

## CHAPTER 2

### REVIEW OF RELATED LITERATURE

#### 2.1 Theoretical Studies on FDI and Economic Growth

Studies based on the neoclassical approach argue that FDI affects only the level of income and leaves the long-run growth unchanged (Solow, De Mello). They argue that long-run growth can only arise because of technological progress and/or population growth, both considered exogenous. Thus, according to neoclassical models of economic growth, FDI will only be growth advancing if it affects technology positively and permanently.

Solow's (1957) pioneering contribution to growth theory has generated the theoretical basis for growth accounting. In this neoclassical view, we can thus decompose the contribution to output growth of the growth rates of inputs such as technology, capital, labor, inward FDI, or by incorporating a vector of additional variables in the estimating equation, such as imports, exports, institutional dummies etc. The growth accounting approach can be derived from the following equation:

$$Y = AF(K, L, \Omega) \quad (2.1)$$

where  $Y$ ,  $K$ ,  $L$  and  $A$  are output, capital, labor and the efficiency of the production, respectively; and  $\Omega$  is a vector of ancillary variables. Assuming, for example, a Cobb- Douglas form, and taking the logarithms and time derivatives of equation (2.1) yields:

$$g_Y = g_A + \alpha g_K + \beta g_L + \gamma g_\Omega \quad (2.2)$$

where  $g_Y$  is the rate of growth of  $A$ ,  $K$ ,  $L$ ,  $\Omega$  (the subscripts are defined in per capita terms), and  $\alpha, \beta, \gamma$  are respectively, the elasticities of output with respect to physical capital, labor and the ancillary variables.

Mankiw, Romer, and Weil (1992) modified Solow's model and argued that omitting human capital accumulation in Solow's model would cause biased estimation of the coefficient on saving and population growth. They argued that cross-country variations in income-per-capita are a function of variations in the rate of saving, the rate of population growth, and the level of labor productivity.

The endogenous growth models that began with Romer's (1986) seminal work introduced a theory of technological change into a production process. Helpman (2004) argues that endogenous growth theory emphasized two critical channels for investment to affect economic growth: Firstly, through the impact on the range of available products, and secondly, through the impact on the stock of knowledge accessible for research and development.

Economic models of endogenous growth have been applied to examine the effect of FDI on economic growth through the diffusion of technology (Barro, 1990; Barrell and Pain, 1997). FDI can also promote economic growth through creation of dynamic comparative advantages that leads to technological progress (Balasubramanyam et al., 1996; Borensztein et al., 1998).

Romer (1990) and Grossman and Helpman (1991) have calibrated Romer's (1986) model and assume that endogenous technological progress is the main engine for economic growth. Romer (1990) argues that FDI accelerates economic growth through strengthening human capital, the most essential factor in R&D effort, while Grossman and Helpman (1991) emphasize that an increase in competition and innovation will result in technological progress and increase productivity and thus promote economic growth in the long run.

## 2.2 Empirical Studies on FDI and Economic Growth

There are different results in the literature regarding to how FDI affects economic growth. Using an endogenous growth model, Borensztein et al (1998) find that FDI is an important vehicle of technology transfer, contributing more to economic growth than domestic investment. Higher productivity of FDI holds only when host countries have a minimum threshold stock of human capital. Blomstrom et al. (1994) find that, for FDI to have positive impacts on growth, the host country must attain a level of development that helps it reap the benefits of higher productivity.

Also applying endogenous growth theory framework for a data set of six Middle East and North African countries (MENA) countries in period 1975-1990, Abdel-Hameed M.Bashir (1999) concludes that FDI leads to economic growth and human capital has a negative impact on growth since the countries in sample experience lower secondary school enrollment. Shiva S.Makki and Agapi Somwaru (2004) use the same growth theory framework for cross section data of sixty-six developing countries in period 1971-2000 and realize that FDI and trade contributed toward advancing economic growth in developing countries. FDI stimulates domestic investment and benefits from FDI would be greatly enhanced if host country has better stock of human capital. Li and Liu (2005) base on a panel data set for 84 countries over the period 1970-99, apply single equation and simultaneous equation system techniques to examine the relationship between FDI and economic growth. Their results show a significant endogenous relationship between FDI and economic growth. FDI not only directly promotes economic growth by itself but also indirectly via interaction terms. Positive effect of FDI on economic growth through its interaction with human capital in developing countries, negative effects of FDI on economic growth via interaction with technology gap.

Balasubramanyam et al (1996) analyses how FDI affects economic growth in developing economies. Using cross-section data and OLS regressions he finds that FDI has a positive effect on economic growth in host countries using an export promoting strategy but not in countries using an import substitution strategy.

Olofsdotter (1998) provides a similar analysis. Using cross sectional data, the author finds that an increase in the stock of FDI is positively related to growth and that the effect is stronger for host countries with a higher level of institutional capability as measured by the degree of property rights protection and bureaucratic efficiency in the host country. In contrast to the preceding studies, De Mello (1999) only finds weak indications of a positive relationship between FDI and economic growth despite using both time series and panel data fixed effects estimations for a sample of 32 developed and developing countries. Zhang (2001) and Choe (2003) analyses the causality between FDI and economic growth. Zhang uses data for 11 developing countries in East Asia and Latin America. Using cointegration and Granger causality tests, Zhang (2001) finds that in five cases economic growth is enhanced by FDI but that host country conditions such as trade regime and macroeconomic stability are important. According to the findings of Choe (2003), causality between economic growth and FDI runs in either direction but with a tendency towards growth causing FDI; there is little evidence that FDI causes host country growth. Rapid economic growth could result in an increase in FDI inflows. Carkovic and Levine (2002) use a panel dataset covering 72 developed and developing countries in order to analyze the relationship between FDI inflows and economic growth. The study performs both a cross-sectional OLS analysis as well as a dynamic panel data analysis using GMM. The paper concludes that there is no robust link running from inward FDI to host country economic growth. Finally, Bengoa and Sanchez-Robles (2003) investigate the relationship between FDI, economic freedom and economic growth using panel data for Latin America. Comparing fixed and random effects estimations they conclude that FDI has a significant positive effect on host country economic growth but similar to Borensztein et al (1998) that the magnitude depends on host country conditions.

Most researches are done for cross section data. Some researches for time series data such as Akinlo (2004) who applies Ordinary Least Squares with Error Correction Model for Nigeria period 1970-2001 and concludes that extractive FDI does not enhance growth as manufacturing FDI in Nigeria. Wasantha Athukorala (2003) applies simple production approach to test time series data for Sri Lanka in the period 1959- 2002 using Cointegration and Error Correction Model and points out that FDI

inflows does not exert an independent influence on economic growth. The direction of causation is not towards from FDI to GDP growth but GDP growth to FDI.

There are numerous reports on FDI in Vietnam and although the growing in number, the research literature on FDI in Vietnam is still not much. This is partly because of data availability. The unavailability of data has long been an obstacle for researchers doing empirical research on the determinants of FDI and its impacts on the economy. More recently, although the availability of data has allowed some research to be done, the data is not of good quality. There are some measurement problems with the data (Phan and Ramstetter 2006, Nguyen and Xing 2006). Still, the availability of data recently has allowed researcher to conduct numerous interesting and policy-relevant empirical research on FDI and its consequences. The Government Statistical Office has recently improved by making more dataset available for research. This can lead to a surge of research work on the important topic of FDI for Vietnam in the future.

Nguyen Phi Lan (2006) examined the relationship between FDI and economic growth in Vietnam by using a simultaneous system of equations for a panel data set of Vietnamese provinces over period 1996-2003 and indicated that FDI and economic growth are important determinant of each other. Le Thanh Thuy (2005) figures out the main channels and estimates the technological spillover effects of FDI using industrial level data for periods 1995-1999 and 2000-2002. The linkage between foreign investors and domestic private sectors is found to play an important role for technological spillovers from FDI in Vietnam.

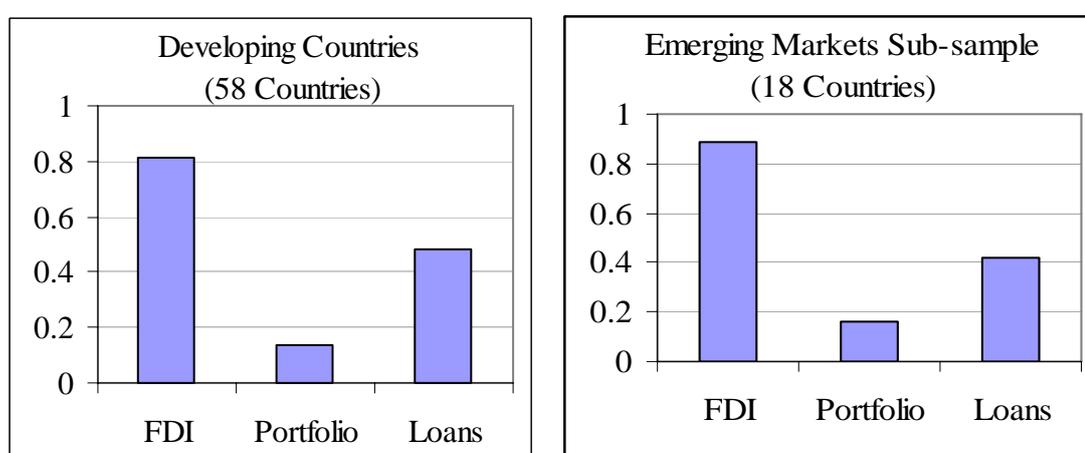
### **2.3 Foreign Direct Investment and Domestic investment**

A comprehensive study by Bosworth and Collins (1999) provide evidence concerning the effect of capital inflows on domestic investment for 58 developing countries during 1978–95. The authors distinguish among three types of inflows: FDI, portfolio investment, and other financial flows (primarily bank loans). Bosworth and Collins find that an increase of a dollar in capital inflows is associated with an

increase in domestic investment of about 50 cents. (Both capital inflows and domestic investment are expressed as percentages of GDP). This result, however, masks significant differences among different types of inflows. FDI appears to bring about close to a one-for-one increase in domestic investment. These results hold both for the 58-country sample and for a subset of 18 emerging markets.

Figure 2.1

Estimated impact of capital flows on domestic investment.



Source: Based on Bosworth and Collins (1999). The height of the bar represents the estimated impact of US\$1 of the indicated capital flow on domestic investment.

Foreign investment may “crowd in” domestic investment where it generates spillovers to the domestic economy. In Borenstein et al (1998), such spillovers occur because foreign investments lower the costs of adopting new technologies, which in turn enhances the rate of growth. Other mechanisms may also operate, as when foreign investments generate demand for specialized inputs, thus increasing the marginal productivity of investments in those inputs. Spillovers are most likely to occur when the knowledge can be rapidly transferred within the economy and domestic entrepreneurs are able to absorb that knowledge.

In the case of Vietnam, Nguyen Phi Lan (2006) estimates coefficient of FDI inflows into Vietnam indicates that, other things remaining constant, a one Vietnamese dong (VND) increase in FDI inflows would bring about an increase of

VND 1.71 in domestic investment. This implies that FDI crowds in domestic investment in Vietnam over the period 1996-2003.

Economic theory provides a well-specified framework for understanding the relationship between FDI inflows and domestic investment. First, FDI affects the profitability of domestic investment and, second, FDI is likely to alter the ownership structure of total investment in the host country and provides additional funding for the domestic investment. So far, there has been a lot of skepticism concerning the potential impact of FDI to domestic investment, since the mixed empirical evidence indicates that FDI may cause either beneficial economic effects and stimulate domestic investment and economic growth or adversely impacts through crowding out effects.

*The positive effects for the domestic investor and the host economy, stemming from activities including the following:*

De Mello (1999) concludes that domestic firms respond to FDI inflows by increasing and updating their capital stock. More particularly, when foreign investment is in a sector where many domestic firms already exist, local firms will increase investment in order to face competition. When foreign investment is in an undeveloped sector of the host country, positive effects could arise by creating complementarities with the domestic firms.

Cardoso and Dornbusch (1989) state that the increases in capital formation through financial resources brought by FDI inflows. The provision of infrastructure (transportation, telecommunication, etc.), which increases the profitability of domestic investment; the creation of new demand for local inputs and the creation of labor income; the introduction by foreign firms of new production processes and products, managerial skills, technology, etc.

The generation of spillovers that lead to productivity growth, thus, boosting competition. The creation of potential agglomeration economies attract more foreign investors and create complementarities with the domestic firms as in Markusen and Venables, (1999); Driffield and Munday, (2000). However, according to De Mello, (1999); Xu, (2000) that a number of studies provide evidence that these positive

effects depend on certain preconditions, such as: the host country's openness to trade, the size of the technological gap between multinational and domestic firms, which should not exceed a threshold level. Alfaro et al., (2004) state positive effects depend on certain level of development in the local financial markets, and a sufficiently qualified human capital in the host country, Borensztein et al., (1998).

*FDI, however, may have some negative effects as the following possibilities:*

Fry, (1992); Agosin and Mayer, (2000) Foreign firms are usually characterized by technological superiority and it is likely that they are able to exploit more rapidly and effectively possible opportunities which primarily were open to domestic investors.

Kokko, (1994); Borensztein et al., (1998) argue that in the case of imperfect competition, the market share of domestic firms can be reduced by FDI and even a number of them may have to exit the market. This happens when there is a large technological gap between foreign and domestic firms and the labor force in the host country is not sufficiently qualified.

FDI increases wages and the price of locally supplied inputs. This leads to reduced employment and displacement of domestic firms.

FDI deteriorates the balance of payments (by raising imports and worsening the terms of trade). This leads to a loss of the potential domestic productivity advantage, increases in the prices of capital goods, and the reduction of domestic investment.

Agglomeration in the long-run may crowd out domestic firms and replace them by original FDI.

FDI may crowd out domestic investment, because of differences in the access to credit.