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Editorial

Introduction: macroeconomic implications of capital flows in a global economy

Abstract

The papers in this volume address issues raised by the wave of financial crises that hit emerging markets since the mid 1990s. Several of the papers examine the role that different credit market frictions may have played in triggering the crises, or in determining the effects of policies aimed at containing them. Other papers ask more general questions about the implications of international financial integration for business cycles, risk sharing, and sovereign lending.

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This special issue of the *Journal of Economic Theory* is a collection of eight papers that focus on international macroeconomic issues. Five of these papers (Aghion et al., Caballero and Krishnamurthy, Chari and Kehoe, Christiano et al., and Heathcote and Perri) were part of the June 2001 conference titled *The Macroeconomics of Global Capital Markets Imperfections*, organized by Ravi Bansal and Enrique Mendoza and sponsored by Duke University. The conference also included papers by Bansal et al. [1], Mendoza and Smith [5], Paasche and Zin [6], and Burnstein et al. [2].

The papers by Aghion et al., Caballero and Krishnamurthy, Burnside et al., Chari and Kehoe, Christiano et al., and Goldstein and Pauzner deal with the financial crises of emerging markets and the role that different credit market frictions may have played in triggering those crises, or in determining the effects of policies aimed at containing them. The papers by Kehoe and Perri and Heathcote and Perri ask more general questions about the implications of international financial integration for business cycles, risk sharing, and sovereign lending.

As the survey of the emerging-markets-crises literature by Arellano and Mendoza [1] notes, the main features of the wave of financial crises that hit emerging markets since the

Mexican crash of 1994 posed a serious challenge for conventional open-economy models of business cycles and current-account determination. Emerging markets crises featured the so-called “sudden stop” phenomenon, characterized by a sudden reversal of capital inflows and the current account, a large recession in domestic production and absorption, and collapses in real asset prices and in the relative prices of nontradable and tradable goods. These stylized facts are seriously at odds with the predictions of both conventional open-economy models with nominal rigidities, in which devaluations are expansionary because they shift the terms of trade in favor of the country that devalues its currency, and standard neoclassical dynamic equilibrium models, in which the current account is modeled as an efficient vehicle for consumption smoothing, risk sharing, and arbitraging of the returns of capital across countries. Another set of important issues, as typified by the South East Asian Crisis, relates to contagion—economic crisis from one country seems to spread rapidly to others. These crisis-spillovers also pose a serious challenge to conventional dynamic economic models.

The papers of this issue that focus on emerging markets make innovative contributions to our understanding of the financial transmission mechanisms that account for sudden stops. In “A Corporate Balance-Sheet Approach to Currency Crises,” Aghion, Bacchetta, and Banerjee develop a perfect-foresight, multiple-equilibrium model of currency crises in which firms face credit constraints and prices are sticky. The credit constraints are in the Bernanke–Gertler tradition: firms face an external financing premium so the interest rate on loans they obtain from a competitive banking sector is an increasing, convex function of the ratio of their debts to their net worth. The model also features a financial friction known as “liability dollarization”: Firms sell domestic output in units of domestic currency but their debt obligations are denominated in foreign currency. Thus, in the presence of price stickiness, a devaluation triggers a sudden drop in the prices of the goods produced by domestic firms relative to the cost of debt service, which increases the burden of servicing private debt. Currency crises emerge in this setup as a sunspot equilibrium. The authors explore some of the policy implications of this setup and show that defending managed exchange rates with interest rate hikes can be ineffective, whereas pumping liquidity via short-term lending facilities can make this policy effective by attenuating the rise in interest rates to firms.

The paper by Burnside, Eichenbaum, and Rebelo in this issue argues that these sudden and dramatic devaluations are intimately related to banking crisis (also see [4]). The paper argues that the government’s guarantees to bank’s foreign creditors is the root cause of the banking-currency crisis in emerging markets. Because of these, it is optimal for banks to incur unhedged currency risk and to renege on their foreign debts when devaluation occurs. The ensuing liabilities for the government of the emerging economy are financed via seigniorage—leading to a self-fulfilling currency-banking crisis. In this setup, it is optimal for banks to have a currency mismatch between assets and liabilities—this, the paper shows, is the channel that leads to the possibility of a self-fulfilling banking-currency crisis.

The paper by Christiano, Gust, and Roldos (“Monetary Policy in a Financial Crisis”) is in a similar vein. They study the implications of a policy of interest rate cuts introduced as a financial crisis hits a small open economy in an environment without uncertainty. The authors build a two-sector dynamic general equilibrium model with financial frictions and

use numerical simulations to determine under what conditions the interest rate cut can help increase output and employment and under what conditions it can have the opposite effects. The financial frictions take the form of working capital constraints affecting the firms' demands for labor and for imported intermediate goods and collateral constraints on foreign debt. Foreign credit contracts are again denominated in units of tradable goods. A financial crisis is modeled as an exogenous event that takes the form of a fully unexpected imposition of binding collateral constraints on foreign borrowing. If there are frictions in adjusting tradables output and in the ability of the economy to allocate tradables output for use in other parts of the economy, a cut in the interest rate results in a fall in output and employment. When these frictions are absent, the cut in the interest rate improves asset positions and thus has the opposite effects.

The papers by Aghion et al. and Christiano et al. ask a similar question: What is the response to monetary policy of an economy experiencing a financial crisis? In the setup of Aghion et al. the crisis is a "sunspot" equilibrium, so it is one possible outcome in an environment with multiple equilibria. In the Christiano et al. model, the financial crisis itself is an exogenous phenomenon (i.e., the sudden imposition of binding collateral constraints). The two feature "liability dollarization" in the sense that debt contracts are denominated in units different from those of the output of domestic firms. In Aghion et al., sticky prices imply that a large devaluation causes a sharp fall in the prices of domestic output relative to debt service. In Christiano et al., the tradables–nontradables split implies that a large devaluation causes a sharp fall in the relative price of nontradables to tradables. In both papers, large relative price movements trigger financial accelerator effects because the price drops make it harder for debtors to service their debts as the real value of outstanding debt increases. The policy predictions are similar in that monetary policy can be used to undo these effects (either with direct liquidity injections, as in Aghion et al., or with interest rate cuts, as in Christiano et al.).

In "Smoothing Sudden Stops," Caballero and Krishnamurthy consider an emerging economy with "underdeveloped" financial markets, in the sense that (a) its needs for financing from abroad are larger than the international collateral it can offer to foreign lenders and (b) the nontradables sector faces binding collateral constraints because the domestic collateral value of projects in this sector is less than their expected revenues. The authors argue that, at equilibrium, these financial frictions result in "collective external underinsurance." The reason is that domestic agents in need of external resources (i.e., those that lack assets regarded as "good collateral" by foreign lenders) cannot transfer the full surplus generated by these resources to other participants in domestic financial markets that do have access to external funds (i.e., those that have assets that are viewed as "good collateral" by foreign lenders). Caballero and Krishnamurthy study several policies that could be applied to address this underinsurance problem. They start from benchmark results showing that the underinsurance problem vanishes if there are complete markets of contingent claims. Then they remove these markets by assuming that idiosyncratic shocks are unobservable and show that a social planner that can undo this informational friction could still attain the efficient complete-markets equilibrium. Finally, they show that decentralizations with a private conglomerate that provides credit lines to individual firms, or with government intervention in the form of taxation or sterilization of capital inflows, can also solve the problem, but these arrangements have the weakness that they are not "coalition incentive compatible."

“Financial Panics as Herds: Overturning the Critiques,” by Chari and Kehoe, examines financial crises characterized by herd behavior, in the sense of the informational-cascades literature in which agents can be put in a position in which they optimally choose to ignore individual information and replicate the choices of other agents. The authors note that the original informational-cascades setup is difficult to accept as an explanation of herding in the financial crises of emerging markets because informational cascades with herding disappear if two of the model’s assumptions are abandoned: if zero–one investment choices are replaced by a continuum of investment opportunities and if investors trade assets at market-determined prices. Chari and Kehoe show that informational cascades with herding can exist even if these two assumptions are taken into account as long as investors are allowed to choose the timing of their investment choices (instead of making decisions in a predetermined order). Choosing the timing of investment is important because by waiting to invest investors can gain more information (by observing the investment choices made by other investors who receive investment signals in a particular period). On the other hand, waiting is costly because of discounting. Herding emerges here with a continuum of investment choices or with trading at market prices whenever the benefits of waiting for more information are lower than the costs of waiting.

Goldstein and Pauzner develop a model in which contagion, i.e., spreading of financial crisis, occurs because investment portfolios are diversified across countries. The mechanism in their model is based on a wealth effect: A crisis in one country reduces the wealth level of international investors and makes them more risk averse. As a result, they are less willing to take strategic risks—risks associated with the fact that the return on their investment depends on the behavior of other investors. Consequently, they “run” more often in another country and increase the probability of a crisis there as well. An important feature of the Goldstein–Pauzner model is that crises are self-fulfilling: They occur as a result of a coordination failure, and not merely because of bad fundamentals. This feature of the model is consistent with observations made in [4].

In the context of sovereign debt markets Kehoe and Perri ask the question: Can one decentralize constrained efficient allocation that arise from enforcement constraints between sovereign nations? Enforcement constraints arise as allocations can be enforced only if their value exceeds the value from being excluded from intertemporal and interstate trade. These constraints limit borrowing and lending between sovereign nations. The paper shows that in an endowment economy decentralization is accomplished if the government can choose the rate of default. However, in an economy with capital, the decentralization is possible if the government can choose the default rate and tax domestic capital income. The authors argue that the mechanisms that they offer in this paper achieve the efficient outcome in a more natural way—that is, there is no need for credit-rationing or seniority clauses as discussed in [3].

The paper “Financial Globalization and Real Regionalization,” by Heathcote and Perri, is motivated by the empirical observation that cross-country business cycle correlations across industrial countries declined with the integration of financial markets across these countries. For example, the cyclical correlation of GDP between the United States and an aggregate of Europe, Canada, and Japan fell from 0.76 in the period 1972–1986 to 0.26 in the period 1986–2000. However, the correlation of real shocks between the US and the rest of the world also declined during the same period. The authors develop a two-country

international real-business-cycle model in which international financial market integration is an endogenous response to the lower correlation of exogenous shocks. Agents are allowed to trade shares in domestic and foreign assets that deliver imperfectly correlated dividends. The degree of international financial integration is driven by a “shipping cost” associated with foreign dividend income. This cost acts as an incentive to bias portfolios toward the domestic security. Thus, a fall in the correlation of dividends across countries increases international asset diversification. In general equilibrium, this higher degree of financial integration has a feedback effect that further reduces GDP correlations. Hence, the authors conclude that both less correlated shocks and endogenous financial integration are needed to account for the changes in the international business cycle of industrial countries.

The papers in this issue improve our understanding of aspects of the economics of sudden stops. Some advance our understanding of the fundamental causes of sudden stop, while others advance our understanding of the economy once the sudden stop is under way. A task that remains before us is to develop models that capture in a single coherent framework both the causes and the effects of sudden stops.

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