

Research Spotlight

The Internal Markets of Multinational Firms

By Mihir A. Desai, C. Fritz Foley, and James R. Hines Jr.

THE rising economic importance of multinational firms has been accompanied by significant changes in their structure and functioning. Multinational firms, historically characterized as webs of autonomous subsidiaries spread across countries, now represent globally integrated production systems serving worldwide customers. These changes are manifest in the rising significance of intrafirm trade and financial flows for these firms. While there is extensive analysis of aggregate patterns in intrafirm flows of goods and capital, few firm-based studies examine the workings of the internal markets of multinational firms, largely because of the difficulty in accessing the necessary data.

A number of our recent projects investigated the internal markets of U.S. multinational firms. Our research demonstrates that internal market operations represent a critical aspect of firm responses to costly external finance, capital controls, and currency fluctuations. Our research also shows that the changing nature of internal markets has influenced how firms operate and finance themselves around the world. An important insight emerging from this research is that firms use internal markets opportunistically, particularly in response to distortions in local markets. This Research Spotlight summarizes this body of work.

Our research is based on work conducted at the U.S. Bureau of Economic Analysis (BEA) through a special program that provides access to the agency's rich store of confidential firm-level data on multinational companies for analytical purposes (see the box "BEA Program for Outside Researchers"). The firm-level data

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collected in BEA's surveys of international direct investment are used by BEA to produce aggregated tabular data on multinational-company operations for release to the general public. In its benchmark and annual surveys of U.S. direct investment abroad, BEA collects the most comprehensive and reliable available data on the activities of U.S. multinational firms.¹

Several notable features of BEA's direct investment abroad surveys distinguish them from other data sources. First, BEA's firm-level data include balance sheets and income statements for all of a multinational firm's affiliates, offering considerably finer firm-level detail than the aggregated geographic or industry segment data available through public financial records. Also, aggregation in public financial statements and the differential reporting standards of firms in different countries can hinder comparisons across firms. Second, the BEA filings provide details on intrafirm transactions, such as intrafirm borrowing, intrafirm dividends, and intrafirm trade. Without access to such detailed information, previous studies were forced to infer aspects of intrafirm transactions (such as capital reallocations across divisions) from observed outcomes. The variety of operating information for parent companies and their affiliates also allows for analysis that controls for a variety of potentially confounding factors.

This rich data source creates two distinct research opportunities. First, new insights regarding financing and operating decisions can be obtained by analyzing decisionmaking in different institutional settings. Second, examining the internal markets of multinational firms promises to generate new insights into how firms structure their worldwide operations and how policies can impact those decisions. The remainder of this article summarizes our research on the internal markets of

1. For a discussion of the most recent data collected, see Raymond J. Mataloni Jr. and Daniel R. Yorgason, "Operations of U.S. Multinational Companies: Preliminary Results From the 2004 Benchmark Survey," *SURVEY OF CURRENT BUSINESS* 86 (November 2006): 37–68. For general information on the statistics that are available on U.S. multinational firms, see Raymond J. Mataloni Jr., "A Guide to BEA Statistics on U.S. Multinational Companies," *SURVEY* 65 (March 1995): 38–55.

multinational firms in the following areas:

- Ownership decisions
- Weak investor protection and shallow capital markets
- Dividend policies
- Capital controls
- Currency depreciations

Ownership Decisions

One of the most fundamental decisions firms face when expanding abroad is whether to organize foreign operations as joint ventures or as wholly owned affiliates. Multinational firms frequently have the option to own 100 percent, majority, or minority shares of foreign entities. It is widely believed that the forces of globalization make the use of joint ventures particularly attractive, but this presumption rests on aspects of the ownership decisions of American multinational firms that, until recently, were not rigorously examined.

“The Costs of Shared Ownership: Evidence From International Joint Ventures” provides a comprehensive review of U.S. overseas affiliate activity from 1982 to 1997, offering evidence that over time American multinational firms have become less inclined to organize their foreign operations as joint ventures. In 1982–97, the share of all affiliates that were wholly owned increased from 72 percent to 80 percent, and the share of minority-owned affiliates fell from 18 percent to 11 percent. Whole ownership affords the parent

company the ability to control the operation and destiny of a foreign affiliate. The growing use of whole ownership suggests an increased appetite for control by multinational parents, one that appears to be related to rising costs of employing the joint venture organizational form.

We identify three sources of rising costs to joint ventures by analyzing the factors that influence ownership shares. First, joint ventures limit a firm’s ability to structure its worldwide operations in a tax-efficient manner. This is the inevitable byproduct of divided interests, as joint venture partners are concerned with local profits while multinational parents are concerned with the profits of their global operations. Second, the attractiveness of transferring intellectual property to overseas operations is reduced by the prospect of potential appropriation of that technology by joint venture partners. Third, the desire to decentralize worldwide production through greater intrafirm trade creates the potential for conflict with local partners over sourcing decisions and transfer pricing. Because multinational firms increasingly rely on worldwide tax planning, global technology transfer, and production decentralization, they face growing incentives to avoid sharing ownership with local partners.

Wholly owned foreign affiliates of U.S. companies have considerably greater financial and commercial ties to their U.S. parent companies than do partially owned foreign affiliates. However, this cross-sectional evidence that whole ownership is associated with close coordination of parent and affiliate activity does not prove that ownership decisions are functions of coordination costs. Another possibility is that both ownership and operational decisions are responses to other unmeasured factors. In distinguishing these two interpretations of the same evidence, we identify exogenous changes in ownership levels and trace their effects on intrafirm transactions. By principles of symmetry (implied by the theory of the firm), any effects of ownership on intrafirm transactions should be mirrored by equal effects of intrafirm transactions on ownership decisions. Our analysis examines two changes in government policy that affected the relative costs of sharing ownership—the liberalization of foreign ownership restrictions and tax penalties on joint ventures featured in the U.S. Tax Reform Act of 1986. Our results indicate that affiliates operating in liberalizing countries and firms whose joint ventures would be subject to tax penalties after 1986 both engaged in greater intrafirm transactions after the reforms.

These reactions imply that the increased desire to coordinate parent and affiliate trade, technology transfers, and tax planning that has been evident over the

BEA Program for Outside Researchers

Recognizing that some research requires data at a more detailed level than that provided in its publicly disseminated tabulations, the Bureau of Economic Analysis maintains a program that permits outside researchers to work on site as unpaid special sworn employees of BEA for the purpose of conducting analytical and statistical studies using the microdata that it collects under the International Investment and Trade in Services Survey Act.

This work is conducted under strict guidelines and procedures that protect the confidentiality of company-specific data, as required by law. Because the program exists for the express purpose of advancing scientific knowledge and because of legal requirements that limit the use of the data to analytical and statistical purposes, appointment to special-sworn-employee status under this program is limited to researchers. Appointments are not extended to persons affiliated with organizations that collect taxes, enforce regulations, or make policy.

last 20 years contributed to the rising appetite for control over worldwide operations. Our estimates imply that between one-fifth and three-fifths of the decline in the use of partial ownership by multinational firms over the sample period is attributable to the increased importance of intrafirm transactions. These findings indicate that the forces of globalization have diminished rather than accelerated the use of shared ownership.

Weak Investor Protection and Shallow Capital Markets

Capital market conditions differ markedly around the world. Some countries offer legal protections and supportive regulation that produce liquid capital markets of the type found in the United States, whereas others have legal structures or regulatory policies that produce extremely shallow capital markets. These differences influence the capital structure choices that firms make. Empirical attempts to study these issues face significant challenges. Recent efforts using cross-country samples of local firms exploit the rich variation that international comparisons offer, but these efforts have faced problems associated with nonstandardized measurement across countries and limited statistical power because of small sample sizes. An alternative approach is to analyze the financing choices of local affiliates of multinational firms. This approach affords the prospect of comparing the financing decisions of affiliates of the same multinational firm operating in different institutional settings. Furthermore, an analysis of multinational firm responses to capital market conditions illuminates the workings of internal capital markets, as multinational firms may be able to substitute internal capital reallocations for external financing when it is most costly.

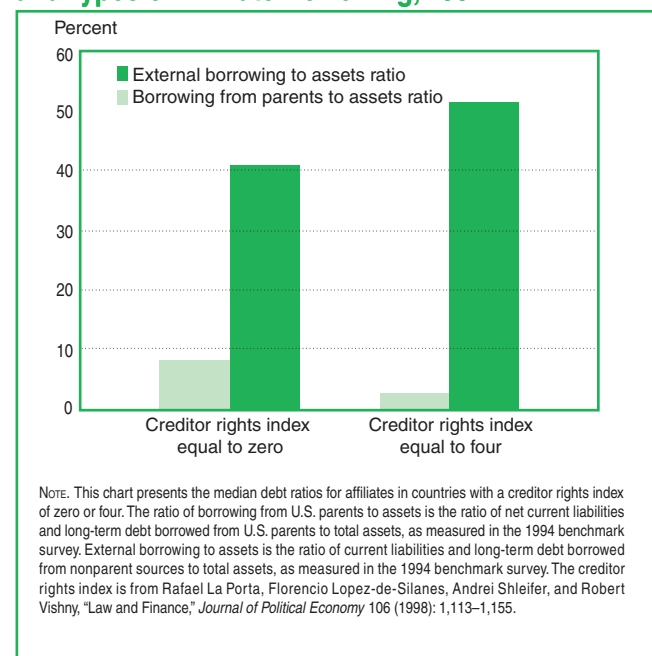
In “A Multinational Perspective on Capital Structure Choice and Internal Capital Markets,” we study BEA’s firm-level data and find that both the level and the composition of leverage of multinational affiliates are strongly influenced by capital market conditions. Analysis of these data illuminates the mechanisms by which weak capital markets affect external and internal financing choices. Our findings indicate that interest rates paid by U.S.-owned affiliates are significantly higher in countries with underdeveloped credit markets and weak creditor rights. This interest-rate difference very likely reflects the default premium that lenders demand in countries where legal institutions make it difficult or costly to use bankruptcy procedures to recover unpaid loans and the price premium paid for capital in countries with thin capital markets. In addition, the difference between the costs of bor-

rowing from external lenders and parent companies is larger for affiliates in these weaker institutional environments. In response to these differences, multinational firms borrow less from external sources and more from internal sources in settings with weak credit markets. These differences are manifest in a simple comparison of the internal and external borrowing decisions of affiliates in countries where creditor rights are very weak and very strong (chart 1). Regression analysis indicates that greater internal borrowing offsets approximately three-quarters of the reduction in external borrowing arising from adverse local credit market conditions.

The tests in our paper control for other determinants of financing choices, including political risk, inflation, and tax rates. Greater political risk is associated with higher affiliate leverage. Higher inflation is associated with more external borrowing and less internal borrowing. Finally, higher corporate tax rates are associated with higher leverage. The analysis also reveals that borrowing from parent companies responds more sharply to tax rate differences than borrowing from external sources, suggesting that firms are better able to exploit internal capital markets than external capital markets when structuring optimal financing in response to tax differences.

In general, we found that firms use internal capital markets opportunistically when external finance is costly and when there are tax planning opportunities.

Chart 1. Relationship Between Creditor Rights and Types of Affiliate Borrowing, 1994



The results suggest that internal capital markets may give multinational firms an advantage over local firms in countries with poorly developed credit markets. Local firms that borrow from external sources face high costs of debt in countries with shallow capital markets or weak creditor rights. Although weak credit markets also reduce external borrowing by multinational firms, these firms can draw on resources from internal capital markets to obtain needed financing.

Dividend Policies

Dividend payments from U.S.-owned foreign affiliates to U.S. parent companies represent sizable financial flows. In 1999, public U.S. corporations had after-tax earnings of \$516 billion and paid \$198 billion in dividends to common shareholders.² In the same year, foreign affiliates of U.S. multinational firms had after-tax earnings of \$182 billion and paid \$97 billion to the their parents as dividends. Indeed, the partial tax holiday featured in the 2004 American Jobs Creation Act was motivated by the prospect that large dividend payments from the foreign affiliates of U.S.-owned multinational firms would have favorable macroeconomic consequences for the U.S. economy.³ “Dividend Policy Inside the Multinational Firm” identifies three main determinants of dividend policy within the multinational firm: The taxation of dividend income, domestic financing and investment needs, and agency problems inside firms.

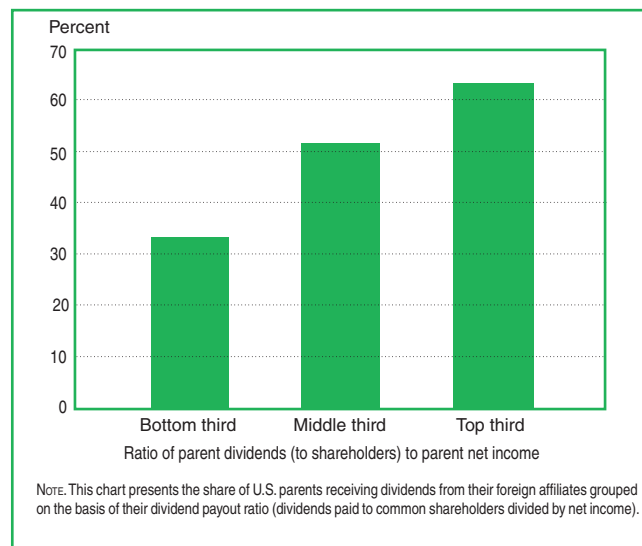
Dividends include payments to multinational parent firms declared out of the income of foreign subsidiaries, but they do not include flows related to invested equity. Tax considerations alone would suggest that dividend payments inside the firm would be irregular and lumpy, since the tax implications of dividend payments often differ sharply between years, reflecting a firm’s changing tax situation. However, dividend payments from the foreign affiliates of U.S. multinational firms are regular and can be characterized by a process of partial adjustment that was first described by John Lintner.⁴ Multinational firms behave as though they select target payouts for their foreign affiliates, gradually adjusting payouts over time in response to changes in affiliate earnings. Dividends paid by affiliates rise by roughly \$0.40 for every additional dollar of their after-

tax profits. Our regression evidence indicates that this pattern of persistent payouts is not an artifact of other regularized investment or financing decisions at the affiliate level.

Further analysis presented in our paper provides additional evidence that tax minimization only partially explains observed dividend policies; incorporated and unincorporated foreign affiliates, which face sharply differing tax consequences of paying dividends, nonetheless exhibit only modest differences in their dividend policies. Similarly, some firms simultaneously pay dividends and invest new equity in the same affiliate, a practice that is hard to reconcile with tax minimization.

Circumstances may lead parent companies to seek cash dividends from their foreign affiliates to satisfy domestic financing and investment needs. A simple comparison of multinational firms illustrates such a motivation for dividend policies within multinational firms. Chart 2 displays shares of parent companies receiving dividend payments from their foreign affiliates, where parent companies are grouped according to their ratios of dividend payouts to external shareholders (as a fraction of after-tax earnings). The heights of the bars in chart 2 measure fractions of parent companies receiving dividends from their affiliates. Parent companies with the highest external dividend payout ratios are the most likely to receive dividends from their foreign affiliates. This simple association also appears in a regression analysis that controls for various confounding factors. Parent companies require cash to pay dividends to external shareholders and foreign affiliates often represent ready sources of cash, ones that

Chart 2. Share of Parents Receiving Dividends from Affiliates



2. Gustavo Grullon and Roni Michaely, “Dividends, Share Repurchases, and the Substitution Hypothesis,” *Journal of Finance* 57 (2002): 1,649–1,684.

3. For an assessment of the effects of this act on affiliate dividend payments, see Ralph Kozlow and Patricia Abaroa, “U.S. Multinational Firms, Dividends, and Taxes” (paper presented at the International Association for Official Statistics, Ottawa, September 6–8, 2006).

4. John Lintner, “Distribution of Incomes of Corporations Among Dividends, Retained Earnings, and Taxes,” *American Economic Review* 61 (1956): 97–113.

are particularly attractive to firms that would face high costs of raising funds externally. The analysis also reveals that financially constrained parents in industries with attractive investment opportunities are particularly likely to receive dividends from foreign affiliates. Hence, it seems that dividend payments from foreign affiliates are often used to satisfy parent company cash needs.

Finally, dividend payments from foreign affiliates appear to play a role in monitoring the activities of foreign managers. Regular dividend payments can restrict the financial discretion of foreign managers, mitigating whatever agency problems may exist within firms. Conflicts of interest between managers of foreign affiliates and managers of parent companies are likely to be most pronounced when the parent company owns only a fractional share of the affiliate, as other owners may be tempted to transact with the affiliate at non-market prices. Consequently, parent companies have incentives to require steady flows of dividend payments in order to limit the scope of potential malfeasance by foreign affiliates. Indeed, the evidence indicates that regularized dividend payments are most common when affiliates are partially owned, even when such payments are explicitly tax penalized. This finding suggests that at least some of the regularization of dividend repatriations is a consequence of control considerations inside the firm.

The foreign affiliates of U.S. multinational corporations follow well-defined repatriation policies featuring gradual adjustment of payouts to target ratios that depend on current earnings and the tax costs of repatriating dividends. In addition to taxation, costly external finance and agency problems—motivations that are typically emphasized with respect to arm's-length financing decisions—also appear to influence the internal capital markets of multinational firms.

Capital Controls

Countries concerned about the economic instability that may be associated with exposure to world capital markets are often tempted to impose controls on short-term international capital movements. These controls can take many forms, and their effect on economic growth and firm performance is hotly debated. Countries imposing capital controls are typically also eager to attract foreign direct investment, but the potential inconsistency of attempting to control capital movements while also attracting inbound foreign direct investment has hitherto received limited attention.

“Capital Controls, Liberalizations, and Foreign Direct Investment” analyzes the effects of capital controls

on the operations of the foreign affiliates of U.S. multinational firms. Evidence indicates that foreign affiliates located in countries imposing capital controls face borrowing rates that average 5.25 percentage points more than those faced by other affiliates of the same multinational parent companies.

Multinational firms operating in countries with capital controls have incentives to use their internal product and capital markets to mitigate the effects of capital controls by limiting local profits that are subject to such controls. Similar incentives are created by high tax rates, and it is possible to compare the effects of capital controls with the effects of high income tax rates. Our results indicate that multinational firms distort their reported profitability and their dividend repatriations in order to mitigate the impact of capital controls. Affiliates in countries imposing capital controls have 5.2-percent lower reported profit rates than comparable affiliates in countries without capital controls, reflecting in part trade and financing practices that reallocate income within a firm. The distortions to reported profitability are comparable with those that stem from a 27-percent difference in corporate tax rates. Dividend repatriations are also regularized to facilitate the extraction of profits from countries imposing capital controls.

Evidence of the impact of removing capital controls is consistent with the comparisons of foreign affiliates located in countries with and without capital controls. U.S.-owned foreign affiliates in countries with capital controls experience 6.9-percent faster annual growth of property, plant, and equipment investment after the liberalization of controls, indicating that capital controls impose significant burdens on foreign investors. There is, however, no discernible effect of the imposition or removal of capital controls on the volatility of affiliate profitability or the volatility of affiliate growth rates. Hence, it appears that capital controls are responsible for slow growth of U.S.-owned affiliates, and local reported profit rates significantly below those reported elsewhere.

Currency Depreciations

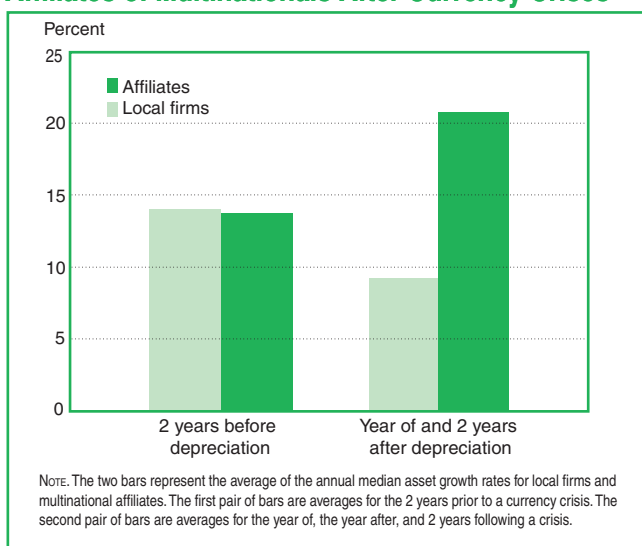
Settings where investment opportunities and financial constraints move in identifiable ways provide valuable opportunities to study the impact of financial constraints on firm growth. Because firms typically incur some costs in local currency terms, currency depreciations are hypothesized to provide improved investment opportunities. Firms differ, however, in their access to financial resources at the time of the depreciation. A comparison of the investment responses to

currency depreciations by firms with differential access to financial resources can illustrate the degree to which financial constraints can limit growth. This comparison, given its setting, can also help explain why hypothesized benefits of depreciations are often not manifest.

In the paper “Financial Constraints and Growth: Multinational and Local Firm Responses to Currency Depreciations,” the effects of sharp currency depreciations on the behavior of U.S.-owned affiliates and local firms in the tradable sectors of emerging markets are compared.⁵ The differential response of local firms and multinational affiliates is manifest in the simple comparison provided in chart 3. In this chart, the bars represent annual growth rates in assets in the year prior to a sharp depreciation and subsequent years for local firms and multinational affiliates. This basic difference between local firms and multinational affiliates is robust. Regression analysis demonstrates that U.S.-owned affiliates increase sales 5.4 percent, and assets 7.5 percent, more than local firms after currency depreciations. The improved relative performance of U.S.-owned affiliates is even more striking in investment. Capital expenditures are 34.5 percent higher for U.S.-owned firms than for local firms in the aftermath of large currency depreciations. Our analysis investigates the sources of this distinctive performance, with

5. Unlike the other papers described in this spotlight, this paper was written by Mihir A. Desai, C. Fritz Foley, and Kristin J. Forbes. The other papers were written by Mihir A. Desai, C. Fritz Foley, and James R. Hines Jr. See the references.

Chart 3. Asset Growth of Local Firms and Affiliates of Multinationals After Currency Crises



particular emphasis on the possible role of differential operating exposures and financing capabilities.

Differential changes in investment opportunities could give rise to distinctive investment opportunities for local firms and multinational affiliates. For example, multinational affiliates may export more of their output to countries with undepreciated currencies. In order to consider this possibility, we compared multinational and local firms with similar product and input market exposures. We also computed measures of the operating exposures of firms in order to investigate whether differences in operating exposures explain differences in the behavior of U.S.-owned affiliates and local firms.

Our tests offered little evidence that the relative growth of multinational affiliates after sharp currency depreciations can be traced to differential investment opportunities. Multinational affiliates that are more reliant on exports prior to depreciations increase investment by larger amounts, but affiliates that exclusively serve the local market increase investment by considerably more than local firms. Large differences in the investment responses of affiliates and local firms persist after including measures of operating exposure as controls.

Given the evidence on the opportunistic use of internal capital markets by multinational firms discussed above, it is possible that a superior ability to overcome financing constraints is the reason for the better post-depreciation performance of U.S.-owned affiliates. Tests reveal that financing constraints play a decisive role in explaining the differential investment response of multinational affiliates and local firms. Following currency depreciations, the leverage of local firms increases more than the leverage of multinational affiliates, in part reflecting the tendency of local firms to borrow in foreign currency terms. Local firms with the most leverage and with the shortest term debt reduce investment the most. The examination of the internal capital markets of multinationals shows that multinational parents provide additional financing in response to sharp currency depreciations. These results indicate that multinational firms overcome the negative consequences of large depreciations by avoiding the financial constraints that handicap local firms.

In addition to offering a test of how financial constraints influence investment, this evidence illustrates an effect of foreign direct investment not previously emphasized. The internal capital markets of multinational firms allow their affiliates to expand output after severe currency depreciations, precisely when economies are fragile and prone to severe economic contrac-

tions. As a consequence, multinational affiliates may be able to mitigate some of the aggregate effects of currency crises. This analysis does not consider the long-run distributional consequences of the differential impact of currency crises on multinational affiliates. Increased multinational activity during crises may help support local firms through spillover effects, such as increased demand for local inputs or improved access to technology or trade credit. However, multinationals could also use crises to expand at the expense of local firms with potentially persistent effects. While the internal capital markets of multinational firms appear to mitigate the contractionary output effects of severe currency depreciations, the longer term effects on local firms remain an open question.

Conclusion

The data collected by BEA in its surveys of interna-

tional direct investment provide a unique window on the internal markets of U.S. multinational firms.

Our analyses of BEA's firm-level data reveal that the increased importance of internal capital markets has reduced the use of joint ventures; that multinational firms respond opportunistically to cross-country differences in capital markets, capital controls, and taxes; that the set of factors that influence dividend payouts by U.S.-owned foreign affiliates are similar to those that influence dividends paid to external shareholders; and that multinationals access their internal capital markets to overcome financial constraints associated with currency depreciations.

As more firms expand their global activities, BEA's work in collecting these data will become even more critical to policymakers, business leaders, and others seeking to make informed policy decisions and business choices.

References

Mihir A. Desai, C. Fritz Foley and Kristen J. Forbes. "Financial Constraints and Growth: Multinational and Local Firm Responses to Currency Depreciations" *Review of Financial Studies* (forthcoming).

Mihir A. Desai, C. Fritz Foley and James R. Hines Jr. "Capital Controls, Liberalizations, and Foreign Direct Investment," *Review of Financial Studies* 19, no. 4 (Winter 2006): 1,433–1,464.

———. "The Costs of Shared Ownership: Evidence From International Joint Ventures," *Journal of Financial Economics* 73, no. 2 (August 2004): 323–374.

———. "Dividend Policy Inside the Multinational Firm," *Financial Management* (forthcoming).

———. "A Multinational Perspective on Capital Structure Choice and Internal Capital Markets," *Journal of Finance* 59, no. 6 (December 2004): 2,451–2,488.