1997 and after the spring of 1998, whereas in the Republic of Korea the positive association seems to have held over almost the entire two-year period around the time of the crisis.

The proposition that tight money can be counterproductive in sustaining the value of the domestic currency under (at least some) crisis conditions directly contradicts one of the most generally accepted tenets of international macroeconomics. For this reason, this contrarian view of events in Asia has spawned a vigorous controversy, and a substantial amount of empirical research has been devoted in recent years to testing this proposition. This article seeks to take stock of what has been learned about this issue as the result of this attention. It focuses on whether the recent systematic empirical research supports the proposition that monetary tightening after the outbreak of the Asian—or any other—currency crisis indeed resulted in currency depreciation.[2] Given the novelty of the "contrarian" view, the article begins by setting out and evaluating the analytical arguments for this view.

The Contrarian View: Theory

The analytical context in which the controversy over post-crisis monetary policy has arisen is that of a small open economy that maintains a flexible exchange rate.[3] The issue under debate has to do with the immediate asset-market response of the ex-

Figure 1. Interest Rates and Exchange Rates in Thailand and the Republic of Korea, 1997–98



Source. International Monetary Fund, *International Financial Statistics*, various issues.

change rate to a change in the stance of monetary policy in such an economy. In other words, it concerns the response of the exchange rate over a relatively short time horizon. A substantial body of open-economy macroeconomic modeling has been devoted to this issue over the 30 years or so since the collapse of the Bretton Woods system.

Conventional models of exchange rate determination are based on an asset-market approach to explaining exchange rate movements—that is, they are derived from a combination of a stable money demand function and alternative versions of an interest-parity condition linking the expected returns on financial assets denominated in domestic and foreign currencies. Such models unambiguously suggest that tighter money strengthens the exchange rate, perhaps even more in the short run than in the long run. To suggest that this association may not hold in the post-crisis context, therefore, one needs to move significantly beyond the standard models. This section reviews the analytical basis for the contrarian view before the evidence is examined in the sections that follow.

Signaling and Credibility

The simplest basis for the contrarian view does not question the relevance of the traditional interest parity conditions that appear in standard models or the analytical link between the domestic interest rate and a floating exchange rate suggested by these models. Instead, it notes that very high domestic interest rates would be required to raise borrowing costs sufficiently to offset the gains arising from near-certain expectations of even a relatively small depreciation of the exchange rate over a short time horizon. Because interest rates at such levels would have destructive effects on the real economy, interest rate defenses are typically mounted with lower interest rates than would be required to achieve this effect.

How could such an apparently inadequate defense be expected to be successful? The expected future exchange rate is simply the probability-weighted average of a range of potential future exchange rate outcomes. Such a defense can be successful if it reduces the probability weight placed by the market on a sharp depreciation of the exchange rate in the near future, thus resulting in an appreciation of the expected future exchange rate relative to what would have happened without the defense. This revision of probabilities could materialize if mounting an interest rate defense signals information to the market about the authorities' resolve not to allow the sharp exchange rate movement that the market expects given the state of the economy. By demonstrating that they are willing to impose high costs on the domestic economy if necessary to make it more expensive to speculate against the currency, the authorities may seek to convey their high level of resolve in defending a particular value of the currency.

This signaling channel for tight-money currency defenses has been emphasized by Drazen (2001). As he points out, however, the effectiveness of a tight-money defense depends critically on what markets actually learn from the signal the authorities send when they mount such a defense. The information the authorities hope to convey concerns their future policy intentions.[4] But the message the authorities try to send and the one that the market receives may not always be the same. The

government's avowed intentions may simply not be credible. For example, if the domestic economy is weak and the government's political position is precarious, the authorities' announced willingness to inflict pain on the domestic economy to punish speculators may be interpreted by the market as no more than a bluff. This is more likely the more sensitive the domestic economy is to high interest rates (see Bensaid and Jeanne 1997), as, for example, when leverage is very high and net worth very low among domestic firms and financial institutions. The credibility of a tight-money policy may thus be weakest precisely under post-crisis conditions, when the fragile condition of the domestic economy magnifies the damage that would be done by high interest rates.

In other circumstances, the signal may actually backfire. Assume, for example, that some subset of the fundamentals that drive the value of the currency is unobservable to the market (but not to the government) and the market believes that the government is more likely to adopt an interest rate defense when these fundamentals are weak. Under these circumstances, mounting a defense may send exactly the opposite signal from that intended by the authorities, thus increasing speculative pressures against the currency (see Drazen 1999).[5]

The upshot is that the link between interest rates and the exchange rate is not structural but depends on how markets interpret the signal conveyed by the interest rate defense. This in turn depends on the vulnerability of the domestic economy to high interest rates, the strength of the government's political position, the extent to which the stance of monetary policy reveals information about the economy's fundamentals, and other factors. The implication of the signaling story is that the effectiveness of an interest rate defense depends on the circumstances in which it is mounted.

Default, Risk, and Expectations

A stronger version of the contrarian view argues that a high interest rate policy would be ineffective even if it could credibly be sustained. Proponents of this view argue that the uncovered interest parity condition used in standard models is overly simplified and leaves out some channels through which high domestic interest rates may affect the exchange rate.

To see how this can make a difference in the effects of monetary tightening on the exchange rate, consider how the nexus between the interest rate and the exchange rate works in the standard models. The uncovered interest parity condition is typically expressed as

$$R = (1 + R^*)S^e_{+1}/S - 1, \tag{1}$$

where R and R^* are the nominal interest rates on "safe" domestic and foreign bonds of the same (say, one-period) maturity; S is the current spot exchange rate (units of domestic currency per unit of the foreign currency); and S^e_{+1} is the spot exchange

rate expected to prevail in the next period. In this relation the small-country assumption makes R^* exogenous, and the relation between R and S thus depends on how S^e_{+1} responds to changes in R. Indeed, one of the main functions of traditional exchange rate models is to supply the structure required to make S^e_{+1} an endogenous variable in arbitrage relationships such as condition (1). In the popular Dornbusch "overshooting" model, for example, the expected future spot rate appreciates more than the spot rate that prevails before a monetary shock, making S^e_{+1} a decreasing function of R. It is easy to see that if this is so, condition (1) would immediately imply that increases in R must be associated with decreases in S—that is, tight money must be associated with exchange rate appreciation.

Contrarian critics, such as Furman and Stiglitz (1998), however, argue that condition (1) leaves out endogenous default risk, endogenous risk premia, and endogenous fundamentals. R is the promised (contractual) interest rate on the domestic investment. It corresponds to the expected rate of return on the domestic investment only if the default probability on that investment is zero. However, if the default probability is nonzero, what matters to the investor is the expected return on the investment, given by $\delta(1 + R)$, where δ is the probability of repayment. In crisis conditions, δ may be a decreasing function of R. The effects of tight monetary policy on domestic economic activity (and thus on the profitability of domestic firms, on firms' borrowing costs, and on the health of the banking system) may adversely affect the probability of repayment. This link may be stronger in post-crisis conditions, when the financial position of firms and banks may be fragile. It is strengthened by interest rate exposure created by maturity mismatches in the balance sheets of firms and banks.

Another criticism of condition (1) is that it assumes risk neutrality on the part of investors. If investors are instead risk averse, a risk premium, ν, would have to be subtracted from the left-hand side of condition (1). Given the expected return on the domestic asset, if under crisis circumstances tight monetary policy increases either the riskiness of the domestic asset (that is, the probable dispersion of asset returns), through its effects on domestic economic activity, or the compensation investors demand for bearing risk, ν may be an increasing function of the domestic interest rate.

The expected future exchange rate may also be affected by current monetary policy through channels other than signaling. A central bank may adopt a tight monetary policy in the aftermath of a crisis to signal its determination to resist future exchange rate movements. Its intention in doing so is to convey information to the market about the government's intentions, conditional on the economy's fundamentals (that is, the government's type), rather than to alter the future evolution of those fundamentals. However, an unintended consequence of tight monetary policy may be to affect the evolution of the fundamentals, thus changing the expected future exchange rate conditional on the government's actual and perceived type.

The endogeneity of the fundamental determinants of the expected future exchange rate to the stance of monetary policy is not an innovation of the contrarian view, because the standard models essentially add structure to no-arbitrage conditions, such as condition (1), precisely to explain how S^e_{+1} is determined. Contrarian arguments, however, emphasize different channels of influence. For example, Furman and Stiglitz (1998) argue that contractionary monetary policy may cause the expected future exchange rate to depreciate relative to its preshock value. According to them, this could happen if the economy's future export prospects are adversely affected by tight monetary conditions (presumably through reduced credit availability to exporters or bankruptcy of export firms that are highly leveraged with short-term debt). The expected reduction in the future flow of foreign exchange could cause a depreciation in the expected future exchange rate. In that case, S^e_{+1} would be an increasing rather than a decreasing function of R.

Other mechanisms could produce the same result. In their "unpleasant monetarist arithmetic" analysis, Sargent and Wallace (1981) showed that a temporary monetary tightening could actually be inflationary, essentially because the adverse fiscal effects of high interest rates (through government debt servicing costs) may imply higher future seigniorage financing, the anticipation of which could reduce the demand for money sufficiently to raise the current price level.

Applied to an open-economy context, this mechanism would imply a depreciation of the nominal exchange rate, essentially driven by expected future exchange rate depreciation. Indeed, Flood and Jeanne (2000) have relied on just such a mechanism to show that an interest rate defense may actually accelerate the timing of the collapse of a fixed exchange rate. The intuition is that defending a fixed rate by raising the domestic interest rate in effect finances the holding of low-interest reserves with high-interest debt, thereby worsening the government's fiscal position and increasing the stock of government debt outstanding at every instant after the defense is mounted. Because, given the government's post-collapse policies, higher levels of debt cause the "shadow" exchange rate to be more depreciated (to adjust the real stock of debt to the government's post-collapse debt servicing capacity), higher levels of debt cause the collapse to happen sooner. Lahiri and Vegh (2000) have formally demonstrated that this fiscal effect could also cause tight money to depreciate the currency in a flexible exchange rate environment.

Taking each of these three possible channels of influence into account, condition (1) can be rewritten as

$$\text{(1b)} \qquad \underset{-}{\delta(R,\ldots)}(1+R)/[1+\underset{+}{\nu(R,\ldots)}] = (1+R^*)\underset{+}{S^e_{+1}(R,\ldots)}/S.$$

The left-hand side of this equation can be interpreted as the risk-adjusted expected return on \$1 invested in a domestic asset, where the "promised" return $(1 + R)$ is multiplied by the probability of repayment δ and the required return on the risky

domestic asset has been augmented by the risk premium ν. Both δ and ν are expressed as functions of the domestic interest rate as well as potentially of other variables (indicated by the ellipses).

The right-hand side, representing the expected domestic-currency return on $1 invested in the foreign asset, remains as in condition (1), except that the expected future exchange rate S^e_{+1} is now expressed as a function of the domestic interest rate, as well as potentially of other variables. The signs under R indicate the direction in which interest rate changes are likely to influence each of the three new functions introduced in condition (1b) according to the contrarian view.

It is easy to see that the potential dependence of each of these components of the uncovered parity condition on the domestic interest rate tends to create a positive association between the interest rate and the exchange rate. Thus each of these channels operates in a direction opposite to the negative link between the interest rate and the exchange rate that would hold in their absence. Taking them into account renders the direction of the link between these variables theoretically ambiguous.

To summarize, the contrarian view of the tight-money defense of the currency suggests that the conventional effect of tight money on the exchange rate may be weak, or even reversed, under the following circumstances.

- The state of the economy and the government's political position are weak, reducing the effectiveness of high interest rates as a signal of commitment to a relatively appreciated currency.
- Market information about fundamentals (such as reserve stocks) is poor, making it possible for an interest rate defense to be interpreted as a sign of desperation.
- The economy is acutely vulnerable to interest rate risk because of high leverage and low net worth among domestic firms and financial institutions.
- High interest rates can be expected to result in a deterioration of fundamentals that depreciates the expected future exchange rate (flows of credit to exporters are imperiled by tight monetary conditions, for example, or monetary tightness imperils the government's fiscal position).

Each of these mechanisms is analytically plausible. In the end, then, the validity of the contrarian view is an empirical issue.

Monetary Policy and the Exchange Rate: Pitfalls in Empirical Testing

Before turning to the empirical evidence, it is worth pausing to consider some methodological issues. The compilation of evidence on the empirical relevance of the contrarian view must overcome some considerable methodological challenges that complicate the interpretation of the evidence and create the potential for conflicting results.

Crisis and Noncrisis Settings

Estimates of the effect of monetary policy on the exchange rate derived from noncrisis environments cannot be used to assess the empirical relevance of the contrarian view because the thrust of that perspective is that the mechanisms that may reverse the effect may operate only in crises. The contrarian view suggests that the empirically estimated effect of monetary policy on the exchange rate should be expected to depend on the economic environment in which it is measured. This means that empirical studies need to address the interest rate–exchange rate link specifically in the context of crisis episodes.

The Meese-Rogoff Problem

The second issue is a broad philosophical one. The empirical performance of traditional exchange rate models has left much to be desired. The classic references on this issue are Meese and Rogoff (1983a, 1983b), who examined the out-of-sample forecast accuracy of these models compared with simple univariate forecasting methods at various short (up to 12-month) forecast horizons. They found that none of these models could outperform a simple random walk at any of the forecast horizons tested, even when predictions were based on the actual future values of the variables these models use to explain exchange rate behavior. These findings proved to be robust to a variety of modifications of the empirical methodology, sample period, and criteria for forecast accuracy.

The original Meese-Rogoff results applied not just to estimated structural models but also to nonstructural vector autoregressions (VARS) specified on the basis of the explanatory variables identified in these models, including domestic interest rates. These results suggest that even without imposing structural restrictions, the full set of variables identified in standard exchange rate models is jointly unable to provide a very satisfactory explanation of exchange rate movements. These results have tended to hold up well over time, and some recent work has suggested that standard exchange rate models may indeed be able to improve on simple random walks in long-horizon predictability. Still, there is no evidence that they can do so over the short time horizons relevant for the post-crisis interest rate defense of the currency.

Where does this leave empirical tests of propositions about the determinants of exchange rate behavior? One interpretation of the Meese-Rogoff results is that they indicate that there is no satisfactory theory to guide hypothesis testing about exchange rate behavior. In the absence of any such theory, hypothesis testing would be fruitless.

A more sanguine interpretation is that although there is some useful theory, the understanding of exchange rate behavior is incomplete, in the sense that a large frac-

tion of exchange rate behavior cannot be explained. This interpretation complicates but does not preclude hypothesis testing of individual influences on exchange rate movements. Put differently, the viability of an interest rate defense of the currency does not depend on the empirical relevance of any particular structural explanation of how monetary policy affects the exchange rate or on the broad question of whether the variables emphasized by the models can usefully explain exchange rate movements. It depends instead on a much narrower issue: the sign of the reduced-form effect of exogenous changes in monetary policy on the exchange rate. From an empirical standpoint, what one wants to measure is the sign of the partial derivative of S with respect to R in condition (1b), an estimate of the independent effect of an exogenous increase in domestic interest rates on market-determined exchange rates.

Although estimating the sign of this partial derivative may seem to be a less ambitious task than that of explaining exchange rate behavior more generally, it turns out to be a nontrivial matter. It is complicated by the limitations highlighted by the Meese-Rogoff results.

Empirical Identification of Monetary Policy Shocks

The two key challenges in determining the sign of this reduced-form parameter concern identifying monetary policy shocks and controlling for other influences on the exchange rate. Two separate issues are involved in identifying monetary policy shocks: identifying the variable that was actually used as the intermediate target of monetary policy in a particular context and identifying exogenous innovations in that variable within the sample.

Identification of the appropriate monetary policy instrument is crucial. If the researcher identifies the wrong monetary policy target (taking it to be the interest rate when the authorities were actually targeting domestic credit, for example), the chosen indicator of monetary policy will actually be an endogenous variable. Because the chosen variable and the exchange rate are jointly endogenous in this case, the correlation between them will be driven by third factors that are likely to vary from sample to sample, depending on the sources of shocks that prove to be dominant. These correlations would provide no information about the reduced-form effect of monetary policy on the exchange rate.

Once the problem of identifying the appropriate monetary policy variable is solved, the next challenge is to identify exogenous innovations in this variable within the sample. Because previously anticipated monetary policy actions would presumably elicit no exchange rate response, it is necessary to discriminate between monetary policy actions (changes in the monetary policy instrument) and monetary policy shocks (changes in the instrument that could not have been predicted on the basis of

past information). What matters is how exchange rates respond to monetary policy shocks rather than to actions per se. Even if monetary policy shocks can be identified within a sample, it is still necessary to identify their exogenous components. If an innovation in monetary policy, for example, partly responds to contemporaneous movements in the exchange rate, correlations between monetary policy shocks and exchange rate movements may convey little information about the reduced-form parameter that is of concern.

Controlling for Nonmonetary Exchange Rate Determinants

Once the empirical identification of the exogenous monetary policy shock is resolved, the next task is to control for the influence of other variables on the exchange rate to isolate the independent effect of the monetary policy variable. Doing so requires identifying these other potential influences and measuring their effects on the exchange rate. Unfortunately, the Meese-Rogoff problem complicates matters significantly. The fact that exchange rate models do not tend to work very well in explaining exchange rate behavior makes it difficult to identify the additional variables that should be included in empirical exchange rate equations. The upshot is that specification error may bias the sign and magnitude of the coefficients of interest in empirical tests of propositions about the determinants of exchange rate movements.

Though the task is daunting, there is a substantial empirical literature on the reduced-form effect of monetary policy on the exchange rate. For the United States most of this evidence tends to be consistent with the orthodox presumption that tight money results in an appreciation of the exchange rate (see Eichenbaum and Evans 1995). For other countries results have tended to be sensitive to the identification strategy used for monetary policy. Overall, studies that have been careful about this identification strategy—that is, those that have examined movements in policy variables that can plausibly be considered to be exogenous—have also provided support for the orthodox presumption that tight money results in exchange rate appreciation.[6] Although this research at least suggests that the specification challenges posed by the Meese-Rogoff problem have not been perceived as insuperable, it is not directly relevant to the issue at hand because the bulk of it has been restricted to noncrisis contexts.

The conclusion to be drawn is that empirical tests of the contrarian view face demanding requirements. A credible test of the contrarian view is one that specifically allows for the role that crisis-induced vulnerabilities may play in determining the effects of monetary policy on the exchange rate, takes the identification of exogenous innovations in monetary policy seriously, and acknowledges the unsettled state of empirical exchange rate economics by allowing for a wide range of other potential influences on the exchange rate.

The Contrarian View: The Evidence

A substantial amount of empirical work has been done on this issue, but not all of it has overcome the methodological challenges. This section evaluates the evidence in light of the empirical difficulties described in the previous section.

Bivariate Tests

The most straightforward way to explore the empirical relation between exchange rates and interest rates is to examine the time-series correlation between the two variables in individual country episodes in which monetary policy was tightened and exchange rates were free to respond to market forces. Kaminsky and Schmukler (1998) looked at daily interest rate and exchange rate data in the immediate post–Asian crisis period (the second half of 1997) for the five countries most affected by the crisis (Indonesia, the Republic of Korea, Malaysia, the Philippines, and Thailand) as well as Taiwan (China). They examined correlations between interest rates and exchange rates within 30-day rolling windows. Not surprisingly, they found that the signs of these correlations were very unstable during the period examined for all of the countries in their sample.

Because such simple bivariate correlations fail to take into account any of the empirical problems mentioned, they can provide suggestive evidence at best. Nonetheless, Kaminsky and Schmukler's results at least rule out the possibility that the post-crisis sample period in these countries was characterized by purely exogenous interest rate shocks in the context of orthodox links between monetary policy and the exchange rate. Something else must have been happening to explain the instability of these correlations.

In the wake of the Asian crisis, Goldfajn and Baig (1998) conducted one of the first empirical examinations of the nexus between interest rates and exchange rates that attempted to dig a little deeper. Like Kaminsky and Schmukler, they looked at the correlation between nominal interest rates and exchange rates in the immediate aftermath of the Asian crisis (though in the longer period from July 1997 to July 1998) for the five Asian countries most affected by the crisis. They went beyond Kaminsky and Schmukler, however, by attempting to identify innovations (that is, unpredictable shocks) in interest rates as well as to allow for richer dynamic effects of such innovations on exchange rates. To do so, they estimated bivariate VARs for first differences in daily interest rates and exchange rates and focused on the associated impulse response functions. They found little evidence that innovations in interest rates had any effect on subsequent exchange rate behavior in either direction during the crisis period (that is, the response of exchange rate changes to innovations in the domestic interest rate did not prove to be significantly different from zero).

The two equations of the VAR system estimated by Goldfajn and Baig can be interpreted as condition (1b) solved for the exchange rate S as a function of current and lagged interest rates, together with a monetary policy reaction function that sets the interest rate partially as a function of lagged exchange rates. The key problems with this approach are the ex ante identification of interest rate innovations with exogenous changes in monetary policy (as opposed to, say, changes in the risk premium) and the potential bias in estimates of the VAR parameters that would arise from the omission of other relevant variables from both the exchange rate and interest rate equations.

Other researchers who have examined the bivariate relation between interest rates and exchange rates have reasoned that there is no particular reason to expect that the contrarian view should have emerged only in the context of the Asian crisis. They have thus attempted to exploit the broader international currency crisis experience to shed light on the issue.

Goldfajn and Gupta (1999), for example, examined a broad sample of crisis episodes, including 80 currency crisis episodes (identified on the basis of the occurrence of large exchange rate depreciations) between 1980 and 1998. They usefully note that one of the factors that may influence the effects of monetary policy on the exchange rate is the position of the economy's real exchange rate relative to its long-run equilibrium level. They reason that if a country's real exchange rate differs from its long-run equilibrium value, the equilibrium real exchange rate must be restored through some combination of nominal exchange rate adjustment or inflation differentials relative to partner countries. In this context, the role of monetary policy is to determine the extent to which adjustment takes place through nominal exchange rate changes or inflation differentials. Because adjustment through prices may be asymmetric, however, the influence of monetary policy on the composition of real exchange rate adjustment (and consequently on the nominal exchange rate) may depend on whether the currency is initially overvalued or undervalued. To control for this possibility, they consider instances in which the depreciation of the exchange rate following the crisis significantly overshot its equilibrium rate, investigating the role of tight money in causing the overshooting to be reversed through nominal exchange rate appreciation rather than differentially high domestic inflation.

Defining a success as an instance in which at least 50 percent of the overshooting was eliminated through nominal appreciation, Goldfajn and Gupta found that the probability of success conditional on the adoption of a tight monetary stance (defined as a domestic real interest rate above a given threshold) was significantly larger than either the unconditional probability of success in the sample or the probability of success conditioned on monetary policy that was not tight by their definition. This led them to conclude that consistent with the orthodox view, tight money tended to be associated with a more appreciated nominal exchange rate.

It is difficult, however, to determine the extent to which these results were driven by monetary policies actually undertaken in the post-crisis period. It is possible, for example, that in countries that had previously established monetary credibility, private agents did not expect a return to equilibrium real exchange rates through an acceleration in domestic inflation. This would have made it less costly for the central banks in those countries to adopt a restrictive monetary stance post-crisis. It would suggest that in cross-section, causation would run from low inflation (and thus more nominal appreciation) to tighter monetary policy rather than vice versa. However, the authors' results were supported by a fixed-effects panel regression in which deviations of the real exchange rate from its equilibrium value were regressed on real interest rates in a panel containing all the undervaluation episodes. The estimates, which exploit the time-series dimension of the data, indeed indicate that higher real interest rates tended to be associated with smaller gaps between the real exchange rate and its equilibrium value—that is, with smaller undervaluation. The implication is that the association between tight money and real appreciation in these episodes is not merely a cross-section artifact of previously established monetary credibility.

These results are clearly favorable to the orthodox view. However, there is no presumption that the selection of crisis episodes from the international data on the basis of the magnitude of exchange rate depreciation would serve to identify cases in which contrarian results are likely to hold. Indeed, consistent with the vulnerability argument of the previous section, Goldfajn and Gupta also found that the probability of choosing a tight monetary policy during a post-crisis period of undervaluation was significantly lower when the country was simultaneously faced with a banking crisis. Moreover, their results also indicated that if tight money was nevertheless chosen under such circumstances, it was less likely to succeed than in the absence of banking sector fragility.

Other researchers have also obtained mixed results in studies based on international currency crisis experience. Kraay (1998), for example, examined whether interest rate policy was instrumental in permitting countries to defend successfully against speculative attacks. Presumably, if the channels of influence emphasized in the contrarian view were important, they would tend to undermine the role of interest rate policy in defending against speculative attacks by increasing the cost of an interest rate defense. Thus although not directly focused on the problem of the feasibility of a post-crisis tight-money defense of the currency, this evidence bears indirectly on the issue.

Kraay used a sample of monthly data from 75 countries over the period 1960–99. In his sample he identified 105 successful attacks (defined as episodes in which a nominal depreciation of at least 10 percent was preceded by a period of relatively stable exchange rates) and 203 failed attacks (episodes in which monthly reserves declined more than 20 percent, interest rates rose more than 5 percent, or both). The central monetary policy instrument used in the study was the real central bank dis-

count rate, but Kraay also considered real domestic credit growth and reserves of deposit money banks as alternative measures of the monetary stance. He examined the change in these variables in the month before the attack relative to the previous month.

Kraay found that conditional on attacks having failed, the probability that monetary policy was tightened in the month before the attack was not statistically different from 0.5 for the real discount rate or real credit growth. Conditional on a tightening of monetary policy, the probability that a speculative attack failed was far below unity. Indeed, tightened monetary policy and failure of speculative attacks were essentially uncorrelated (or marginally negatively correlated) across episodes. These results held across a variety of robustness checks, including within subsamples that controlled for the stage of financial development, for various conditions that might affect the probability of resisting a speculative attack, and for the endogeneity of the monetary policy response to the strength of the speculative attack. Finding that tight money was not successful in defending speculative attacks and did not weaken the currency, Kraay concluded that it is unrelated to the probability that an attack will be successful.

Overall, then, the evidence based on simple bivariate associations is inconclusive. In individual country studies the issue of the identification of monetary policy shocks has not been confronted, and the studies have failed to control for the roles of nonmonetary factors in driving movements in exchange rates. In the multicountry studies these problems have been compounded by country heterogeneity with respect to the conditions under which tight monetary policies may have been implemented. Indeed, a consistent interpretation of the results of Goldfajn and Gupta (1999) and Kraay (1998) is that when it comes to the association between monetary variables and exchange rates, country circumstances matter.

Multivariate Tests

A second group of studies has attempted to deal with the potential influences of initial conditions and nonmonetary factors. Furman and Stiglitz (1998) examined the effects of 15 episodes of high interest rates in nine countries during 1992–98. To control for the country characteristics they considered relevant, they focused on the possibility that both real exchange rate misalignment (as in Goldfajn and Gupta) and the country's previous inflationary history may determine the response of the exchange rate to monetary tightness.

They considered the change in the exchange rate between the beginning of the high interest rate episode and one month after the end of the episode. They regressed the change in the exchange rate on the average magnitude of the interest rate hike during the episode, its duration (measured in days), and the interaction between these variables as well as their interaction with a high-inflation dummy (on the grounds that high interest rates may provide more useful signals of a new anti-inflation de-

termination in formerly high-inflation countries), with and without controls for pre-episode real exchange rate misalignment.

They found that all of the variables associated with a high interest rate defense were associated with a subsequent depreciation of the nominal exchange rate, although the effect was far more pronounced for low-inflation than for high-inflation countries. Their interpretation was based on the signaling mechanism described earlier. They argue that in low-inflation countries periods of high interest rates may be of little value as a signal of future anti-inflationary resolve, implying that the adverse effects of high interest rates on the real economy (that is, a deterioration of fundamentals) would exert the dominant influence of high interest rates on the exchange rate. In contrast, in high-inflation economies the deterioration of fundamentals would be somewhat counteracted by a positive signaling effect. Furman and Stiglitz do not indicate how representative they believe their rather small sample to be.

Other recent studies have focused more narrowly on the experience of individual countries and taken more seriously the challenge of controlling for effects other than domestic monetary policies. All of these studies take condition (1b) as their point of departure and then add structure to the model to account for other influences on the exchange rate in an attempt to isolate the independent effect of monetary policy.

Basurto and Ghosh (2000) focused on testing one of the channels identified by Furman and Stiglitz: the potential dependence of the risk premium on the domestic interest rate, as captured by the function ν (R, . . .) in condition (1b). They begin from the observation that the variables causing movements in the exchange rate can be classified into two groups: changes in the risk premium ν and everything else. Their strategy is to account for the component of exchange rate movements that can be explained by "everything else," thus isolating the effect of changes in the risk premium, and then to see whether changes in domestic real interest rates are related to the implied behavior of the risk premium. That is, they want to determine whether the function $\nu(\ )$ indeed depends on the domestic interest rate, as stipulated in condition (1b).

To identify the factors to be controlled for as everything else, they adopt one of the traditional models of exchange rate determination—the "flexprice" monetary framework—but provide a role for risk premia in the model by replacing condition (1b) by

$$R = R' = (1 + R^*)S^e_{+1}/S\,(1 + \nu) - 1,$$

which in log terms becomes

$$R = R^* + (s^e_{+1} - s) + \nu, \tag{1c}$$

where ν is the Furman-Stiglitz risk premium and $s = \log(S)$.[7] Solving the risk premium–augmented monetary model for the exchange rate permits the current exchange rate

to be expressed as the sum of two terms, one that contains the current and anticipated future values of the standard variables identified by the flexprice monetary model and one that depends on current and anticipated future values of the risk premium ν. The implication is that any variables that affect the risk premium—such as the domestic real interest rate—would be expected to exert an influence over the exchange rate over and above that contributed by the standard monetary variables.

Basurto and Ghosh essentially tested whether the domestic real interest rate exerted such an independent influence. To do so, they noted that the augmented monetary exchange rate model suggests that the current exchange rate is a function of the actual and expected future values of the monetary variables and the risk premium. Agents' expectations of the future values of these variables are presumably based on their current and lagged values, as well as on other information not observed by the econometrician but that would be reflected in the actual exchange rate. These expectations can be estimated on the basis of projections derived from an estimated VAR containing the exchange rate and the monetary variables. If the domestic real interest rate affects the risk premium, it represents a part of the relevant information set and thus should be included in the VAR. The empirical test thus consisted of estimating VARs containing the exchange rate, the monetary variables, and the real interest rate and conducting tests of exclusion restrictions on the real interest rate.

Basurto and Ghosh conducted this test for Indonesia, the Republic of Korea, Thailand, and Mexico (as a comparator), using monthly data for the 1990s as well as a sample restricted to the post-crisis period. They found that after "contagion" variables were included in the VAR, the null hypothesis that the real interest rate does not belong in the information set could not be rejected for any of the countries. Their results thus shed doubt on at least one channel of influence emphasized in the contrarian view.

Gould and Kamin (2000) took a complementary approach. They attempted to eliminate the effects of variations in the risk premium and default probabilities from the exchange rate and to determine whether doing so made it possible to detect the orthodox channel from interest rates to exchange rates in the data. They reasoned that since the default and risk premium functions—$\delta(\ )$ and $\nu(\ )$—in condition (1b) may depend on factors other than the domestic interest rate, the potential influence of such factors may make it difficult to detect the sign of the partial effect of tight money (as reflected in the interest rate R) on the exchange rate in simple bivariate tests. By controlling for the influence of these other factors, they could hope to isolate the sign of the reduced-form effect of R on S.

Gould and Kamin based their work on weekly post-crisis data (through the end of July 1998) for the five most affected Asian countries and Mexico. Their proxy for country risk premia was the spread on dollar-denominated government bonds over

U.S. Treasuries with similar maturities. Their estimation strategy was based on writing condition (1c) in real terms, as

$$r = r^* + (e^e_{+1} - e) + \nu,$$

where r and r^* are the domestic and foreign real interest rates and e is the real exchange rate. Solving this equation for e, we have

$$e = (r^* - r) + e^e_{+1} + \nu.$$

Gould and Kamin observe that according to this equation, the expected future real exchange rate should depend on the expected future values of the real interest rate differential and the risk premium. They then estimate an error-correction specification that relates the change in the real exchange rate to past changes and levels of the real interest rate differential (decomposed into nominal interest rates and inflation) as well as of their proxy for the risk premium. Their test is based on the signs and statistical significance of the estimated coefficients of the nominal interest rate terms in this equation. Under the orthodox interpretation of the link between tight money and the exchange rate, these coefficients should be negative.

They found that, although their proxy for ν tended to be significantly related to exchange rate movements, neither nominal interest rate nor inflation differentials had systematic effects on the exchange rate. This was true even after relatively parsimonious specifications were chosen, restricting the number of parameters to be estimated, and after adding aggregate domestic stock returns and bank stock returns to the regression to improve the credit risk proxy. They concluded that their results could provide little support for either the orthodox or the contrarian view. If monetary policy exerts any influence on exchange rates, they concluded, it probably does so over a longer time horizon than could be identified in their study.

Cho and West (2001) adopted a methodology that is very similar conceptually to that of Basurto and Ghosh but includes an alternative approach to identifying "everything else"—that is, factors other than risk premia that may affect the exchange rate. In terms of condition (1c), the methodology of Basurto and Ghosh can be interpreted as solving for the log of the exchange rate s in terms of R, s^e_{+1}, and ν, and then using the monetary model to identify the factors that determine the endogenous variables R and s^e_{+1}. After accounting for the effects of these factors, the remaining variation in s can be attributed to variation in ν as well as random elements.

Cho and West use a monetary policy rule in which the domestic interest rate for the current period is set as a function of the exchange rate that the authorities rationally expected in the previous period to prevail in the current period. Their model consists of condition (1c), a linear function relating the risk premium ν to the domestic interest rate, and the monetary policy reaction function. This model has the sensible property that if the relation between ν and R is nonpositive, interest rate and exchange rate movements are positively correlated (recall that an increase in the exchange rate

is a depreciation) if the sample is dominated by shocks to the risk premium and negatively correlated if it is dominated by shocks to the monetary policy rule. (The relation between ν and R is nonpositive in traditional monetary exchange rate models, in which there is no relation, and under a signaling interpretation in which tight money sends a favorable signal about risk, in which the relation is negative.) In contrast, if the relationship between ν and R is positive, as in the contrarian view, the correlation between interest rates and exchange rates is positive even if the sample is dominated by monetary policy shocks.

Cho and West's empirical procedure was to estimate the parameters of their model directly to detect the sign of the dependence of ν on R in condition (1c). Their estimates are based on weekly interest rate and exchange rate data from the Republic of Korea, the Philippines, and Thailand for a 53-week period beginning 2 weeks into the immediate post-crisis exchange rate regime. Their estimates of the dependence of ν on R for the three countries are very imprecise, but they are negative for the Republic of Korea and positive for the Philippines and Thailand. In the Philippines the positive influence of the interest rate on the risk premium was sufficiently weak that stabilizing the exchange rate in response to an expected depreciation would nevertheless require monetary tightening. That is, although the contrarian channel was present, it was too weak to dominate the orthodox channel. In Thailand the influence of the domestic interest rate on the risk premium was much stronger, suggesting that consistent with the contrarian view, resisting depreciation would actually have called for loose monetary policy.

Summary and Conclusions

What conclusions can be drawn from the research on the effect of monetary tightening on exchange rates in the aftermath of currency crises in emerging markets? The short answer seems to be that the contrarian view is plausible on analytical grounds, but too little is still known to determine how important the mechanisms associated with this view have been in actual crisis episodes.

Consider the analytical issue first. The basic uncovered interest parity condition—on which the orthodox presumption that tight money results in a more appreciated exchange rate rests—is one of the fundamental building blocks of open-economy macroeconomics. But even within the confines of conventional open-economy models, extracting a theory of exchange rate determination from it requires supplementing it with a model that explains the behavior of the two endogenous variables it contains: the domestic interest rate and the expected future exchange rate. The traditional exchange-rate models used to perform this function all generate the orthodox prediction that monetary tightening should be associated with a more appreciated exchange rate, other things being equal.

However, the claims that form the analytical basis for the contrarian view—that what should matter for uncovered parity is the expected rate of return on domestic assets rather than the promised interest rate and that the relation needs to include a risk premium—are unassailable. The key additional argument that default probabilities, the risk premium, and the expected future exchange rate may all be positively affected by domestic interest rates also appears to be unobjectionable in principle. These factors are particularly likely to be relevant in crisis situations in which both domestic firms and banks find themselves with precariously low levels of net worth, especially if maturity mismatches leave both types of agents severely exposed to interest rate risk. The bottom line is that the contrarian perspective cannot be dismissed on theoretical grounds in post-crisis situations.

The issue, then, is empirical. The challenge is to isolate the independent effect of monetary policy on the exchange rate in a context in which exogenous innovations in monetary policy are hard to identify and in which many other relevant factors are known to be changing at the same time. This challenge has to be met under some rather serious handicaps. The state of knowledge does not permit researchers even to confidently identify the set of relevant factors they need to control for, many of the factors that need to be controlled for are very hard to measure, and parameters may differ not just across countries and episodes but over time.

The empirical literature on the post-crisis tight-money defense has begun to deal with some of these challenges. Recent multivariate studies improve on earlier bivariate work by attempting to control for the influence of everything else. But the range of other potential influences on the exchange rate considered in these studies remains relatively restricted, and none of the recent studies has faced up to the challenge of identifying exogenous innovations in monetary policy in the crisis countries.

Under these conditions it is perhaps not surprising that the empirical work on this issue does not speak with one voice. If there is one theme that runs consistently through the empirical work it is the absence of strong results not just for or against the contrarian view but also for the view that monetary policy has any consistent and systematic effect on the exchange rate in post-crisis situations. Progress in this area will require more careful attention to identifying exogenous monetary policy innovations and the potential role of influences on the exchange rate other than monetary policy, if only by assessing the robustness of empirical results to alternative approaches to these problems.

Empirical studies have also failed to condition the response of the exchange rate to tight monetary policy on the presence and severity of domestic financial fragility. In principle this could be done by interacting monetary policy variables with indicators of fragility, for example, or using switching regressions to discriminate among effects that obtain under alternative fragility regimes.

Inconclusive empirical results on a contentious and important policy question suggest a strong need for additional research. In the meantime, the state of knowledge on

this issue suggests a need to tone down the rhetoric on both sides of the debate. It is not obvious that tight money is called for in the aftermath of crises because of, say, the presence of currency mismatches because tight money may not help prevent further depreciation of the currency. Nor is it clear that reliance on tight money under such circumstances is an obvious policy mistake because of its destructive effects on the real economy. If such effects are present, they may not have been strong enough to reverse the orthodox direction of influence of monetary policy on the value of the currency. In short, the state of knowledge on this issue calls for humility in ex post policy analysis.

The effects of monetary policy in post-crisis situations should be considered very uncertain. The standard prescription in the face of uncertainty of this type is that policy instruments should be used with caution. In a post-crisis environment proposed deviations—in either direction—from a sustainable medium-term monetary policy stance should thus be viewed with a strong dose of skepticism.

Notes

Peter J. Montiel is Fred C Greene Professor of Political Economy at Williams College. His e-mail address is peter.j.montiel@williams.edu.

1. In figure 1 the exchange rate is defined as the domestic-currency price of foreign currency, so that an increase in the exchange rate represents a depreciation. Lane and others (1999) present the IMF's view of the extent to which a tight-money defense was actually attempted in crisis countries with IMF-supported programs.

2. This article does not evaluate the normative question of whether or not tight money is optimal in a post-crisis situation. Clearly, monetary tightening could be suboptimal even if the currency does not depreciate as a result (see Krugman 1999). The question of optimality is, of course, substantially broader and more complicated than the one addressed here and has received much less formal attention from researchers For recent research on this issue, see Krugman (1999), Lahiri and Vegh (2000), and Cespedes and others (2000, 2001).

3. The flexible exchange rate regime is, of course, the post-crisis successor to the fixed exchange rate regime overthrown by a successful speculative attack.

4 In standard exchange rate models, consistent with the traditional link between tight money and the exchange rate, the authorities' intentions are typically assumed to be known.

5. The policy could also backfire if the fundamentals are themselves endogenous to an interest rate defense.

6. See Zettelmeyer (2000) for evidence on Australia, Canada, and New Zealand

7. This is just a special case of condition (1b) with the repayment probability δ set equal to unity.

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Foreign Bank Entry: Experience, Implications for Developing Economies, and Agenda for Further Research

George Clarke • Robert Cull •
Maria Soledad Martinez Peria • Susana M. Sánchez

In recent years foreign banks have expanded their presence significantly in several developing economies. In Argentina and Chile in Latin America and in the Czech Republic, Hungary, and Poland in Eastern Europe, foreign-controlled banks now hold more than half of total banking assets. In other regions the trend is similar, though foreign bank entry has been slower. Despite the growing number of countries embracing foreign bank entry, important questions are still being debated: What draws foreign banks to a country? Which banks expand abroad? What do foreign banks do once they arrive? How do foreign banks' mode of entry and organizational form affect their behavior? This article summarizes current knowledge on these issues. Because the existing literature focuses heavily on developed economies, it also puts forth an agenda for further study of the causes and effects of foreign bank entry in developing economies.

When foreign banks set up operations in a host country—the process referred to as *foreign bank entry*—they do so by opening a branch or a subsidiary, either as a new (de novo) operation or by acquiring a domestic bank. According to Tschoegl (1985), the level of financial integration represented by this activity today can only be compared to the level before World War I. Between 1920 and 1980 several countries that had allowed foreign bank entry restricted it, and no country that had forbidden foreign entry allowed it. Since that time the pendulum has swung back toward entry: in several countries in Latin America and Eastern Europe foreign-controlled banks now hold more than half the banking assets. As Eichengreen and Mussa (1998) argue, allowing entry by foreign financial institutions has been part of a general trend toward lower barriers to trade in financial services.

Although many developing economies are embracing foreign bank entry, its causes and effects are still being debated. This article summarizes the evidence on foreign

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bank entry, focusing on four main questions: What draws foreign banks to a country? Which banks expand abroad? What do foreign banks do once they arrive? How do foreign banks' mode of entry and organizational form affect their behavior? Answers to these questions could help address concerns that foreign entry weakens domestic banks, diminishes the ability of local regulatory and monetary authorities to influence bank behavior, unduly exposes the host country to economic shocks in the entrants' home countries, and results in less credit to certain market segments (such as small and medium-size enterprises) or at certain key times (such as during financial crises).

Although this article is concerned mainly with the effect of foreign bank entry in developing economies, the existing literature focuses primarily on developed economies, where the effect may differ. For example, many studies have found that foreign banks in the United States are less efficient than domestic ones, perhaps because of linguistic or cultural barriers (see Chang and others 1998; DeYoung and Nolle 1996; Hasan and Hunter 1996; and Mahajan and others 1996). But recent cross-country research and country case studies suggest that the opposite is true in developing economies: In these countries foreign banks appear to be more efficient than their domestic counterparts, and foreign entry seems to improve the efficiency of domestic banks (see Barajas and others 2000; Claessens and others 2000; Denizer 2000; and Kiraly and others 2000). So if policymakers in developing economies relied primarily on the evidence from developed economies, they might underestimate the potential benefits of foreign entry, to the detriment of the banking sector's development. Thus this article seeks to identify areas where knowledge about the effect of foreign bank entry in developing economies is limited and puts forth an agenda for future research.

Nevertheless, the studies surveyed here allow a number of preliminary conclusions about the causes and consequences of foreign bank entry in developing economies.

What draws foreign banks to a country? Foreign banks follow their domestic clients abroad and also pursue market opportunities in the host developing economies. Foreign banks are generally attracted to countries with fewer restrictions on entry and bank activity. Although more research is needed, initial evidence suggests that countries that impose greater restrictions reap fewer benefits than those that provide a level playing field for foreign banks.

Which banks expand abroad? Many studies have found that larger banks are more likely to expand abroad. One plausible reason for this is that larger banks are more likely to have clients (such as multinational companies) that demand banking services abroad. Moreover, large banks might be better able to exploit the economies of scale associated with expanding overseas. Banks that are more innovative and efficient are also more likely to expand abroad. But restrictions on outward foreign direct investment reduce the likelihood that local banks will enter other countries.

What do foreign banks do once they arrive? Although more empirical work is needed on developing economies, foreign entry appears to exert competitive pressure on

domestic banks, forcing them to become more efficient by lowering their costs. But this competition is often concentrated in specific lines of business, which appear to vary among countries. Recent evidence on the type of lending undertaken by foreign banks appears to discredit the notion that foreign entry might reduce access to credit for small and medium-size enterprises. Empirical studies suggest that overall foreign banks do not threaten financial stability. Although foreign banks have the potential to transmit shocks from their home countries, their lending generally does not decline substantially during local financial crises, especially when compared with that of domestic banks. Whether recent events in Argentina—where some foreign banks do not intend to recapitalize subsidiaries—signal a change in foreign bank behavior or a justified response to bad government policies will surely be the subject of future research in this area.

How do foreign banks' mode of entry and organizational form affect their behavior? Foreign banks can enter developing economies by acquiring an existing domestic bank or by setting up de novo operations. As an organizational form, they can choose a representative office, an agency, a branch, or a subsidiary of the parent bank. Alternatively, they might prefer to lend directly to businesses in developing economies without actually setting up operations there (so-called cross-border lending). Regulatory restrictions and profit opportunities may influence foreign banks' mode of entry and organizational form.

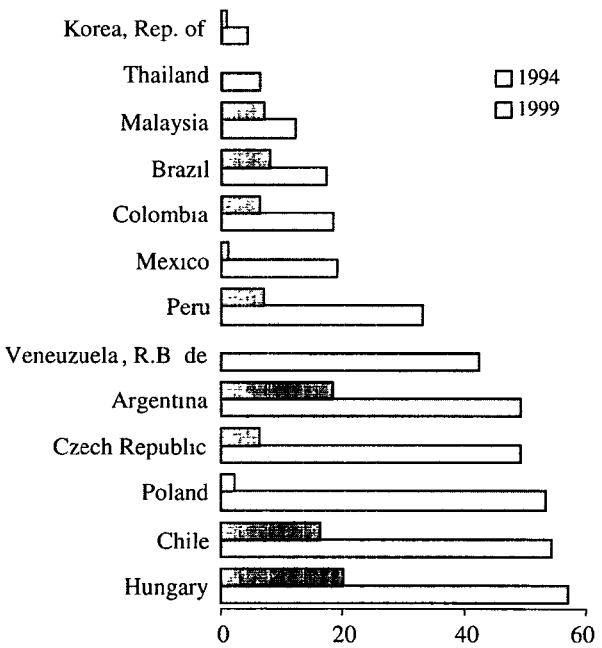
Most of the evidence on foreign banks' mode of entry and organizational form relates to banks from the United States operating abroad or to foreign banks operating in that country. Though more research is needed in developing economies, several issues are worth highlighting. First, recent technological changes may allow banks involved in cross-border consolidation to benefit from economies of scale arising from such transactions. Such benefits are likely to be passed on to consumers of financial services in the form of better financing conditions and greater access to financing. In particular, advances in electronic banking and credit scoring could assuage fears that the typically large banks resulting from mergers and acquisitions will shy away from lending to small customers. Second, although the evidence from the United States indicates that de novo banks are likely to increase credit to small customers as well, it is unclear whether these findings will carry over to developing economies, because de novo entrants in these markets tend to be neither truly young nor small. Third, subsidiaries might appear to be the preferred organizational form for developing economies—because they allow foreign banks to provide a wider range of activities than branches and appear to provide a more stable source of financing than cross-border lending—though more research is needed on this question. Existing evidence suggests that branches engage in a narrower set of activities, but they have more direct access to the parent bank's capital than do subsidiaries, as illustrated by the recent decision of some foreign banks not to recapitalize their subsidiaries in Argentina.

The Pattern of Foreign Bank Penetration around the World

Although foreign bank entry has occurred in many developing countries, the pattern has not been uniform (IMF 2000). Countries in Latin America and Eastern Europe have permitted and attracted the most foreign bank entry: between 1994 and 1999 the share of banking assets held by foreign-controlled banks in Argentina, Chile, Hungary, and Poland rose from less than 20 percent to more than 50 percent (figure 1). By contrast, in East Asia over the same period, the average share rose only from 3 percent to 7 percent.

Based on a survey of national bank regulatory and supervisory authorities, Barth and others (2001c) provide data on the share of banking assets held by foreign-controlled banks in 91 countries, mostly for 1998 (table 1). (In an era of rapid entry, small differences in timing can have a significant effect on reported foreign ownership, explaining differences between figure 1 and table 1.) Two features of these data stand out. First, foreign-controlled banks hold widely differing shares of assets across countries—from 0 to 100 percent. In 31 countries foreign banks hold less than 10 percent of banking assets; in 24 others they hold more than 50 percent. Second, there

Figure 1. Share of Banking Assets Held by Foreign-Controlled Banks, Selected Countries, 1994 and 1999 (percent)



Source. IMF 2000.

Table 1. Economies by Share of Banking Assets Held by Foreign-Controlled Banks, 1998 (percent)

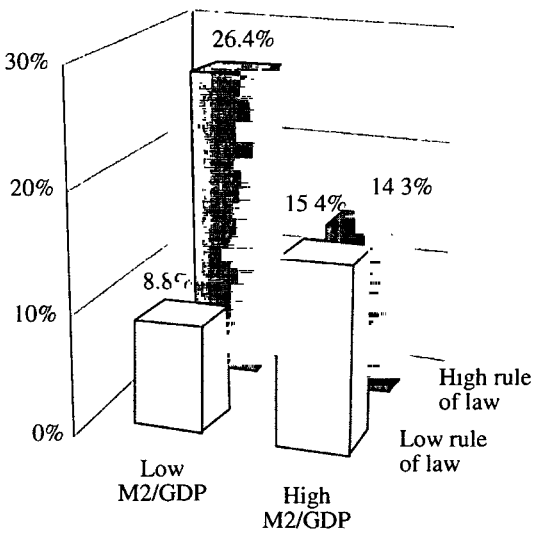
0–5 percent		*5–10 percent*		*10–20 percent*		*20–40 percent*		*40–60 percent*		*60–80 percent*		*80–100 percent*	
Burundi	0.0	Austria	5 1	Cyprus	10 9	Bhutan	20 0	Peru	40 4	Hungary	62 0	Estonia	85 0
Iceland	0 0	South Africa	5 2	Spain	11 0	Maldives	25 0	Bolivia	42 3	Zambia	64 0	Solomon Islands	90 0
India	0 0	Japan	5 9	Oman	11 1	Vanuatu	25 0	Jamaica	44 0	St Kitts and Nevis	65 1	Turks and Caicos	90.0
Korea, Rep of	0 0	Tajikistan	6 2	Portugal	11.7	Mauritius	25 8	Lithuania	48 0	Turkey	66 3	Macedonia, FYR	92.7
Kuwait	0 0	Bangladesh	6 4	Macau	12 0	Czech Republic	26 0	Malta	48 8	Jordan	68 0	Samoa	93.0
Nigeria	0 0	Croatia	6 7	El Salvador	12 5	Poland	26 4	Argentina	49 0	Cambodia	71 0	Luxembourg	95 0
Saudi Arabia	0 0	Indonesia	7.0	Philippines	12 8	Lebanon	27 2	Lesotho	49 0	Gambia	76 4	Botswana	97 6
Liechtenstein	1 0	Thailand	7 2	Qatar	14 9	Bahrain	28 0	Rwanda	50 0	Aruba	76 8	Cayman Islands	98.0
Honduras	1 6	Finland	7 8	Guyana	16 0	Puerto Rico	30 8	Singapore	50 0	Estonia	85 0	New Zealand	99 0
Sweden	1 8	Trinidad and Tobago	7 9	Brazil	16 7	Chile	32 0	Ghana	54 3			British Virgin Islands	100 0
Belarus	2 8	Romania	8 0	Australia	17 1	Moldova	33 4					Gibraltar	100 0
Egypt, Arab Rep.	4 2	Malawi	8 3	Malaysia	18 0	Venezuela, R. B de	33 7					Guernsey	100.0
Germany	4 2	Switzerland	8 5	Morocco	18.8	Nepal	35 0					Tonga	100.0
Slovenia	4.6	Russian Federation	9 0	Mexico	19 9	Panama	38 3						
United States	4 7												
Guatemala	4 9												
Greece	5 0												
Italy	5 0												

Source: Barth and others 2001c

is no obvious pattern based on level of development. Foreign banks hold less than 10 percent of banking assets in such developing economies as Bangladesh, Egypt, and India—but more than 60 percent in Cambodia, Hungary, and Turkey. In developed economies, such as Germany, Sweden, and the United States, foreign-controlled banks hold less than 10 percent of assets, whereas in Luxembourg and New Zealand they hold more than 90 percent.

The Barth and others data can help shed light on the links between the degree of foreign ownership and several macroeconomic and institutional indicators, including the rule of law index, which reflects the willingness of a country's citizens to accept the established legal traditions for making and implementing laws and adjudicating disputes, and the ratio of money plus quasi-money (M2) to GDP as a measure of financial development. The data show that foreign-controlled banks hold the largest share of assets, 26.4 percent, in countries where the rule of law is well established but the financial sector is relatively underdeveloped—as reflected in a relatively low ratio of M2 to GDP—and thus market opportunities are greater (figure 2). By contrast, in countries with a weak legal tradition and a relatively low ratio of M2 to GDP, they hold only 8.8 percent of assets. In financially developed economies the quality of the legal system appears to have less influence. In these countries foreign banks hold about 15 percent of assets regardless of the quality of legal institutions.

Figure 2. Foreign Bank Participation, Financial Development, and Rule of Law, 1998 (Banking Assets Held by Foreign-Controlled Banks) (percent)



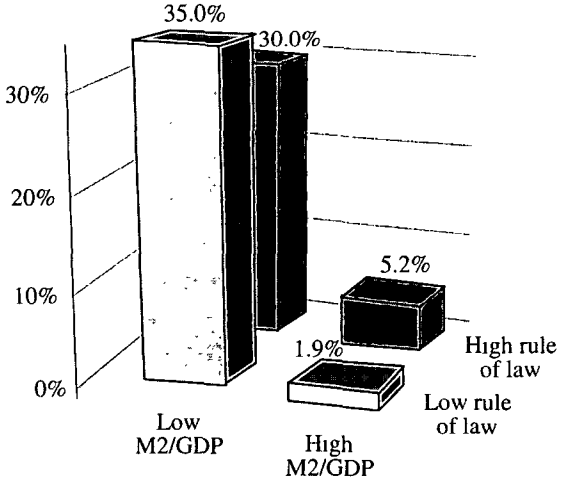
Source World Bank 2001, Political Risk Services (PRS) Group 2001, Barth and others 2001c.

By comparison, regardless of the quality of the legal environment, state banks control a much larger share (30–35 percent) of banking assets in countries with less developed financial sectors than in those with more developed financial sectors (2–5 percent; figure 3). Considered together, figures 2 and 3 suggest that in financially underdeveloped economies with strong legal traditions, on average the banking sector is divided in thirds among state, foreign, and private domestic banks. In financially underdeveloped economies with weak legal traditions, state banks control a large share of banking assets, foreign banks a very small share, and private domestic banks the rest.

An examination of the relationship between foreign bank participation and foreign direct investment suggests that foreign banks play an important role in countries where the overall level of foreign direct investment is high regardless of the level of financial development (figure 4). This evidence suggests that foreign banks follow their clients abroad. But local market opportunities (as captured by low levels of financial development, measured here as the ratio of private sector credit to GDP) also appear to play a role. Among countries that receive large per capita inflows of foreign direct investment, foreign banks hold 44 percent of assets in those with underdeveloped banking sectors but only 18 percent in those with relatively developed sectors.

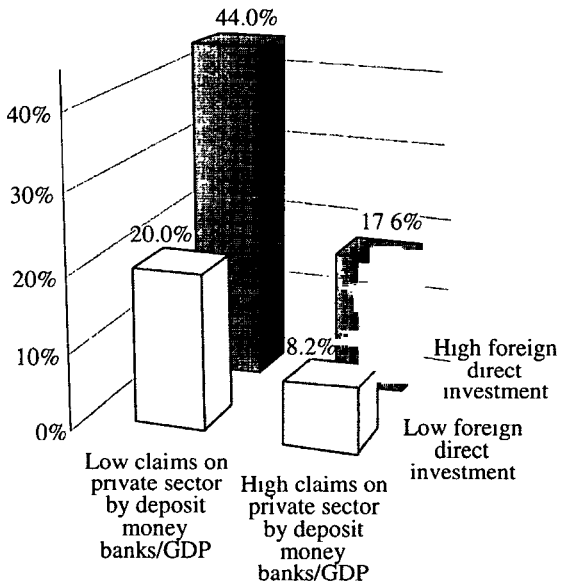
The data on foreign bank participation and private sector lending support the hypothesis that foreign banks can be a stabilizing influence (though they do not

Figure 3. State Bank Ownership, Financial Development, and Rule of Law, 1998 (Banking Assets Held by State-Owned Banks) (percent)



Source: World Bank 2001, PRS Group 2001, Barth and others 2001c

Figure 4. Foreign Bank Participation, Financial Development, and Foreign Direct Investment, 1998 (Banking Assets Held by Foreign-Controlled Banks) (percent)

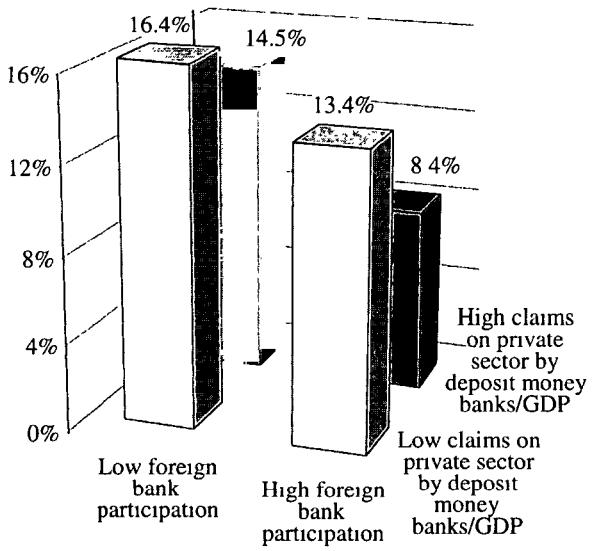


Source. World Bank 2001, PRS Group 2001, Barth and others 2001c

include the recent experience of Argentina). The coefficient of variation for the ratio of claims on the private sector by deposit money banks to GDP (that is, the instability of credit growth) over the period 1996–2000 is lower in countries where foreign ownership is greater than the sample median for countries with both developed and less developed banking sectors (figure 5). It is smallest (8.4 percent) in countries where the level of foreign bank entry is relatively high and the banking sector is relatively developed.

A comparison of the behavior of international bank claims with that of domestic bank credit (both in real dollars) before and during recent financial crises in East Asia, Latin America (excluding the recent case of Argentina), and the Russian Federation provides further evidence that foreign banks do not increase instability in countries that host them (table 2). In all cases except Argentina (1995 crisis) both domestic credit and international bank claims dropped during the recent crises. But in most cases domestic credit declined significantly more than lending by international banks.

Figure 5. Private Credit Volatility, Foreign Bank Participation, and Financial Development, 1996–2000 (Coefficient of Variation for Ratio of Claims on Private Sector by Deposit Money Banks to GDP)



Source: World Bank 2001, PRS Group 2001, Barth and others 2001c

The evidence in this section points in a number of directions. First, foreign bank entry has not been evenly distributed across developing economies. Second, foreign banks seem to not only follow their customers abroad but also pursue local market opportunities. Third, foreign banks do not appear to be more destabilizing than domestic banks in the countries that host them. Although suggestive, these associations are not formal tests of the causes and consequences of foreign entry. They are included here to provide context and motivation for the empirical literature on these subjects, to which the next section turns.

What Draws Foreign Banks? Location-Specific Factors

Empirical research on the factors that encourage entry by foreign banks shows that economic integration between a foreign bank's home country and the host country it enters, the market opportunities in the host country, and entry restrictions and other regulations (including tax treatment) all affect the pattern and timing of foreign entry. Although much of the evidence comes from the United States, some cross-country evidence has recently emerged.

Table 2. The Impact of Financial Crises on Growth in Domestic Credit and International Bank Claims, Selected Countries
(annual percentage growth in U.S dollars)

		International bank claims[a]		*Domestic credit*[b]	
Country	*Crisis year*	*Precrisis*[c]	*Crisis*[d]	*Precrisis*[c]	*Crisis*[d]
Argentina	1995	5.17	4.89	11.41	2.34
Brazil	1999	12.22	−12.11	−6.17	−47.09
Mexico	1995	6.19	−14 60	9.37	−61.79
Russian Federation	1998	6.15	−22 24	5.93	−33.59
Indonesia	1997	20.44	−28.69	13.17	−82.16
Korea, Rep. of	1997	25.77	−37.82	12.79	−29.28
Malaysia	1997	22 30	−29.06	25.76	−37.55
Thailand	1997	20.78	−36.00	13.68	−30.46

[a]International bank claims refer to cross-border and local claims in foreign currency by countries reporting to the Bank for International Settlements (Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, Portugal, Spain, Sweden, Switzerland, the United Kingdom, and the United States)

[b]Domestic credit refers to the credit extended locally by domestic and foreign institutions

[c]Precrisis refers to the two years before the crisis The growth rates reported are an average over these two years.

[d]Crisis refers to the year in which the crisis occurred.

Source: Bank for International Settlements 2001, IMF 2001

Economic Integration between the Home and Host Countries

Looking at developed economies, many studies have found a positive and significant correlation between foreign direct investment in the banking sector and integration between home and host countries.[1] Several of these have examined the activities of foreign banks operating in the United Kingdom or the United States (Budzeika 1991; Fisher and Molyneux 1996; Hultman and McGee 1989). Others have analyzed the foreign activities of banks from one country—Germany, Japan, the United Kingdom, the United States—throughout the world.[2] Studies that link foreign bank entry with other foreign direct investment are often seen as supporting the claim that banks follow their customers abroad.

Even if foreign direct investment in the nonfinancial sector is correlated with foreign bank entry, it is not clear that it has a causal effect. Indeed, foreign bank entry might drive foreign direct investment in the nonfinancial sector, or other factors could drive such investment in both sectors. Moreover, although most empirical studies on this topic control for market size (as measured by GDP or population) and for trade links between home and host countries, these controls might not be sufficient. These problems aside, even if there is a positive association between foreign direct invest-

ment in banking and in the nonfinancial sector, this would not necessarily mean that foreign banks provide financial services only—or even principally—to the affiliates of home country clients.

Seth and others (1998) directly address this issue by looking at the lending patterns of U.S.-based banks from Japan, Canada, France, Germany, the Netherlands, and the United Kingdom—the countries accounting for the most foreign bank activity in the United States—and at the borrowing patterns of nonbank affiliates of firms from these countries. They find that banks from four of the six countries (Canada, Japan, the Netherlands, and the United Kingdom) allocated most of their loans to non–home country borrowers for some or all of 1981–92. They conclude that the "follow the customer" hypothesis might have more limited applicability than previously thought.

This hypothesis might be even less applicable in developing economies. In a study of U.S. banks in 32 countries from 1987 to 1995, Miller and Parkhe (1998) find that greater foreign direct investment flows to a host country are associated with foreign bank entry *except in developing economies*. One plausible explanation for this is that domestic competition might be less effective in developing economies, so that these countries might offer foreign bank entrants substantial profit opportunities. Thus foreign entry by banks might precede or even bring about foreign entry by nonfinancial firms.

Opportunities in the Host Country

Several recent studies offer support for the notion that foreign banks are attracted by profit opportunities in host countries. Modeling foreign bank presence across 80 countries in 1988–95, Claessens and others (2000) find that foreign banks are attracted to markets with low taxes and high per capita income. Yamori (1998), Brealey and Kaplanis (1996), and Buch (2000) find similar results for per capita GDP.

Focarelli and Pozzolo (2000), using a richer set of variables to control for profit opportunities in the host market, model the location choices of 143 banks with at least one shareholding abroad across 28 OECD countries. Besides controls for the degree of economic integration between countries (bilateral trade, geographic distance, and nonfinancial foreign direct investment) and regulatory restrictions on bank entry, they include variables that measure prospects for economic growth and the competitiveness of the banking sector. They find greater foreign bank entry where the expected rate of economic growth is higher. They also find greater foreign presence where local banks have higher average costs, lower net interest margins, fewer chargeoffs, and higher cash flows (signaling an inefficient use of capital). They interpret these results as consistent with the hypothesis that foreign investors envision using their expertise and human capital to restructure inefficient banks. They also find greater foreign presence where banks are smaller on average, perhaps because

it is easier to acquire banks in these markets and because there is greater opportunity to increase market share after the restructuring.

Although most of the 28 host countries in Focarelli and Pozzolo's sample are developed, the study also includes several developing economies (the Czech Republic, Hungary, the Republic of Korea, Mexico, Poland, and Turkey). Because domestic banks are likely to be weakest in developing economies, Focarelli and Pozzolo's results provide another indication that foreign banks enter developing economies to exploit local profit opportunities. Also consistent with this hypothesis, Bonin and Abel (2000) find that foreign banks in Hungary (the transition economy quickest to open its banking sector) became heavily involved in both deposit taking and consumer lending (box 1).

So, foreign banks appear to enter developing economies for somewhat different reasons than they enter developed ones. Following the customer seems a less important motivation in developing economies, suggesting that foreign banks are genuinely interested in exploiting opportunities in the host country. But more research is needed, particularly in the least developed economies, where prospects for foreign bank profitability are bleak and Focarelli and Pozzolo's (2000) results on local market opportunities are less likely to apply.

Regulations in the Host Country

The effects of host country regulations restricting foreign entry are straightforward: they limit competition and protect inefficient domestic banks. Focarelli and Pozzolo (2000) find that foreign banks prefer to invest in countries with fewer regulatory restrictions on banking activity. Barth and others (2001b) provide cross-country evidence that restrictions on entry (whether for foreign or domestic banks) are associated with higher net interest margins and overhead costs. In addition, major banking crises appear more likely in countries that limit foreign bank entry and ownership.

Again, the most studied case is the United States, where state regulations affected the nature and pattern of foreign participation. Goldberg and Grosse (1994) find that foreign banks had a greater presence in states with less strict regulations on foreign activities. Hultman and McGee (1989) argue that tax laws may also have affected foreign banks' decisions about where to locate and what type of office to establish.

For developing economies, it will be interesting to contrast the experiences of those that pursued open, "level playing field" approaches to foreign participation, such as Argentina and Chile, with those that have imposed special conditions on foreign banks, such as Egypt and the Republic of Korea. Initial indications are that less open approaches have produced meager benefits. Hao and others (2000), for example, find only limited efficiency improvements associated with foreign entry in Korea.

Box 1. The Evolution of Hungary's Banking Sector

During the economic transition in Hungary the ownership structure of its banking sector was rapidly overhauled. State-owned banks were privatized, and private foreign banks were allowed to enter. Despite some initial dislocation, services have slowly expanded and improved

Foreign participation in banking has grown dramatically. At the end of 1999 banks in which foreign interests owned more than 50 percent of equity accounted for 57 percent of banking assets, up from 20 percent in 1994 If the threshold for foreign control is lowered to 40 percent of equity, their share increases to 80 percent of assets. Not all foreign banks have pursued the same objectives or clientele. Many are active in retail banking, both taking deposits and lending to households.

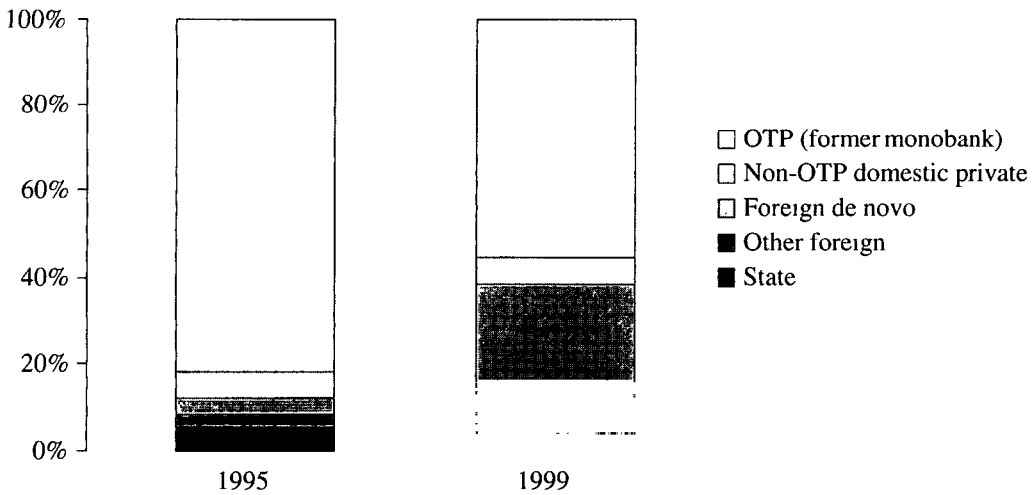
Concentration in the banking sector has declined sharply. In 1990, before the transition, Orszagos Takarekpenztar es Kereskedelmi Bank (OTP) held 98 percent of loans to households and collected 93 percent of household deposits. By 1999 the reorganized (and privatized) OTP retained only 56 percent of household loans and 52 percent of household deposits. OTP's share of the household loans extended by all private domestic banks fell from 93 percent in 1995 to 90 percent in 1999. Thus OTP accounted for almost all the decline in the share of household loans granted by these banks between 1995 and 1999 (see figure).

The combined share of the six largest banks—four of which are foreign owned—declined from 99 percent of household loans in 1990 to 85 percent in 1999 Their share of household credit fell from 99 percent to 66 percent, reflecting the important inroads into retail banking made by small and medium-size banks, most also foreign owned. But the de novo banks made even earlier inroads into that market.

Banks have sought specific market niches. Small banks largely use the household deposits they collect to lend to other households, whereas larger banks use household deposits to support other types of lending, such as commercial loans. Foreign de novo banks return 23 percent of their deposits to the household sector in the form of loans, up from 10 percent in 1996. By contrast, private domestic banks return only 16 percent to the household sector, down from 18 percent in 1996.

Starting from a low level of checking accounts, Hungary "leapfrogged" that medium of payment and moved directly to electronic bankcards In 1999 it had the region's second-highest number (after Slovenia) of Visa and Europay cards, 358 per 1,000 inhabitants The Czech Republic had 208 per 1,000, and Poland 181. And from 1995 to 1999 the number of automated teller machines increased by 350 percent, though about a third of the machines are in Budapest.

Figure. Total Bank Credit to Households by Type of Bank, Hungary, 1995 and 1999 (percent)



Source: Bonin and Abel 2000.

Which Banks Expand Abroad?

The rich variation in foreign bank entrants, modes of entry, and choices of location might be expected to provide evidence about the ownership-specific factors that affect entry decisions. But most theoretical explanations of how ownership-specific factors affect entry center on product differentiation and comparative advantage. Buch (2000) notes that because it is difficult to obtain data on such ownership-specific factors, most research has focused on location-specific factors. Despite the data limitations, there is evidence suggesting that banks' size, their efficiency and performance, and their home country's restrictions on banking all play a part in determining which banks expand abroad.

Size

There are several reasons why large banks might be more likely to expand abroad.[3] First, large banks are more likely to have multinational enterprises as customers and therefore might be more likely to be pulled to new locations. Second, banks with a large home market share might have stronger incentives to seek risk diversification opportunities abroad. Finally, increasing returns to scale in some of the banking services characteristic of international banking, such as portfolio management and investment banking, could favor large banks.

Several studies have found a positive correlation between size and internationalization. Tschoegl (1983), studying the activities of the world's 100 largest international banks in 1976, finds that larger banks had a greater global presence. Grosse and Goldberg (1991), using 1980–88 data on the average characteristics of the home country's banking sector, find that sector size was positively linked to foreign bank presence in the United States. Studying the activities of Japanese banks in the Republic of Korea, Ursacki and Vertinsky (1992) find a positive correlation between asset size and number of branches. Williams (1996, 1998) finds similar results for foreign banks in Australia. Focarelli and Pozzolo (2000), in their study of foreign banks in 28 OECD countries, find that bank size as measured by total assets is positively correlated with internationalization.

Efficiency and Other Performance Measures

There are two types of evidence on efficiency and bank performance. One comes from comparisons of foreign and domestic banks, which show different results for developed than for developing economies. The other shows that among the banks that expand abroad, those that have a greater international presence perform better.

Several studies in developed economies have found that foreign-owned banks are less efficient than domestic ones.[4] For example, Hasan and Hunter (1996) find that

Japanese multinational banks in the United States are less efficient on average than U.S. multinational banks. But some studies have found that foreign institutions are nearly as efficient as domestic ones, especially when the United States is not the host nation (Hasan and Lozano-Vivas 1998; Vander Vennet 1996).

Efficiency comparisons of foreign and domestic banks in developing countries yield very different results. Comparing the cost efficiency of various groups of banks in Hungary in 1994–97, Kiraly and others (2000) find that foreign-owned banks (especially those that are large) rank at the top of the efficiency list. In India, Bhattacharya and others (1997) find that foreign banks are slightly more efficient than domestic ones.

Comparisons of the performance (particularly profitability) of foreign and domestic banks also differ between developed and developing economies. Examining the performance of foreign and domestic banks in 80 countries, Demirgüç-Kunt and Huizinga (2000) and Claessens and others (2000) find that foreign banks exhibited lower profitability than domestic banks in developed economies. They find the opposite result in developing economies. Similar evidence is found in developing economy case studies. Denizer (2000) finds that foreign banks in Turkey attained higher profitability than domestic banks. Clarke and others (2000) find similar results for Argentina in the late 1990s. Comparing the performance of foreign-owned and domestic banks in Colombia in 1985–98, Barajas and others (2000) find that foreign-owned banks had fewer nonperforming loans, lower administrative costs, and higher productivity.

Mathieson and Roldós (2001) argue that the contrasting results in mature and emerging markets reflect differences in conditions at the time of foreign entry. Most studies in developed economies cover periods in which banking regulations and controls had long since been liberalized and banks were used to competing with not only other domestic banks but also nonbank sources of credit (especially capital markets). This competition had already put pressure on net interest margins, forcing banks to merge or adopt new technologies to reduce overhead costs. By contrast, studies in developing economies have typically focused on periods in which the banking system had only recently been liberalized or was coming out of a crisis. In both cases banks were emerging from periods typically characterized by entry restrictions, nonmarket interest rates, and limited competition from nonbank sources of credit. Although this type of environment allowed inefficient banks to survive, it also created strong profit opportunities for foreign banks that could operate with more efficient cost structures and offer market interest rates.

The second type of evidence, linking foreign entry to efficiency and performance, again comes from Focarelli and Pozzolo (2000). They find that a bank's return on assets is positively correlated with the degree to which it expands abroad. They argue that this result is consistent with the notion that efficiency, as proxied by profitability, has a positive effect on the level of internationalization. They also find that banks

with a higher share of noninterest income are more likely to have a foreign presence. They interpret these results as showing that more innovative banks look for new profit opportunities and therefore have both a larger share of revenues from nontraditional activities and a greater propensity to expand abroad.

Though size and efficiency are important determinants of which banks go abroad, other factors also appear to play a role. For example, Calderon and Casilda (1999), in a review of foreign bank entry into Latin America over the past decade, point to characteristics of the banks' home countries. They argue that financial deregulation in Spain, together with the greater competition brought about by the European Monetary Union, led Spanish banks to invest heavily in Latin America to expand their regional presence. Similarly, Goldberg (1992) notes that foreign banks were able to penetrate U.S. banking in the 1980s because of greater availability of funds at home. Many countries, such as Japan, had higher savings rates and trade surpluses than the United States and were trying to find places to invest.

Regulations in the Home Country

Home country regulations can also affect the pattern and nature of foreign bank entry. Based on regressions explaining foreign presence, Focarelli and Pozzolo (2000) find that restrictions on outward foreign direct investment reduce the likelihood that local banks will enter other countries. Somewhat more surprisingly, they find that restrictions on the activities of domestic banks have the same effect. They speculate that the restrictions reduce the efficiency of a country's banking sector and thus the likelihood that its banks will have a comparative advantage over competitors in their destination market. In a cross-country study Barth and others (2001a, 2001b) find evidence that restricting the range of domestic banks' activities is negatively associated with the banks' performance and stability.

What Do Foreign Banks Do? What Are the Implications for Domestic Banks?

The evidence shows that foreign banks do not merely follow home country customers abroad. They also go abroad to pursue local profit opportunities, especially in developing economies. What are the effects of foreign entry on competition for domestic banks? What are the implications for stability? Besides concerns that foreign banks will drive domestic ones out of business, there are concerns that in times of crisis foreign banks may curtail their lending in the host country, exacerbating the problems. There is also concern that foreign banks will "cherry pick" the best borrowers while neglecting market segments like small and medium-size enterprises. If

cherry picking weakens domestic banks enough so that some must exit the market, the supply of credit to such firms may decline.

Competition with Domestic Banks

Studies show that foreign entry does exert competitive pressure on domestic banks. This appears to force domestic banks to lower their costs and in some cases appears to reduce their profitability. Moreover, because foreign banks do not necessarily enter all domestic market segments equally, domestic banks face different degrees of pressure—though the areas where pressure is applied probably vary across countries. The evidence on how foreign entry affects the quality of domestic banks' loan portfolios is mixed, suggesting that this issue requires further investigation.

Several studies have examined the activities of foreign banks in the United States. Goldberg and Saunders (1981a) find that foreign banks operating in the United States tended to be oriented toward wholesale business. Damanpour (1990) provides similar evidence, showing that foreign banks had a heavy concentration of commercial and industrial loans in their portfolios. Calomiris and Carey (1994) suggest that the growth of foreign banks' market share in the United States depended more on purchasing existing loans than on originating new ones. Similarly, Kraus (1995) finds that having established a presence in the United States, many foreign banks increased their market share by acquiring existing banks rather than originating new lending. Seth (1992) and Peek and others (1999) attribute the relatively low profitability of foreign banks operating in the United States to the preexisting conditions of banks acquired as well as to foreign banks' business strategies. These studies show that foreign banks tended to acquire banks with lower than average capital and higher than average nonperforming loans. Dealing with these problems reduced their profitability relative to that of domestic banks.

Although the wholesale orientation of foreign banks limited the benefits they could provide in the United States, some borrowers nevertheless gained. Goldberg (1992) notes that foreign banks that were new entrants were often accused of pricing their products lower than domestic competitors to obtain business. The foreign banks were able to accept smaller profit margins because of lower capital requirements and a greater ability to use leverage. Several studies conclude that foreign banks benefited from lower costs of capital compared with U.S.-owned banks (McCauley and Seth 1992; Terrell 1993; Zimmer and McCauley 1991).

Still, the high cost of doing business in a foreign country means that foreign banks often find themselves at a competitive disadvantage. In the United States, a developed economy with strong domestic banks, competing on the basis of special expertise or services is hard to do. So it is not surprising that foreign banks competed largely on price and in the wholesale market.

But the United States may not be a typical host country. Many recent studies have therefore focused on the activities of foreign banks and the effect of foreign entry in other countries that saw an increase in foreign bank participation in recent years. Claessens and others (2000) estimate the effect of foreign bank entry on the operations of domestic banks in a sample of 80 developed and developing economies. They conclude that foreign banks diminish the profitability of domestic banks and also find some evidence that foreign entry reduces the noninterest income and overall expenses of domestic banks. They argue that when other variables are controlled for, high profits reflect a lack of competition, and high overhead costs a lack of efficient management. Thus the authors interpret their results to mean that foreign bank entry increases efficiency in the domestic banking system.

Using bank accounting data from the Philippines for 1990–98, Unite and Sullivan (2001) investigate how foreign bank entry and increased foreign ownership affected domestic banks. The authors find that greater foreign bank entry and penetration reduced the interest spreads and operating expenses of domestic banks but not their profitability. They conclude that foreign competition forces domestic banks to be more efficient. They also find that foreign bank entry and penetration led to an increase in loan loss provisions, used as a measure of bank risk. Because greater loan loss provisions reflect an increase in estimates of bad loans or a more realistic evaluation of the quality of loan portfolios, the authors assume that the higher loan loss provisions reflected more conservative banking practices and lower bank risk.

Barajas and others (2000) provide evidence on the competitive effect of foreign entry in Colombia, using panel estimation and controlling for other aspects of financial liberalization (including the number and relative size of new domestic entrants and overall increases in capital flows). They find that foreign entry appeared to improve the efficiency of the domestic banking system by reducing nonfinancial costs. But foreign and domestic entry combined led to a deterioration in the quality of domestic banks' loan portfolios. The authors point out that this evidence is consistent with the notion that greater competition increases risk by leading to a loss of bank franchise value (a notion discussed most notably by Hellman and others 2000). Finally, the authors find that foreign entry lowered spreads among foreign banks, whereas domestic entry lowered spreads across all banks. This result suggests that foreign banks in Colombia did not compete against domestic ones in all sectors.

Similarly, Clarke and others (2000) find that although foreign banks in Argentina competed beyond the wholesale market in the late 1990s, they did not compete with domestic banks in all sectors. This result is consistent with the hypothesis that foreign banks enter areas where they have a comparative advantage, putting pressure on the domestic banks in those areas. The authors find that domestic banks with loan portfolios concentrated in manufacturing, where foreign banks have traditionally directed much of their lending, tended to have lower net interest margins and lower profits than other domestic banks. By contrast, banks active primarily in con-

sumer lending, where foreign banks have not been heavily involved, had higher net interest margins and higher profits.

Implications for Stability

By permitting foreign banks to enter, host countries may open themselves up to economic fluctuations in entrants' home countries. Peek and Rosengren (2000a) find that the collapse of the equity and real estate markets and the subsequent banking crisis in Japan affected economic activity in the U.S. commercial real estate sector in the 1990s. Japanese bank subsidiaries in the United States responded to the problems in Japan by reducing their lending in U.S. markets. Because Japanese banks had a large presence in some major commercial real estate markets in the United States, that response had real effects on construction. Evidence also shows that cyclical conditions in the United States can affect the host countries of U.S. banks operating abroad. Based on data on U.S. bank claims on individual foreign countries since the mid-1980s, Goldberg (2001) concludes that foreign claims are highly correlated with GDP growth in the United States but not with economic conditions in the host countries.

But it has also been argued that foreign banks may be a stabilizing influence before or during local financial crises. One reason is that they tend to have access to a more diversified (international) pool of liquidity than do domestic banks. Even if external funds dry up, they may still have access to financial support from their parent banks (see Detragiache and Gupta 2002 and Peek and Rosengren 2000b). Cross-country evidence in Demirgüç-Kunt and others (1998) and Levine (1999) shows that when other factors likely to produce banking crises are controlled for, the presence of foreign banks reduces the likelihood of crisis and has a positive effect on growth. Barth and others (2001b) find that restrictions on foreign entry are associated with lower loan portfolio quality on average and greater fragility of the banking sector.

Moreover, studies examining the actions of foreign banks during crises conclude that they do not appear to retrench their lending significantly during these episodes, especially when compared with domestic banks. Dages and others (2000) show that foreign banks in Argentina and Mexico had stronger and less volatile loan growth than domestic banks between 1994 and 1999—that is, during and after the Tequila crisis. Peek and Rosengren (2000b) reach a similar conclusion after examining the direct (or cross-border) foreign lending and local claims by foreign banks in Argentina, Brazil, and Mexico in 1994–99. Focusing on U.S. banks' cross-border and locally funded claims since the mid-1980s, Goldberg (2001) finds that their foreign lending was virtually unaffected by crises in host (borrower) countries. In Malaysia, Detragiache and Gupta (2002) find that foreign banks not only did not abandon the local market in the immediate aftermath of the recent economic crisis but in fact increased their market share.

Nevertheless, the evidence on the behavior of foreign banks during crises is new and still limited. Moreover, recent events in Argentina, which experienced significant foreign bank entry in the 1990s (see figure 1), may challenge the notion that foreign banks can be a stabilizing force in developing economies' banking sectors. After a decade in which a currency board system pegged the Argentine peso one to one to the U.S. dollar, a run by investors in late December 2001 forced the government to freeze bank deposits (under the so-called *corralito*, or little fence), devalue the peso, and default on its debt.[5] Following these events, three foreign banks operating in Argentina (two owned by the French Crédit Agricole and one owned by the Canadian Scotia Bank) announced their decision to leave the country, and others have threatened not to recapitalize their subsidiaries.

Many observers accuse the foreign banks of being fickle. But the banks blame government policies for the enormous losses the banking system faces, and some blame the policies for their decision to leave. In particular, they point to the asymmetric "pesification" of assets and liabilities as a form of expropriation—while dollar-denominated loans were converted to pesos at a rate of 1 to 1, deposits were converted at 1 to 1.4. They note that because banks had become key financiers of the Argentine government before the crisis, they had been hurt severely by the debt default and the collapse of government bond prices.

Because the crisis is ongoing and threats to leave or not to recapitalize might be a negotiating tactic in some cases, it is difficult to assess what effect foreign bank ownership will have on stability in the Argentine banking sector. Whether the behavior of foreign banks in Argentina will become the norm or the exception in severe crises—and where government policies appear to have exacerbated banking sector problems—is likely to be the subject of much future research.

Lending to Small and Medium-Size Enterprises

Foreign banks appear to allocate greater shares of their lending portfolios to commercial and industrial loans than do domestic banks—indirect evidence that foreign banks may be more oriented toward lending to large companies. Goldberg (1992) notes that foreign banks operating in the United States held 28.5 percent of commercial and industrial loans in 1989 but only 22.6 percent of banking assets. In a 1985 survey of 271 foreign banks operating in the United States, Cho and others (1987) find that 56 percent pointed to trade finance as a major area of specialization, 44 percent to corporate banking, and 31 percent to foreign exchange trading—all services likely to disproportionately benefit large businesses. Similarly, in Argentina in the late 1990s, Clarke and others (2000) find that foreign banks allocated about 35 percent of their lending to manufacturing, compared with less than 20 percent for private domestic banks and 10 percent for public domestic banks.

One reason that foreign banks may shy away from lending to small businesses is that, as Focarelli and Pozzolo (2000) indicate, most banks with an international presence are large. For large banks, organizational diseconomies may make it difficult to provide relationship lending services to small businesses at the same time that they are providing transaction lending and wholesale capital market services to their large clients (Berger and others 2001b).

Substantial evidence from the United States indicates that large (though not necessarily foreign) banks lend relatively less to small businesses than do smaller banks (see Berger and others 1995; Berger and Udell 1996; Keeton 1995; Levonian and Soller 1995; Peek and Rosengren 1996; and Strahan and Weston 1996). Although large banks (those with assets of more than $5 billion) allocate only 3 percent of their assets to commercial and industrial loans to domestic borrowers with bank credit of less than $1 million, small banks (those with assets of less than $100 million) allocate 9 percent of their assets to such borrowers (June reports of income and condition for various banks, 1993–96, as cited in Strahan and Weston 1998).

Evidence on small business lending in Latin America is mixed. Berger and others (2001b) find that small businesses in Argentina are less likely than large ones to receive credit from large banks or from foreign banks. Also analyzing the case of Argentina, Escudé and others (2001) find that although foreign banks allocated a smaller share of their loan portfolio to small and medium-size enterprises than did domestic banks, they granted almost half the credit to this sector in 2000. The authors argue that this is evidence that foreign banks do not discriminate against small enterprises.

Clarke and others (2002) find that foreign banks in Argentina, Chile, Colombia, and Peru generally lent a smaller share of their portfolio to small and medium-size enterprises than did similar domestic banks in the late 1990s. But they also find that differences between foreign and domestic banks were far less pronounced among large banks than among small banks in all four countries. In fact, in Chile and Peru their analysis suggests that large foreign banks might have lent relatively more to small and medium-size enterprises (as a share of total lending) than did large domestic banks, once other factors that affect lending are controlled for. Moreover, the authors find that real growth in lending to small and medium-size enterprises was higher for large foreign banks than for large domestic banks in Argentina and Chile.

Technological change may explain this growth in lending by large foreign banks to small and medium-size enterprises. Mester (1997) argues that advances in credit scoring, coupled with greater computer power and data availability, might change small business lending. These factors could reduce the need for banks to have a physical presence in all geographic areas in which they lend (Petersen and Rajan 2000). They could also help large foreign banks overcome the diseconomies and difficulties in lending to small borrowers.

Even if foreign banks continue to focus on serving large customers in most developing economies, advocates of foreign entry argue that it might still benefit small borrowers. Besides the benefits associated with greater banking efficiency, foreign bank penetration could indirectly improve small borrowers' access to credit through its effect on domestic bank lending. Foreign bank competition for large customers could displace some domestic banks, forcing them to seek new market niches, such as providing credit to small and medium-size enterprises. Bonin and Abel (2000), in their descriptive account of Hungary's experience with foreign bank penetration in recent years, show that as foreign bank presence increased, some smaller domestic banks sought new market areas. Similarly, in a survey of banks from 78 countries, Jenkins (2000) finds that among the banks that lent to small and micro enterprises, 44 percent cited changed market conditions and greater competition in lending to large and medium-size enterprises as the two most important reasons for doing so.

Still, the studies cited thus far have failed to econometrically capture these indirect effects of foreign bank entry on access to credit. One possible reason is that it is difficult to isolate the effect of foreign bank penetration on domestic bank lending and access to credit from that of macroeconomic and technological changes. There are several challenges. Data are usually available only for short periods. Many developing economies, even many middle-income ones, have relatively few commercial banks. Comparable cross-country data on bank lending to small and medium-size enterprises are not readily available, especially because small local banks tend to be important lenders to this sector.

As far as is known, the study by Clarke and others (2001) is the first to try to capture both the direct and indirect effects of foreign entry on access to credit. The authors combine responses from a survey of about 3,000 enterprises in 36 developing and transition economies with data on the degree of foreign bank penetration in these countries. Controlling for a wide range of macroeconomic, institutional, and firm-specific factors, they analyze whether borrowers' perceptions about interest rates and access to long-term credit are positively associated with the presence of foreign banks. If the potential advantages of foreign bank entry in developing economies—greater sector efficiency, competitive pressures forcing a subset of domestic banks into new market niches, and new credit scoring technologies—outweigh the tendency of foreign banks to avoid lending to small and medium-size enterprises, all borrowers (including small ones) should rate access to credit as easier in countries with relatively high foreign bank penetration.

Overall, the authors' empirical results strongly support the assertion that foreign bank penetration improves access to credit. Controlling for other factors, they find that enterprises in countries with greater foreign bank penetration tend to rate interest rates and access to long-term loans as smaller constraints on operations and growth than do enterprises in countries with less foreign penetration. Moreover, although some evidence suggests that entry by foreign banks benefits large enter-

prises more than small ones, there is strong evidence that even small enterprises experience a net gain, and there is no evidence that they are harmed by foreign entry.

Thus recent evidence suggests that foreign entry might not reduce access to credit for small and medium-size enterprises, as was first suspected. Indeed, foreign entry might even increase lending to that sector. That said, however, the empirical studies on this subject remain few and cover only a small number of countries and periods. Clearly, more research is needed.

How Do Foreign Banks' Mode of Entry and Organizational Form Affect Their Behavior?

In some cases host countries provide incentives or establish requirements for foreign banks to adopt specific modes of entry and organizational forms. For example, beginning in the 1970s Egypt permitted foreign entry only through joint ventures with the state, though in recent years the government has begun divesting those shares (Caprio and Cull 2000). In other cases governments limit the number of banking licenses, so that foreign banks can enter only by acquiring the license of a domestic bank through purchase or merger. In still other cases, as in Argentina, there appear to be no strong incentives toward particular modes of entry or organizational forms, and therefore not all foreign banks make the same choice.

This section discusses the potential implications of two modes of entry (the acquisition of or merger with a domestic bank and de novo entry) and four organizational forms (branch, subsidiary, representative office, and agency of the parent bank) as well as foreign bank penetration through cross-border lending. The impact of mode of entry and organizational form on foreign bank behavior is perhaps the area in which research on developing economies is most needed. This section draws primarily on the literature on developed economies, speculating about how these findings might translate to developing economies. It should therefore be considered a preliminary attempt to summarize some of the issues that need to be confirmed in future empirical analyses.

Mergers and Acquisitions

Foreign bank participation in developing economies has increasingly occurred through cross-border mergers and acquisitions and will continue to do so. Berger and others (2000) summarize several hundred articles on the causes and consequences of consolidation, so that effort is not duplicated here. Most of that literature focuses on developed economies, particularly the United States and the European Union, and most examines mergers and acquisitions between domestic banks. The authors note that the literature on scale, scope, and product mix efficiencies provides little information

on the effects of cross-border consolidation, which may differ from the effects within a nation. Moreover, the within-country literature generally finds that scale and scope have small efficiency effects.

Berger and others (2000) also perform an empirical analysis of cross-border banking efficiency in France, Germany, Spain, the United Kingdom, and the United States in the 1990s. They find that domestic banks in these countries have both higher cost efficiency and profit efficiency than foreign banks, although the differences are not always statistically significant. A priori, these findings can be interpreted as supporting the home field advantage of domestic banks. When the authors disaggregate their results by nation of origin, however, they find that domestic banks are more efficient than foreign banks from *most* countries, are just as efficient as foreign banks from *some* countries, and are less efficient than foreign banks from *one* country, the United States.

Because foreign banks are generally less efficient than domestic banks in developed economies, the authors argue that efficiency considerations may limit the global consolidation in financial services. But efficiency differences between foreign banks from developed economies and domestic banks in developing economies (see Bhattacharya and others 1997 and Kiraly and others 2000) suggest that much of the future cross-border consolidation in financial services is likely to occur in developing economies, precisely because domestic banks in these countries are relatively inefficient.

What can be expected from the entry of foreign banks through cross-border mergers and acquisitions? Although the jury is still out for developing economies, the outcome for them is likely to be a net gain because they will benefit from the efficiency improvements brought about by foreign banks. Moreover, there are gains to be made from economies of scale that will result from such mergers and acquisitions. In particular, Berger and others (2000) note that technological change may have recently increased the potential for scale economies. Scale economies may be greater for new service delivery methods such as phone centers, Internet banking, and automated teller machines (Radecki and others 1997). Advances in payments technology appear to have created scale economies in back office operations and network economies that can be more readily exploited by large banks (see Bauer and Ferrier 1996; Bauer and Hancock 1993, 1995; and Hancock and others 1999). Indeed, Berger and Mester (1997) find evidence of substantial scale economies when they use data from the 1990s, even for mergers between large banks.

Along with cross-border consolidation, foreign entry in developing economies is likely to coincide with greater consolidation among domestic banks in the host country's banking sector, some of it probably involving large banks. One area of particular concern might be the impact of consolidation (cross-border or domestic) on lending to small businesses. The evidence from the United States suggests that mergers and acquisitions involving large banks lead to a fall in credit to this sector, given the informational disadvantages that large banks might face in lending to infor-

mationally opaque borrowers. Once again, however, technological improvements can mitigate some of these adverse effects. For example, if scale economies associated with consolidation lead to an increase in electronic banking, this could improve access to some financial services even for small customers. Moreover, as Mester (1997) argues, enhanced computer power, greater access to data, and use of credit scoring models can allow large banks to tap the small business lending market.

Even if the banks created through mergers and acquisitions shy away from small business lending, the literature also suggests that consolidation may have a strong "external effect." If some types of credit provided by consolidating institutions decline, banks not in the process of consolidating may respond by increasing their own supplies of credit. In the United States Berger and others (1998) and Avery and Samolyk (2000) find that almost all the decline in lending to small businesses by participants in mergers and acquisitions was offset by an increase in lending by other banks in the same local markets. Short-term disruptions are possible, however. Berger and others (2001a) note that even if the external effect completely offsets the impact of consolidation on the quantity of credit supplied, some firms will probably face search and disruption costs and perhaps less favorable loan terms until new relationships mature.

De Novo Entry

Although the evidence from developed economies is mixed, it suggests that consolidation might result in an increase in de novo entry—that is, new banks might enter markets where mergers and acquisitions occur (Berger and others 1999; Seelig and Critchfield 1999). This could also occur in developing economies. Moreover, developing economies might experience de novo entry by banks, because, as argued before, foreign banks enter these markets to pursue local profit opportunities.

What might be the impact of de novo foreign entry? Studies in the United States suggest that greater de novo entry could benefit small borrowers. For example, DeYoung and others (1999), controlling for factors including bank size, show that in the United States young banks appear to lend more to small businesses. Similarly, Goldberg and White (1998) find that the age of banks is inversely related to small business lending. In short, de novo banks in the United States tend to lend more to small businesses than incumbent banks of a similar size ($5–100 million in assets). Using a sample of banks from 78 countries, Jenkins (2000) finds similar results.

But studies of de novo entry in the United States suggest that de novo entrants are unlikely to meet a large share of a host country's credit needs in the near term, because they may find it difficult to attract deposits and identify profitable lending opportunities. For example, Houpt (1980) finds that de novo foreign entrants in the United States were less profitable than U.S. banks acquired by foreign banks, partly because they depended more on relatively expensive purchased funds.

It is unclear whether the findings for de novo bank entry in the United States will carry over to developing economies. De novo foreign banks in these countries may differ from de novo banks in the United States. In many instances foreign banks that set up de novo operations in developing economies have existed in their country of origin for some time and could even be large. It seems unlikely that these banks will behave as the relatively small de novo entrants in the United States do, but only further study of entry in developing economies will yield definitive conclusions.

Branches or Subsidiaries?

Foreign banks can adopt a range of organizational forms when entering a host country. Goldberg (1992) notes that the most limited but most easily established organizational form is the representative office. These offices neither take deposits nor make loans. Instead, they act as agents for the foreign bank and make forward payments to the home office. Representative offices are generally established to test the possibility of further involvement in a host country.

Agencies represent a more expansive form of entry. They can make commercial and industrial loans but (at least in the United States) cannot make consumer loans or accept deposits. Although they are allowed to maintain credit balances similar to deposits, payments are rarely made from these accounts. In the United States agencies' funding comes from their parent bank or from borrowing in the federal funds or interbank market.

Because neither the agency nor the representative office represent full immersion in a host country, most of the benefits and risks of foreign entry for developing economies will probably come from two other organizational forms: the branch and the subsidiary.

In the United States branches are the most important organizational form, accounting for 63.8 percent of foreign banking assets in 1989 (Goldberg 1992). A branch is an integral part of a parent bank, meaning that it can draw on the parent's capital base and offer a wider range of services than agencies or representative offices. In the United States, however, branches have engaged mostly in wholesale operations (see Goldberg 1992 and Miller and Parkhe 1998).

Subsidiaries are permitted to engage in a broader range of financial services, and in many countries they have powers identical to those of domestic banks and thus are regulated in the same way. As wholly owned subsidiary companies of parent banks, they must lend based on their own capitalization. Unlike branches, many subsidiaries operating in the United States are oriented toward retail business.

By putting foreign banks on an equal footing with domestic ones, subsidiaries are thought to enable banks to draw on their comparative advantages (Goldberg 1992; Miller and Parkhe 1998). Despite these potential advantages, DeYoung and Nolle (1996) find that subsidiaries operating in the United States are significantly less profit

efficient than U.S. banks. But these results are not likely to apply to developing economies, and subsidiaries appear to have advantages over cross-border lending in Latin America.

Miller and Parkhe (1998) provide cross-country evidence on the overseas activities of U.S. banks suggesting that host countries influence the organizational form that entrants choose. They find, for example, that countries that permit universal banking have a larger percentage of subsidiaries, presumably because branches cannot take advantage of all the profit opportunities. They find that countries with high tax rates and explicit barriers to creating subsidiaries have a smaller percentage of subsidiaries. They find a positive relationship between nonfinancial U.S. foreign direct investment in a host country and the percentage of subsidiaries. They argue that as foreign direct investment increases, subsidiaries will become the preferred organizational form because, unlike branches, they can provide the broad array of financial services demanded by large nonfinancial firms. Although this finding might support the hypothesis that foreign banks follow their customers abroad, it does not hold for developing economies—another indication that foreign banks are more likely to be attracted to developing economies by local market opportunities.

The discussion has focused primarily on what determines a foreign bank's choice of organizational form. The literature has not directly addressed another important question: which organizational form should regulators promote? Regulators will probably want to encourage the form that supports the greatest range of financial services while not raising concerns about financial stability. The recent experience of Argentina, particularly the decision of some foreign banks not to recapitalize their subsidiaries, will probably spark a debate on the relative benefits of subsidiaries and branches. Whether the ability of branches to draw on their parent bank's capital is enough to make them the preferred choice is a question on which research is clearly needed.

Cross-Border Lending

Most recent studies of foreign bank entry in developing economies focus on lending by foreign banks operating within the host country (see Claessens and others 2000; Clarke and others 2000; Dages and others 2000; and Focarelli and Pozzolo 2000). According to Peek and Rosengren (2000b), these studies exclude a potentially important source of credit—banks operating outside the host country. They find that until the end of 1997 the cross-border lending to Argentina, Brazil, and Mexico by foreign banking organizations exceeded the credit provided by foreign bank subsidiaries in those countries.

Peek and Rosengren note a major shift in the composition of foreign bank lending in the late 1990s as foreign banks increased their claims through existing and newly acquired onshore banking subsidiaries rather than through cross-border loans.

Moreover, the evidence from Argentina (until the recent crisis), Brazil, and Mexico does not indicate reluctance by foreign bank subsidiaries to expand operations when the host country is suffering from a crisis. Indeed, they find that foreign bank penetration rose after crises, mainly through acquisitions by foreign banks and growth in lending by existing foreign subsidiaries. By contrast, cross-border lending was more sensitive to economic instability in the host country, typically declining after a crisis (though less than domestic credit; see table 2).

Although few dispute that cross-border lending tends to be more volatile than bank lending through bricks-and-mortar operations, recent events in Argentina are likely to raise questions about foreign subsidiaries' commitment to staying in developing economies during crises. Future research will determine whether the recent case of Argentina is the exception or is becoming the norm.

Conclusion

The past decade has seen a great influx of foreign banks into developing economies, a trend likely to continue. What benefits is foreign entry likely to bring, and what risks does it pose? Because the literature on this topic relates mainly to developed economies, it is difficult to fully answer these questions. Many results from studies of developed economies do not appear to carry over to developing economies. For example, most such studies have found that domestic banks are more efficient than foreign competitors, which some researchers have suggested might limit future cross-border consolidation. But the evidence suggests that in developing economies foreign banks typically outperform domestic banks, indicating a possibility for efficiency-enhancing restructuring through sales of domestic banks to foreign investors or through cross-border consolidation.

Some might argue that the efficiency benefits for developing economies are self-evident but that foreign entry poses risks for the range of services provided and the stability of the banking sector. But what evidence there is provides some reassurance. The evidence suggests that foreign banks do more than merely follow their domestic clients abroad. They appear genuinely interested in pursuing local lending opportunities in developing economies, even more so than in developed economies. Although they may not initially enter all sectors equally, the evidence suggests that their entry will be broad enough to exert competitive pressure on domestic banks, which should benefit consumers through both prices and services. Although foreign banks could increase instability in developing economies if they reduce their exposure during financial crises, the evidence from Asia and Latin America shows that foreign banks have been more likely than domestic banks to extend credit during recent crisis periods. The more recent crisis in Argentina may lead some to revisit this issue, however. Concerns also remain that foreign entry might expose developing economies to eco-

nomic fluctuations in the home countries of foreign banks or in other developing economies where these banks operate. These contagion effects have not yet been well researched, but having foreign entrants from a diversified group of countries seems likely to minimize these risks.

The initial empirical evidence on the effect of foreign entry on access to credit by small businesses suggests less reason for concern than previously thought. Although foreign banks tend to be large and large banks lend smaller shares of their portfolios to small businesses than do other banks, there are some signs that technological change might allow large foreign banks to serve this sector. Undoubtedly, this is an area requiring further research.

On the question of how the mode of foreign bank entry affects host countries, the only evidence comes from developed economies. For mergers and acquisitions, the evidence is mixed. Some studies suggest that because domestic banks in these countries tend to be more efficient than foreign banks (except for those from the United States), efficiency gains from mergers and acquisitions are likely to be limited. But other studies have shown that recent technological changes (like electronic banking) are allowing large banks—such as those that may result from cross-border consolidation—to reap benefits from economies of scale not possible before, perhaps even to the point where they can extend services to previously neglected customers such as small and medium-size enterprises. According to the U.S. literature, foreign entry through de novo operations is also likely to benefit small and medium-size enterprises. Whether the results on mode of foreign entry for developed economies can be extended to developing economies needs to be empirically tested.

Which organizational form should host countries promote? Recent studies suggest that subsidiaries allow foreign banks to provide a wider range of activities and could bring greater stability in lending to host countries than relying on cross-border bank loans. But the empirical evidence is limited, and further research on this issue is warranted.

Notes

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1. Economic integration has been measured by geographic distance, volume of bilateral trade flows, bilateral foreign direct investment, or a combination of these. See Ball and Tschoegl (1982), Brealey

and Kaplanis (1996), Buch (2000), Goldberg and Saunders (1980, 1981a, 1981b), Goldberg and Johnson (1990), Grosse and Goldberg (1991), Miller and Parkhe (1998), Nigh and others (1986), Sagari (1992), and Yamori (1998).

2. For German banks, see Buch and Lapp (1998) and Buch (2000). For Japanese banks, see Yamori (1998). For U.S. banks, see Goldberg and Johnson (1990), Miller and Parkhe (1998), Nigh and others (1986), and Sagari (1992). The study by Moshirian and Van der Laan (1998), who look at evidence for German, U.K., and U S. banks, is the only one that fails to find a strong link between nonbanking foreign direct investment and foreign bank penetration.

3. This discussion draws on Focarelli and Pozzolo (2000).

4. See, for example, Berger and others (2000), Chang and others (1998), DeYoung and Nolle (1996), Hasan and Hunter (1996), Mahajan and others (1996), Miller and Parkhe (1999), and Parkhe and Miller (1999).

5. For a description of the causes of the recent Argentine crisis see Calvo and others (2002), de la Torre and others (2002), Mussa (2002), and Perry and Servén (2002).

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Judicial Reform

Juan Carlos Botero • Rafael La Porta •
Florencio López-de-Silanes • Andrei Shleifer • Alexander Volokh

A review of the evidence on judicial reform across countries shows that those seeking to improve economic performance should not focus on judicial efficiency alone but on independence as well. It also shows that the level of resources poured into the judicial system and the accessibility of the system have little impact on judicial performance. Most of the problem of judicial stagnation stems from inadequate incentives and overly complicated procedures. Incentive-oriented reforms that seek to increase accountability, competition, and choice seem to be the most effective in tackling the problem. But incentives alone do not correct systematic judicial failure. Chronic judicial stagnation calls for simplifying procedures and increasing their flexibility.

Judicial systems around the world are perceived to be in crisis. Civil and criminal cases take too long and cost too much, and judicial systems are plagued by dishonest judges. Though there is little consensus on exactly what judicial efficiency means or how to measure it, people seem to agree that it is low. Judicial inefficiency is not only bad for litigants, it is also bad for economic prosperity, undercutting a nation's wealth and economic growth. Markets, as Posner (1998:1) reminds us, "depend on the establishment of an environment in which legal rights, especially property and contractual rights, are enforced and protected—an environment that is taken for granted in wealthy nations." The impact of judicial inefficiency may be particularly severe in poor societies. As Widner (2001) has recently documented in Tanzania, judicial inefficiency hurts the poor the most.

These and other considerations have invited calls for major judicial reforms. In particular, it is widely believed that such reforms may improve economic performance. Messick (1999:120) presents two hypotheses describing the link between good judiciaries and economic development. The first holds that well-functioning courts support economic development broadly by checking government abuses and

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upholding the rule of law. This view puts a large premium on judicial independence. The second hypothesis links the two elements more directly, maintaining that judicial efficiency enhances economic development by facilitating fruitful exchanges between private individuals.

Indeed, a large part of economic theory—from the theory of the firm to labor economics to finance—rests on the assumption that courts enforce contracts both perfectly and freely. Yet this assumption does not hold up to empirical scrutiny (Djankov and others forthcoming). This article presents building blocks for the analysis of judicial reforms.

There are several schools of thought about judicial reform. One views the primary problem of the legal system as one of funding and thus sees the solution to judicial inefficiency as lying in more resources—more training, better computer systems, and more courts, judges, and clerks. Another school of thought believes that judicial systems are inefficient because of excessive and indiscriminate access. Far from increasing fairness by allowing more people to assert their rights, the democratization of the legal system has opened the floodgates, bogging courts down with mostly frivolous cases and slowing the meritorious ones. This view suggests such solutions as greater procedural hurdles for lawsuits and restrictions on lawyers' advertising and fees (see Olson 1991). A third school views the problem as one of incentives. Judges who do not bear the costs of their slowness tend to be slow. Court systems unafraid of losing litigants to alternative venues of dispute resolution, such as arbitration or small claims courts, will treat their litigants as the captive market they are. Yet another group believes that the main problem is overly rigid and ineffective procedures, particularly in developing economies that inherited their legal systems from their colonizers without the systems' being sufficiently adapted to their needs. Reforms can enhance efficiency even within the existing system by streamlining procedures and creating specialized courts.

A review of the evidence on judicial reform across countries suggests that inadequate incentives and overly complicated procedures account for most of the problem. It also shows that not all incentive-oriented reforms are equally effective. A system that relies on incentives and competition to improve legal services could probably put a greater premium on efficiency without sacrificing quality. But incentives alone will not correct chronic judicial inefficiency. Most cases of judicial stagnation require simplifying procedures and increasing their flexibility.

Review of the Evidence

The following review of the empirical evidence on judicial reform is organized by the schools of thought already outlined.

More Resources Will Probably Not Solve the Problem

Judicial officials commonly complain that they have too few resources and too little staff. But the evidence on the effectiveness of increasing resources is mixed. Data from the United States and countries in Latin America and the Caribbean show no correlation between the overall level of resources and the time to disposition of cases (Buscaglia and Ulen 1997; Church and others 1978; Dakolias 1996, 1999). In one study, however, "resources allocated for court personnel" emerged as an important factor in Argentina and Ecuador (Buscaglia and Dakolias 1996).

Many reform efforts lump other initiatives together with funding increases (see Dakolias and Said 1999 on Peru; Hendrix 2000 on Guatemala; Hong 1995 on Singapore; and Tarigo 1995 on Uruguay). These packages may be effective more because of the other initiatives than because of the funding. For example, in Tanzania the Commercial Court is well funded because it gets its operating budget from filing fees as well as the fact that because it does not have exclusive jurisdiction, its ability to collect fees depends on its ability to offer a better product for the filing party (Finnegan 2001). In Paraguay the number of judges was increased at the same time that oral proceedings were introduced (Dakolias 1996), so the time savings achieved may have resulted from the greater efficiency of oral procedures rather than from the increase in judicial personnel.

Funding increases alone may help alleviate temporary case backlogs in systems that have made a serious effort to work better. But they may be useless in those with large inefficiencies—or even worse than useless if they draw resources away from fixing systemic problems. "Crash programs" to reduce backlogs—presumably through a large infusion of resources—have shown good results in the short term. But just as with crash diets, without deeper change, courts revert to their old, bad habits (see Neubauer and others 1981).

Similarly, introducing computer systems or other mechanization apparently helps reduce delay according to studies in Latin America and Singapore (Buscaglia and Dakolias 1996; Buscaglia and Ulen 1997; Hong 1995). It also appears to reduce corruption (Buscaglia and Dakolias 1999). But this is probably not a success story about increasing resources. Introducing computer systems seems to help because the systems increase accountability. Computerized case inventories are more accurate and easier to handle than the paper-based procedures they replace, which makes them harder to manipulate. So it is more difficult for judges to "lose" case files and extract bribes from litigants (see Hendrix 2000).

Of course, there are still cases of extreme underfunding where an infusion of resources can be effective. In Uganda backlogs caused by shortages of stationery were solved when another court donated paper (Odoki 1994). Although overall resource levels are often uncorrelated with judicial efficiency, increasing resources may im-

prove efficiency in certain circumstances if the additional resources are well targeted (see Buscaglia and Dakolias 1996). Unfortunately, because courts are often loath to admit that they are inefficient, identifying cases where money is truly the bottleneck is an exercise that many countries get wrong.

A major inefficiency in many judicial systems is judges' responsibility for administrative work, such as signing paychecks and ordering office supplies. Centralizing administrative work in a single office, staffed by employees with administrative training, increased efficiency in Colombian and Peruvian pilot courts and in the Guatemalan public ministry (Dakolias and Said 1999; Hendrix 2000). But because it may subject judges' paychecks to the government's mercy, it may also reduce judicial independence.

Reducing Access Is Probably Not the Solution Either

Intuitively, it seems that delay could be defeated by reducing the number of filings—for example, by raising the procedural hurdles to lawsuits or increasing the costs of litigation.

A straightforward quantity theory of the judiciary would suggest that decreasing filings directly decreases backlogs. But the number of filings was found to be an insignificant factor in a study in Latin America and several studies in the United States (Buscaglia and Ulen 1997; Church and others 1978; Feeley 1983; Goerdt and others 1989, 1991; Mahoney and others 1985), though a study in Argentina and Ecuador did find it to be important (Buscaglia and Dakolias 1996). Overall, however, the evidence suggests that merely reducing filings does not solve a chronic problem of court delay. Judges are often subject to weak incentives, and reducing filings may reduce their productivity if they discover that they will not be penalized for keeping delay at the same level as before.

In countries where many people speak a language other than the dominant legal language—for example, local Indian languages in Guatemala (see Hendrix 2000)—reforms that improve access by providing interpreters or aboriginal-language materials will probably increase costs, both by making cases more expensive and by increasing caseloads as the disenfranchised assert their rights more often. The same is probably true for judicial institutions that watch over public officials, help people mobilize against injustice, and assist people in making representations to and obtaining benefits from authorities—such as *acciones de tutela* in Colombia and *lok adalats* in India (Cranston 1986; Gaviria-Díaz 1996). For that matter, any procedural reform that lowers the cost of litigation may increase filings and possibly drive up backlogs and costs, at least in the short term. If access is a major problem, a short-term increase in filings and backlogs is probably inevitable and not necessarily inefficient (see Dakolias and Said 1999).

Moreover, the interaction between access and efficiency is normally positive when associated with long-term structural or fundamental changes to the system. For ex-

ample, measures aimed at broadening access to lower-level courts, such as simplifying procedures and restricting lawyers' involvement at certain levels of litigation, have been generally associated with increased efficiency (reduction in the time to disposition of cases). Similarly, lowering the legal requirements of complaints has been associated with increased efficiency in Japan (Hasebe 1999).

Finally, limiting access for the sake of efficiency raises social concerns, because justice may become a luxury that only the wealthy can afford. Generally speaking, efficiency is not an end in itself, and some "democratic" procedures may be desirable even though they are inefficient. For example, juries in the Russian Federation have been expensive and do not seem to be particularly good fact-finders, but in countries with a history of untrustworthy governments and inadequate protection of the innocent, juries may increase overall efficiency by restoring a sense of legitimacy, reducing convictions of the innocent (see Thaman 1999), and guarding against judicial corruption (see DeVille 1999).

Incentive-Oriented Reforms May Help in Solving the Problem

Many judicial reforms seek to create the "right" incentives for judges, lawyers, and litigants to increase judicial efficiency. Clearly, not all achieve that goal. The evidence suggests that the incentive-oriented reforms that foster accountability, competition, and choice are those that produce the greatest impact.

Making judges accountable. Judges may be regulated in many ways, but not all such regulation increases efficiency. Legislated time limits for cases appear to be ineffective, whereas individual calendars and case management seem to work, apparently by increasing accountability and competition.

Legislated time limits have been a popular response to slow trials, but they have a poor track record. In Argentina and Bolivia judges face mandatory time limits, but these are rarely enforced (Dakolias 1996). In the United States time limits were first set by the Supreme Court as a constitutional matter, then by the Federal Rules of Civil Procedure, then by federal and state legislation. In each case the rules were unenforceable. There is no objective way to tell whether a case drags on because it has legitimate difficulties or because someone falls down on the job. Moreover, every legislated time limit in the United States has had exceptions and loopholes broad enough to fit any case (see Feeley 1983). In addition, step-by-step regulation of litigation seems to merely add rigidity, limiting the space for case management techniques, reducing judges' accountability for the overall efficiency of the procedure and leaving ample room for corruption.

Individual calendars appear to have more impact on judicial performance, by increasing accountability. A study of U.S. metropolitan courts found that civil cases move significantly faster in courts with individual calendars—where judges have

assigned cases and follow them from beginning to end—than in courts with master calendars—where many judges may work on different parts of a case at different times (Church and others 1978). The experience with delay-reduction programs in the United States suggests that because individual calendars allow problems on a case, such as excessive delay, to be traced to a single judge, they make judges work harder and manage cases more effectively (Neubauer and others 1981). Similarly, some studies have found that the individual calendar reduces times to disposition not only because the judge in charge is more familiar with his or her own cases but also because judges feel more accountable (Church and others 1978; Neubauer and others 1981; Dakolias 1996). Individual calendars have been found to be important in some Latin American countries (Buscaglia and Dakolias 1996). But the evidence is not uniform. Nimmer (1978:142) argues that neither individual nor master calendars have "a clear and consistent impact on elapsed time to disposition."

Case management—a bundle of reforms that includes pretrial conferences, strict scheduling, and shortened discovery time cutoffs—may also improve the judiciary's managerial capacity. Some studies in Singapore, the United States, and Latin America suggest that case management reduces time to disposition (Buscaglia and Dakolias 1996; Buscaglia and Ulen 1997; Church and others 1978; Hong 1995; Neubauer and others 1981). A U.S. study reports that pretrial conferences have no effect on time to disposition or settlement activity but may improve the quality of trials (Leubsdorf 1999). A RAND study reports that case management reduces time but increases costs, whereas shortened discovery reduces both time and costs (Kakalik 1997). (However, the RAND methodology has been criticized recently; see Flanders 1998.) The introduction of case management techniques in the Supreme Court of India is believed to be the driving force in reducing the backlog to almost a third, despite a considerable increase in filings (Verma 2000:104).

Case management is at the heart of Lord Woolf's blueprint for reforming civil litigation in England and Wales. It may still be too early to assess the impact of these reforms, which faced some initial opposition in the academic world (see Zander 1995). Because case management was bundled with other initiatives (such as simplifying procedures) targeted at broadening access to justice and improving service for the average citizen, isolating its net effect on civil litigation in England and Wales will be difficult.

If poorly designed, case management can seriously backfire, as it did with pretrial hearings in Japan (Hasebe 1999). Moreover, there appears to be little room for case management in civil law jurisdictions, where procedure is often minutely regulated. If judges have no procedural room to maneuver (as is often the case in countries following the French civil law tradition), they can always blame their inefficiency on rigid procedure. A safe conclusion seems to be that in the hands of judges who already take judicial efficiency seriously, case management can bring effective pressure on litigants to get their acts together. But because there is no easy way to test whether

cases are being managed well or badly, case management may not make recalcitrant judges reform (see Feeley 1983).

One advantage of reforms that transfer control of cases to a particular judge, as individual calendars and case management do, is that they allow measurement of judicial performance. The mere ability to generate accurate statistics reduces delay, even without enforcement, because judges care about their numbers. This effect has been reported in Colombia, Guatemala, and the United States (Dakolias and Said 1999; Hendrix 2000; Neubauer and others 1981). More broadly, "legal culture" is a crucial determinant of whether delay is light or severe. A "soft" variable, legal culture is difficult to measure, but its existence can be verified because cases in state and federal courts in the same area take similar amounts of time even though the procedures differ substantially (see Church and others 1978). Reforms such as reporting judicial statistics appear to work because they support a legal culture unsympathetic to delay.

Sharpening incentives for lawyers. Judges are not the only cause of inefficiency. In both civil and criminal cases at least one of the parties often pursues delay or other inefficient outcomes (see Church and others 1978; Feeley 1983). In Uruguay lawyers objected to reforms that would speed up civil and criminal trials, fearing that speedier trials would mean less work. Similarly, in Peru attorneys vigorously opposed measures to cut the costs of registering land belonging to the urban poor because the measures would make them compete against other professionals, such as engineers and architects (Messick 1999). Regulating lawyers through controls on attorneys' fees will probably not improve efficiency, but deregulating the legal services market seems promising.

Attorneys' monopolies are good targets of judicial reform. Making lawyers compete with other professionals and facilitating self-representation by litigants can be fruitful strategies for making lawyers more accountable and increasing overall efficiency. Part of the success of the Japanese judicial system is attributed to the absence of lawyers in 90 percent of summary court cases, which account for more than 60 percent of civil litigation in Japan (Japan Ministry of Public Management 1999:762; Ogishi 1999). Similarly, high levels of efficiency and litigant satisfaction in lower-level courts in England are associated with low rates of involvement by lawyers. More than 80 percent of unrepresented small claims litigants surveyed in a recent study in that country said they would not have preferred representation (Baldwin 1997b:117).

Deregulating the legal services market improves not only efficiency but also equity by increasing access to the judicial system. The experiences in Japan and the Netherlands suggest that deregulating legal services increases the supply of legal aid and decreases costs (Blankenburg 1999; Kojima 1990). Studies of legal advocacy by lawyers and nonlawyers in the United States suggest that the decrease in costs is not necessarily associated with a decline in quality (Kritzer 1997). In the Netherlands

deregulation seems to have contributed to the high rate of mediation, allowing the less litigiously minded (such as mediators and insurance companies) to easily enter the legal services business and compete directly with lawyers. In England locally funded citizens' advice bureaus are among the biggest providers of legal advice, though many of the advice givers are not professional lawyers. In the United States nonlawyers regularly appear as advocates before government agencies, many of which wield disciplinary power over nonlawyers or require them to pass an examination.

Establishing stringent requirements for practicing law or making membership in self-governing bar associations mandatory for lawyers may help increase accountability. Similarly, better information and accreditation systems make law schools more accountable and tend to improve the quality of the legal profession (see Fuentes-Hernández forthcoming). But caution is needed, because these are also tools of the legal monopoly. To increase competition, countries considering these measures may bundle them with policies aimed at diversifying services. Countries raising standards for legal practice might also liberalize requirements for advocacy by nonlawyers, such as mediators or paralegals.

Because attorneys' fees account for a large part of the costs of the justice system, one natural place to apply incentives is on the attorneys themselves. Direct regulation to limit fees may reduce efficiency by restricting the supply of lawyers, whom people often believe they need. Of course, high lawyers' fees are not desirable, but without wholesale reform of the legal profession, cheap lawyers are not a pure good. Low fees may lead claimants to hire an attorney even for minor controversies that an arbitrator could have resolved. Reduced costs may also increase litigation—both good claims and bad.

Pressure can also be placed on subordinate judicial officials. Administrative concentration—the concentration of many administrative tasks in the hands of one official—has been associated with corruption, because bribery becomes easier when a single identifiable individual has the power to speed the processing of a case. Reforms that disperse administrative tasks across several officials appear to increase accountability and reduce corruption (see Buscaglia and Dakolias 1999).

Sharpening incentives for litigants. One way to discourage long litigation is to increase the direct costs to one or both parties. In Singapore, where the first day of trial is free and court fees progressively increase for subsequent days, 80 percent of trials take a single day (Buscaglia and Dakolias 1996). Similarly, in Latin America higher direct costs have been found to shorten the duration of cases (Buscaglia and Ulen 1997). But what a court system gains in speed it may sacrifice in access for poor people with more complex cases. The system allows wealthier litigants to win cases by outspending their opponents.

Fee shifting mechanisms can increase the direct costs to at least one party. In countries where the losing litigant pays, the loser ends up bearing greater costs than in

the American system, where litigants generally bear their own costs. A loser-pays system probably cuts down on frivolous litigation—by deterring parties who have no chance of succeeding on the merits but bring a case to extort a settlement from the defendant. But in cases where both litigants stand a fair chance of winning, each may be encouraged to outspend the other in the hopes of producing a marginally more persuasive case—thereby winning and paying nothing. This may contribute to high legal costs in Germany and Great Britain (Baldwin 1997a; Rohl 1990). So the effect of litigants' cost on judicial efficiency is unclear.

Creating competition among courts. Creating specialized courts generally improves efficiency, in part because such courts tend to have streamlined procedures and in part because they offer an alternative forum for litigants that may compete with regular courts.

Competition between different courts and between different bodies of law has been a guiding force behind legal innovation in Anglo-American law since medieval times. The English legal system was largely shaped by the "rather unedifying but often beneficial competition" among the royal common law courts "vying with each other to attract litigants by offering better procedures" (Kiralfy 1990:129). The Chancery Court led the way in this competition, and the common law courts had to imitate the Chancery Court—by adding flexible procedures and remedies—or lose business (Kiralfy 1990:128–39). Similarly, competition between courts of different states and between state and federal courts has led to improvements in the United States (Berman 1983).

Creating or extending small claims courts is among the most praised judicial reforms. In many countries small claims courts have substantially reduced times to disposition and expanded access to justice. The introduction of small claims courts in Brazil in 1995 "succeeded in bringing justice closer to the Brazilian people [by allowing them to] litigate at a very low cost, in an informal manner, and see immediate results for their judicial initiative" (Bermudes 1999:347). The increase in the small claims limit in Great Britain is vastly popular among old and new litigants (though some of the enthusiasm may be driven by the lower risk for small claims litigants, who, unlike litigants in regular British courts, need not pay their opponents' legal fees nor go up against defendants bankrolled by the government's generous legal aid system; see Baldwin 1997a). Parties in informal or small claims courts in the Netherlands may initiate ordinary proceedings after the initial case, but this rarely happens, suggesting that both parties are generally pleased with the result (Blankenburg 1999). Small claims courts are popular in many other countries, such as the United States and Japan (see Kojima 1990). But they also receive criticism for not providing enough legal advice to pro se litigants (Baldwin 1997a) and sometimes for remaining too formal in their procedures and thus failing to fulfill their promise of reducing cost and delay, as in Germany and Italy (Rohl 1990; Varano 1997).

In Uganda administrative tribunals have provided an efficient solution to judicial stagnation. When the National Resistance Movement took power in 1986 after a protracted guerrilla war, it set up resistance councils and committees to "promote national unity and foster popular participation in the governance and development of Uganda" (Odoki 1994:63). In 1988, with magistrates' courts seen as slow and corrupt, the resistance committee courts were given judicial power to provide popular justice at the grassroots level. Their jurisdiction—mainly civil—includes debts, contracts, trespass, conversion of property, assault and battery, and customary disputes related to eloping with or impregnating a girl under age 18. These courts may order civil remedies, including costs, apology, reconciliation, declaration, compensation, restitution, or attachment and sale. They use simple, informal procedures and keep only the essential particulars of a case in the record of proceedings to assist in case of appeal. Decisions are made by consensus or majority vote, and lawyers are not allowed to appear before the courts except in cases dealing with breach of council by-laws.

Uganda's resistance committee courts are said to be a popular forum providing simple, efficient, and accessible alternative dispute resolution. But plans to expand their jurisdiction have been criticized as offending the independence of the judiciary and separation of powers, because the resistance committee courts also act as police, prosecutor, judge, and enforcer and exercise political power (Odoki 1994). Experience in other countries suggests that simplifying procedures and creating specialized courts within the judiciary could also have provided efficient and inexpensive justice for citizens.

Specialized courts with jurisdiction over particular subject matter can also increase efficiency. Such courts have been set up for streamlined debt collection in several countries, including Germany, Japan, and the Netherlands (Blankenburg 1999; Kojima 1990; Rohl 1990). Labor tribunals in Ecuador, tenancy tribunals in New Zealand, and commercial courts in Tanzania have all reduced times to disposition (Cole 2001; Dakolias 1996; Finnegan 2001). The Netherlands also has a specialized court for divorce cases, which is considered cheap and easy to use (Blankenburg 1999). In the United States judges who specialize in contested divorce trials tend to resolve cases faster (Buscaglia and Dakolias 1996). Many of these specialized courts emphasize arbitration and conciliation, so some of these positive results may be due to the effect of alternative dispute resolution and not the specialized courts themselves.

In Tanzania a commercial court created to handle large commercial disputes reduced the average time to disposition of commercial cases from more than a year to less than three months in its first year of operation. Because the commercial court must compete with the general division of the High Court that otherwise has jurisdiction, and because it is more expensive than the general division (it collects filing

fees proportional to the amounts in dispute), it must offer quicker or higher-quality dispute resolution (Finnegan 2001).

Specialization is good not only for courts. Experience in Guatemala shows that setting up specialized teams in the prosecutor's office can lead to better-quality prosecutions (Hendrix 2000). But a note of caution is in order. Courts that specialize in native or "peasant" justice have often been criticized for failing to respect human rights, as in Peru (Zarzar 1991). Other courts specializing in popular justice, like the *nyaya panchayats* in India, have been considered corrupt and driven by factionalism, though the experience with *lok adalats* in that country has been more positive (Cranston 1986). Even specialized, informal courts are still agents of the state, and procedures are in place in part to guarantee fairness and equal treatment for all litigants.

Providing alternative dispute resolution. Alternative dispute resolution is also generally positive, particularly because it creates competition and choice. As noted, arbitration and conciliation are a strong element of many successful small claims courts, specialized courts, and native justice courts—including the *kort geding* in the Netherlands (Blankenburg 1999), labor mediation in Ecuador (Dakolias 1996), mediation centers in Latin America (Hendrix 2000), *lok adalats* in India (Cranston 1986), and justices of the peace in Peru (Brandt 1995), the United States (Dakolias 1996), and elsewhere. Moreover, the presence of alternative dispute resolution can reduce opportunities for corruption, as it has in Chile and Ecuador, because a judicial system competing with other institutions is less able to extract bribes from litigants (Buscaglia and Dakolias 1999).

In criminal courts, introducing plea bargaining to avoid or abbreviate a trial tends to reduce times to disposition, as expected (Hendrix 2000). Some countries with a totalitarian past frown on plea bargaining, however, for fear that it may mask a coerced confession (DeVille 1999).

Although no one questions the value of voluntary alternative dispute resolution, the mandatory kind is another story. One study suggests that whether mediation is voluntary or mandatory has no effect (Buscaglia and Dakolias 1996). But others suggest the opposite. In the United States the courts with the most intensive civil settlement efforts tend to have the slowest disposition times; extensive settlement programs improve neither processing time nor judicial productivity (Church and others 1978). Referring cases to mandatory arbitration has no major effect on time to disposition, lawyers' work hours, or their satisfaction and has an inconclusive effect on their views of fairness (Kakalik 1997). In some mediation programs—for example, in Japan and some parts of Latin America (Dakolias 1996; Hasebe 1999)—the mediator is also the judge. This may be procedurally unfair, as the judge may railroad the parties into a settlement, and the parties will fear being frank before the same official who will later pass judgment on them.

Simplifying Procedures and Increasing Their Flexibility May Improve Efficiency

Simplifying procedures and increasing their flexibility appear to improve both efficiency and access to the judiciary, and ultimately to increase justice, in countries experiencing a chronic problem of judicial stagnation.

Complex procedures reduce transparency and accountability, increasing corrupt officials' ability to elicit bribes for progress on a case (see Buscaglia and Dakolias 1999). By contrast, simplifying procedures tends to decrease time and costs—as with the shortened time cutoff for discovery in the United States (Kakalik 1997)—and increase litigants' satisfaction—as with the streamlined procedures of British small claims courts (Baldwin 1997a) or justices of the peace in Peru, the United States, and elsewhere (Brandt 1995; Dakolias 1996). The efficiency of small claims courts seems to be driven less by any structural difference with regular courts than by the simplicity of procedures. Indeed, English small claims courts are not a separate institution—county court procedures have merely been modified over the years to accommodate small claims (Baldwin 1997b:5). The same is true in Scotland (Kelbie 1994; Mays 1995) and several U.S. states.

In the Netherlands the *kort geding*, technically the procedure for a preliminary injunction, has developed informally into a type of summary proceeding on matters of substantive law. To decide a *kort geding* rarely requires more than one oral hearing. The parties present their case and reply immediately; the president of the court indicates the parties' chances of success in a full action. The oral hearing often ends in settlement. *Kort geding* cases take six weeks on average. The Netherlands has also cut costs and time to disposition by instituting streamlined debt collection and divorce courts. The debt courts are extremely quick and cheap for plaintiffs in the mass of cases where defendants do not contest the claim. In the divorce courts judges can make a decision based on written documents submitted by one side unless the other party objects or the Council for Child Protection says that children will be adversely affected. In 25 percent of cases parties handle their own divorce on the basis of a precourt agreement negotiated with the help of one attorney. In the future nonlawyer divorce mediators may play an increasing role (Blankenburg 1999).

The introduction of Tenancy and Disputes Tribunals in New Zealand in 1986 was another successful judicial reform. Before the reform complex and archaic legal language made resolution of landlord-tenant disputes slow, expensive, and inaccessible. Today, Tenancy Tribunals handle 41,000 landlord-tenant disputes a year, hearing 64 percent of the cases within 10 working days and 88 percent within 15. Cases are normally settled or adjudicated in a single hearing among the parties and the adjudicator, with 55 percent resolved by mediation (Cole 2001).

New Zealand's Tenancy and Disputes Tribunals are both specialized courts, but procedural simplicity, not court specialization, is at the heart of the reform. Jurisdic-

tion is not bound to give effect to strict legal forms or technicalities, and many of the adjudicators do not hold a law degree. Participation of lawyers is prohibited in Disputes Tribunals and strongly discouraged in Tenancy Tribunals. Complaints are expected to be very simple, and defendants are notified by mail. Proceedings are mostly oral. Tenants are not required to notify the tribunal or the landlord of their defense before the hearing. The tribunal may call for and receive as evidence any statement, document, information, matter, or thing that in its opinion may help deal effectively with the matters before it, whether or not that evidence would be admissible in a court of law. Judgment is normally handed down in court at the end of the hearing. Only 5 percent of decisions are appealed (Cole 2001).

India's *lok adalats* ("people's courts") are an inexpensive alternative to formal justice. The *lok adalats*, normally composed of a retired judge, a lawyer, and a social worker, mediate disputes through informal procedures accessible to the ordinary citizen. If there is no settlement, cases can revert to the formal system. In the decade ending in 1992 the 5,634 *lok adalats* disposed of 3.25 million cases. They are most successful with motor accident claims, revenue issues, and minor criminal matters; less so with family disputes (Cranston 1986).

Lok adalats have also successfully handled complicated multiparty conflicts that in other countries would typically require lengthy and expensive class action litigation. A *lok adalat* in Visakhapatnam settled claims for additional compensation of about 25,000 villagers whose lands were acquired for a steel plant, and one in Andhra Pradesh settled 40,000 land acquisition cases arising out of three irrigation projects. Another settled claims of 9,046 small cane growers and 1,186 workers in sugar factories taken over by the state government (Cranston 1986).

Simplifying procedures has improved efficiency and access in countries with such diverse legal traditions as those of Japan, Peru, and Scotland (see Brandt 1995; Kelbie 1994; Kojima 1990; Mays 1995; Ogishi 1999). Moreover, using a sample of 109 countries, a recent study of comparative litigation, the Lex Mundi project, found that formalism in procedures is strongly correlated with judicial inefficiency. Formalism is associated with more corruption, less consistency, less honesty, inferior access to justice, and longer expected durations of judicial proceedings. Because formalism is significantly greater in countries with civil law traditions than in those with common law traditions, the authors of the study suggest that transplanting civil law traditions from France or Spain may have led to inefficiently high procedural formalism in developing economies especially (Djankov and others forthcoming).

Clearly, the impact of simplifying procedures depends on how burdensome they were before. Streamlining procedures in clogged systems will probably improve service, shorten time to disposition, increase litigants' satisfaction, and improve access in the long run. But reforming already simple procedures may have little effect or result in frivolous litigation. Common law countries, rich and poor, seem to have more easily adaptable procedures than civil law countries, where judges facing overly rigid

procedures have little room to maneuver (see Djankov and others forthcoming). The need for more flexibility in procedures appears to be particularly acute in developing economies with civil law traditions.

The predominance of written over oral elements is a factor commonly associated with inefficiency in civil law countries, especially in Latin America but also elsewhere (see Rohl 1990; Varano 1997; Véscovi 1996). Oral hearings are unimportant, and judges do not have direct contact with witnesses and other sources of evidence. These characteristics tend to go along with a piecemeal trial rather than one continuous in time. A move toward orality produced positive results in Paraguay, Uruguay, eighteenth-century Prussia, and possibly Italy (Dakolias 1996; Tarigo 1995; Varano 1997; Véscovi 1996; Weill 1961). Orality is, of course, a dominant characteristic of small claims courts and specialized tribunals, which are widely popular for this and other reasons (see Baldwin 1997a; Blankenburg 1999).

Reforms aimed at increasing procedural flexibility can do so by creating different procedures for different types of cases or by allowing the judiciary some leeway to adapt procedures. Lord Woolf's recent reform of civil procedures in England and Wales is based on the concept that different procedures should govern different types of cases. Litigation is divided into small claims (up to £3,000), fast-track cases (£3,000–10,000) with limited procedures and fixed costs, and multitrack cases (more than £10,000) with effective judicial control over both procedures and the protection of the interests of litigants. Similarly, New York launched a pilot program in 1993 in which four judges with expertise in commercial litigation and management of complex cases were designated to hear complex commercial disputes. The program substantially reduced the number and length of pending cases and increased the number and speed of dispositions. In 1995 the court was established permanently (Kerr and others 1999).

Such experimentation and innovation can become difficult if every procedural change has to go through the legislature. To ease the bottleneck, the legislature could partially delegate its powers relating to courts' organization and procedural rules to the judiciary as a whole—which has been done to some extent in the United States and has proved beneficial in Uruguay (Tarigo 1995). Or the legislature could partially delegate these powers to individual courts to encourage more flexibility—as has been done in Great Britain, where small claims judges are free to adopt any procedure they believe will be just and efficient (Baldwin 1997a). Procedural flexibility allows experimentation and innovation and permits local courts to adapt to local needs (Weller and others 1990). As long as legislatures retain control over judicial procedure, they should be able to continue to check abuses of the procedure-making power.

Not all streamlining efforts work. In the Dominican Republic, for example, forms intended to simplify case filing procedures apparently complicated the process (Varela and Mayani 2001:12). But in this case the streamlining effort was quite limited, when much more fundamental reforms were needed.

Moreover, time to disposition and cost do not tell the whole story. Most legal procedures were adopted because they were believed to serve accuracy, protect the accused, improve access, or otherwise further justice. In the United States, for example, the Federal Rules of Civil Procedure appear to have increased costs and to have had no effect on delay but may have increased accuracy, which may or may not be a net gain (Leubsdorf 1999). To the extent that a legal system focuses on speed and cheapness, it risks losing some of the less measurable goals of procedure. The introduction of preliminary criminal hearings in Uganda is a prime example of a reform that seems to reduce backlogs of criminal cases but at the cost of accuracy and protections for the accused (Odoki 1994).

Other Considerations

This section discusses some caveats on judicial reform efforts in general, the politics of judicial reform, and the relationship between judicial reform efforts and economic development.

We Have No "Justice-O-Meter"

Lest this discussion sound too optimistic, two notes of caution are warranted. First, one should not read too much into these empirical results. The complexity of judicial systems points to some important caveats. Of the three elements of justice—accuracy, speed, and cost—the first is not easily measurable and hard to even define without reference to country-specific norms. The best we can do is subjective surveys of the satisfaction of litigants or attorneys (see Baldwin 1997a; Kakalik 1997), surveys that are admittedly unrefined and problematic. Sometimes we know the effect of reforms on accuracy: In one study that reported effects of reforms on the duration of cases, patterns of case disposition remained unchanged, so accuracy probably also stayed the same (Neubauer and others 1981). Usually patterns of case disposition do change, and without an independent way of judging accuracy, we generally cannot be sure whether accuracy has increased.

Second, studies of the judicial system tell us little about the invisible mass of cases that settle before even seeing a courtroom.[1] They tell us even less about the possibly larger mass of cases that never develop because potential litigants are discouraged by procedural problems, a hostile substantive law, distrust of the accuracy or honesty of the judicial system, or simple ignorance of their legal rights. One way to measure discouragement of litigants is to observe the number of filings—if people file fewer cases, the reason may be that they have less confidence in the ability of the justice system to rule in their favor. But this measure reflects plaintiff-friendliness, not accuracy. Because of the way the judicial system works, defendants are at the mercy of

plaintiffs, even in a loser-pays system. They do not choose to be sued. Thus if procedural changes increase the number of filings, we still cannot know whether they increase judicial accuracy or simply increase frivolous litigation.

Despite such caveats, common in most empirical work, capturing the underlying forces identified across studies is useful. Knowing empirical results but recognizing their deficiencies—for example, knowing results on time and cost and demanding a convincing intuitive story about accuracy—is a step up from much discourse about judicial reform, which describes reforms in the belief that their correctness is intuitively obvious to the reader and dispenses entirely with the need for evaluation. If anything, the field of judicial reform needs more empirical analysis, not less.

The Perils of Transplantation

Allison (1996) argues that the importation into England of administrative tribunals modeled on the French *Conseil d'État*, where individuals could sue the government, was unsuccessful because the English legal tradition, unlike the French one, did not have a well-developed distinction between private and public law. Damaška (1997) explains the similar perils of transplanting Anglo-American rules of evidence into the Continental system.[2] "Anyone contemplating the use of foreign legislation for law making in his country," Kahn-Freund (1974:12) tells us, "must ask himself: how far does this rule or institution owe its existence or its continued existence to a distribution of power in the foreign country which we do not share?"

In a critique of the transplantation of the American constitutional model into Ethiopia, Mattei (1995) wonders whether the Western rule of law is a desirable target for an African country. Mattei (1995:127) concludes,"If Africa desires to borrow from western institutions, which I do not believe to be a sound policy, it should do so after a serious comparative analysis of the pros and the cons of each institutional alternative."

Similarly, after a thorough review of transplanted legal systems and customary law in several African countries, a South African legal scholar categorically concludes that

> it would be a pity to miss the opportunity to enrich our social and legal culture by some imaginative fusion of distinctly African models of, for example, dispute settlement. The blind and hegemonic push for uniformity around a non-African standard simply increases resentments that have been simmering since colonial times. We are dealing with a people who have grounds for being suspicious of the purveyors of "modernization," which in their minds translates into "westernization," a process not characterized in the past by too much respect for the African viewpoint. (Nhlapo 1998:88)

In the Philippines, enhancing tribunal and community-based traditions and systems for resolving conflict has proved to be an effective strategy for addressing struc-

tural inefficiencies of the judiciary (Mayo-Anda 2001). Mayo-Anda (2001:851–52) argues that transplantation may give rise to "serious strains in the recipient justice system," for foreign law is not "a boutique in which one is always free to purchase some items and reject others. An arrangement stemming from a partial purchase—a legal pastiche—can produce a far less satisfactory . . . result in practice" than either the recipient or the source system in its unadulterated form.

Part of the reason is that to succeed, a judicial system must achieve a balance among at least three elements—accuracy (or fairness), speed, and access (Zuckerman 1999)—and the tradeoffs among these elements differ for different countries. Some countries—for example, France, Germany, Japan, and the United States[3]—have achieved a balance among accuracy, speed, and access that if not optimal at least does not seem glaringly wrong. Other parts of the world—even the developed world[4]—have succeeded less well.

The accuracy-speed-access tradeoffs in the developing world may be quite different than those in developed economies. It is unlikely that complicated legal systems that work in rich countries, which have the resources and expertise to handle complexity, can be transplanted without significant modification into poor countries. Developing economies tend to lack a highly trained and competent judiciary, have fewer resources with which to fund such a system, and would have more trouble achieving good results even if they had the same resources as developed economies.

Moreover, the evidence suggests that poor countries have more formal procedures than rich countries, apparently as a result of legal transplantation rather than benevolent design (Djankov and others forthcoming). In many developing economies proceedings often last more than 10 years, even for simple cases (see Buscaglia and Dakolias 1996). In Sri Lanka, lawyers have a high level of professional competence, and "a good number of [them] have been trained in western, and particularly North American countries," yet the judicial system functions poorly (Malik 2001:93). Even appeals against death penalty sentences "take at least three years," and "land disputes are often passed on to sons and grandsons" (Malik 2001:97). There appears to be a mismatch between the types of conflicts that the legal system was designed to address and those that most people actually face.

This is not to say that lawyers in poor countries should not seek foreign education. Instead, it suggests that in a largely agricultural society with a judiciary that has very limited human and financial resources, greater emphasis should be placed on reducing the gap between highly sophisticated justice in a few cases and no justice at all in most.

Poor countries, or countries without a developed judicial tradition, should probably concentrate on instituting simple rules and procedures that are easy to enforce. A legal system that will do perfect justice in infinite time and at infinite cost is probably a luxury that the poor can ill afford. Efficient though blunt justice is better than no justice at all.

Short- and Long-Term Effects of Judicial Reforms

Judicial reforms that enhance efficiency often have negative effects in the short term. If filings are exogenously decreased, judges who remain equally productive will resolve cases more quickly. But when the quality of the service improves, the demand for justice increases. Therefore, if delay decreases, filings may increase, as they did in Ecuador after a large one-time budget increase and in Colombia after the introduction of pilot courts in Itaguí (Buscaglia and Dakolias 1996; Dakolias and Said 1999). The reverse is also true: if delay increases, filings may decrease—as they have in Argentina, Ecuador (Buscaglia and Dakolias 1996), and the United States[5]—as litigants are forced to resolve their disputes informally or leave their grievances unresolved. Thus it may be impossible to fully understand the effect of judicial reforms in the short run.

Moreover, pain relievers cannot solve chronic congestion problems. Large one-time efforts are effective only if accompanied by broad structural or procedural changes in the judicial system (see Hong 1995; Neubauer and others 1981). Reforms that do work may increase congestion temporarily (see Bermudes 1999).

The Politics of Judicial Reform

To be successful, judicial reform, like any legal reform, needs to incorporate local political and judicial realities (see López-de-Silanes forthcoming). It also needs to be translated into enforceable changes. But the politics of reform are difficult, because forces that benefit from the status quo (such as through rent seeking) will attempt to block reform. These forces include most types of actors in the judicial process, from judges and clerks to lawyers and politicians.

One of the most important questions in judicial reform is that of judicial independence. Clearly, the degree to which courts can adjudicate without fear of meddling by the other branches of government bears directly on questions of accuracy and the political feasibility of many reforms, such as introducing juries (see Schauer 1998; Widner 1999). This issue might be particularly important for developing economies as they struggle to establish the independence of different branches of power. Judicial independence—desirable for free, democratic, and prosperous societies—is difficult to establish and maintain (see Widner 2001 for a discussion of efforts to achieve judicial independence in Tanzania). As Oxner (1998) reminds us, measures to strengthen judicial independence, such as by improving security of tenure, may also hamper judicial accountability.

Many judicial reforms aim at strengthening judicial independence, because in many cases the sovereign's influence on judges and lawyers affects judicial performance. In China, for example, the fact that judges "remain under the *de facto* control of the same power that controls local enterprises" has seriously undermined the en-

forcement of judgments against locally important state-owned enterprises and led to judicial inaction in class action suits involving publicly traded firms (Clarke 1996:80).

Clarke (1996) has shown that the Chinese judiciary's lack of independence may stem from factors that go beyond the protection of local enterprises. Chinese judges have to deal with the fact that ruling officials may determine the outcome of cases. As a result both judicial and nonjudicial officers appear to perceive judges as no different than any other government functionaries; in effect, judges act as if they were another piece of the state apparatus. This observation, which can also be made about many other developing economies, has deep economic implications. The successful transformation of a centrally planned economy or one dominated by state enterprises into one driven by market forces depends not only on the adoption of new laws but also on profound changes in the ways in which laws are applied and enforced. Independent courts are a fundamental part of the institutional framework that enables markets worldwide to operate smoothly.

The political feasibility of reforms also depends on the strength of the institutions of civil society—a free media, opposition political parties, a reform-friendly business community—which can bring pressure to bear on a judiciary that is not keen on reforming itself (see Dakolias and Thachuk 2000; Finnegan 2001; Fuentes-Hernández 2001). Such pressure can also come from the outside, from foreign governments[6] or foreign businesses.[7] Such institutions are not sufficient to bring about reform, but they are probably necessary in the long run for reforms to succeed.

In the Philippines judicial reform engaged civil society through continued community empowerment activities, informal monitoring and evaluation mechanisms, effective use of tribal and community-based systems of decision making and law enforcement, and sustained partnerships between local communities, nongovernmental organizations, and government. The Philippines experience suggests that all these may play a crucial part in effective justice at the local level in developing economies (Mayo-Anda 2001).

Judicial Reform and Economic Development

Effective judicial reform may improve economic performance by checking government abuses or by facilitating fruitful exchanges between private individuals. As World Bank President James Wolfensohn declares in the foreword to *World Development Report 2002*,

> Effective institutions can make the difference in the success of market reforms. Without land-titling institutions that ensure property rights, poor people are unable to use valuable assets for investment and income growth. Without strong judicial institutions that enforce contracts, entrepreneurs find many business activities too risky. Without effective corporate governance

> institutions that check managers' behavior, firms waste the resources of stakeholders. And weak institutions hurt the poor especially. For example, estimates show that corruption can cost the poor three times as much as it does the wealthy. (World Bank 2002:iii)

The view that well-functioning courts boost economic performance by controlling government abuses and upholding the rule of law puts a large premium on judicial independence. Recent work by La Porta and others (2002) sheds some light on the mechanics of the relationship. After examining the constitutions of a large number of countries, the authors measure the independence of the judiciary from other branches of power and find that institutions of judicial independence are strong predictors of economic freedom.

A second view, that judicial efficiency directly enhances economic development by supporting transactions between private contracting parties (Messick 1999:120), is supported by cross-country evidence. A study of more than 100 countries shows that greater regulation of dispute resolution does not translate into positive outcomes, as measured by litigants' satisfaction with and trust in the judicial system and the enforcement of the law (Djankov and others forthcoming).

The two theories of the effect of judicial efficiency on the economy may not be mutually exclusive. More independent judges are often more efficient judges. For example, the systematic corruption of judges associated with poor judicial independence has led to a deterioration in the service delivered by the judiciary in many countries (see Buscaglia and Dakolias 1999; Widner 1999, 2001). Moreover, the combination of judicial independence and efficiency seems to be essential for judicial reforms to have a positive effect on economic development.

Conclusion

The four basic schools of thought about judicial reform point to different factors as the main cause of judicial inefficiency—inadequate resources, excessive access, poor incentives, and complex procedures. A review of the evidence shows that the first two are insufficient to explain judicial inefficiency in most countries. Instead, the evidence suggests that inadequate incentives and overly complicated procedures account for most of the problem. Although incentive-oriented reforms can be effective, incentives alone will not end chronic judicial inefficiency. Most cases of judicial stagnation require simplifying procedures and increasing their flexibility.

If the goal is to ensure cheap, swift, and accurate justice, infusions of money are probably not the answer. Reforms that tinker around the edges—such as indiscriminately increasing judicial budgets or salaries or instituting a one-time crash program to reduce case backlogs—are unlikely to succeed. But purely managerial reforms can

work in extreme cases, where resource shortages are particularly acute or allocations of the workload particularly perverse (with judges unable to delegate routine administrative tasks to a clerk). Managerial reforms can help judges who already want to change, though these are the judicial actors least in need of prodding.

Nor does limiting access to court services appear to be the solution. A reduction in filings will not solve a chronic problem of court delay. As with any public service, limiting access for the sake of efficiency may have a net negative social impact. A judicial system that denies people the right to sue will leave many wrongs unrighted and create a perverse incentive for people to take justice into their own hands. Moreover, access and efficiency can often go hand in hand when associated with long-term structural or fundamental changes to the system.

Incentive-oriented reforms that seek to increase accountability, competition, and choice appear to be the most effective. Strengthening accountability increases judicial efficiency. Judicial databases that make cases easy to track and hard to manipulate or lose (whether by accident or on purpose) also help guard against sloppy procedures and corrupt behavior. Individual calendars explicitly link the management of a case to a particular judge, making judges accountable to the public and the political decisionmakers about whose opinions they care. Statistics on judicial performance have been reported to reduce delay in several countries, even without enforcement mechanisms. Statistics are most effective when information on clearance rates and time to disposition is generated for each judge. In traditionally corrupt or repressive countries, juries can provide a check on the behavior of judges, because overruling a jury is a visible and seemingly heavy-handed act.

Improving competition and choice, by creating alternatives to the standard court system, also tends to increase judicial efficiency. Alternative dispute resolution and nonexclusive small claims and specialized courts enable litigants to escape slow and expensive court processes and save time for the courts (as does criminal plea bargaining). Mandatory alternative dispute resolution is less clearly beneficial than the voluntary kind, however. Competition and choice seem to work at all levels—sophisticated international commercial arbitration provides an expensive yet cost-effective alternative to court litigation for complex international transactions, and small claims courts provide a cost-effective alternative for day-to-day disputes.

Administrative justice has proved effective in poor countries facing extreme court delays. Yet the success of administrative tribunals may come at the cost of losses in judicial independence, in the separation of powers, and ultimately in democracy. The same results may be achieved without compromising judicial independence by simplifying procedures and creating specialized courts.

By allowing people to prepare a case without relying on the expensive services of the legal monopoly, deregulation of legal services can create efficiency-enhancing competition (for interesting case studies, see Blankenburg 1999; Kojima 1990; Kritzer 1997). Of course the best alternative to the standard legal system is the opportunity

to avoid a dispute in the first place. Simplifying substantive rules can enable people to structure their behavior so as to reduce their chances of ever having to use the legal system (Epstein 1995).

Allowing courts to offer superior service in exchange for higher fees would increase accountability: Litigants would signal their desire for better procedure through their willingness to pay, and courts would have to respond to these desires or risk losing business. But this reasoning runs afoul of the ideal of equal justice unless competition and choice are truly present—that is, if the jurisdiction of the "better" court is nonexclusive, and if the old court system does not increase its fees or allow the quality of its service to deteriorate (see Finnegan 2001).

Not everything that looks like an incentive-based reform will succeed or will be beneficial if it does succeed. For example, legislated time limits are largely unenforceable. Fee shifting, as with loser-pays rules, makes frivolous litigants responsible for the burdens they place on hapless defendants, but it can lead to excessive legal costs in cases where either party might win, by encouraging the parties to think that if they spend enough they will win and thereby avoid having to pay. Although high legal fees reduce the legal system's subsidy of litigation, they do so at the cost of restricting access.

Streamlining procedures is another way to increase judicial efficiency. Establishing simple procedures for simple cases apparently improves the overall efficiency of a system by allowing most litigation to be resolved swiftly and inexpensively in one or two hearings, avoiding adding to the caseloads of upper judges. Such reforms have improved efficiency and access in countries with such diverse legal traditions as those in Brazil, England, Japan, Peru, Scotland, and the United States. Lay language and pared-down procedures have made small claims courts and justices of the peace widely popular. By contrast, overly formal procedures have been blamed for the limited success of small claims courts in Italy.[8]

Cutting the number of steps in a trial decreases time and costs and reduces opportunities for corruption. Even so, many procedures exist for a reason, and to the extent that streamlining procedures may undermine important procedural rights, caution is warranted. But judicial systems in developing economies seem to suffer more from an excess of formality than from its lack (Djankov and others forthcoming).

In judicial systems that rely excessively on written procedures, shifting toward oral hearings tends to make trials simpler, faster, and cheaper. This shift probably will not lead to an appreciable loss of accuracy and may even lead to a gain, because the judges will have direct contact with the evidence and the trials will not be piecemeal.

Procedural rigidity seems to be strongly correlated with legal origin (Djankov and others forthcoming). In developing economies that inherited civil law traditions from France or Spain, judges must contend with overly rigid statutory procedures allowing little room to maneuver. Common law countries—rich and poor—seem to have more easily adaptable procedures.

Analyzing the problem of judicial inefficiency a few years ago, Posner (1998:3) suggested that "there may be a chicken and egg problem: a poor country may not be able to afford a good legal system, but without a good legal system it may never become rich enough to afford such a system." The available evidence suggests that judicial inefficiency is not just a matter of national income. According to Djankov and others (forthcoming), the problem of overly rigid procedures seems to be particularly critical in developing economies, apparently as a result of legal systems being transplanted without adaptation to local needs. The evidence also shows that judicial independence is essential for judicial reforms to have a favorable economic impact. Independent judges are the watch guards of economic freedom (La Porta and others 2002).

It is unlikely that complicated legal systems that work in rich countries, which have the resources and expertise to handle complexity, can be transplanted without significant modification into poor countries. Poor countries and those without a developed judicial tradition should probably concentrate on instituting simple rules and procedures that are easy to enforce. A good first step is often to enhance community-based mechanisms for resolving conflicts.

Notes

Juan Carlos Botero is with the School of Management at Yale University; his e-mail address is juan.botero@yale.edu. Rafael La Porta, Andrei Shleifer, and Alexander Volokh are with the Economics Department at Harvard University; their e-mail addresses are rafael_laporta@harvard.edu, ashleifer@harvard.edu, and volokh@fas.harvard.edu, respectively. Florencio López-de-Silanes is with the School of Management and the Economics Department at Yale University, his e-mail address is florencio.lopezdesilanes@yale.edu.

1 One study, based on a telephone survey to randomly selected U S households, revealed that among grievances involving $1,000 or more that were reported during the previous year, only 5 percent finally resulted in a court filing (Carp and Stidham 1990:191).

2. Damaška (1997) describes three perils of transplanting rules of evidence from the Anglo-American system into the Continental system First, American rules of evidence are heavily influenced by the American jury system; in a world of bench trials, concerns about prejudicial evidence may be less pressing. Second, Anglo-American trials are characterized by "continuous" fact-finding in the context of a concentrated trial, whereas Continental trials have "episodic" proof-taking, and rules of evidence designed for the first system may not work well in the second. Finally, adversarial evidence gathering methods, in which attorneys prepare their own witnesses and develop evidence by direct and cross-examination, do not sit well with the inquisitorial system, in which attorneys provide witnesses (with whom they have little contact) to the court.

3. In 1993 French cases lasted an average 4.8 months in the *Tribunal d'Instance*, 9.3 months in the *Tribunal de Grande Instance*, and 13.3 months in the Court of Appeals (Nouel 1999). In Germany in 1993, civil disputes in a court of first instance lasted an average 4.2 months in county courts and 6.1 months in district courts; disputes lasted an average 4.9 months in a district court of second instance and 8.7 months before the Higher Regional Court. More than 53 percent of county court cases were disposed of in less than three months, and more than 80 percent in less than six months; for district courts, the shares were 42 percent and 68 percent (Heckel 1999). In Japan nearly 60 percent of cases are dis-

posed of at a low cost, in a single hearing, and without a lawyer. More than 95 percent of civil cases in summary courts and more than 60 percent in district courts are disposed of in less than six months (Ogishi 1999). The overall clearance rate is 99.5 percent (5,104,000 civil, administrative, criminal, domestic, and juvenile cases were disposed of in Japan in 1997, out of 5,128,000 cases filed). Only 5 percent of all civil litigation is appealed (see Japan Ministry of Public Management 1999). In the United States typically more than half of all cases are disposed of quickly and cheaply in single hearings before small claims and other lower courts, and the vast majority are never appealed (Ostrom and Kauder 1998; Carp and Stidham 1990; Kerr and others 1999; Weller and others 1990).

4. In Italy civil disputes last an average of almost two years before a *pretore*, three years before a *tribunale*, and three years before the *Corte di Apello* (Gianni 1999). Varano (1997) associates this inefficiency with procedural rigidity.

5. Three of the five U.S. states with clearance rates below 85 percent between 1996 and 1998 saw their caseload activity decline. See Ostrom and Kauder (1998:21).

6. Under the forum non conveniens doctrine, U.S. courts will often decline jurisdiction over disputes that can more conveniently be tried in a foreign court (even if the U.S. court otherwise has jurisdiction). But a U.S. court can choose to assert jurisdiction rather than sending the matter to the foreign court if it believes that the system of justice in that court's country is inadequate.

7. See Matus (1999.64) for a discussion of how millions of dollars in foreign investment were withdrawn from Chile because of frustration over the uncertainty of the legal system.

8. For interesting case studies of small claims courts, see Baldwin (1997a), Kojima (1990), and Rohl (1990). For an interesting case study of a commercial court, see Finnegan (2001)

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Evolution of Corporate Law and the Transplant Effect: Lessons from Six Countries

Katharina Pistor • Yoram Keinan • Jan Kleinheisterkamp • Mark D. West

The pattern of legal change in countries that have their legal systems transplanted from abroad differs markedly from countries that develop their own systems, irrespective of the legal family from which their laws come. In "transplant" countries, law often stagnates for long periods of time; when change takes place, it tends to be radical, if not erratic. External models remain dominant even years after the law was transplanted. Although there is some evidence that transplant countries have engaged in comprehensive legal reforms in response to the pressures of globalization, it is still too early to judge whether these new changes can be taken as a sign that the legal systems in these countries have started a process of endogenous legal evolution.

The importance of law and legal institutions for economic development is widely acknowledged. The invention of credit mechanisms to support long-distance trade has been hailed as one of the preconditions for the development of capitalism in Europe (Milgrom and others 1990). The corporate form is regarded as a milestone for industrialization, the creation of viable market economies, and ultimately economic prosperity (Blumberg 1993; Hansmann and Kraakman 2000). For this reason, many former socialist countries quickly moved to enact new corporate codes or revive their prewar legislation (Pistor 2000).

Weaknesses in corporate governance, of which corporate law is a crucial element, has been blamed for the failure of major privatization efforts to enhance enterprise efficiency (Aoki and Kim 1995; Berglöf and von Thadden 1999; Frydman and others 1996). Improvement in corporate governance has become a major goal for economies in East and Southeast Asia hit by the 1997/98 financial crisis (Black and others 2001).

Empirical research based on a sample of 49 countries, most of them OECD member states, suggests that the level of shareholder protection is positively correlated with

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the development of stock markets, as measured by standard indicators, such as market capitalization and turnover ratio (La Porta and others 1997, 1998). Another empirical study (Johnson and others 2000) concludes that East Asian economies with more effective corporate laws were able to weather the 1997/98 financial crisis better than those in which shareholders were afforded fewer protections by the law on the books and the effectiveness of legal institutions, as measured by perception data.

A simple policy conclusion that could be drawn from these studies is that getting the "right" law on the books will boost financial market development. However, there are reasons to caution against such simplistic conclusions. The results of the studies on Asia could not be replicated in transition economies, where massive legal change, especially in corporate law, since the inception of economic reforms in the early 1990s has had remarkably little impact on the development of financial markets (Pistor and others 2000). Moreover, the causal relation between law on the books and economic outcome is not straightforward. As we show, countries with strong shareholder protection did not necessarily have better laws on the books when they developed their corporate law. They improved the law in response to challenges posed by the growth of the corporate and financial sectors. A key question then is, why do some countries develop better laws over time than do others? More generally, how does law evolve? Can we observe systematic differences in the evolution of law between different legal families (common law and civil law) on one hand and between countries that have their legal systems transplanted from other countries and countries that develop their own systems on the other?

We take a first step toward answering these questions by proposing that the process of legal change is crucial for the development of effective law. The intuition behind this proposition is that for law to be effective, it must become part of the institutional fabric of a society, contributing to the process of institutional innovation and change. Putting formal law on the books is not sufficient. Only when law is used—when it is modified in response to changing demands or socioeconomic conditions, such as changes in the size or ownership structure of firms or in the patterns of finance—will law be effective. In other words, the success of a legal system is not determined by having miraculously enacted good law at the outset but by developing the capacity to continuously find solutions to new problems.

Our analysis focuses on the development of corporate law in six "transplant" countries from the date they first imported the law. A transplant country is a country that imported its corporate law—typically wholesale with a set of other formal laws—from another country or other countries rather than developing it domestically. The six countries in our sample include three countries belonging to the French civil law family (Chile, Colombia, and Spain), two countries that took large parts of their formal legal system from English law (Israel and Malaysia), and one country (Japan) that imported German law in the late nineteenth century and U.S.-style corporate law after World War II.[1]

Investigating the pattern of legal change over time requires a different set of analytical tools from those used to measure the level of legal protection at a given point in time. Empirical studies on the quality of corporate law have measured the level of shareholder and creditor rights protection by coding a set of predefined provisions. The assumption behind this approach is that the provisions that have been singled out as "good" law work irrespective of differences in local institutional conditions. However, local conditions may differ, and solutions found in one jurisdiction may be irrelevant for conditions found in others. If, for example, the major concern in a jurisdiction is that holders of large blocks of shares may expropriate minority shareholders, legal protection of minority shareholders that are directed primarily at management rather than blockholders may not be relevant.

To avoid these pitfalls, we take a broader approach. We do not limit the analysis to a set of predefined indicators. Instead, we explore the process of legal change in core areas of corporate law, including entry and exit of the firm, governance structure, and corporate finance, for each country. This approach allows us to track dead-end developments as well as identify where legal innovations first took place and then spread to other jurisdictions.

Who holds the right to initiate change is likely to influence the rate of legal change and the content of legal rules. When legislatures hold the exclusive right to initiate legal change, the rate of legal change will depend on the capacity of lawmakers to respond to the demand for legal innovation. In contrast, when a jurisdiction offers only "rules off the shelf" and allows stakeholders to opt out of them by reallocating control rights in the corporate charter or its by-laws, private actors will contribute to the diversity of corporate charters, and ultimately, corporate law. We therefore analyze not only the content of legal rules but also the allocation of control rights over key aspects of corporate law.

We use statutory law as a source for analyzing the timing and locus of legal change. This is admittedly a narrow approach, especially in common law countries, where case law is an important source of law. Still, even in these jurisdictions, the law on the books offers crucial information about legal change, and case law has often influenced the revision of statutory law.

We find notable differences in the pattern of legal evolution across the six transplant countries on the one hand and the four origin countries (France, Germany, England, and the United States) on the other (see Pistor and others forthcoming). In origin countries legal evolution tends to take place continuously and gradually, but legal change in transplant countries often stagnates for long periods. When change does take place, it tends to be radical, at times even erratic. We suggest that this pattern of legal change can be attributed to the "transplant effect"—the failure of an imported law to be accepted in a host country (Berkowitz and others forthcoming). As in medicine, transplants of laws can be rejected. A new statutory law may be ignored and thus fail to become an integral part of a country's socioeconomic infra-

structure. Indicators of a lack of receptivity include legal stagnation or ossification even during periods of substantial socioeconomic change; a sequence of abrupt legal changes that can be explained only by repeated, but failed, attempts to solve a problem by importing foreign law; and a desire to follow other countries' legal development, even though there may be no domestic demand for legal changes. Differences in the process of legal change may at least partly explain the deficiencies in the effectiveness of legal institutions in transplant countries documented by Berkowitz and others (forthcoming).

Law and Economic Development

Social theorists, legal scholars, and historians agree that law has played a crucial role in the modernization and industrialization of the West over the past 200 years. The growing complexity of formal legal systems and the advance of constitutionalism and the rule of law during this period are perceived to have been key determinants of economic growth and prosperity. Max Weber went as far as stating that a calculable legal system was a precondition for the development of capitalism (Weber 1981).

The role of formal law can best be understood in a thought experiment in which formal law and legal institutions are assumed away and the state of nature is assumed to exist (Kronman 1985). Contracting and investments do take place in the state of nature. Kinship ties, reputation bonds enforced by relatively closely knit communities, and a host of self-enforcing mechanisms form the most important governance and enforcement mechanisms. Numerous historical and comparative studies (Ellickson 1991; Greif 1989; Redding 1990) have shown that these mechanisms can be remarkably effective. Yet they have important limitations. In a world with substantial transaction costs, informal governance mechanisms break down when the size of markets and the number of transaction become too large to render them effective (Charny 1990; Coase 1960). Put differently, the absence of formal legal protections of rights and interests limits the scope of economic activities to those that can be effectively governed by informal mechanisms (Bates 2001). Applied to the organization and operation of firms, this means that absent formal legal protections for key stakeholders, firms can grow and prosper only as long as transaction costs remain low enough that mutual monitoring and other informal enforcement mechanisms work effectively. If a firm seeks to expand its size or geographical scope or increase the number of owners, formal legal protection are needed.

Empirically, it has been difficult to conclusively establish the contribution of law and legal institutions to economic growth and development (Pistor and Wellons 1999). Case studies that track the development of law and legal institutions in particular countries or regions abound, but broader-based empirical studies employing statistical tools are rare, largely because reliable data are not available. Some

advances have been made in recent years, however. Several studies have shown that perception data that measure effectiveness of legal institutions—the absence of corruption, the rule-based exercise and transfer of state power, the absence of expropriation and contract repudiation by the state, and the effectiveness of the judiciary—are positively correlated with the level of per capita GDP (Knack and Keefer 1994; Mauro 1995).

It has proved even more difficult to establish a clear empirical relation between the quality of particular rules or statutes and economic development. Even so, important progress has been made. In a study of 49 primarily OECD countries, La Porta and others (1997, 1998) show that the level of minority shareholder protection is significantly different across different legal families. Common law countries offer the best and French civil law countries the worst minority shareholder protection, with the German and Scandinavian legal families falling between the two. Common law countries also have less concentrated ownership and better developed financial markets than do civil law countries. An important implication of these results is that legal families are important determinants of financial market development (La Porta and others 1997). Implicit in this argument is that the causality runs from legal family to good law to good economic outcome.

If this proposition were true, policy advice would be straightforward. Though it may not be possible for a country to switch from a French civil law to an English common law system, it could certainly import key provisions from common law countries, such as Britain or the United States, in an attempt to boost financial market development. Unfortunately, this strategy has not been very successful in past law and development projects (Trubek and Galanter 1974). In transition economies the level of shareholder or creditor rights protection on the books does not have a statistically significant impact on the development of stock or credit markets (Pistor and others 2000). The effectiveness of legal institutions, in contrast, is a much better predictor of financial market development.

There is some empirical support for the claim that the process of lawmaking is more important than the content of legal rules. Analyzing the determinants of effective legal institutions using the perception data introduced by Knack and Keefer (1994), Berkowitz and others (forthcoming) show that legal families have little impact on the effectiveness of legal institutions. In contrast, there are remarkable and statistically significant differences between origin and transplant countries. Today origin countries have more effective legal institutions than do transplant countries that imported their laws.

Among legal transplant countries, some fair better than others. In particular, countries that adapted law in the process of importing it, as well as countries that had a population in place that was already familiar with the basic principles of the law being imported, have more effective legal institutions today than do countries that did not, even after controlling for GDP.

These results suggest that legal transplantations, which for the most part took place more than 100 years ago, have cast a long shadow on legal institutions that can still be felt. Analyses of the legal development in transition economies have produced similar results. In these countries the effectiveness of legal institutions proved to be a strong predictor of financial market development. The relative effectiveness of legal institutions, in turn, appears to be determined by the history of legal development. Countries that had actively developed a formal legal system before they were incorporated into the socialist world have more effective legal institutions today than do countries that never developed such systems or contented themselves with retaining the rules imposed by foreign powers that had once ruled them (Pistor and others 2000).

This article builds on this research. It starts with the observation that transplant countries tend to have less effective legal institutions than origin countries, even when they emulate the contents of the law on the books. By exploring in greater detail the process of legal change in corporate law, we hope to explain why the transplantation of law has not solved the problem of legal backwardness.

Legal Evolution in Origin Countries

The four origin countries examined are the leading jurisdictions of the three major legal families (England, France, and Germany) and the United States (see Pistor and others forthcoming). The United States transplanted its law from England, but since the late eighteenth century its legal development has been sufficiently independent as to justify classifying it as an origin jurisdiction.[2] Individual states have jurisdiction over corporate law. We include Delaware, because it is the leading state for corporate law, as reflected in the fact that 62 percent of the firms listed on the New York Stock Exchange are incorporated there (Eisenberg 2000).

When the first corporate statutes were enacted, there were remarkably few differences across countries and legal families. Corporate statutes were short, and they focused primarily on the process of forming a company. They had little to say about internal governance structure, different classes of stock, or other aspects of corporate finance and even less about mergers and acquisitions and the rights of different stakeholders in such transactions. This lack of coverage may be attributable to the fact that at the time neither lawmakers nor private parties had much experience with the corporate enterprise; the need to find legal solutions for these issues arose only over time.

The four origin countries differ, however, in how they responded to the challenges of the rapid growth of the enterprise and financial sectors and to the booms and busts of financial markets that accompanied it. Most important are differences, particularly between the common law and the civil law families, in the allocation of control rights. In France and Germany the legislature exhibits a strong tendency to mandate a par-

ticular allocation of control rights and to prevent stakeholders from reallocating them. In Germany a provision in the corporate law states that all provisions of the law are mandatory unless stated otherwise. A typical response in the two civil law countries to new problems was to tighten mandatory rules and restrict the ability of economic agents to determine the allocation of control rights. A good example is the 1848 Prussian law on corporations. The law reaffirmed the requirement of a state concession for establishing a corporation in response to the scandals that surrounded the railway mania in Britain (Kostal 1994). The Prussian legislature attributed the scandals to excessive leniency, which it sought to prevent by controlling entry to the market.

Similarly, in 1867 Germany finally allowed free entry subject only to requirements established by law. After it experienced its first boom and bust, however, the legislature intervened, tightly regulating the process of and the conditions for legal incorporation (Assmann 1992; Schubert and Hommelhoff 1985). Control mechanisms introduced in Germany at the time included the mandate to issue shares at a high legally established minimum par value, restrictions on the company's ability to repurchase stock, and a host of provisions that required shareholder approval, often with supermajority requirements for key decisions, including mergers and acquisitions and changes in corporate capital.

Only over the past decade have laws become more flexible in Germany and France. The general philosophy of corporate law in these countries remains that a mandatory law is needed to adequately protect key stakeholders of the corporation, including creditors and employees.

In contrast, control rights in England were and still are vested primarily with shareholders, subject to judicial review. Courts already played a key role in developing principles for company law long before the first Companies Act passed Parliament in 1844. They based their decisions on contractual arrangements and common law principles developed for partnerships and trusts (Davies 1997). Although statutory law became an important source of law after 1844, the law referred extensively to the articles of incorporation and thus to the allocation of control rights agreed on by shareholders. There are fewer mandatory provisions in the law than in Germany or France, but the law does not allow shareholders to reallocate control rights freely to corporate management.

Delaware shares with England the strong emphasis on shareholder control rights subject to review by the courts. It has been much more lenient in permitting the reallocation of control rights from shareholders to managers, however. In fact, the permissiveness of Delaware corporate law has been criticized by many as a race to the bottom in the competition for corporate charters (Arsht 1976; Cary 1974). One may argue that shareholders are free not to reallocate control rights, but shareholders tend to be passive investors, and directors and managers can easily influence shareholder decisions (Bebchuk 1989).

The "enabling" nature of Delaware corporate law is reflected in many provisions of statutory law. Examples include the watering down of the ultra vires doctrine, which purported to limit the scope of business activity objectives stated in the corporate charter; legal provisions that allow directors rather than shareholders to change the corporate by-laws; the power of management to assess the value of in-kind contributions, which allows them to overstate contributions; the power of the board to determine the timing and pricing of authorized stock; and the relaxation of preemptive rights, which were designed to give existing shareholders a right of first refusal when new shares are issued. Many of these changes were introduced in the 1920s and finalized in the 1967 revision of the law.

Contrary to the expectations of many critiques, the relaxation of mandatory shareholder control rights has not undermined shareholder value. Empirical studies have concluded that reincorporating a company in Delaware does not decrease share value (Romano 1985). Moreover, companies incorporated in Delaware are doing as well if not better than firms incorporated in other states, controlling for size, industry, and other factors (Daines 2001).

An important explanation for the success of Delaware companies despite the state's relatively weak statutory legal protections is that courts have played a crucial role in upholding core shareholder rights under the broad principle of fiduciary duty (Coffee 1989; Fisch 2000). In addition, new control mechanisms emerged that placed limits on the scope of managerial powers. Most important, stock exchanges, and since 1933 the Federal Securities and Exchange Commission, have developed control mechanisms that have effectively limited the scope of discretion exercised by corporate management and compelled them to disclose key information not only to current shareholders but to the investing public. In other words, the relaxation of corporate controls did not create a legal vacuum. It did give corporate stakeholders greater flexibility and thus more room for experimentation. When this created greater possibilities for abuse, new mechanisms were established to counter them. This strategy has not avoided scandals (as is evidenced by the latest series of financial scandals in the United States), but it has proved remarkably resilient over time, which may be attributed to prompt reaction when scandals did materialize.

England and Delaware allowed greater room for experimentation and innovation than did Germany or France. In these two civil law countries the legislature has remained the primary motor of legal change. Once introduced, restrictions have remained on the books for decades. Perhaps these rules have spared the countries the financial distresses that have repeatedly rocked England and the United States, but the same restrictions have also limited the scope of legal change. The fact that financial markets in England and the United States are better developed than in France or Germany suggests that the strategy of allowing greater room for innovation has been more successful.

Legal Transplants

All of the six transplant countries studied—Spain, Chile, Colombia, Israel, Malaysia, and Japan—took their corporate law from one of the four origin countries. Do the transplant and origin countries reveal different patterns of legal evolution? Recall that recent empirical studies have concluded that common law countries as a group outperform civil law countries in terms of the scope of minority shareholder protection they offer and the performance of their stock markets. Other studies, however, suggest that legal families have only limited predictive power with regard to the effectiveness of legal institutions and that differences between origin and transplant countries account for differences in legal effectiveness (Berkowitz and others forthcoming). A detailed analysis of the patterns of legal change in origin versus transplant countries allows us to test these competing propositions by examining the pattern of legal change in transplant countries. We start our analysis from the understanding that the strength of a legal system is not encapsulated in particular legal provisions found in statutory law but in the extent to which it promotes innovation and change without creating a control vacuum.

If legal families were the overriding factor determining the quality of corporate law and common law had certain features that allowed it to be more responsive than civil law, we should observe similar patterns of legal change in Israel and Malaysia as we did in England and the United States. If, however, transplant countries reveal different patterns of legal change, we should observe similar patterns of legal change in transplant countries irrespective of the legal system from which they adopted their law.

Our analysis reveals that with regard to the allocation of control rights in corporate law, transplant countries do indeed follow the basic philosophy of the countries from which they adopted their law. Israel and Malaysia have more flexible and enabling corporate law than the other countries in the sample (although they do not come close to the degree of flexibility that Delaware law affords). Spain, Chile, and Colombia have adopted a rather rigid approach to corporate law that exceeds that of the leading country in their legal family, France.

We find more systematic differences with regard to the process of legal change. In particular, we identify two distinct patterns of legal change: ossification and erratic change. In several transplant countries the law barely changed for decades, even though the country went through a period of rapid economic growth. This is particularly true in the two common law countries examined, Israel and Malaysia, but it is also true in Japan for much of the period under investigation. The development of corporate law all but stagnated during the period of high economic growth experienced since the 1960s by the "Asian miracle" countries and Israel.

Legislative activities have accelerated since the 1980s, most likely in response to growing economic problems and competitive pressures that resulted from the greater

integration of financial markets. An open question is whether a different corporate law may have helped these countries prolong their growth period, if not prevent the subsequent stagnation or decline. Some commentators have indeed suggested that the Asian financial crisis of 1997/98 revealed weaknesses in the underlying institutional structure of the miracle countries (Black and others 2001; Johnson and others 2000; Pistor and Wellons 1999). As long as the economy was growing, these deficiencies were less apparent. Once growth slowed, however, institutions that could effectively buffer economic decline were lacking (Rodrik 2000). We propose that the weaknesses in the institutional infrastructure can be captured only partially by determining whether or not these countries had a particular set of legal rules on the books. The institutional weakness lies in the failure to adapt previously imported law to meet the demands of an economy that had changed markedly during the period of high economic growth.

The second pattern, erratic change, can be observed in Spain and Colombia. In Spain the 1829 corporate law started off as one of the most liberal corporate laws in Europe, only to be superceded by a highly restrictive version 20 years later. The change had a crippling effect on economic development and motivated the legislature in 1868 to turn the clock back to 1829. This suggests a certain level of responsiveness by lawmakers to the impact of earlier legal change, but one that preferred bold measures to fine-tuning.

Colombia also experienced erratic change that reflected the eclectic choice of models from which the law was imported. Colombia first followed the Spanish example, enacting a liberal corporate law in 1853. Unlike in Spain, this law did not have much impact, mostly because of the economic backwardness of the country, which rendered corporate law largely irrelevant (Means 1980). In 1887 the corporate law was revised, this time by adopting the Chilean model. The revised law led to a remarkable change in statutory law, as free incorporation was replaced with a mandate to obtain state approval. In marked contrast to the Spanish experience, however, the new law had no discernible effect on the Colombian economy. Still, it remains a puzzle why lawmakers turned the clock back without any apparent need. Means (1980) suggests that lawmakers were not aware of the change they were introducing. The country lacked a well-trained legal profession or lawmakers acquainted with corporate law developments elsewhere. Legal change occurred because lawmakers felt a need to follow one of the most advanced legal systems in Latin America of the time, not because there were particular domestic reasons for doing so.

The lesson we draw from this analysis is that countries that adopt foreign law are frequently unprepared for it or for the changes it brings. It is therefore not surprising that the new law does not become well incorporated into the institutional landscape or contributes to an ongoing process of institutional change. Our findings suggest that legal transplants cannot function in the host countries as they do in the home countries. Socioeconomic conditions, including overall economic development, the

size of the corporate sector, the ownership structure of firms, and the patterns of firm finance, differ from country to country. Institutions that make a law work smoothly in one country, such as courts and regulators, may be absent, weak, or corrupt in another. As has been acknowledged, socioeconomic change takes place within the constraints of existing formal and informal institutions and thus is highly path dependent (North 1990). Even radical legal change will therefore not alter preexisting allocations of control rights overnight. This will take time and may not even succeed fully, as those fearing to lose from the reallocation of control rights are bound to change their behavior accordingly.

A Short History of Legal Transplants

Before examining more closely the development of statutory law and the core aspects of corporate law identified earlier (entry conditions, exit, reorganizations, corporate governance, and corporate finance), a short summary of legal development in the six transplant countries helps provide context.

French Civil Law Transplants

Spain already had substantial experience with French law during the reign of the Bourbons in the late eighteenth century. The law governing commercial activities, however, was based primarily on Spanish imperial law. It regulated entrance to the market but left customary trade to govern transactions among entrepreneurs (Coing 1976).

The Napoleonic Codes arrived in Spain with the French troops. The troops left in 1815, but the codes were kept on the books, subsequently replaced with national legislation that resembled the French law in many aspects but was not identical with it. The Spanish Código de Comercio of 1829 broke with a long tradition of special privileges, which granted far-reaching autonomy to merchants in Spain (Frey 1999). It legalized the relationship between the state and entrepreneurs as well as among them. Subsequent major revisions of the code took place in 1848 and again in 1868. Between 1885 and 1951 the code became more stable, although amendments were introduced from time to time. Since Spain joined the European Community, corporate law reforms have been targeted at complying with harmonization standards of council directives (Edwards 1999).

Chile was one of the first countries in Latin America to enact major codifications for civil and commercial law in the mid-nineteenth century. It borrowed from France as well as Spain, itself strongly influenced by French law. The 1854 law set the grounds for strong state control over commercial activities, which lasted in corporate law until 1981, when Chilean corporate law was overhauled. The new law borrowed heavily from the United States.

Colombia enacted its first commercial code in 1853. The country was economically backward and had only a few incorporated companies, all of which had been authorized under Spanish imperial rule. Even after the enactment of the new code, few entrepreneurs were aware of the possibilities it offered, and most continued to operate as unlimited partnerships rather than seeking the protection of limited liability the law now offered. In 1887 the code was revised, apparently in an attempt to stay in tune with legal developments in neighboring countries, where major revisions of commercial laws took place in the 1880s. There were few domestic reasons for a major revision of the code. The model chosen this time was the Chilean law of 1854. There have been remarkably few changes in the corporate law since then, perhaps not surprisingly in a country that has been preoccupied with internal struggle and warfare.

English Common Law Transplants

After the dissolution of the Ottoman Empire following World War I, Britain established a protectorate over the territories that later became the State of Israel. The territories that today make up Malaysia were colonized by Britain in the late 1800s. The Federal Malay States were established in 1896, which led to the adoption of English law.

At least in some of its former colonies, the transmission of British law tended to be more gradual than the transplantation of statutory law from civil law countries. An important explanation is that unlike codified law, case law cannot be transplanted instantaneously. In most cases, a royal decree stipulated that English contract or company law as it existed at a particular date would henceforth be applied in the colonized territories. Where English judges sat in courts and applied common law to local cases, the evolving case law used English precedents. The different facts presented in the territories and recognition of local legal customs meant that case law increasingly diverged from the origin country (Hooker 1975). In this process, the law was adapted to local conditions. Consistency with English law was achieved by using the Privy Council in England as the Supreme Court for the colonial empire. Many countries continued to refer their cases to this court even after independence.

One might conclude that this gradual transmission facilitated the reception of the law. However, there is sufficient evidence to the contrary to caution against such a conclusion. Many experiments by British colonial lawmakers ran afoul because they ignored local conditions. A glaring example is the ultimately failed attempt to jump-start competitive credit markets in India by introducing a titling system and effective contract enforcement against defaulting debtors (Kranton and V 1999). Moreover, colonial rule often implied different standards for colonial subjects and colonizers, a fact that may have contributed to the alienation of imported law. The gradual transmission of law is thus only part of the story of transplanting English common law to former colonies. The British Empire sought to devise a shortcut by codifying law for

the purpose of transplanting it to the colonies. India became the testing ground for this strategy (Pistor and Wellons 1999).

It was in this tradition that the English Companies Act was introduced in Israel in 1929 and Malaysia a few decades earlier. This transplantation was simplified by the fact that corporate law had been codified in England since 1844 and had been revised in England only in 1928/29. Both Israel and Malaysia changed their corporate laws only decades later. In Malaysia the corporate law was revised in 1965, this time using Australia rather than the former colonial power as a model. Because the Australian law was still very faithful to the English model, the law closely resembled the 1948 English law. It took Malaysia more than 20 years to catch up with the country from which it had taken its law. Little in the revised code suggests that domestic developments influenced the new law. Perhaps even more notably, the law hardly changed since 1965, despite the fact that Malaysia, together with other East Asian countries, went through one of the most expansive growth experiences in economic history during the next 20 years (Asian Development Bank 1997; World Bank 1993). Formal law was not irrelevant during this period, but administrative rules and regulations took precedence in Malaysia over general laws enacted by the legislature. This body of law performed an important function in the context of Malaysia's state-led development process since the introduction of the New Economic Policy in the early 1970s (Pistor and Wellons 1999). But it also undermined efforts to keep law that was designed for market- rather than state-based economic development strategies up to date.

Israel left the English law unchanged for an even longer period, from its first enactment in 1929 to 1983. In 1967 a package of securities market regulations was introduced, but the corporate law itself was revised only 15 years later. Another major revision of the corporate law occurred in 1999.

Transplants from Germany and the United States

Japan is an odd case in our sample because it transplanted law from two different sources. Germany served as a model for much of the new formal law enacted during the Meiji Restoration (Baum and Takahashi forthcoming). Japan received the second corporate law transplant from the United States in 1950 (West 2001). Before the imposition of U.S.-style law, Japan revised its corporate law only once, in 1937. Legal change accelerated since 1969 and was quite frequent in the 1990s, reflecting a greater awareness of the importance of law for the corporate sector.

Entry, Exit, and Reorganization

The major attributes of the corporation are shareholder limited liability, the existence of the corporation as an independent legal entity, and the free transferability of shares

(Clark 1986). Corporate statutes typically define the conditions a corporation must meet to acquire these "privileges." In addition, the law tends to regulate who may make decisions about the dissolution (exit) or reorganization of a corporation.

In some respects transplant countries clearly benefited from the experience gained in origin countries, particularly with respect to entry conditions for corporations. At the time most of the transplant countries in our sample adopted their corporate laws, the origin countries allowed free incorporation and had enacted several safeguards to balance this change. Transplant countries copied these provisions and thus endured a much shorter period of trial and error.

The most notable exceptions are Spain and Chile. Spain introduced the system of free incorporation subject only to registration in 1829, 40 years before France did so, only to repeal this change shortly afterward. Although courts had substantial discretion in refusing registration, a special state concession was not required. In response to the liberalization of entry requirements, Spain experienced a major founders' boom, followed by a severe crash. The "backlash" (Roe 1998) occurred 19 years later, in 1848. The amended code demanded a royal decree as a condition for incorporation, stifling the market and adversely affecting economic development. In 1869—by which time the leading European powers, including France, had dropped the concession requirement—the pendulum swung back to free incorporation.

For the long-term development of corporate law in Spain, the revision of the Código de Comercio of 1885 was decisive. A major characteristic of this code was its emphasis on creditor rights. Merger transactions, for example, were made subject by law to creditor consent. Most of these provisions were retained in the 1951 overhaul of the code and still characterize corporate law in Spain.

For more than 100 years Chile established and maintained one of the most restrictive corporate laws. Two presidential decrees were required for a company's incorporation, one authorizing incorporation, the other verifying lawful incorporation and allowing the commencement of business. Once these decrees were issued, the company could be registered only for a fixed term, stipulated in the charter. State control also extended to mergers and liquidation. An amendment introduced in 1970 reallocated control rights over mergers to shareholders and required a supermajority vote. The principle of free incorporation was introduced only with the major revision of the code in 1981—more than 100 years later than the origin countries, France and Spain. The revision also shifted control rights over liquidation and mergers to shareholders.

Colombia introduced one of the most liberal incorporation regimes in the world in 1853. Lawmakers essentially followed the Spanish 1829 code, apparently without recognizing that Spain itself had moved back to a concession system in 1848 (Means 1980). In contrast to Spain in 1829, where the liberalization of entry requirements led to a founders' boom, the equally liberal Colombian law had little impact on economic development. The law of 1887 was almost identical to the Chilean model and

included the rigid entry requirement of two presidential decrees, ignoring the fact that the Chilean model lagged far behind legal developments elsewhere in the world.

The Colombian case is an interesting example of a country that transplanted law for reasons that had little to do with domestic demand and had little expertise to assess the likely impact of the new law (Means 1980). The choice of legal models to be transplanted was determined primarily by the perceived prestige of the models. Internal socioeconomic developments or the fit of transplants with preexisting laws and institutions were ignored. There is little evidence that this approach to lawmaking has changed since.

The corporate statutes enacted in Israel and Malaysia in 1929 closely mirrored the timing of the transplantation. Free incorporation and shareholder control over major transactions as well as extensive disclosure requirements were the hallmarks of the English law at the time and were introduced without change in Israel and Malaysia. In Israel important changes affecting entry conditions were introduced in the first major revision of Israel's corporate law in 1983. Most important, the company registrar was given the power to refuse incorporation on public interest grounds. This change signaled a different role for corporate law within the context of a political system that frequently favored more extensive state control over economic activities than the origin country. In 1999 this provision was repealed. The registrar is now obliged to incorporate any company unless there is evidence of violations of the law, including violation of the procedural requirements for incorporation. As will be discussed, the 1999 revision of the corporate law marked a decisive change away from state supervision. Nevertheless, it continues to be much less enabling than the laws of Delaware. For this reason, Israeli entrepreneurs frequently incorporate their companies in Delaware, even when the firm operates in Israel (Rock 2001).

In Japan the switch from a German to a U.S. transplant had little impact on incorporation, as free incorporation subject only to registration had been recognized in the 1898 law, but merger rules were affected by the change. Under the 1898 law mergers required only public notice as well as a simple majority vote (by interest and number), whereas the new law established a two-thirds majority requirement, provided that half of the stock was represented at the meeting. This amendment strengthened control rights of minority shareholders to a greater extent than Delaware law does. Adoption of the stronger law can be explained by the fact that Illinois (rather than Delaware) served as the model for transplanting U.S. corporate law to Japan, and Illinois law of the time was much less permissive than Delaware law.

Corporate Governance

Where the state exercised control rights over entry and exit of corporations, it also ensured that it had some say over the governance of firms. This was the case in Spain

between 1848 and 1868 (during the period when the government tried to regain control over the economy after the initial liberalization of 1829). During this period the government reserved the right to monitor the corporation and to call a special shareholder meeting at any time. Shareholders representing at least 10 percent of total stock were vested with this right only in 1947. Chile adopted the idea of continuous state monitoring in 1854 by including a provision that allowed the government to appoint a special inspector to supervise corporations. It retained this provision until well into the twentieth century.

Creditor control in matters of corporate governance was strong, particularly in Spain but increasingly in Chile as well. Already the Spanish code of 1829 stipulated that creditors could sue management for acting beyond the scope of powers explicitly vested with the corporation, thereby giving them some control rights over the scope of business activities. Chile introduced strong protections for bondholders in 1929 and strengthened their rights in 1931. In contrast, minority shareholders were given comparatively few control rights. Under the 1931 law shareholders representing at least 25 percent of common stock could demand an extraordinary shareholder meeting. In other jurisdictions the relevant threshold at the time was 10 percent, or as low as 5 percent in England and Germany. Chile adopted the threshold of 10 percent only in 1981. The threshold in Colombia is still 20 percent.

Spain, Chile, and Colombia closely followed the French model in terms of voting rights and the delineation of powers between the shareholder meeting and the board. Under French law it was possible to disenfranchise shareholders who held less than a minimum number of shares, as corporate charters could determine that only shareholders holding a specified minimum number of shares could exercise voting rights. The same applied to other countries belonging to the French civil law family.

In Israel and Malaysia the governance structure of the firm was and still is set forth primarily in the articles of incorporation (charter). Fundamental decisions, including changes in the charter, the by-laws, or corporate capital as well as decisions on mergers or liquidation have to be approved by special resolution requiring a three-quarters majority vote. The shareholder meeting appoints and dismisses the members. In Malaysia the board exercises the right to dismiss individual members at any time by ordinary resolution (simple majority vote). Israel's revised corporate law of 1983 retained the requirement of a special resolution (three-quarters majority vote) to accomplish this change, which was first introduced in 1929. In 1999 this provision was relaxed. A resolution passed by simple majority vote is now sufficient to dismiss members of the board. The 1999 amendment also introduced cumulative voting rights, which are, however, optional.

In Japan the American legal transplant established new requirements for firm governance. The 1950 law stipulated only that the board of directors manage the corporation. Relative to minority shareholders elsewhere in the world, minority shareholders in Japan had little control under the 1898 law. Major changes in the

corporate charter, capital increases, and other changes could be adopted with only a simple majority vote, rather than the supermajority needed elsewhere. In 1950 the vote was changed to require a two-thirds vote by shareholders who are present at the meeting and who must hold more than 50 percent of outstanding shares. This requirement ensured greater participatory power by shareholders, in contrast to the law of Delaware, in which statutory shareholder protection, such as supermajority requirements, had already been relaxed. The 1950 law also extended the right to call an extraordinary shareholder meeting by lowering the threshold to only 3 percent.

Corporate Finance

The most extensive divergence across countries and legal families is found in corporate finance. One extreme, the German model, is characterized by legally mandated, detailed capital requirements, strong creditor protection, and limited discretion for corporate management. The other extreme, Delaware, allows extensive reallocation of control rights in favor of directors and management. The six transplant countries are closer to the German than to the Delaware model.

Spain, Chile, and Colombia all place substantial emphasis on protecting creditors. The law gives creditors veto rights over several decisions relating to corporate finance. Similar results may be obtained contractually be creditors in other legal systems. The fact that the law mandates a veto, however, denies any other allocation of control rights over changes in corporate capital. Creditor consent has also been required for decreasing corporate capital under Spanish law since 1885. France introduced this requirement only in 1930, marking an interesting example of reverse transplantation. Increases in corporate capital, however, were squarely put in the hands of shareholders. Since 1885 a simple majority has sufficed, although in 1989 a quorum requirement of 50 percent was introduced, most likely in response to European Union harmonization directives.

Chile

The 1854 Chilean law went far beyond the Spanish model in ensuring shareholder control over changes in corporate capital and introduced unanimous shareholder voting for changes in corporate capital. Only in 1970 was this rule relaxed for decisions concerning capital increases, which henceforth required "only" a 70 percent majority vote. The 1981 revision made changes in corporate capital much more flexible by requiring only a simple majority for increases or reductions in corporate capital. In contrast to Spain, where a quorum is required, only a simple majority vote by shareholders present at the shareholder meeting is needed.[3] Initially, the government determined the amount of corporate capital on a case-by-case basis. This followed

directly from the fact that the state reserved the right to approve incorporation (Chile moved to a system of free incorporation only in 1981). Nevertheless, over time the law standardized some entry requirements for incorporation, thus limiting the discretion of state bureaucrats in charge of incorporation. In 1931 the minimum capital requirement for all corporation was set at 500,000 pesos. A decree issued in 1970, however, gave the government the right to deny incorporation if the capital was deemed insufficient for the business purpose contemplated. Both provisions were dropped in the 1981 revision of the law.

A reallocation of control rights away from the state and toward corporate stakeholders, in particular toward shareholders, can also be observed for minimum subscription and minimum paid-in capital. In 1981 the general rule was established that one-third of the capital be paid in at the time the company was incorporated; failure to do so lead to an automatic reduction of the corporate capital after three years. This rule was modified in 1997. Today capital must be paid in over a period of three years. Despite the general trend toward a more flexible law, some rigidity remains, including the provision introduced in 1981 that 30 percent of the company's profits must be paid out in dividends.[4]

Colombia

Within the French/Spanish legal family, Colombia has retained the most rigid corporate finance regime. The 1897 law prohibited any decrease in capital. In 1931 the state acquired new control rights by requiring state approval for any change in corporate capital. In addition, unanimous shareholder decision was required, a provision that was replaced only in 1971 by a 70 percent majority rule. Government control was extended to the evaluation of in-kind contributions in 1951. Share repurchases are restricted and require shareholder approval.

Malaysia

Malaysia's regime for corporate finance combines some rigid elements with some more flexible ones. Under the 1965 law, a simple majority vote sufficed for an increase in corporate capital. The concept of authorized stock did not exist. A 1987 amendment required shareholder approval for the issuance of shares and thus preempted the possibility that shareholders would authorize but the board would issue the shares. Shares are required to have par value, a requirement Delaware abandoned in the 1920s, but they may be issued at a discount or premium. There are also strings attached to decreases in corporate capital, which require a special resolution (approved by supermajority vote). Moreover, creditors can file a court case claiming that the reduction in corporate capital was inappropriate. Share repurchase was flatly prohibited under the 1965 law. This provision was revised in 1997, permitting share

repurchase under certain conditions, including capital decrease, solvency of the company, or the possible cancellation of all rights attached to the shares.

Israel

Under the 1983 law, changes in corporate capital, including capital increases and capital decreases, required a three-quarters majority vote. Capital decreases had to be approved by the court, a provision that was repealed in England in 1867. Moreover, minority shareholders could appeal to the court to prevent a capital increase. Since 1999 a simple majority has sufficed for capital increases, and the board of directors has been able to decide on capital decreases unless the charter requires shareholder approval. However, creditors and shareholders may apply to the court and request to enjoin a decrease in corporate capital. Preemptive rights, which England did not know before 1980 and which Delaware made optional in 1967, were introduced only in 1999. The 1999 law did, however, allow the corporation to repurchase its own stock. Thus the law exhibits some inconsistency in the treatment of corporate capital, strengthening shareholder rights by including preemptive rights on the one hand and relaxing mandatory rules by allowing for share repurchase on the other.

Japan

The law governing corporate finance in Japan is a true hybrid of the two systems from which it derived its corporate law. The law has been surprisingly faithful to German law, with several restrictions based on the German model introduced only recently. An example is minimum capital requirements, which were introduced in 1990 and levied at ¥10 million. Neither the 1898 law nor German law at the time set minimum capital requirements. Like the German model law, the Japanese law specified the minimum par value, which was levied in 1898 at ¥20 and raised to ¥500 in 1950. Following the German model, in-kind contributions were allowed, but the amount and the number of shares issued in return had to be stated explicitly in the charter. The major amendment of the law before its replacement by the U.S.-style law, the amendment of 1938, restricted in-kind contributions. Only promoters were allowed to make in-kind contributions, and a court-appointed inspector had to ensure that they were assessed correctly. This provision was relaxed in 1990 to require an inspector only for contributions worth more than one-fifth of the capital or ¥5 million.

With respect to share repurchases, the Japanese law is as restrictive as the German law. In principle, share repurchase is prohibited. The 1938 law exempted only decreases in corporate capital and repurchases as part of merger transactions from this prohibition. The 1950 law lifted the prohibition on repurchases, at least in cases where the repurchase was used to compensate minority shareholders who exercised

appraisal rights—an important complementary control device that Japan copied from the U.S. model.

The 1994 and 1998 Japanese amendments to the law governing corporate finance closely resemble recent changes in Germany and allow repurchases for employee compensation or stock option plans. Interestingly, preemptive rights were not included in the 1898 law, despite the fact that they were known in Germany at the time. The 1950 law made preemptive rights optional, this time following the trend in other U.S. jurisdictions that moved away from mandating preemptive rights in statutory corporate law. In 1955 directors were given discretion over specifying the rights of shares with each new issuance, placing preemptive rights squarely under the control of directors.

Summary and Conclusion

Legal systems have typically adopted the basic philosophy of the country from which they imported their law, with civil law countries tending to be less flexible and providing more protection to creditors than common law countries.

The pattern of legal change in transplant countries does indeed differ from that found in origin countries. Legal development in transplant countries often stagnates for long periods or changes erratically. A law may stagnate for many reasons. The law could represent a perfect set of rules that requires no change, although this is unlikely given that no lawmaker can possibly anticipate all future contingencies. Moreover, we find substantial legal change in the most advanced economies, suggesting that they are engaged in a continuous process of legal change. Another explanation is that stagnation may indicate the irrelevance of formal law. Informal governance mechanisms may work sufficiently well to render law irrelevant, or the state may direct economic activities through administrative rules and regulations, leaving too little room to private actors to make differences in corporate law relevant. Alternatively, law may stagnate because there is little demand in a country for a particular set of rules, as economic conditions are sufficiently different to render law unimportant. Whatever the reasons, legal stagnation signals rejection or only partial reception of legal transplants.

In addition to stagnation or ossification, we also observe more sporadic radical legal change in transplant countries. Typically, this type of change occurs in response to a crisis. Although crises are important motors for legal reform, crisis-driven legal reforms can mean that lawmakers overreact in a backlash fashion (Roe 1998). This is not a phenomenon limited to legal transplants, as evidenced by Germany in the late nineteenth century.

There are signs that the pattern of legal evolution has changed in many transplant countries over the past 20 years. Countries have begun to reform their codes more

frequently. They have also relaxed some of the rigid control rights found in earlier laws and given corporate stakeholders greater flexibility. In some cases, this legal change was motivated by crises, as in Malaysia after 1997, and in Japan throughout the 1990s, or by radical changes in economic policies, as in the case of Chile's reform in 1981. But the greater frequency of legal change suggests that at least in the eyes of lawmakers, formal law has been elevated to an important governance device over the corporate sector. The demand for law by local actors may have increased as well. Future research should determine whether a more demand-driven process of legal change in response to domestic problems will result in more effective corporate law.

Apart from differences in the process of legal change, we also observe several differences in the allocation of control rights. Overall the patterns observed in origin countries—namely, that common law countries vest control rights primarily with shareholders and tend to be more flexible in allowing a reallocation of these rights—also hold for transplant countries. Nevertheless, no transplant country has come close to the flexibility of Delaware's corporate law.

The small size of the sample cautions us against overgeneralization. Our results do, however, suggest that legal transplantation is not an easy (and certainly not a short-term) solution for countries with less developed legal systems. For law to play a role in economic activities and long-term economic development, it must be incorporated, meaning that it must develop solutions to problems that exist in the home jurisdiction. As the example of the six transplant countries analyzed here suggests, it can take decades, if not longer, before transplanted laws are accepted.

The frequency of change in recent years and the greater selectiveness with which countries borrow from different legal systems rather than resigning themselves to the legal family from which they first transplanted their law suggests that the role of formal law as a governance device may be changing. Possible explanations include greater domestic demand as a result of economic change and development and increasing competitive pressures due to the integration of financial markets. Future research will have to analyze more closely the political economy of legal change. Greater emphasis should therefore be placed on the process of introducing new legal solutions and on how closely they fit preexisting conditions.

Notes

Katharina Pistor is associate professor of law at Columbia Law School; her e-mail address is kpisto@law.columbia edu. Yoram Keinan is associate at Shearman & Sterling; his e-mail address is ykeinan@shearman com. Jan Kleinheisterkamp is research associate at the Max-Planck Institute for Foreign Private and Private International Law, Hamburg, Germany, his e-mail address is kleinheisterkamp@mpipriv-hh.mpg.de. Mark D. West is assistant professor of law, University of Michigan Law School; his e-mail address is markwest@umich.edu. The article is based on a back-

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1. Although a major objective was to ensure that each legal family was represented in the sample, the choice of countries from each legal family was determined primarily by the legal expertise of the authors and the accessibility of relevant legal material.

2. Testing for robustness by recoding the United States as a transplant country did not change the results (Berkowitz and others forthcoming).

3. Because the meeting can make a valid decision if 50.01 percent of shareholders are present, in effect this means that such decisions can be taken by 26 percent of outstanding votes.

4. According to La Porta and others (1998), this is a feature of the French legal system. In fact, it seems to be confined to several Latin American countries that followed the Chilean model.

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How Effective Are Second-Generation Road Funds? A Preliminary Appraisal

Ken Gwilliam • Ajay Kumar

Underfunded, inefficient road maintenance is a perennial problem in many developing economies. To address it, some countries have created "second-generation" road funds that are financed by fuel levies and managed by boards representing the interests of road users. Macroeconomists often oppose such funds, arguing that this earmarking of revenue reduces fiscal flexibility. Some argue that such road funds should be seen as an interim step toward fully commercialized road maintenance or good public sector governance—and hence subject to sunset provisions. Decisions on whether to retain (or create) such funds should then be based on their effects on resource allocation, operational efficiency, and rent seeking. Using evidence on new road funds in Africa, this article finds that they have not undermined fiscal flexibility. Moreover, they have improved the administration of road funding (in terms of execution capability) and its outputs (in terms of road conditions). So, although criteria for assessing road funds remain relevant, the funds should not automatically be considered temporary mechanisms. But when establishing new funds, government's continued role in approving spending on road maintenance should be explicitly recognized.

Studies of road systems in developing economies over the past two decades have consistently shown that road maintenance is underfunded—as demonstrated by very high returns to investments in maintenance and rehabilitation. But maintenance is often inefficient—as evidenced by low productivity in the implementation of works that receive funding (Harral and Faiz 1988). Many countries have addressed underfunding by earmarking specific tax revenues to road funds. But this approach has traditionally been opposed by macroeconomists, both in the International Monetary Fund and the World Bank, because it undermines governments' fiscal flexibility (Potter 1997).

In response to this opposition, over the past decade more than 20 countries have introduced a new model of road fund. Under these so-called second-generation road funds, fuel taxes include both general revenue taxes and road user charges. Govern-

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ments set the general revenue taxes, and (in theory) road boards—with significant user representation—determine the road user charges and control the revenue from them (Heggie 1995). Separate agencies are responsible for actual road maintenance. This approach is supposed to reduce rent seeking and make resource allocation more efficient by creating an explicit link between what users pay for roads and the quality of the roads available to them.

Gwilliam and Shalizi (1999) highlighted the tension between the traditional macroeconomist approach—which tends to presume that good governance exists—and the sector specialist approach, which is based on the perception that it does not. The authors concluded that road funds should be seen as a step toward either establishing good governance in the allocation of public revenue or the general commercialization of road use. Thus road funds should be subject to sunset provisions and assessed on a case-by-case basis using objective indicators of their effects (or likely effects) on resource allocation efficiency, operational efficiency, and rent-seeking behavior.

But such assessments are not easy because there is never a right time for a definitive appraisal. It can always be argued that it is too early to make a judgment, because effects are likely to develop over a long period, or that it is too late, because too much has changed in the ambient circumstances to identify cause and effect. This problem is compounded by the difficulty of establishing a secure counterfactual. Still, that is no excuse for avoiding the challenge.

Architects of second-generation road funds argue that specific changes in the structure of road maintenance financing make it possible to introduce better business processes, with benefits for performance. This article is based on detailed reviews of experiences in seven African countries where the World Bank has been involved in establishing second-generation road funds (Kumar 2000a) and one (Uganda) where the government sought to improve road performance but rejected arguments for a road fund (Kumar 2002a,b). Although the road funds analyzed are of different ages, common indicators of structure, process, and performance make it possible to examine the effectiveness of the new approach and consider its implications for future road funds.

Road Fund Structures

The boards that direct the use of these second-generation road funds are designed to be autonomous agencies that—directed primarily by road users—have the power to raise and allocate revenue for road maintenance. These boards have a strong incentive to insist on professional, cost-effective management of such works but are not intended to execute them: such tasks are normally performed by national or regional road agencies or by private contractors that submit financing proposals to the road fund's board. Structural indicators for the road funds assessed in this article include the strength of their legal basis; the size, composition, and chairmanship of their

managing boards; the duties and powers attributed to the boards; and the provisions to ensure the technical competence of their permanent staff (table 1).

Although all of the second-generation road fund boards have a secure legal basis, most have not been as independent from government or possessed the full range of powers envisaged by their proponents.

Legal Basis and Functions

The legal basis of the road funds and boards is generally secure, with all except Zambia's established by Parliament. Even in Zambia, the fact that the road fund was established by regulation under an existing ministerial order does not appear to have affected its authority or effectiveness.

The roles of the road fund boards vary. Most serve as financiers rather than providers of services, with the programming, tendering, evaluating, negotiating, awarding, supervising, and managing of contracts generally being the responsibilities of the road agencies to whom funds are allocated. But there are exceptions. Zambia's board advises road agencies on procurement, monitors performance under the national road investment plan, and coordinates donor-financed programs—including management of the 10-year road investment program. Malawi's National Road Administration is still a road implementation agency, though ultimately it is intended to separate implementation staff in an independent Central Roads Authority. Several boards advise on general road policy matters, such as vehicle overloading.

Resource Powers

In principle, all the African road fund boards are responsible for generating and allocating resources for road maintenance. But in practice, the boards' resource powers are much more restricted than originally envisaged. None of the boards is able to set the fuel levy; in most cases spending programs must be approved by one or more government ministries.

For example, Benin's road board is required to implement the policies set by the Review Council, a body consisting of one government and two donor representatives. Only Malawi's board has the formal power to determine the levy, though in practice it always seeks the approval of the minister of transport and public works and the minister of finance.

Composition of Boards and Professional Base

The composition of the road fund boards differs significantly across countries. In Ghana, Kenya, Malawi, and Zambia the boards are dominated by private sector representatives. But in Benin and Ethiopia the boards are dominated by the public sec-

Table 1. Structural Indicators for Road Funds in Various Countries

Indicator	*Benin*	*Ethiopia*	*Ghana*	*Kenya*	*Malawi*	*Tanzania*	*Zambia*	*Uganda*[a]
Year created	1996	1997	1997	2000	1998	1999	1994	n.a.
Legal basis	Law	Law	Law	Law	Law	Law	Ministerial order	n.a.
Number of private sector members on board	5 of 9	4 of 15	8 of 13	8 of 13	9 of 12	5 of 9	7 of 11	n.a
Board chair	Minister of works	Minister of works	Minister of works	Private actor	Private actor	Former permanent secretary, Ministry of Finance	Private actor	n.a.
Is planning separate from execution?	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Does the board set the fuel levy?	No	No	No	No	No	No	No	n.a
Does the board propose the fuel levy?	Yes	No	No	Yes	Yes[b]	No	Yes	n.a.
Is management professional?	Partly	Yes	Yes	In process	Yes	Yes	Yes	Yes
Does the board have additional functions?	No	No	No	No	Yes	No	Yes	n.a
Have semi- or independent executing agencies been established?	No	No	No	No	Partly	Yes	No	Yes

n a., not applicable.

[a]Uganda opted not to create a road fund Instead, road maintenance requirements are met through the normal budget process.

[b]In practice the National Road Administration always seeks ministerial approval

Source. World Bank data

tor (including regional representatives in Ethiopia). In both countries and in Ghana, the minister of works is the chairperson of the board. Elsewhere the chair is appointed by the minister but is not from the public sector (Kenya, Malawi) or is chosen by the board from among its private sector members (Zambia). In Tanzania the chair is appointed by the president from candidates outside the civil service.

The professional base for each road fund board is its secretariat, which performs its day-to-day functions. The size of the secretariat ranges from 3 members in Benin to 13 in Ghana. Secretariats' administrative and operating expenses are usually paid from the road funds and average about 3 percent of their collections—except in Ethiopia, where administrative expenses are allocated by the Ministry of Finance and equal less than 1 percent of the fund's collections. In most of the countries assessed, salaries for secretariat workers are competitive with those in the private sector. Where they are not, as in Ethiopia and Kenya, it is extremely difficult to attract qualified staff. After two years of existence the Ethiopia road fund secretariat had filled less than 30 percent of designated professional positions.

Role of Executing Agencies

Effective executing agencies are essential to road sector reform. Lack of executing capability is the main reason for poor road maintenance, particularly for regional and rural roads. Although road works are increasingly contracted to private firms, Sub-Saharan governments are reluctant to delegate road management to autonomous agencies operating according to sound business practices (Nyangaga 2001). In most countries with a road fund,.main roads are managed by a roads department within a ministry of works. Most of the statutes founding road funds do not provide for institutional reform of executing agencies. In contrast, a core part of Uganda's reform was the creation of an independent engineering organization to procure resources from the market through competitive tendering.

Uganda: Reforming without a Road Fund

Other elements of Uganda's alternative approach are also worth mentioning. In 1995 the government introduced a Road Sector Development Plan to shift its involvement from direct provision of services to provision of policy guidelines and a clear legal framework for implementation of works (Kumar 2002a). The plan included commercializing and contracting technical services on a performance basis under hard budget conditions, separating planning and financing from procurement and implementation, and decentralizing maintenance delivery on district, urban, and community roads.

But the plan did not provide for an autonomous road board; policy and regulation continued to be the responsibility of the Ministry of Works, Housing, and Communications. Although the plan committed to providing stable and secure funding for road

maintenance, maintenance was left on budget. The ministry's weakness in implementation was addressed by the plan's provision for an autonomous Road Agency, preceded during its formation by a Road Agency Formation Unit responsible to the ministry. This reform is not complete. The unit acts as a professional procurement agency, focusing on rehabilitation and reconstruction rather than maintenance, with heavy external financial and technical support. It remains to be seen how it will perform as a maintenance-focused roads agency.

Road Fund Processes

The concept of second-generation road funds is as concerned about process as structure. The funds are designed to develop businesslike (rather than bureaucratic) processes to provide adequate, stable financing for road maintenance. The aim is to develop a new strategy for maintenance, focused on outsourcing most work in a commercial environment.

This approach requires developing performance-based, long-term maintenance contracts managed by professional staff. These arrangements are intended to cut the huge overhead costs associated with maintaining large road agencies and to encourage local contractors to invest in equipment. The process indicators derived from this approach include the ways that revenue and spending totals are set, funds are transferred and secured, revenue is allocated, and implementation (by both road boards and executing agencies) is monitored and audited (table 2).

Overall, funding arrangements have become more transparent, with financial audits working well in most countries. Although delays still occur, transfers of approved revenue to road accounts are more secure. Similarly, though formal allocation procedures are still not well developed and technical auditing remains limited, arrangements have improved since road funds were established. The capacity and effectiveness of implementing agencies have developed least rapidly, though again there has been progress, particularly among private contractors. The income of road funds remains largely under government control, however, rather than being determined by road boards.

Processes for Determining Revenue

In all the countries examined (except Ethiopia) fuel levies are the main source of revenue for road funds. In Benin and Zambia the fuel levy is a fixed percentage of the wholesale price, whereas in Ethiopia, Ghana, and Tanzania its is a fixed charge per liter. The danger of setting the fuel levy as a percentage of the fuel price is that collections may have no relation to maintenance needs, and road fund revenues may fluctuate with changes in the macroeconomic environment.

Table 2. Process Indicators for Road Funds in Various Countries, 1999–2000

Indicator	*Benin*	*Ethiopia*	*Ghana*	*Kenya*	*Malawi*	*Tanzania*	*Zambia*	*Uganda*[a]
Are fuel levies paid directly to the road fund?	No	Yes	No	Yes	Yes	No	No	n.a.
What percentage of the fund's revenue comes from the fuel levy?	75	25	85	>90	95	95	95	n.a.
What percentage of revenue comes from other earmarked duties and fees?	10	75	0	<10	5	0	0	n.a.
Are funds transferred each month?	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Are independent technical audits performed?	No	In process	Yes	No[b]	No	Yes	No	In process
Are independent financial audits performed?	No	In process	Yes	No[b]	Yes	Yes	Yes	In process
Are there performance audits of implementation and management?	No	Yes	Yes	No	No	No	No	Yes
Is there a program to empower small and medium-size contractors?	Yes	Yes	Yes	Yes	Partly	Yes	Partly	In process
What are the fund's objectives?	Maintenance	Maintenance	Maintenance & rehabilitation	Maintenance & repair	Maintenance	Maintenance	Maintenance & rehabilitation	n a

n a , not applicable.

[a]Uganda opted not to create a road fund Instead, road maintenance requirements are met through the normal budget process

[b]Audits have not been completed because the fund's secretariat is new, but they are required by law.

Source World Bank data.

Thus what matters most is how the fuel levy is assessed and adjusted. Ideally it should be based on assessed maintenance needs as well as the absorptive capacity of monitoring and executing agencies. In Zambia the road board operates on the basis of an annual works program based on road agencies' identified needs. Benin's road board negotiates the amount each year with the Ministry of Finance based on the road fund budget.

This approach appears to be consistent with the principle of incrementality—that the user charge element is in addition to what would have been levied for general tax purposes in its absence. But for countries with high fuel levies and those with neighbors (such as Nigeria) with low taxes, the price elasticity of demand for fuel might be high enough to ensure that any increase in the fuel levy would reduce its yield even if its nominal level was unchanged. Recognizing this, governments have generally insisted on retaining effective control over the user charge levy as well as the basic fuel levy. In Ethiopia about 75 percent of road fund revenue comes from the sales tax and a municipal fuel levy; in all the other countries fuel levies occur at the national level.

Though the introduction of a fuel levy is a big step forward, it remains a proxy (indirect) charge for road use. Arrangements to diversify road user charges, including through direct charges for road use, are being explored. For example, Benin's road fund gets 10 percent of its revenue from tolls and weight controls deposited directly into its account by the toll concessionaire. Zambia's road board has sought additional funds through international transit tolls, fines for excess weight on bridges, and motor vehicle license fees.

Processes for Securing Income

In principle, one of the main advantages of creating a road fund is that user charges provide a link between the level and quality of service and the price paid for it. But in practice, governments are reluctant to relinquish control over cash flows and the opportunity to "borrow" funds for other purposes if the need arises (Nyangaga 2001). In Kenya payments are made from the customs department to the Ministry of Public Works and Highways and then to the road fund. In Benin and Zambia the fuel levy is channeled to the road fund from the Petroleum Commission through the Ministry of Finance, creating delays of four months and two months, respectively.

The interposition of a ministry of works or finance in the process is also likely to generate leakages. For example, in Zambia in 1999 only about two-thirds of the fuel levy delivered to the National Revenue Authority by the National Oil Authority found its way to the road fund. In Tanzania the fuel levy is collected by the Tanzania Revenue Authority in the Dar es Salaam region and deposited in a Ministry of Finance account. From there the money is passed on to the Ministry of Works (for main roads) and the Ministry of Local Government (for district roads). These amounts are then

transferred to the road fund, which is responsible for disbursements to executing agencies. The collection process from up-country regions involves even more steps. Between 1996 and 1999 these complicated mechanisms caused a two-month delay and 25 percent leakage in the original levy (Kumar 2002b).

Monitoring Performance

Second-generation road funds should arrange for independent monitoring of the flow of funds and of the quantity, quality, and cost of road projects. Available evidence shows mixed results in this regard. Zambia's road fund accounts are prepared quarterly and audited by an independent external auditor. But they are prepared without any explanation of how funds are used and leave a number of questions unanswered. Ethiopia has introduced procedures to monitor the performance of the national roads agency (the Ethiopian Road Authority), but weaker regional and urban authorities have a long way to go before performance-based systems can be established. Currently they are required to report only on how funds are used. In contrast, Ghana's road fund board has established proper planning and programming of road works along with well-defined disbursement and accounting procedures, facilitating timely contracting arrangements.

Technical Auditing

To improve performance, technical auditing should continuously audit projects under way. To do so, countries must:

- Establish a credible, independent external auditing process to monitor the quantity and quality of work and ensure transparency and accountability in the use of road maintenance funds.
- Establish appropriate responsibilities for reporting and following up on audit recommendations to ensure their effectiveness.
- Develop an updated inventory and condition survey of the classified road network.

Most of the countries studied lack systematic arrangements for independent technical audits. A remarkable exception is Ghana, which has detailed internal and external monitoring procedures to ensure efficient use of money, accompanied by monthly progress reports and external financial and technical audits.

Formal Allocation Processes

Given their commercial orientation and strong constituencies, second-generation road funds should in principle be able to allocate resources for road maintenance

efficiently. But in practice resource allocations continue to be driven by standard formulas rather than by planned reviews of programs put forward by road administrations—especially in Benin, Ethiopia, Kenya, and Zambia. In Kenya 40 percent of road fund revenues are allocated to constituencies and districts for lower category road maintenance, and 57 percent goes to the roads department for the main road network.

Disbursements appear to be biased toward urban and main roads, to the detriment of the rural and feeder roads. In Kenya and Zambia road maintenance resources have been diverted to rehabilitate roads in the nations' capitals, reflecting their high political profile and the fact that the most ardent supporters of the road funds are car-owning urban residents. In addition, in several countries spending planned for rural roads is poorly disbursed, primarily because of lack of capacity at the regional level. In Ethiopia only about 20 percent of the planned allocations for rural roads were disbursed in fiscal year 1999 because of a lack of absorptive capacity. In Tanzania less than 40 percent of programmed works for district roads were undertaken in fiscal 2001.

Development of Supply Agencies

Developing supply agencies is essential to ensure that road executing agencies use allocated resources effectively and efficiently. Available evidence in this area offers mixed results. Although some countries have set up semi-autonomous road agencies (Tanzania, Uganda), siphoning off executing and service delivery functions from the ministry of works, others (Ghana, Kenya, Zambia) have tried to reform existing government departments. Malawi has combined road financing and road executing functions in the same agency. In general, these agencies lack a commercial orientation and have continued to work as government departments without clear objectives, functions, or work programs. In addition, reporting arrangements between regional offices and headquarters are weak. The capacity of district road agencies raises even greater concern.

Performance Outcomes

Reliable, comprehensive data on performance outcomes are sparse. Even in Ghana, where the government hired consultants to audit all funding related to the Highway Sector Investment Program, the audit did not report on the share of planned programs executed, address the relationship between the amount of money allocated for maintenance and the quality of the work, or fully assess spending management, control, and effectiveness.

Besides being incomplete, evidence on performance remains somewhat anecdotal. Still, some indicators are available, including trends in allocations and disbursements, implementation efficiency, and the ultimate outcomes of road conditions (table 3).

Table 3. Performance Indicators for Road Funds in Various Countries
(percent)

Indicator	*Benin*	*Ethiopia*	*Ghana*	*Kenya*	*Malawi*	*Tanzania*	*Zambia*	*Uganda*
Administrative expenses/income	2	>1	3	3	<3	1	<3	
Annual change in roads in good condition	9	3	5				4	
Annual change in roads in bad condition		–10	>–10		>–10		–6	
Annual change in maintenance works contracted out		10	30		30	>30	>30	10
Share of needed maintenance financed		75	50	>70	30	30	30	80
Breakdown of allocated funds (trunk/urban/rural roads)			52/27/20		48/42/10	70/30[a]	40/20/40	
Share of allocated funds disbursed (trunk/urban/rural roads)	55 (average)	65/55/20		50/40/2		100/50[a]	24/69/8	

Note The rates of change in the table do not all cover the same period, but instead reflect the average annual rate of change since the road funds were created (see table 1 for the years the funds were created). In the absence of detailed road inventories in most countries, it is difficult to determine the percentage change in the quality of the road network, which explains the many blank cells. In addition, heavy donor investments in rehabilitation and reconstruction of paved roads have significantly improved road quality, making it difficult to isolate the impact of better maintenance funding

[a]Funds allocated only between two agencies, the first responsible for trunk roads and the second for urban and rural roads.

Source World Bank data.

Overall, although underfunding of road maintenance has been reduced, it remains a serious problem. Similarly, though contractors have become better able to absorb allocated funds, several countries still suffer from inadequate capacity of maintenance providers. Despite these limitations, maintenance costs have been reduced, and long-term declines in road quality have been arrested and in some countries significantly reversed.

Underfunding

Funding for maintenance has increased in all the countries reviewed, though in most the amounts still fall far short of what is needed. Revenue accruing to Zambia's road fund is sufficient to cover only about 30 percent of needed maintenance. In Benin road fund revenue is able to address only the maintenance needs of the main network. In Tanzania road fund revenue meets only 20–30 percent of maintenance needs. Ethiopia is an exception to this general picture: its road fund is able to address about 80 percent of assessed maintenance needs. In all countries maintenance requirements are greater if holding maintenance is performed to keep roads in fair condition while they await more thorough maintenance or to keep them passable while they await rehabilitation.

In contrast, Uganda, which has not created a road fund, has consistently met most of its maintenance budget requirements as well as counterpart funding needs through its normal budget process. It has committed more resources for maintenance per kilometer of road than any of its "securely funded" neighbors. It has also made explicit commitments to sustain maintenance funding, as well as the salaries and employment conditions offered by executing agencies, after the main donor financing ends.

Disbursement

Disbursement to executing agencies has been a serious problem. In 1998 only 55 percent of planned funds were disbursed in Benin, and in 1999 only 30 percent were disbursed in Zambia. In Ethiopia less than 40 percent of the road fund was disbursed in 1999–2000; the rest was invested in treasury bills. Ghana has been the most successful in this regard, disbursing more than 90 percent of allocated funds in 1998–99.

To some extent these poor outcomes have been the result of overly optimistic planning by the road boards, whose ability to plan far outstrips executing agencies' capacity to perform. But it appears that all the boards are learning from this experience. For example, Benin improved its disbursement share to 95 percent in 1999.

Disbursement performance differs significantly by type of road, with rural roads having low disbursement rates, usually less than half of those for main highways and urban roads. Several factors contribute to this pattern. The first is poor executing

capacity in rural areas. The second is political pressure to maintain roads in capital cities. For example, Zambia's government emphasize rehabilitating roads in Lusaka during the early years of the road fund. Similarly, in Malawi half of the road fund's allocations in 1999 went to the cities of Lilongwe and Blantyre, with half of that used for rehabilitation. The third factor is the weak representation of rural road interests on most road boards.

Capacity of Local Contractors

Road funds appear to have helped insulate road maintenance contracting and payment arrangements from financial uncertainties. As a result work programming has improved, contracting has increased, and domestic contractors have grown, increasing efficiency. In Ghana and Zambia almost 90 percent of road maintenance is contracted out. In Ethiopia road maintenance continues to be performed using force account, but the Roads Authority is trying to increase its effectiveness by establishing commercial operations in maintenance districts. It is also jointly implementing performance contracts with the Road Fund Authority as a prelude to introducing contracting for maintenance works. In any case, Ethiopia's spending on road maintenance has more than doubled since 1996.

More reliable funding has had a dramatic effect on private sector contracting capacity and capability. In Zambia the number of local contractors jumped from 4 in 1994 to 450 in 1999, and local consultancy firms from 6 to 20 during the same period. In Benin 40 percent of maintenance was carried out using force account in 1998, down from 47 percent in 1997. Still, there is considerable scope for improving the capacity of local contractors in all the countries examined. In fact, one of the main constraints to efficient use of road fund resources remains the lack of sufficient local capacity for road maintenance.

Operational Efficiency

Better contract management and disbursement arrangements have reduced road maintenance costs by 10–20 percent in Ethiopia, Ghana, and Zambia. Zambia has also introduced a community-initiated cost-sharing scheme for road improvements.

Although these encouraging trends represent a significant departure from the past, evaluations of maintenance performed in Kenya and Zambia in 2000 reveal a number of shortcomings—mainly due to limited local capacity, technical constraints, and an inability to manage contractual arrangements. In Kenya funds have been allocated to roads of low economic priority and in some cases without compliance with contractual arrangements. The absence of a fully functional maintenance management system makes it difficult to ensure that the maintenance budget is allocated correctly, despite an adequate supply of small contractors to undertake minor works.

Condition of the Road Network

Without detailed time-series data on road conditions, it is difficult to establish with precision what has been happening to the quality of the road networks in the countries reviewed. Moreover, most road funds were introduced when donor-financed rehabilitation programs were under way, and aggregate statistics cannot distinguish the separate effects on road conditions of the maintenance and rehabilitation programs. Even so, periodic data on road networks show the most promising picture in many years.

In Zambia road reforms have substantially improved the quality of the road network, and a sound strategy is in place to reverse the deterioration and neglect of recent decades. In Ethiopia the share of main roads in good condition increased from 15 percent in 1996 to 25 percent in 1999, whereas in Ghana the proportion of good roads increased from 21 percent in 1997 to 30 percent in 1999.

The picture is not all rosy. Although main and urban roads have improved, feeder and rural roads continue to deteriorate in some countries. This disparity partly reflects poor planning and programming and partly inadequate capacity in regional administrations. Years of neglect have limited the capacity of road agencies to perform maintenance—a deficiency most apparent in agencies responsible for rural and feeder roads.

Conclusion

It may seem premature to pass judgment on second-generation road funds. But some interesting patterns have emerged that are relevant to traditional debates on this topic. First, boards have had limited power to collect and allocate resources to road maintenance. Most road funds are still not able to fully fund their desired levels of maintenance because of residual ministerial control over the level of the fuel levy. Moreover, many road funds have trouble disbursing funds because of the low absorptive capacity of domestic maintenance industries.

Second, in some countries implementation of road works has become more efficient, reflecting more secure funding arrangements and increased use of private contractors. Thus revenue raising through road funds should match absorptive capacity rather than identified maintenance needs. This approach does not require full funding for desired programs but merely sufficient funding to maintain work programs and make payments in a timely fashion.

Third, improvements in the execution of road works will likely lag reforms in their financing, planning, and monitoring. But better execution will also depend on governments' willingness to take reforms beyond establishing a road fund.

To ensure continued improvements in road maintenance, governments must facilitate a more businesslike approach to it and give it a high priority in budget allocations. As Uganda's experience shows, it is possible to improve the execution of road

works without creating a second-generation road fund—but only if existing structures adopt many of the procedures and processes associated with new road funds (separating implementation from financial control, improving managerial procedures, increasing private sector contracting, and so on). Thus better performance is surprisingly independent of institutional structures or resource allocation mechanisms but highly dependent on some critical aspects of process. The creation of a second-generation road fund has been as much an indicator of a country's willingness to change its approach as an essential mechanism for efficient maintenance.

In that light consider again the Gwilliam and Shalizi (1999) propositions offered at the start of this article. They argued that second-generation road funds should be viewed as an interim step toward either fully commercialized road maintenance or good governance in the public sector and that in deciding whether to create (or retain) a fund, decisionmakers should estimate its effects on resource allocation, operational efficiency, and rent seeking. The implication of their argument was that the funds being established should have a limited lifespan.

The authors were clearly driven to that conclusion by their recognition of the validity of both the macroeconomic desirability of fiscal flexibility and the microeconomic argument for reformed processes to improve road performance. But the history of the argument appeared to offer no compromise. To finesse their arguments for earmarking, the proponents of road funds had constructed an edifice in which part of a fuel tax was renamed a user charge, and in support of that device gave its determination the status of an internal business decision in what could be seen as a road users' cooperative. Although macroeconomists might not be fooled by this finesse, their fears could perhaps be appeased by the imposition of sunset clauses on new road funds.

Practicality has wished a plague on both houses. A weaker form of the second-generation road fund has emerged, stripped of the full commercial freedom for a user-dominated board to set its revenue. In addition, ministries of finance have been forced to recognize the advantages of most of the process changes brought by second-generation road funds—without yielding their ultimate control over taxation or spending responsibilities for an important public good. The outcome has often been surprisingly favorable in terms of efficient spending on maintenance, regardless of whether that spending met the aggregate assessed need. Commercialization of road maintenance and fiscal flexibility have turned out to be complements rather than alternatives.

This experience suggests a rather different conclusion from that reached by Gwilliam and Shalizi. Certainly the road funds should be kept under review. But there is no need for the Damoclean sword of a sunset provision, which might only undermine confidence in the important process changes that have been brought about. Rather, the reviews should be embodied in strong technical and efficiency audits, both of the road funds and of the implementing agencies, whether in the private or public sector.

Note

Ken Gwilliam was formerly economic adviser in the Transport and Urban Development Department at the World Bank. His e-mail address is kengwilliam@yahoo.com. Ajay Kumar is consultant economist in the Africa Transport Department at the World Bank. His e-mail address is akumar3@worldbank.org.
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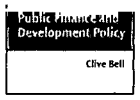

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