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Introduction

Takatoshi Ito and Anne O. Krueger

One of the hallmarks of the 1990s has been the enormous increase in the international flow of long-term private capital. The architects of the post-war economic system (the Bretton Woods system) based their plans on the assumptions that private capital markets had been almost entirely destroyed by the upheavals of the Great Depression and that, in the future, most capital flows would consist either of short-term trade credits or of official flows. Over the intervening forty years, private capital flows gradually reemerged, first among the industrialized countries and then among most of the countries of the world. By the 1980s, some developing countries were relying more on private capital flows than on official flows, and by the 1990s, private capital flows had dwarfed official flows for most countries.

Different components of private capital flows grew at different rates. Among them, many observers focused on foreign direct investment (FDI) as an important contributor to growth. According to the International Monetary Fund (1998), FDI to developing countries rose steadily from US$18 billion in 1990 to $138 billion in 1997. Even in the wake of the currency crises of 1994–95 in Mexico and 1997–98 in Asia, FDI has been credited for its stability relative to other forms of capital flows.

Interestingly, in the 1950s and 1960s, few developing countries attempted to attract private foreign capital. What efforts there were usually

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were intended to attract investment into "import substitution" industries. Indeed, in many countries private foreign capital was subject to strong political attacks for being an instrument of "exploitative" Western capitalism. When that attitude changed in the late 1980s and early 1990s, policymakers in many of the same countries sought private foreign capital. In a complete reversal, by the mid-1990s, many policymakers came to regard private foreign capital, and especially FDI, as a major and essential source, if not the key source, for accelerating economic growth.

Asian countries have had varying experiences with private foreign capital. Taiwan and Singapore sought private foreign capital early in their development efforts at a time when few other countries did so. Japan and Korea received little equity capital (FDI or portfolio) during their years of rapid development, although Korea accessed commercial banks to a considerable extent. Countries of Southeast Asia began encouraging FDI by the 1970s, as they began their rapid outward-oriented development effort. Later on, Japan, Korea, and Taiwan became exporters of private capital to other countries, although there were substantial inflows as well as outflows. The Southeast Asian countries have continued to be predominantly recipients of inflows, especially from the East Asian countries.

International economists have long taught that a negative current account balance is the counterpart to capital flows and enables a country to invest more than it saves. This truism led most economists to believe that net capital flows were in the interests of both capital exporters and capital importers. Until recent years when private capital flows increased, however, little attention was paid to their causes and effects, and to differences between types of capital flows.

However, at the same time as private capital flows had greatly increased in importance, financial crises in countries such as Mexico, and later in Asia, raised concern about the stability of these flows. In very short periods of time, private capital outflows threatened to overwhelm central banks, forcing rapid action and changes in policies on the part of a number of governments.

These recent developments thus raise a number of questions. What is the role of private capital (inflows or outflows) in resource allocation and in affecting economic growth? What determines the direction and composition of capital flows? What are the contributions of different types of capital flows? Researchers have been turning their attention to these issues as the importance of private long-term capital flows has increased, and as policymakers have attached increasing importance to them. But in fact, little is known about these capital flows and their causes and effects. Questions arise at many levels—micro- and macroeconomic determinants and effects of capital flows in general and of different types of capital flows.

For that reason, and also because capital flows are so important to countries in East Asia, the ninth annual NBER–East Asia Seminar on

Economics (EASE) focused on FDI in and from East Asian countries and its microeconomic determinants and effects. FDI plays a number of roles in different countries. For Japan, FDI has mostly been directed outward; about one-quarter of it has been directed to other Asian countries. Korea, Taiwan, and to a lesser extent Singapore and Hong Kong have both inward and outward FDI flows. In the early years of their phenomenal growth, inward FDI predominated; more recently, outward investment has taken place as industries earlier established in those places have pursued cost advantages in countries with lower wage rates for unskilled workers. In 1996, for example, outward FDI from Korea and Taiwan was US$4.7 billion and $3.8 billion, respectively, while inward FDI was $2.3 billion and $1.9 billion. Thus "net" FDI amounted to $2.4 billion, or 0.5 percent of GDP, in Taiwan and $1.4 billion, or 0.7 percent of GDP, in Korea. For still other countries, most notably in South and Southeast Asia, FDI has been mostly inward.

Economists have long agreed that capital flows, from countries where capital per worker is abundant and has a relatively low real rate of return to countries where capital per worker is scarcer and has a higher real rate of return, could benefit both capital-sending and capital-receiving countries. Moreover, in the context of the standard Heckscher-Ohlin-Samuelson model of international trade, where comparative advantage derives in large part from differences in relative factor endowments, capital flows (in the form of current account deficits) to a country can serve as a substitute for trade in goods. Thus a relatively capital-poor country could benefit either from exporting labor-intensive goods and exchanging them for capital-intensive goods or from having a current account deficit to enable it to increase its relative stock of capital.

In either case, the country would obtain a bundle of goods and services with larger capital inputs than would be achievable in the absence of trade in goods and capital flows. But if "trade in capital" is all that is involved in capital flows, the form of the capital flow should be immaterial—whether long-term bonds issued in the receiving country, long-term commercial bank lending, foreign purchase of equities in the local share market, or FDI. In fact, many observers have claimed that these forms of capital flow are distinctly different, both in terms of their microeconomic impact on the sending and receiving countries and in terms of the degree to which they render the receiving economy vulnerable. This latter concern has been highlighted by events in Mexico at the end of 1994 and again by the Asian crisis of 1997–98. Many of the issues are macroeconomic as, for example, when it is claimed that FDI is less likely to result in financial instability than is portfolio investment, which can be withdrawn much more easily and quickly.

Many papers investigating the determinants (or early warning indicators) of currency crisis in the aftermath of the Mexican and Asian crises

point out that a higher ratio of FDI to total flow reduces the probability of currency crisis. The reason is thought to be that FDI is a steady flow of long-term capital that, once invested, is not likely to be quickly withdrawn, while portfolio flows are volatile and foreign investors can quickly sell them. It has been debated whether capital controls erected against short-term portfolio flows by developing countries serve the purpose of lowering the vulnerability of these countries, but there is a consensus that accepting (expanding) FDI normally reduces vulnerability to large shifts in flows.

While issues relating to the macroeconomic effects of different types of capital flows are being addressed by many economists and financial analysts throughout the world, a prior question relates to the differing effects of each of these types of capital flows. Questions arise as to when investments will be undertaken and financed by purchases of equity (as in instances of acquisitions or simply purchases of shares in the open market), by various forms of long-term lending and borrowing, or by FDI. If all that capital flows do is enable additional investment in the receiving country, the form of the capital flow might not matter. Even then, issues relating to the volatility of different types of capital flows might arise. This subject is addressed below.

But observers have suggested that FDI provides people in the recipient country with much more than simply a larger amount of capital with which to work. One of the early efforts to ascertain what these broader effects are was made by Kiyoshi Kojima (1978, esp. chaps. 4 and 7), who suggested that Japanese FDI and American FDI in Southeast Asia were quite different, with the Japanese investing more in industries that produced goods to be used by Japanese industry and Americans investing more in industries that produced goods for the home market.

In recent years, it has often been said that FDI enables managers and workers in the recipient country to acquire know-how and technology faster than would otherwise be possible. It may also enable new entrants to learn about export markets, stimulate competition with local firms, and provide training for workers. While these ideas have been put forth, many questions remain. What is "technology"? What attributes are "transferred" through FDI that could not otherwise be attained by, for example, sending students abroad or through licensing and royalty agreements? Even at the theoretical level, a number of questions arise. But there is a dearth of empirical evidence, which could help to shed light on these issues.

It was to consider how FDI in fact affects host and recipient countries at the microeconomic level that the ninth annual EASE was held. Questions addressed included: How different are foreign-owned (or joint venture) firms from local firms, and in what ways? What are the effects of the entrance of foreign firms into a domestic market? Do foreign firms enable all firms to achieve mastery of advanced technologies, or are those technologies adapted only in foreign-owned local firms?

The first set of papers examines characteristics of Japanese FDI in Asia. Belderbos, Capannelli, and Fukao examine Japanese FDI to Asia in the electronics sector, analyzing practices with regard to local procurement and technology transfer. Urata and Kawai's paper covers Japanese FDI to the rest of the world in textiles, chemicals, general machinery, electronic machinery, and transport equipment to test for effects on intrafirm productivity enhancement and local procurement. Kimura examines Japanese FDI to Asia and North America in both manufacturing and nonmanufacturing sectors. His goal is to test whether the industrial sector of a subsidiary is the same as that of its parent. Branstetter examines Japanese FDI in the United States in chemicals, machinery, electronics, transportation equipment, and precision instruments with a view to seeing whether FDI helps innovation in local production.

Belderbos et al. analyze in chapter 1 the determinants of local content for 157 Japanese electronics manufacturing subsidiaries in Asia. Local content is the sum of in-house value added and local outsourcing and is considered to be the component of output that yields benefits to the host country via technology transfers. Belderbos and his coauthors find that local content is generally lower in greenfield subsidiaries, subsidiaries of R&D-intensive parents, and export-oriented subsidiaries in the ASEAN-4 countries and China. In contrast, local content is higher in export-oriented subsidiaries in the newly industrialized economies, those subsidiaries that have higher domestic sales ratios, and subsidiaries of vertical *keiretsu* firms with strong intra-*keiretsu* supplier relationships.

In chapter 2 Urata and Kawai measure technology transfer by comparing the level of total factor productivity of overseas affiliates with that of parent firms. The smaller the gap between the two, they believe, the greater the extent of intrafirm technology transfer. Urata and Kawai find that the capability to absorb technologies, as reflected in educational attainment in host countries, is a key explanatory variable for intrafirm technology transfer. In some cases, experience in industrial activities is also shown to contribute to intrafirm transfers of technology.

We tend to think that FDI is a locational decision for reproducing production facilities. Kimura points out in chapter 3 that FDI is not necessarily undertaken in the same industry. Sector switching between parent and FDI affiliate is the focus of his study. The research is motivated by the observation that many Japanese trading firms invest in downstream and upstream industries abroad. Kimura finds that large Japanese manufacturing parent firms tend to have both manufacturing affiliates (all over the world) and nonmanufacturing affiliates (mainly in North America and Europe). Small manufacturing parent firms concentrate on production activities (do less sector switching) at their affiliates, particularly in East Asia. Large nonmanufacturing parent firms, such as general trading companies (*sogo shosha*), have extensive networks of production and wholesale trading all over the world. For manufacturing firms, factors that promote FDI,

such as size, foreign sales, and R&D expenditures, also promote sector switching.

Branstetter examines FDI as a channel for R&D spillovers in chapter 4. He constructs and uses panel data for individual Japanese firms to measure the quantitative impact of FDI on firms' innovation activities. He asks: How does Japanese FDI enable Japanese firms to acquire knowledge in the United States? To answer this question, he regresses "innovation" (as measured by the number of U.S. patents owned by a firm) on the firm's own R&D expenditures, foreign spillovers (measured by R&D expenditures by technologically related U.S. firms), and foreign spillovers times FDI (greenfield investments in the United States). The coefficient on the interaction of FDI with foreign spillovers is significantly positive, and Branstetter concludes that Japanese firms with FDI in the United States experience higher productivity from those spillovers than firms without FDI.

The first four chapters center on Japanese FDI; another interesting issue is contrasts between Japanese and American FDI in the Southeast Asian region. Lipsey addresses that subject in chapter 5. He notes that the composition of exports has changed markedly in East Asian countries, moving away from the "typical developing country" composition of labor-intensive commodities toward one more like that in advanced countries. U.S. FDI is found to have played an important part in this shift because it was directed largely toward the newer group of export industries. As experience with exports in the new industries was gained, U.S. firms reduced their concentration on exportable production and tended to produce more for home markets. Lipsey finds that Japanese firms invested in industries that had already demonstrated comparative advantage and exported. However, he also finds that over time U.S. and Japanese affiliates have become more alike.

In chapter 6 Abe and Zhao build a theoretical model to consider the benefits and costs of customs union between developed and developing countries. They derive conditions for a profit-increasing (for the firm) customs union and show the policy implications of developing countries' use of subsidies to promote joint ventures. These subsidies work in the same way as a reduction in tariffs on intermediate goods and can, under their assumptions, improve welfare.

In chapter 7 Cheng and Kwan consider the determinants of FDI in China, using data from twenty-nine Chinese regions for the period 1986–95. They attempt to distinguish between the agglomeration effect (under which new investment follows old investment to the same destinations) and other factors (such as wage levels) that influence choice of location for foreign investors. They find that both sets of factors are important. Investors are more likely to flock to a location where others have already gone. However, other factors can offset this tendency. They find that good infrastructure, for example, attracts FDI and that higher wage costs deter

FDI. Measures to encourage FDI (such as those taken in China's Special Economic Zones) have had large positive effects, while other measures to attract FDI have had smaller, but still positive effects.

Another interesting question pertains to the determinants of the overall level of FDI directed to China, as contrasted with other emerging markets. In chapter 8 Wei addresses this question. He first notes the very large absolute value of investment in China but then points out that a sizable part originates in Hong Kong. He argues that this is "false" foreign investment because it is investment by mainland Chinese who send their capital to Hong Kong to receive the benefits accorded to foreign investors. Once investment from Hong Kong is netted out, Wei uses a cross-country model to examine the extent to which FDI in China is the same as for other emerging markets. He finds that China is a "significant underachiever," given its size and other attributes, relative to other countries. He also finds that corruption within China is a major deterrent and can explain a significant portion of the shortfall in foreign investment. In addition, he believes that the regulatory burden in China may weigh heavily on the FDI decision.

Korea has also had an interesting experience with foreign investment. In chapter 9 June-Dong Kim and Sang-in Hwang investigate the effect of inward FDI on the productivity of Korean industries and also the effect on the likelihood of currency crisis. They find that FDI in Korean manufacturing sectors had a positive, but statistically insignificant, effect on the productivity of these sectors. In a sample of ninety developing countries in the 1990s, they found that FDI inflows lower the incidence of both currency crashes and IMF rescue loans. The explanation, they believe, is that FDI is less mobile than short-term portfolio flows so countries with higher FDI ratios are better able to withstand adverse macroeconomic shocks than countries with relatively less FDI.

In chapter 10 Seungjin Kim also considers Korean FDI but analyzes the impact of outward FDI from Korea. Some observers have feared that investing overseas may drain home firms of investment resources that could otherwise be used to increase productivity in Korea. However, Kim finds no evidence of any such effects and notes that the relatively small size of Korean FDI, combined with the access of Korean firms to the international capital market, probably implied that FDI occurred in addition to home investment and was not a substitute for it.

For Taiwan, Chen and Ku analyze in chapter 11 the effects of FDI by examining the microeconomic aspects of FDI in one industry: Taiwanese textiles. They study the pattern of change at the level of individual firms over the years 1992–95. During that period, extensive restructuring of the industry was going on, much of it entailing large investments. Most firms reduced the number of product lines in which they engaged, even changing the principal commodities they produced, so that by 1995 almost half of

sales revenue came from products introduced after 1992. Firms that had undertaken FDI were found to have restructured more dramatically in Taiwan than those that had avoided FDI.

In chapter 12 Chan analyzes the role of FDI in the growth of Taiwan's manufacturing industries. Controlling for the growth of human capital, gross capital formation, and exports in two-digit manufacturing industries, Chan investigates the links between FDI and growth in each manufacturing sector. Pooling time-series and cross-sectional data, Chan finds a link between FDI in individual manufacturing sectors and growth but no link between FDI and fixed investment or exports. The suggested interpretation is that FDI's impact on manufacturing growth probably came directly through technological improvements resulting from FDI rather than through any indirect channel.

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