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Editors' Summary

The Brookings Trade Forum held its sixth annual conference in Washington on May 15–16, 2003. This volume contains the papers, invited commentary, and general discussions from that conference.

The volume's first three papers focus on implications of heightened foreign competition, as developing countries increase their exposure to the global market. The first paper uses a dynamic simulation model to better understand the interrelated channels through which trade liberalization affects the efficiency of domestic firms. The second paper tackles a novel aspect of globalization's impact on labor standards, empirically examining effects of foreign pressures on compliance with minimum wage laws in Indonesia. The third undertakes a detailed case study of the controversial economic reform of the cashew sector in Mozambique, estimating gains and losses incurred and drawing broader lessons for liberalization.

The remaining three papers address macroeconomic topics. One undertakes a broad empirical analysis of when countries are able to sustain fiscal consolidation. It finds clear differences in experience across low-, middle-, and high-income country groups. Another empirically examines the linkages between external debt and economic growth, finding high-debt stocks to have particularly deleterious implications for both capital accumulation and productivity. The volume's final paper uses both theory and empirics to evaluate the efficacy of introducing collective action clauses into bond contracts, a recent approach intended to address the persistent problem of sovereign debt crises.

IN THE FIRST PAPER Erkan Erdem and James Tybout take a new look at whether trade liberalization really does tend to increase manufacturing efficiency in developing countries. Over the past two decades, a substantial

body of evidence has accumulated on the firm- and plant-level effects of openness in developing countries, including influential earlier work by Tybout. This literature has generated findings, now typically accepted as stylized facts, about how increased foreign competition acts to discipline domestic firms. Import discipline is believed to work primarily through two channels. First, it squeezes price-cost margins among import-competing firms. This heightened competitive pressure induces productivity gains among these same firms. Second, additional efficiency gains are expected to come from reallocations of firms' market shares.

Erdem and Tybout argue that although these findings are useful, they leave many central issues unresolved and may be misleading because they tell only part of the story. Their paper highlights concerns that arise from problems with the way in which firm-level productivity has been measured in the literature. It also emphasizes additional dimensions of firm-level responses and recognizes that these may become increasingly important over time. Taking a more nuanced perspective, the effects of trade liberalization may be quite different in the short run than the long run.

The objective of the Erdem and Tybout paper is to begin to address these shortcomings. The authors' approach is to develop a computable model of industrial evolution that enables them to simulate the effects of import competition as they unfold over time. They are able to demonstrate what types of managerial behavior, long-term transition paths, and welfare effects are consistent with the findings of previous firm- and plant-level empirical studies. The model also provides a rigorous means to evaluate the combined effects of various forces.

Erdem and Tybout's paper begins with a brief overview of the logic behind the import discipline hypothesis. It then surveys the empirical evidence supporting this hypothesis, focusing on analyses of five natural experiments. Particularly informative is the table summarizing results from studies of liberalization in Chile, Mexico, Côte d'Ivoire, Brazil, and India. As this survey shows, these studies are consistently supportive of the hypothesis that trade liberalization increases productivity.

The authors then explain why problems in how productivity is measured may induce biases in both the cross-section and time-series variation in efficiency gains across firms. Primarily because of data limitations, empirical productivity studies measure output as deflated revenues and intermediate inputs as deflated expenditures. Neither of these reflects the considerable heterogeneity in both outputs and inputs across firms. Thus in addition to

productivity, these measures will reflect other factors such as degree of market power and output demand elasticities. To take one example, the authors note that big firms tend to pay workers more and face relatively low demand elasticity and appear relatively efficient using these indicators. This bias would tend to cause measured efficiency gains to be overstated if market share shifts toward large firms following trade liberalization. But other types of biases may work in the opposite direction. The authors also note that measures of productivity typically omit costs of firm innovation and costs of work force downsizing. These omissions imply that they tend to overstate the gains from liberalization.

Even if ideal measures of firm productivity were available, Erdem and Tybout stress that the existing literature is only partially informative because it does not distinguish the mechanisms through which import competition affects firms' efficiency. In this regard, they identify three specific weaknesses of past empirical work. First, it fails to characterize the managerial behavior behind the efficiency gains. Second, it only describes the short-run effects of trade liberalization. And third, it does not translate firms' performances into welfare measures.

The structural features of their model are developed so as to enable the authors to address these shortcomings. Specifically, their model, which allows for imperfect competition, has dynamic, forward-looking, and heterogeneous domestic firms. Entry and market share reallocation are endogenous. Microfoundations are specified for a form of induced innovation, and there are costs to both entry and innovation. The resulting model is rich but complex. Thus the authors consider only a small number of domestic firms—at most six, but typically only three to five.

Simulations of their model illustrate both the expected short-run adjustment from import discipline and the more nuanced intraindustry adjustments that have typically been omitted. In terms of the former, their results show trade liberalization reducing price-cost margins and raising efficiency, largely because inefficient firms exit and weak product lines are discontinued. But interestingly, they find that productivity gains due to the purging of weak firms are transitory, and likely to dissipate within ten to fifteen years of trade liberalization.

As the purging effects fade, the simulations find that the cumulative effects of reform-induced changes in the incentive to innovate become more important. However, these innovation effects are often negative. Foreign competition can create a longer-term tendency for the quality of domestic

goods to deteriorate relative to imports. Depending on the nature of the trade reforms, this tendency may or may not be offset by quality or efficiency gains due to embodied technological progress in imported capital. In any case, the simulations show that heightened import competition is likely to be accompanied by permanently higher plant or product line turnover, combined with more rapid job creation and destruction. Finally, the results suggest quite strong welfare implications. Specifically, there is a strong possibility of welfare losses on the part of domestic producers. In contrast, incorporating the additional dimensions of potential firm-level response suggests somewhat larger welfare gains among consumers, due to lower prices.

Discussants and conference participants very positively received the basic theoretical approach and particular results reported in the paper. However, there was some discussion of the robustness of the results, and the trade-off between model tractability and generality.

MOTIVATED BY THE LARGER QUESTION of the implications of globalization for labor standards in developing economies, the paper by Ann Harrison and Jason Scorse analyzes compliance with minimum wage legislation in Indonesia, using panel data on manufacturing plants. Indonesia's experience is a particularly interesting one to study for a number of reasons. The government made minimum wages a central component of its labor market policies in the 1990s. These wage minimums differ significantly across regions as well as over time. Over the past decade, minimum wages quadrupled in nominal terms, and doubled in real terms. At the same time the real value of the minimum wage surged, Indonesia's entry into international markets increased dramatically. In addition, Indonesia became a primary target of international human rights groups, with Nike's footwear factories emerging as poster children in the global campaign against sweatshops.

Harrison and Scorse introduce their study by discussing the key points made by those who argue that the competitive pressure imposed by international competition is likely to create a "race to the bottom" in global labor standards. These antiglobalization forces frequently claim that competition induced by globalization leads firms to ignore or fail to comply with labor standards so as to reduce costs. Exporters that face either international markets or foreign competitors in the home market, as well as multinationals faced with cheap imitators from low-wage regions, may attempt to cut costs by paying lower wages, hiring child labor, and imposing unsanitary working conditions on workers.

From this perspective, globalization is likely to undermine national efforts to impose labor standards. Even if countries are successful in passing legislation that introduces (or raises) labor standards, global pressures may prevent firms from adhering to them. This is likely to be the case when penalties for noncompliance are low. Under such circumstances, labor standard legislation, such as minimum wage laws, may simply be viewed as a useful but nonbinding guideline for wage-setting activities.

On the other hand, the authors stress that increasing political activity by human rights organizations has focused greater scrutiny on the behavior of exporting firms and large multinationals. These types of firms are increasingly being held to high standards. While there are no clear international penalties for deviation from local labor legislation, the reputational effects are potentially significant, as enterprises like Nike have learned.

In their analysis, Harrison and Scorse estimate the relationship between international competition and compliance with the statutory minimum wage in Indonesia. They use two plant-level indicators to identify firms facing international competition: the plant's export orientation and whether or not the plant is foreign owned. This framework provides a direct test of the relationship between measures of globalization and labor standards, as defined by compliance with the regional minimum wage.

They find positive relationships between compliance with labor standards and outward orientation, both measured by export sales and foreign ownership. They begin with a description of the broad trends during the 1990s, which suggest that both multinationals and exporting firms are more likely to comply with labor standards. These differences are borne out by simple statistical tests, which show that foreign and exporting enterprises are both more likely than domestic nonexporters to comply with minimum wage legislation.

However, once the authors add controls for capital intensity and technical change, the differences in compliance probabilities between foreign plants and other enterprises are cut in half, and the likelihood of compliance for exporters switches from positive to negative. They find that at the beginning of the 1990s, exporters were significantly less likely to adhere to minimum wage laws compared to other similar plants. The characteristics most strongly associated with increased minimum wage compliance are greater capital intensity and higher investment in machinery. This result is not surprising, given that firms with these characteristics are likely to pay higher wages.

One of their most interesting findings is a significant upward trend in compliance with minimum wage legislation for exporting enterprises during the 1990s. Their estimates imply that the probability of compliance with minimum wage legislation increased for exporting firms by about 3 percent a year. Harrison and Scorse hypothesize that this upward trend is connected with pressure from the U.S. and European governments, human rights activists, and news coverage. Beginning in the 1990s, North American and European Union groups expressed concern about Indonesian exporters and the labor market conditions of their workers, particularly in exporting sectors. Complaints by U.S. groups were filed first in 1987 and then again in 1992, citing violation of worker rights under the Generalized System of Preferences (GSP). In response the Indonesian government made a number of policy changes in its minimum wage laws in the 1990s. Thus the authors conclude that their analysis suggests the Indonesian government was successful in raising compliance with the minimum wage, at least in exporting sectors that were the focus of U.S. and European criticism.

Harrison and Scorse find that these trends are even more striking in the garment and apparel industry, which has been the main focus of human rights groups. The authors argue that this result suggests that human rights activism, in fact, has had an impact on firm behavior. And contrary to frequently voiced expectations, their results for Indonesia suggest that forcing firms to adhere to higher labor standards need not have adverse consequences for employment.

More generally, the authors conclude that their paper's analysis of the Indonesian experience refutes the claim that pressures to compete in the global market place are creating a race to the bottom. The evidence for Indonesia in the 1990s suggests that firms touched by the global market place were more, not less, likely to comply with labor standards. Furthermore, compliance increased despite a doubling of the real value of the minimum wage in Indonesia during this period, enormous increases in foreign investment and export sales, and a painful currency crisis that erupted in late 1997. Although difficult to quantify, this increase in compliance is likely to have resulted from pressure imposed by the United States, which used the GSP as a mechanism to enforce labor standards in Indonesia, combined with increasing human rights activism.

The discussants and participants welcomed the paper's careful empirical analysis as a valuable contribution to a debate that often focuses on anecdotes. However, there was considerable discussion of the extent to which

finding that multinationals and domestic exporters are more likely to comply with minimum wages gets to the heart of concerns of those who fear that globalization creates a "race to the bottom."

IN THIS VOLUME'S THIRD PAPER, Margaret McMillan, Karen Horn Welch, and Dani Rodrik empirically examine an episode that has become a *cause célèbre* for the antiglobalization movement. In the early 1990s, the World Bank prevailed on Mozambique's government to liberalize the cashew sector and remove restrictions on exports of raw cashews. The policy was met with fierce opposition from the domestic cashew-processing industry, which ironically had just been privatized. After a decade of political strife, international controversy, and ongoing (if hesitant) reform, the consequences remain hotly contested.

Historically, cashews have constituted a significant part of Mozambique's economy. In the 1960s Mozambique produced as much as half of the world's total. The sector went into a long decline thereafter, as a combination of adverse policies and civil war brought new tree plantings to a halt. Following the country's independence in 1975, the government banned the export of raw cashew nuts to stimulate domestic processing. Mozambique became the first African country to process cashews on a large scale. Following World Bank advice, the government began to loosen restrictions on raw cashew production in the late 1980s. The ban on exporting was lifted in 1991–92 and replaced with an export quota and export tax. The quota was subsequently removed, and the export tax on raw nuts was reduced from 60 percent in 1991 to 14 percent by 1999.

A simple textbook analysis of the export restriction and its removal is straightforward. A ban (or tax) on exports depresses the domestic price of raw cashews, effectively subsidizing the domestic processors. The policy results in an inefficient allocation of resources: raw cashew production is discouraged, while labor and capital are pulled into cashew processing where, absent externalities, their social value marginal product is lower than in other activities. Therefore relaxing the restrictions is expected to create both an efficiency gain, as resources are reallocated, and a distributional gain for Mozambique's poorest households, resulting from the rise in farmgate prices.

McMillan, Horn, and Rodrik show that many of the textbook implications of export liberalization indeed were realized. Farmgate prices rose, raw cashew exports increased, and resources were pulled out of cashew process-

ing. However, they conclude that the magnitude of the efficiency gains generated by the liberalization was very small, no more than $6.5 million annually, or about 0.14 percent of Mozambique's GDP, with just $5.13 per year in additional income accruing to the average cashew-growing household.

Moreover, they argue that even these small numbers overstate the benefits involved because they do not factor in the efficiency losses due to the idling of processing plants. Instead of finding alternative sources of employment after suffering a temporary wage loss, a very large percentage of the workers from these plants appear to have remained unemployed, perhaps because of the expectation that the liberalization would be eventually reversed. The authors estimate an implied real output loss in the order of $6.1 million, or 0.12 percent of GDP, roughly equivalent to the direct efficiency gain generated by the liberalization. Therefore the authors conclude that the aggregate static gains from the liberalization were a wash.

McMillan, Horn, and Rodrik attribute these disappointing outcomes in large part to complications from imperfect market structures that are ignored in simple textbook analysis. Domestically, they point to several layers of intermediaries, separating cashew farmers from the export trade. Increases in export prices are not passed on one-for-one to the farmers. Instead a pass-through coefficient of perhaps just 40 to 50 percent reduces the gains that accrue to the poorest households. Traders capture much of the benefits from the liberalization. Externally, they characterize India as a monopsony buyer of raw cashews from Mozambique. If the raw cashew market is significantly less competitive than that for processed cashew, Mozambique's switch from an exporter of processed cashews to an exporter of raw cashews can be expected to worsen its terms-of-trade, diminishing both the efficiency and distributional gains from liberalization.

The authors conclude that any real hope for the liberalization strategy should have been placed on the dynamic, not static, effects. In particular liberalization could have reinvigorated the rural sector by reversing the dramatic collapse in cashew tree planting. Also, it could have heralded a restructuring of urban production by promoting a more rational investment pattern. The key in both instances was a credible commitment to a new pricing regime—possibly complemented with compensatory programs—that would have made it worthwhile for farmers, entrepreneurs, and workers to undertake investments that would be, at least in part, irreversible. The main failing of the cashew liberalization policy, in their view, was that it did not send sufficiently credible signals about the pricing regime. The result was

that farmers refused to plant trees, cashew processors refused to take their resources elsewhere, and urban workers refused to look for other jobs. Had these adjustments taken place instead, the static losses would have been minimized, while the efficiency gains would have grown over time. Ironically, the actual course of the export tax—the main point of contention—followed closely what the processors had asked for in the first place. Therefore the outcomes may have been far preferable had the World Bank agreed to the export tax originally proposed by the industry association.

The authors also draw some broader messages, or themes, about reform policies from their analysis of the Mozambique cashew story. One theme has to do with the importance of credibility and the need for expectations management. The second theme is that reform is a political problem as well as a technical one. Had the political opposition of the urban groups been anticipated, or factored in, compensatory mechanisms and side bargains could have been worked out beforehand. Third, policy reform via conditionality is rarely conducive to desirable outcomes. Not having full ownership of what was viewed as World Bank reform, the government was poor at selling it.

Finally, stepping back from Mozambique's experience, the authors take issue with what they see as an overreliance on price reforms in attempts to generate significant agricultural supply responses through liberalization in Africa and elsewhere. Yes, it is easier to stop regulating producer prices than to remove structural constraints like poor roads, or lack of access to credit. But price reforms can be easily reversed and may have little impact on farmers' expectations about the future. Since nonprice reforms are harder to reverse, they may be more effective in increasing farmers' expected profitability of investment, thus eliciting the elusive supply response.

IN THE FOURTH PAPER, Christopher Adam and David Bevan use the empirical techniques of duration analysis to investigate determinants of the persistence of periods of fiscal stability. A contribution of the paper is its focus on developing countries, contrasting the experiences of low- and middle-income developing countries with those of members of the Organization for Economic Cooperation and Development (OECD). The analysis is organized around four broad themes. The first focuses on determinism, asking to what extent the structural characteristics of economies predetermine their prospects for sustained fiscal control. Of particular interest is whether low-income, very open, or natural resource dependent economies are at greater

risk of losing fiscal control. The second theme is path dependency: how does a history of poor fiscal control influence the durability of today's (stable) fiscal stance? Third, the authors analyze the role of restraints: can particular nominal exchange rate regimes or the presence of external agents (such as the International Monetary Fund [IMF]) help lock in a sustainable fiscal stance? Finally they examine the role of composition, exploring whether the form of a fiscal consolidation influences its subsequent duration.

The duration analysis requires an explicit measure of the persistence of fiscal sustainability. Such measures are necessarily arbitrary and always contestable. Adams and Bevan argue that their challenge is to define one that is plausible, operationally useful, and testable, or at least amenable to sensitivity analysis. They consider two approaches. The first, which they refer to as the gradient approach, defines sustainability as a reduction in the deficit in excess of some specified amount. The second, which the authors call the level approach, defines it as the maintenance of the fiscal balance in excess of some specified threshold. While much of the existing literature focuses on the former; Adams and Bevan argue that the latter approach gets closer to the nature of sustainability as generally understood in the fiscal policy debate in developing countries. Thus they base their analysis on a range of thresholds for the deficit, concentrating on two: a fixed threshold of 3 percent of GDP for the entire sample, and a threshold that evolves slowly along a smooth transition path, from an initial level of 4.5 percent of GDP in the early 1970s to 3 percent by the end of the 1980s. Based on sensitivity analysis around these values, they conclude that qualitatively their results are relatively robust to the choice of threshold. However, much of the discussion at the conference revolved around what is meant by fiscal sustainability and the extent to which simple threshold indicators reflect the potentially important country-specific dimensions.

The empirical results reported in the paper are based on standard proportional hazard models. The authors adopt a flexible form for the baseline hazard, allowing some covariates to have time-varying coefficients, specifically their measure of a country's track record for fiscal control. They also control for unobserved heterogeneity, which may arise, for example, from cross-country differences in political structure that may affect a country's ability to lock-in fiscal reforms.

Adams and Bevan find that fiscal outcomes differ markedly between OECD and developing countries. For the OECD, the fiscal stance, on average, is broadly stationary with a strong cyclical component. By contrast, for

developing countries, over the last three decades this pattern is the exception rather than the rule. Instead the fiscal stance is highly asymmetric, vulnerable in the face of adverse output shocks, but not particularly buoyant in the face of positive shocks. The consequence for these countries is that extended periods during which a broadly sustainable fiscal stance is maintained are comparatively rare.

Four key results emerge from their analysis, all of which have important implications for post-stabilization countries and deserve further investigation. First, while the persistence of periods of fiscal stability and their determinants differ between OECD and developing countries, these differ much more markedly between middle- and low-income countries. Little of this difference can be explained simply in terms of structural features of the economies, although richer countries generally face better prospects, while fiscal stability in natural resource dependent economies is significantly more vulnerable to terms of trade movements and the adverse effects of conflict than elsewhere. But perhaps surprisingly, the types of structural feature that often emerge as important explanatory variables in empirical work (the composition of GDP, openness to trade, and income equality) appear to have little impact on persistence. An exception is government size, which is inversely related to persistence. Their results also give some support to the view that fiscal discipline is better supported by flexible rather than fixed exchange rates. However, these effects are relatively weak across all developing countries, and they do not suggest that arguments about choice of exchange rate regime should hinge on different regimes' impacts on fiscal discipline.

A second key result is that fiscal prospects are strongly dependent on aspects of a country's fiscal history. A recent history of inflation (but not public debt) and a track record of poor fiscal management act as drags on current fiscal performance. Also important for OECD and middle-income countries, however, is that good fiscal policy, in effect, is self-reinforcing. For these countries, as stability endures, the adverse effects of a poor track record depreciate. But although traces of the same effect are present for low-income countries, Adams and Bevan find that the half-life of a poor fiscal history is significantly longer for this group. Governments in low-income countries would appear to have to hold their feet to the fire for much longer in order to erase the legacy of past fiscal indiscipline.

A third, related finding is that for the full sample of countries, persistence is more easily attained in a context of growing incomes. But once again,

there are significant differences across country groups. Adams and Bevan find this linkage to be relatively weak for developing countries and insignificant for low-income countries.

Finally, and in contrast with the OECD countries, Adams and Bevan conclude that what really matters for developing countries, and especially for low-income countries, are fiscal adjustments brought about by improved domestic revenue mobilization. These significantly prolong the duration of a fiscal consolidation compared with equivalent reductions in government expenditure. The authors note that the fact that fiscal adjustments engineered through (aggregate) expenditure cuts do not persist is consistent with the literature on adjustment failures. This literature finds that expenditure reductions tend to be easily reversed. Further, those that are sustained tend to be concentrated in areas such as maintenance and investment expenditure that may improve public finances in the short run at the expense of sustainability in the future. In contrast, sustained improvements in domestic revenue mobilization often requires substantial institutional reform and political commitment, both of which are arguably less easily reversed. Adams and Bevan argue that their results identify an important return to this effort—significantly more stable medium- to long-run fiscal performance.

IN THE SECOND HALF OF THE 1990S, policymakers and citizens around the world have been increasingly concerned that high external indebtedness in many developing countries is limiting growth and development. Both theory and policy discussions indicate that the effect of debt on growth, in principle, could occur through all the main sources of growth: physical and human capital accumulation as well as total factor productivity. But although recent empirical studies do indicate a negative impact of debt on growth at high levels of indebtedness, existing analysis tells us little about channels of influence. This is the main issue investigated by Catherine Pattillo, Hélène Poirson, and Luca Ricci in the fifth paper of this volume.

The authors begin with a discussion of what economic theory tells us about the channels through which external debt affects growth. They identify two main arguments supporting the capital accumulation. First, the debt overhang concept implies that when external debt increases, investors lower their expectation of returns in anticipation of the higher and progressively more distortionary taxes needed to repay debt. Thus new domestic and foreign investment is discouraged, which in turn slows capital stock accumulation. Second, in heavily indebted countries, investors may hold back from

investing given the uncertainties about what portion of the debt will actually be serviced with the countries' own resources.

The authors then discuss other considerations that imply that high debt levels may also constrain growth by lowering total factor productivity growth. For example, governments may be less willing to undertake difficult and costly policy reforms if it is perceived that the future benefit in terms of higher output will accrue partly to foreign creditors. In addition, high levels of uncertainties and instabilities related to the debt overhang are likely to hinder incentives to improve technology or to distort the allocation of resources toward less-efficient uses (such as activities with quick returns, rather than long-term, higher-risk, irreversible investment, which would be more conducive to long-run productivity growth). The poorer policy environment as well as misallocated and less-efficient investment projects could contribute to slower productivity growth.

Finally, they point out that debt relief advocates have argued that high debt severely constrains low-income countries' abilities to provide social services, such as education. The decision to acquire human capital is also an investment decision, which might be affected by the expectation of high marginal taxes. This would imply that high debt levels could lower growth by slowing human capital accumulation. However, the authors recognize that this effect may be very difficult to detect because it would affect human capital stocks with long lags.

In order to investigate the impact of debt on growth and on its sources, Pattillo, Poirson, and Ricci combine growth regressions with regressions on the sources of growth derived from a consistent growth accounting exercise. The analysis is applied to a panel of sixty-one developing countries over the period 1969–98. They augment a standard growth specification based on conditional convergence by adding several debt indicators (both in nominal and net present value terms) as a ratio to exports as well as GDP. Drawing from the extensive growth regression literature, their basic control variables include lagged per capita income, terms of trade, the ratio of fiscal balance to GDP, openness, population growth, secondary education, and the ratio of investment to GDP.

A contribution of their analysis is its focus on the potential nonlinearity of the relationship between debt and growth. Specifically, the authors adopt a spline (inverted V) function approach, allowing the impact of debt to have a structural break. They estimate the same models for the different components of growth—physical capital accumulation, human capital accumula-

tion, and total factor productivity growth. Furthermore, they consider a number of traditional (OLS, instrumental variables, fixed effects) as well as more recent estimators (differenced GMM, system GMM, and identification through heteroskedasticity). This enables the authors to control (to different extents) for biases associated with unobserved country-specific effects and the endogeneity of several regressors, particularly the debt variables.

The authors find a large negative impact of high debt on growth. Furthermore, debt appears to slow growth through two channels. Their estimates imply strong negative effects of debt on both physical capital accumulation and total factor productivity growth. On average for countries with high debt levels, the authors' results imply that doubling debt could reduce per capita growth by about 1 percentage point. Two-thirds of this slowdown would occur via total factor productivity growth and one-third via physical capital accumulation. On the other hand, they find that the impact of debt on growth and its components at low debt levels is generally not significant (partly due to the limited sample with low debt). Their results appear to be very robust, even when controlling for the potential endogeneity of debt on growth.

By comparing their preferred results with those obtained from a simple linear model, Pattillo, Poirson, and Ricci argue that the negative impact of high debt on growth tends to be underestimated when using a linear specification (that is, constraining the coefficient of debt to be the same for both moderately and highly indebted countries). Finally, their results suggest that the dynamic aspects of debt accumulation may matter because the time-series dimension of the panel appears crucial in helping to identify the negative impact of high debt on growth.

The authors see their results as consistent with the speculation that high debt may reduce the incentive to invest and undertake good policies. This is because the return of such action can be expected to accrue partly to lenders rather than to citizens and politicians of a high indebted country. In addition, high debt may distort allocation of resources toward less productive activities. On the other hand, the empirical analysis is unable to detect an impact of debt on human capital. The authors hypothesize that this is because this channel operates with very long lags.

Finally, the authors highlight policy implications of their findings. Specifically, for the average country in their sample, reducing debt levels should contribute to growth by boosting both capital accumulation and productivity growth, as long as other macroeconomic and structural distortions, or political constraints, are not binding. The authors believe that their find-

ings are relevant for current policy debates on the potential impact of the HIPC Initiative and forward-looking assessments of debt sustainability in low-income countries. However, they stress that the economic and political situation of these countries makes them a nontypical sub-sample that warrants additional study.

IN THE FINAL PAPER, Barry Eichengreen, Kenneth Kletzer, and Ashoka Mody assess the efficacy of recent developments in approaches for addressing the persistent problem of debt crises. Indeed the debate over how to strengthen mechanisms for resolving crises of sovereign debt sustainability has been long been under way—at least since the Mexican crisis of 1994–95, if not before. At the spring 2003 meetings of the IMF and World Bank, a decision was made to push ahead with the contractual approach to smoothing debt restructuring by encouraging the further introduction of collective action clauses (CACs) into bond contracts, while continuing to examine the IMF's Sovereign Debt Restructuring Mechanism. This decision was shaped by Mexico's successful launch the preceding March of a $1 billion global bond (subject to New York law but featuring CACs) and by subsequent issues with similar provisions from a number of other emerging market countries.

The authors focus their analysis on two questions. First, are speculative credits likely to follow investment-grade countries in adding CACs to their loan instruments? Second, is it likely that CACs will be sufficient to solve the problem of cross-issue coordination among creditors, the so-called aggregation problem? A strength of their approach is that it combines new theoretical and empirical analyses with a useful summary of recent developments so as to address various dimensions of both questions.

In terms of the first question, the authors conclude that their analysis of the sources of resistance to contractual innovation creates reasons for hoping that Mexico's path-breaking issue may have broken an important logjam. However, they also stress that both theory and evidence highlight the moral hazard associated with restructuring-friendly provisions for countries with relatively poor credit. This suggests that CACs may raise the cost of borrowing for countries with poor credit ratings, especially in periods when sentiment toward emerging markets is relatively unfavorable, leaving them slow to embrace these provisions.

Eichengreen, Kletzer, and Mody also ask how difficult it may be for countries whose existing bond issues feature unanimous action clauses

(UACs) to effect the transition to CACs. The concern is that the holders of bonds that require unanimous consent to changes in financial terms may be able to hold out for favorable restructuring terms at the expense of investors holding bonds with collective action clauses. Again, the authors find this to be a problem mainly for issuers with relatively poor credit. They argue that a fact consistent with this view is that countries with good credit (Mexico, South Africa, and South Korea) are the main pioneers of New York law issues with CACs. More optimistically, their results suggest that reversion from CACs to UACs may be unlikely. If bonds with CACs reach a critical mass, issuing new bonds with UACs may become less attractive.

Turning to the aggregation problem, Eichengreen, Kletzer, and Mody argue that multiplicity of bond issues has both benefits and costs. The benefits accrue through being able to establish yield curves in major currencies and avoid humps in amortization. However, there also are costs of multiplicity, since collective action clauses in individual bonds do not solve coordination problems across issues. They believe that the market is most concerned about aggregation in the case of poor credits with limited market access. However, because investors may not anticipate the relapse of good credits into repayment difficulties, cross-issue coordination may become a problem for other issuers as well. Therefore they conclude that there is a need to encourage the development of supercollective action clauses, bondholders committees, and a code of creditor conduct.

How much difference will collective action clauses make for the efficiency of outcomes and for the stability of international financial markets if they become widespread? This question emerged as a central concern among participants at the conference, with some expressing the view that CACs were of only second-order importance. The theoretical analysis presented in the paper suggests that by pricing moral hazard, collective action clauses would encourage market discipline. At the same time, by facilitating creditor coordination, collective action clauses would reduce the deadweight disruptive costs of delay. However, Eichengreen, Kletzer, and Mody stress that the case for collective action clauses is strongest if they are viewed as one of several interdependent changes in the international financial system, which together promise to make the world a safer financial place, but none of which is feasible in the absence of the others. For example, the authors argue that collective action clauses could reduce the likelihood that the IMF and its principal shareholders will feel compelled to extend financial assistance to countries whose debts are already borderline

unsustainable. This is because the consequent restructuring would not be so disruptive in the presence of these contractual provisions. They also argue that, absent the expectation of IMF bailouts, borrowers and lenders are likely to exercise more discipline, thereby reducing crisis risk and enhancing systemic stability.

One of the authors' central points is that the international financial architecture is made up of a set of interlocking parts. It is hard to change one without also changing the others. Thus they conclude that a concerted effort to alter the provisions of loan agreements may hasten progress on other, complementary changes, which will then work together to make the world a safer financial place.

But Eichengreen, Kletzer, and Mody emphasize that in the rush to get everything right, it would be a mistake to think that the job of fine-tuning contractual provisions is complete. They note that it has yet to be seen whether a significant number of speculative credits will follow investment-grade countries like Mexico and South Korea in adopting these provisions. Even if they do, the authors hypothesize that countries with low credit ratings may be tempted to require very high-qualified majorities and retain other provisions that stymie collective action and encourage holdout litigation. Furthermore, there is no consensus to date on the desirability of super-collective-action clauses or the design of informal substitutes such as a standing committee of bondholders and code of creditor conduct. They conclude that it is on these issues that the next steps in strengthening crisis resolution should focus.