Chapter XIII

Capital Controls and Firm’s Dynamics

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ABSTRACT

This chapter constructs a dynamic model of a multinational enterprise (MNE) to quantify the effects of various capital control policies on a firm’s debt and equity positions, innovations, and outputs at the headquarters and subsidiary. The model is calibrated to the US Foreign Direct Investment (FDI) Benchmark Survey and the IMF’s Exchange Arrangements and Exchange Restrictions so that it reproduces the average US FDI and technology flows to foreign subsidiaries. Both steady-state and transition analyses suggest a significant impact of capital controls on an MNE’s operations. Lifting capital restrictions produces an inflow of capital and technology into the less developed countries, leading to an increase in the steady-state FDI position and production. Simulation experiments reveal that even short-term capital controls have long-lasting negative effects.

INTRODUCTION

Despite the rapid process of globalization and financial integration that the world economy has experienced in the past several decades, many national governments choose—for short periods of time or permanently—to hinder this process of financial integration by imposing restrictions on capital mobility. Such restrictions are prevalent throughout the world: the majority of the International Monetary Fund (IMF) member nations have imposed capital controls over the past decade.
This chapter constructs and simulates a dynamic partial-equilibrium model of a multinational enterprise (MNE) that allows us to study the effects of various capital control policies on a firm’s debt and equity positions, innovations, and outputs at the headquarters and subsidiary. Microeconomic considerations that lie at the heart of the model help us to arrive at important macroeconomic policy implications. Specifically, the model enables us to evaluate the costs—in terms of lost capital and output, as well as slower technological progress—of capital control policies that vary in strength and duration. We also analyze the long-term effects of short-lived capital restrictions.

Capital controls (and particularly exchange restrictions) alter the operations of US MNEs because they affect expectations about the dollar amount of profit, dividend and royalty remittance from the foreign subsidiaries back to the US parent. However, evaluating the effectiveness of capital restrictions is a difficult task since the length of the available time series data is limited (Edwards, 2000). This chapter overcomes the time-series difficulties of evaluating exchange controls—including relatively short time dimension of the available panel data on capital controls, as well as quality limitations, difficulty of isolating the effects of capital controls, and unobservable technology transfers—by examining transitional dynamics of a model of an MNE. We calibrate our model to the 1998 US Foreign Direct Investment (FDI) Benchmark Survey and the IMF’s Exchange Arrangements and Exchange Restrictions so that the model reproduces the average US FDI and technology flows to foreign subsidiaries in 1998.

Our simulations show that the milder the exchange controls, the greater the rate of convergence of headquarters’ capital and output and the longer it takes for the plant to reach its steady state level of production. The opposite is true for the subsidiary: the milder the restrictions, the lower the rate of convergence and the less time until it hits steady-state. During the transition and at the steady state, exchange controls induce a wedge between the headquarters’ and subsidiary’s capital stocks and depress the level of technology available at both the headquarters and subsidiary.

Unlike previous papers in this area, we also allow the MNE to borrow locally in each of the plants. Typically, multinationals, especially those in developing countries or immature subsidiaries, start foreign operations with a limited FDI position and large local borrowings. Understanding how governmental exchange control policies affect debt versus equity financing of capital is important to developing countries that want the infusion of foreign capital, not the multinationals borrowing from local sources. Also, for countries that impose exchange controls when faced with low foreign exchange reserves, knowing how their exchange control policy affects the decision of debt versus equity flows is important for their foreign reserve position. We find that in African countries equity-financed capital would increase, local borrowing would fall, and the flow of foreign technology would intensify if these countries abolish the restrictions. However, the predicted change in these variables is minimal resulting from the fact that, although Africa can impose restrictions, they are rarely used. In Brazil, which has had on-off restrictions between the 1970s and 1990s, depending on the severity of the policy and expected length of enforcement, we find sizable movements in the FDI stock and bond issuing.

Focusing on steady state, we quantify the effects of constant exchange control policies. We find the more severe the restriction, the smaller the FDI position at the subsidiary, the larger the capital stock at home, and the smaller the innovations. We also
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