

Essays on the Political Economy of Foreign Direct Investment

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ABSTRACT

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This dissertation studies the causes and consequences of inflows of foreign direct investment (FDI). The first chapter identifies and explains a skill bias in the sectoral composition of inward FDI in developing countries; that is, high-skill intensive FDI constitutes a large share of total FDI inflows in autocracies, while low-skill intensive FDI takes a relatively high proportion in democracies. In this chapter, I develop a political economy framework to explain the empirical pattern and argue that the skill bias is an outcome of the interaction between a country's underlying distribution of skills and the logic of political survival. Distinct institutional constraints drive political leaders in autocracies and democracies to adopt different policies toward these two types of FDI to extend benefits to their core constituencies, thus generating a skill bias in the sectoral composition of inward FDI across political regimes. Empirical evidence based on available sectoral FDI data in developing countries supports my argument. To further illustrate the causal mechanisms, Chapter 2 briefly examines FDI policy in China and Taiwan. In Chapter 3, I employ a survey experiment implemented in China to examine the distributional effects of high-skill and low-skill intensive FDI derived in Chapter 1. The results suggest that respondents' skill level is positively and strongly associated with support for high-skill intensive FDI but has no significant effect on their support for low-skill intensive FDI. These findings provide support for the micro-foundations of the political economy framework developed in Chapter 1. Finally, Chapter 4 examines the relationship between economic integration and corruption in China. Using an original dataset of corruption cases

to measure corruption at the provincial level, I find that economic integration leads to a high level of corruption in China. This finding runs counter to the conventional wisdom that economic integration helps reduce corruption and thus has important implications for both domestic and global governance. Taken together, this dissertation aims to provide more nuanced accounts of the causes and consequences of FDI inflows.

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Part I

Dissertation Chapters

Chapter 1

Domestic Political Institutions and the Skill Composition of Inward Foreign Direct Investment in Developing Countries, 1980-2008

Abstract

This chapter identifies and explains a skill bias in the sectoral composition of inward foreign direct investment (FDI) across political regimes in developing countries. That is, high-skill intensive FDI accounts for a high proportion of total FDI in autocracies, while low-skill intensive FDI takes a large share in democracies. This empirical pattern has not been studied in the literature. I argue that this skill bias is an outcome of the interaction between a country's underlying distribution of skills and the logic of political survival. Distinct institutional constraints force political leaders in autocracies and democracies to adopt different policies toward these two types of FDI to extend benefits to their core constituencies, thus generating a skill bias in the sectoral composition of inward FDI across political regimes. Empirical evidence based on available sectoral FDI data in developing countries strongly supports my argument. The results are robust and consistent across various model specifications. This study contributes to the literature by studying the nuances of industry-level FDI policy and inflows in developing countries.

1.1 Introduction

Do governments in different developing countries prefer different types of inward foreign direct investment (FDI)? If yes, what drives such heterogeneity? Inward FDI, as the single largest form of external finance, not only brings in scarce capital, sophisticated technology and advanced managerial know-how, but also creates jobs, boosts exports and stimulates economic growth in host countries. Nowadays developed and developing countries alike are competing to lure foreign investment. In this regard, this competition is leading to a “race to the bottom” in regulations,¹ because governments have little discretion in front of footloose capital.

On the contrary, governments in host countries seem to be very selective in promoting certain kinds of foreign investment over others. Consequently, the variation in the sectoral composition of inward FDI across countries in the developing world is striking. Most interestingly, autocracies and democracies tend to have distinct tastes for different types of inward FDI. As shown in Figure 1.1, for middle- and high-income developing countries,² on average, there is no significant difference between autocracies and democracies in terms of total FDI inflows. However, the sectoral composition of inward FDI across political regimes differs significantly. In other words, authoritarian countries have received a high proportion of high-skill intensive FDI,³ while democratic countries have taken a large share of low-skill intensive FDI.⁴ We can see from Figure 1.1 that high-skill intensive FDI on average accounts for 56% of total FDI inflows in authoritarian countries, while it takes only 43% in democratic states.⁵ More surprisingly, not only does the skill composition of inward FDI in autocracies and democracies differ, but the level of FDI’s skill intensity in a given country tends to decline as its level of democracy increases.

¹For discussions of the race-to-the-bottom literature, see, e.g., Garrett (1998) and Mosley (2003).

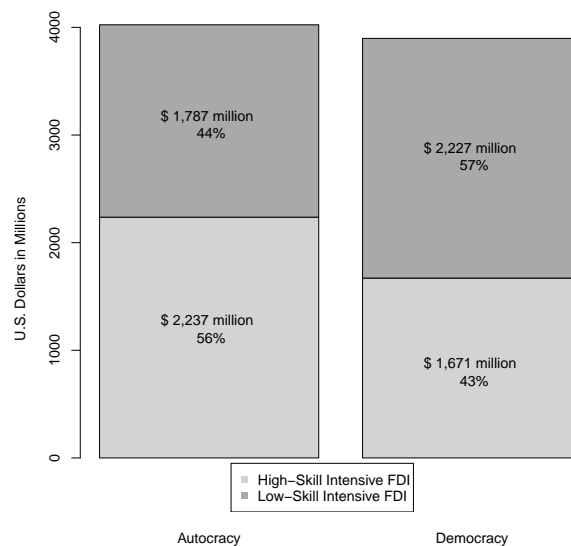
²The World Bank classifies countries with gross national income per capita larger than \$1,005 as middle- and high-income countries.

³I.e., foreign investment that utilizes sophisticated technology and hires a high ratio of skilled to unskilled workers.

⁴I.e., foreign investment that uses unsophisticated technology and hires a high ratio of unskilled to skilled workers.

⁵Here I use Cheibub et al. (2010)’s classification of autocratic and democratic countries.

Figure 1.1: Distribution of High-Skill and Low-Skill Intensive FDI in Autocracies and Democracies



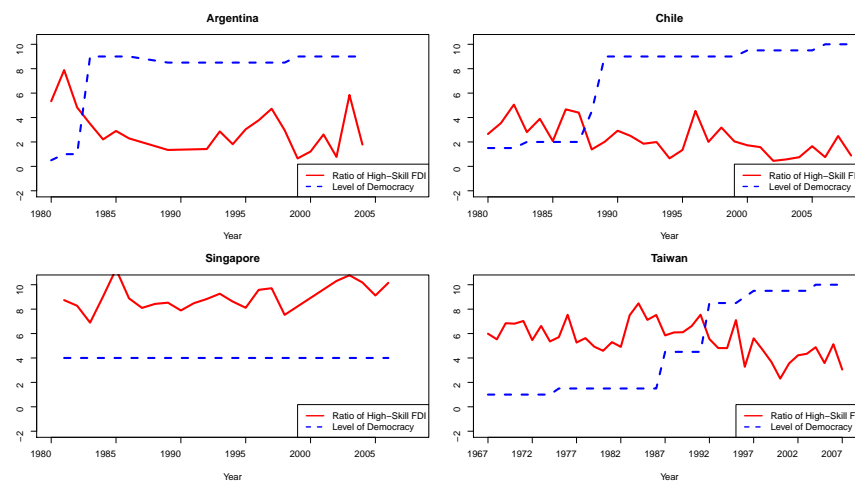
Notes: Mean values of high-skill and low-skill intensive FDI in autocracies and democracies. The sectoral FDI data come from UNCTAD. The dichotomous regime type variable is from Cheibub et al. (2010).

In Figure 1.2, I plot the proportion of high-skill intensive FDI to total FDI and level of democracy for four developing countries: Argentina, Chile, Singapore and Taiwan. The graphics illustrate two features. First, the skill composition of inward FDI tends to be divergent across political regimes, which resembles the pattern in Figure 1.1. Authoritarian Singapore consistently has a higher share of high-skill intensive FDI than democratized Argentina, Chile and Taiwan. Second, the ratio of high-skill intensive FDI decreases with democratization in Argentina, Chile and Taiwan. All of these suggest that there exists a “skill bias”⁶ in the sectoral composition of inward FDI across political regimes in developing countries.

This skill bias in FDI, and its relation to political regimes, has not been examined in the literature. It presents an empirical puzzle because conventional wisdom attributes capital flows into

⁶Recently, scholars have identified a skill bias in the pattern of trade protection across countries. See Nunn and Trefler (2006) and Milner and Mukherjee (2009).

Figure 1.2: Ratio of High-Skill Intensive FDI and Level of Democracy in Argentina, Chile, Singapore and Taiwan



Notes: The solid line indicates the ratio of high-skill intensive FDI to total FDI. The dashed line shows the level of democracy. The sectoral FDI data for Taiwan come from Investment Commission, Ministry of Economic Affairs, Taiwan. The data for other countries are from UNCTAD. The ratio of high-skill intensive FDI and level of democracy are re-scaled to range from 0 to 10.

developing countries primarily to relative factor endowments or prices (e.g., Markusen et al. 1996; Mundell 1957; Yeaple 2003). It is economically inefficient for firms to locate activities where intensively used factors are scarce. Scholars have suggested that authoritarian countries are likely to suppress labor unions and wages, while democratic countries tend to invest in human capital (e.g., Baum and Lake 2003). Thus, we would expect that democracies receive a high proportion of high-skill intensive FDI in total FDI while autocracies take a large share of low-skill intensive FDI. In addition, with the accumulation of human capital, we should expect that the skill intensity of foreign investment grows over time. The data in Argentina, Chile and Taiwan show the exact opposite (see Figure 1.2). The recent literature on FDI in Political Science has mainly focused on the supply side of foreign investment and thus devoted substantial attention to exploring the internal and external features that make countries attractive to foreign investors (e.g., Bütthe and

Milner 2008; Jensen 2003, 2006; Li and Resnick 2003).⁷

I approach this question from the perspective of the demand side of foreign investment. The answer to the skill bias, I hypothesize, hinges on the interaction between a country's skill endowments and the logic of political survival. To retain office, political leaders, whether in an autocracy or a democracy, must adjust policies to cater to their constituencies for political support (Bueno de Mesquita et al. 1999, 2003; Milner and Kubota 2005: 115-6). To this end, FDI policy can be an effective instrument to extend benefits to core supporters (see Pandya 2007; Pinto 2004; Pinto and Pinto 2008). In general, FDI inflows tend to hurt domestic capital because of increasing competition. Crucially, however, high-skill and low-skill intensive FDI generate distinct distributional consequences for skilled and unskilled labor respectively by changing their relative demand. Through employing a high proportion of skilled workers, high-skill intensive FDI tends to increase the relative wages of skilled to unskilled workers. In contrast, by hiring a large share of unskilled workers, low-skill intensive FDI generates the exact opposite income effect on both types of labor. Given that, authoritarian leaders, who rely on support from a small winning coalition that often includes skilled workers, have incentives to attract more high-skill intensive FDI to benefit and co-opt skilled workers. In contrast, democratic leaders, who depend on a broad winning coalition with a majority of unskilled workers, have incentives to attract more low-skill intensive FDI to appeal to the unskilled median voter.

To test this argument, I construct a time-series cross-sectional (TSCS) dataset that covers 38 developing countries from 1980 to 2008 using the sectoral FDI data from the United Nations Conference on Trade and Development (UNCTAD). The empirical results indicate that democracy or an increase in the level of democracy is negatively and significantly associated with the percentage of high-skill intensive FDI to total FDI. This finding strongly supports my argument that regime type makes a difference in the sectoral structure of inward FDI. The results are robust and consis-

⁷Dorobantu (2010), Pandya (2007), Pinto (2004), and Pinto and Pinto (2008) are notable exceptions.

tent when alternative measures of political institutions and various political and economic variables are considered.

The skill composition of FDI is an important variable that requires further examinations. Adding this dimension will provide more nuanced insights into both the causes and consequences of FDI inflows. The trade literature has shown that what matters to endogenous growth is not only the average tariff, but also the structure of tariffs (e.g., Nunn and Trefler 2006). Similarly, the structure of sectoral FDI inflows, along with the total volume of FDI, has crucial implications for our understanding of the consequences of FDI on income distribution, technology diffusion and economic growth in host countries. For example, scholars have been debating whether or not FDI inflows lead to income inequality, but empirical findings are mixed (e.g., Feenstra and Hanson 1997; Jensen and Rosas 2007). Given high-skill and low-skill intensive FDI's distinct employment structures, inflows of high-skill intensive FDI tend to increase income inequality while inward low-skill intensive FDI is likely to decrease it. Therefore, what also matters is the skill composition of FDI. This study suggests another channel that democracy may help to mitigate income disparity by attracting a high proportion of low-skill intensive FDI that benefits the lower and middle classes. Yet, one important policy implication for authoritarian countries with strong preferences for high-skill intensive FDI is that governments need to increase redistribution to target the poor for their support of globalization.⁸

The sectoral structure of inward FDI also sheds light on the enduring debates on the causes of FDI inflows. Political scientists are particularly interested in exploring whether political regime type affects a country's attractiveness to foreign investors. Some scholars contend that democratic governments are more attractive due to institutional constraints that help mitigate the political risks associated with government's opportunist behavior (e.g., Jensen 2003). Others claim that the plurality of interests in democracies restricts politicians' capacity to offer favorable treatment to

⁸There is a large literature on "embedded liberalism" which suggests that government spending is necessary to compensate losers in order to sustain trade openness. See, e.g., Cameron (1978), Hays et al. (2005) and Rodrik (1998).

foreign investors and facilitates lobbying for protection (e.g., Li and Resnick 2003). This chapter highlights that political institutions not only affect overall FDI inflows but also play a crucial role in shaping the sectoral structure of inward FDI.

In addition, this study provides a more nuanced account of the distributional consequences of FDI. To date research on the politics of FDI has assumed that workers and in particular skilled workers are primary beneficiaries of foreign investment because foreign firms pay higher wages than their domestic counterparts and increase the demand for skills (e.g., Feenstra and Hanson 1997; Pandya 2010; Pinto and Pinto 2008). Nonetheless, the existing literature overlooks the crucial differences between different types of FDI by assuming that all kinds of foreign investment have the same employment structure. By unpacking FDI, this research suggests that high-skill and low-skill intensive FDI are likely to engender different distributional effects on different types of labor. This finding underlines the importance of taking into account the heterogeneity of foreign investment in studying the politics of FDI. The heterogeneous preferences among different groups of labor could be crucial for various political economy models of FDI policy and have critical implications for understanding labor groups' political campaign and lobbying activities.

The chapter proceeds as follows. Section 1.2 reviews relevant literature. Then, Section 1.3 proposes a political economy framework to explain the skill bias in the sectoral composition of FDI across political regimes. Following that, Section 1.4 discusses research design and presents systematic empirical evidence. This chapter concludes with a discussion of this study's limitations and future research revenues.

1.2 Literature Review

Scholars' interests in FDI have experienced significant changes over time. In the 1960s and 1970s, there was an influential literature on multinational corporations (MNCs), especially the oligopolis-

tic expansion model and the dependency theory,⁹ both of which assumed some inherent conflicting interests between foreign investors and host governments. The central theme in this literature was “who gets what.” While we witnessed a boom of global FDI flows in the 1980s and 1990s, academic research on FDI actually declined. During this period, the prominent approach was the OLI model.¹⁰ With the continuous growth of global FDI flows, developing countries now view FDI as an important means to increase employment, acquire advanced technology and managerial know-how, and ultimately promote economic growth. Thus, we have seen a resurgence and re-orientation of FDI research. For the purpose of this chapter, I focus the literature review on recent developments in the FDI literature.

One central debate in the Political Science literature is whether political regime type affects FDI inflows. Earlier work suggests that authoritarian leaders, in order to promote industrialization, are better than their democratic counterparts at safeguarding MNCs’ oligopolistic rents by suppressing wages and the populist demand for consumption (O’Donnell 1978, 1988). In an empirical study, Oneal (1994) finds no evidence that authoritarian regimes attract more U.S. foreign investment. Recently, Jensen (2003) has argued that democracy is more attractive to FDI because democratic governments are more credible due to institutional constraints such as veto players and audience costs, helping to mitigate the political risks associated with government expropriation and policy instability. Focusing on developing countries, Li and Resnick (2003) suggest that the effects of democracy on FDI are not necessarily positive. In fact, the plurality of interests in democracies constrains politicians’ capacity to offer favorable treatment to foreign investors and facilitates lobbying for protection from incumbent domestic firms. They find that property rights protection associated with democracy is, in fact, the driving force behind inward FDI.

The mixed empirical findings raise one important question: whether political regimes *per se*

⁹For the oligopolistic expansion model, see, e.g., Hymer (1976), Kindleberger (1969) and Vernon (1971, 1980). For the dependency theory, see, e.g., Evans (1979).

¹⁰OLI refers to ownership advantage (“O”), location advantage (“L”), and internalization advantage (“I”). See Dunning (1977, 1981).

or other embedded political features such as credible commitments, veto players and political constraints actually matter to foreign investors? Recently, scholars have suggested that political constraints on politicians help attract foreign investment. The logic is that mobile foreign capital possesses substantial bargaining power *ex ante*, but becomes illiquid *ex post*. A large part of the bargaining power then shifts to the host government once investment takes place. In this regard, foreign investors prefer countries with predictable policies and transparent rules of decision making. In order to attract FDI, politicians can offer liberal policies to foreign investors. Nevertheless, the problem lies in how to make these policies credible given politicians' opportunistic behavior. Scholars have argued that veto players can perform this function by increasing checks and balances, therefore biasing policies towards the status quo. Henisz (2002) and Henisz and Zelner (2001) have revealed evidence that infrastructure investment is higher when constraints on execution are stronger. In addition, scholars have identified that political federalism, by adding a veto to central government, helps attract FDI (Jensen 2006; Jensen and McGillivray 2005). Existing studies tend to conclude that credible commitments are attractive to foreign investors. Recently, Büthe and Milner (2008) have argued that participation in international institutions contributes to credible commitments because international institutions bind members to a basket of liberal economic policies, therefore increasing the costs of deviation. They find that membership in the WTO and preferential trade agreements (PTAs) is positively and strongly associated with high levels of FDI inflows.

The aforementioned literature has reshaped the landscape of FDI study and made significant contributions to our understanding of the determinants of a country's attractiveness to FDI. However, there are some weaknesses in the literature. First, all studies have exclusively concentrated on the aggregate level of FDI inflows, while the sectoral variation of inward FDI has been mostly overlooked. Why are some countries able to attract particular types of FDI rather than others? Why do countries adopt a liberal FDI policy in some industries but not in others? Another weakness of

this literature is that, although we call it the politics of FDI, there is little dynamic domestic politics there. Most of them attend to the supply side of foreign investment and address how certain features of internal or external institutions determine a country's attractiveness to foreign investors, thereof, overlooking the significance of domestic politics including interest groups, political competition, partisanship, government turnout, etc. This is in sharp contrast to the rich literature on the political economy of trade policy.¹¹ The trade literature has clearly shown that trade policy is an endogenous outcome of a rent-seeking game of interest groups and politicians, which is shaped by national institutions (see, e.g., Grossman and Helpman 1994, 2001; Mayer 1984; Milner and Kubota 2005; Milner and Mukherjee 2009; Peltzman 1976; Stigler 1971). FDI inflows, like other cross-border factor movements, generate significant distributional consequences for domestic actors (e.g., Goldberg and Pavcnik 2007; Pandya 2010; Scheve and Slaughter 2004, 2005). Thus, domestic politics is likely to play a significant role in shaping a country's FDI policy.

Recent developments in the literature have given us many insights into the domestic politics of FDI. In a pioneering work, Pinto (2004) argues that FDI inflows benefit domestic labor but hurt domestic capital. Left-wing governments that represent the interests of labor are thus likely to welcome foreign investment. In contrast, right-wing governments representing the interests of business groups, tend to restrict FDI inflows. Empirically, he finds that partisanship is a strong predictor of the variation of overall FDI inflows. As an extension of this work, Pinto and Pinto (2008) suggest that left-oriented governments encourage the type of inward FDI that complements domestic labor while right-oriented governments support the kind of inward FDI beneficial to domestic capital. Using the sectoral FDI data of OECD countries from 1980 to 2000, they find empirical support. Additionally, Pandya (2007), distinguishing between horizontal and vertical FDI, suggests that horizontal FDI's market access nature makes domestic capital and labor unite to oppose this type of FDI, while consumers benefit on the whole; vertical FDI tends to benefit

¹¹See Rodrik (1995) for a review of different political economy frameworks of trade policy.

domestic labor by increasing employment, while it exerts no impact on the domestic market given that it is export-oriented. In the political arena, vertical FDI is likely to become a partisan issue because left-wing parties cater to labor. In contrast, the politics of horizontal FDI centers on regime characteristics because it leads politicians to make tradeoffs between special interest groups and overall consumer welfare. Focusing on transition economies, Dorobantu (2010) claims that democratic leaders are likely to liberalize FDI regulations because their broad constituencies—workers—benefit from FDI inflows. Their authoritarian counterparts tend to restrict FDI inflows to protect domestic capitalists from whom they derive political support. The underlying assumption is that FDI is beneficial to domestic labor but harmful to capital.

Certainly, these studies treat FDI policies or inflows as an endogenous outcome of political interactions that are channeled by national institutions. Although still at an early stage, this research has significantly advanced our knowledge about the dynamic domestic politics of FDI and moved FDI research into a new field in line with the traditional literature on the political economy of trade. Nevertheless, these works have mainly focused on the aggregate level of inward FDI.¹² The sectoral variation in FDI policy and flows, particularly in developing countries remains under-explored. This chapter seeks to contribute to the literature by examining the sectoral variation of inward FDI in developing countries.

¹²Pinto and Pinto (2008) focus on the sectoral variation of FDI inflows in OECD countries. Pandya (2007) distinguishes between vertical and horizontal FDI.

1.3 Political Regimes and the Skill Composition of Inward FDI:

A Political Economy Explanation

1.3.1 Distributional Consequences of High-Skill and Low-Skill Intensive FDI

MNCs, the vehicles of FDI, possess proprietary and intangible assets, such as advanced technology, brand names, managerial know-how, and access to markets, which are inefficient to directly contract or license. Thus MNCs arise to overcome these inefficiencies (Caves 1996; Markusen 2002). Investment by MNCs usually involves cross-border transfers of physical assets and changes of factor demand, therefore generating distributional consequences on domestic actors in host countries¹³

Scholars often distinguish between vertical and horizontal FDI.¹⁴ When engaging in vertical FDI, MNCs decompose various production stages into multiple countries to take advantage of factor-price differentials. The primary motive of vertical FDI is to locate production where intensively used factors are relatively cheap, which is often referred to as “efficiency-seeking.” Horizontal FDI is when an MNC duplicates its production in various countries to avoid high tariffs or trade costs, which is particularly “market-seeking.” Another dimension—MNCs’ level of skill intensity—is also an important determinant of MNCs’ investment behavior.¹⁵ High-skill intensive FDI involves MNCs that use sophisticated technology and hire a high ratio of skilled to unskilled workers. In contrast, low-skill intensive FDI utilizes unsophisticated technology and employs a

¹³Cross-border movement of FDI could change the factor returns in both home and host countries (see, e.g., Feenstra and Hanson 1996, 1997). Given that the focus of this chapter is the distributional effects of FDI in host countries, the following discussions simply ignore the influence of FDI in home countries.

¹⁴For models of vertical and horizontal FDI, see, e.g., Helpman (1984), Markusen (1984), Markusen and Venables (2000), and Markusen et al. (1996).

¹⁵For instance, it has been documented that MNCs’ skill intensity—measured by firms’ capital intensity, R&D, advertising expenditures, or ratios of non-production to production workers—is an important determinant of their investment strategies in various business environments. See, e.g., Henisz (2000), Javorcik and Wei (2009), Rodriguez et al. (2005), and Uhlenbruck et al. (2006).

high ratio of unskilled to skilled workers. Given their distinct employment structures, inflows of these two types of FDI can have different distributional consequences.

In a variant of Jones's (1971) specific factors model,¹⁶ let us assume a small open economy endowed with the following factors: domestic capital (K), skilled labor (S), and unskilled labor (L). In developing countries, L is usually much larger than S ($L > S$). Let us further assume that domestic capital is industry specific (immobile) and labor is completely mobile across industries within the country but immobile internationally. Foreign capital (F) is completely mobile and seeks the highest returns globally. Furthermore, suppose that there are two sectors—high-skill and low-skill intensive—in the economy producing high-skill and low-skill goods (X, Y), respectively. The prices of these two goods are fixed, set by the world prices. In other words, changes in domestic production of X and Y do not affect their prices. By definition, the high-skill intensive sector utilizes a higher ratio of skilled to unskilled labor than the low-skill intensive sector. Put differently, producing one unit of X requires more skilled labor than producing one unit of Y . Supplies of domestic capital and both types of labor are fixed but supply of foreign capital is perfectly elastic. Full employment is maintained in the economy.

Given its cross-border mobility, FDI seeks the highest returns globally. Government is able to affect the patterns of FDI inflows into these two sectors by choosing differential FDI policies¹⁷ that could affect the expected returns of foreign capital.¹⁸ First, let us assume that the government chooses to eliminate restrictions on FDI in the high-skill intensive sector. It may even provide certain tax or policy incentives to attract FDI into this sector. Inflows of foreign capital raise capital

¹⁶See also Pinto and Pinto (2008). Their model allows foreign capital to either substitute or complement domestic capital.

¹⁷These policies include not only direct taxation on foreign capital, but also other restrictions on foreign capital, including joint venture, local ownership, and minimum export requirements, etc. See Pinto and Pinto (2008).

¹⁸The “race-to-the-bottom” literature suggests that globalization significantly constrains government policy space and autonomy. With regard to FDI, governments (especially those in developing countries) are forced to liberalize FDI regulations in order to compete for foreign capital. For discussions of this literature, see Garrett (1998) and Mosley (2003).

endowments in this sector, thus increasing demand for both skilled and unskilled labor.¹⁹ On the one hand, since domestic capital is sector specific, entry of foreign capital decreases the returns of domestic capital in the high-skill intensive sector due to growing competition.²⁰ Additionally, the consequent increase in the wage rate due to higher demand drives down the returns of domestic capital in the low-skill intensive sector. On the other hand, growing capital endowments in the high-skill intensive sector raise the marginal product of labor in this sector. Firms in this sector increase the output of X by inputting more labor until labor's marginal product is equal to its price. The expansion of output in X increases the demand for both types of workers, thus attracting both types of labor to move away from the low-skill intensive sector. Given that the high-skill intensive sector utilizes a higher ratio of skilled labor, foreign capital into this sector raises the demand for skilled labor more than that for unskilled labor. In order to compete for labor, firms' output in the low-skill intensive sector declines, freeing up a high proportion of unskilled workers. Consequently, the relative demand for skilled workers in the economy increases, while the relative demand for unskilled workers decreases. To maintain full employment, given the change of relative demand, the relative wages of skilled to unskilled workers increase.²¹ Overall, inflows of high-skill intensive FDI benefit skilled workers more than unskilled workers.

¹⁹The model assumes that foreign capital complements domestic labor. In theory, foreign capital could substitute labor. However, the existing literature tends to support that inward FDI has a positive effect on wages. See Brown et al. (2004) for a review of the literature.

²⁰Here foreign and domestic capital are substitutive. More efficient foreign firms can reduce domestic firms' market shares, therefore increasing the production costs of domestic firms and leading to a decline in their productivity. This situation is what Aitken and Harrison (1999) interpret as the "market-stealing" effect, or negative technology spillover. In other cases, MNCs can also complement domestic capital through positive technology spillover or forward and backward linkages. If this sort of complementarity is sector specific, domestic firms in the other sector still hurt because labor is driven away. In cases where foreign capital is complementary to domestic capital in both the high-skill and low-skill intensive sectors, both domestic labor and capital gain from inflows of foreign investment.

²¹This change does not necessarily lead to a decline in unskilled workers' real wages, which is dependent on other parameters as well. In a two-country Heckscher-Ohlin model with both countries of significant size, Feenstra and Hanson (1996, 1997) show that capital movement from North to South increases the skilled wage and decreases the unskilled wage in both home and host countries. In their model, the less skill-intensive production that moves from North to South is considered to be more skill-intensive than the average production in South; thus, such capital movement increases the average skill intensity of production in both the home and host countries. For a detailed discussion of how FDI affects factor returns in various circumstances, see Brown et al. (2004).

Second, suppose that the government liberalizes FDI regulations in the low-skill intensive sector. While foreign firms might employ a higher ratio of skilled to unskilled labor than their domestic counterparts, they still, on average, use more unskilled labor in production in this sector than firms in the high-skill intensive sector.²² Inflows of foreign capital into the low-skill intensive sector decrease the returns of domestic capital in both sectors due to increasing competition and the immobility of domestic capital. Moreover, increasing capital endowments lift the demand for both types of labor in the low-skill intensive sector. This time, the demand for unskilled labor is larger than that for skilled labor. Due to complete labor mobility, both types of labor are driven to the low-skill intensive sector. The relative demand for unskilled workers therefore rises in the economy, while the relative demand for skilled workers declines. Foreign capital into the low-skill intensive sector thereby increases the relative wages of unskilled to skilled workers.

The analysis above has shown that inflows of high-skill and low-skill intensive FDI affect the relative demand for skilled and unskilled workers and therefore their real wages. Given their distinct effects on workers' material well-being, I expect that, *ceteris paribus*, skilled workers favor high-skill intensive FDI and demand liberal FDI policies in high-skill intensive sectors, while unskilled workers prefer low-skill intensive FDI and demand FDI liberalization in low-skill intensive sectors.

1.3.2 Distribution of Skills, Political Institutions and FDI Policy

Following the endogenous tariff formation framework developed by Mayer (1984), we can treat FDI policy as an endogenous outcome of the interaction between a country's underlying distribution of skills and the processes of political participation through which economic interests are

²²Foreign firms tend to be more productive and have technology advantages over domestic counterparts. For instance, in Feenstra and Hanson's (1996; 1997) studies of the effects of capital movement on the relative wages in both home and host countries, one assumption is that relatively labor-intensive production moving from a developed to a developing country is considered to be skill-intensive in the host country. However, it is also possible that MNCs could transfer production that is less skill-intensive than the average production in the host country.

aggregated to influence actual FDI policy. I have assumed that a country is endowed with three factors: capital (K), skilled labor (S) and unskilled labor (L). In developing countries, unskilled labor is the mass majority, with skilled labor in the middle and capitalists at the top as the smallest group; that is, $K < S < L$. Given that the primary focus of this chapter is to understand how labor coalitions affect FDI policy, I will simply put aside capitalists in the following analysis.²³ ²⁴ Now let's further assume that each individual in the economy only owns one of the two factors. Namely, individuals are either skilled or unskilled workers. Each individual can be differentiated by his or her skill level. Then, the distribution of skills in a developing country is skewed to the right with mass unskilled workers concentrating on the left (see Figures 1.3 & 1.4). Heterogeneous skill endowments imply that each person has an optimal FDI policy. Given the distributional effects of high-skill and low-skill intensive FDI, I expect that skilled workers prefer high-skill intensive FDI while unskilled workers favor low-skill intensive FDI.

According to the selectorate theory, the key distinction between autocracies and democracies is the size of the winning coalition—a subgroup of the selectorate from whom leaders have to secure political support (Bueno de Mesquita et al. 1999, 2003). Regardless of the composition of the winning coalition, leaders in both autocracies and democracies must execute policies that appeal to the winning coalition to remain in office (Bueno de Mesquita et al. 2003; Milner and Kubota 2005: 115). Thus to maximize political support within the winning coalition, political leaders have to adopt policies preferred by the median voter or the representative person.²⁵

Here, the use of “median voter” should not be read literally. As Alesina and Rodrik (1994:

²³Domestic capital's preferences over inward FDI are complex. They depend on whether foreign investment is substitutive for or complementary to domestic capital, which is determined by the underlying market structure, foreign and domestic firms' skill intensity, their positions on the production chains, etc.

²⁴Even in a country that only allows capitalists and skilled workers to participate in the political process, a social planner who seeks to maximize the overall support of the constituencies, should cater to the representative skilled worker, given that the size of skilled workers is often larger than that of capitalists. Thus, the ignorance of capitalists should not be a serious concern in the analysis of how different labor coalitions affect a country's FDI policy.

²⁵I use median voter and representative person interchangeably. In an autocracy, it is more appropriate to refer the median voter as the representative person.

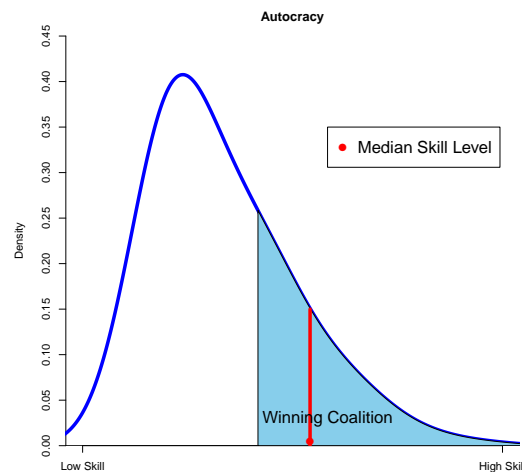
466-67) put:

“We appeal to this theorem simply to capture the basic idea that any government is likely to be responsive to the wishes of the majority when key distributional issues are at stake. Even a dictator cannot completely ignore social demands, for fear of being overthrown. Thus, even in a dictatorship, distributional issues affect the majority of the population will influence policy decisions.”

The majority refers to the winning coalition *as per* the selectorate theory. In an autocracy, the winning coalition consists of a small group of people that often include elites, professionals, technocrats, and other skilled workers, who exert influence on political leaders and their public policies. There are at least two chief reasons why skilled workers are likely to be part of the winning coalition. First, skilled workers are scarce in developing countries and they are valuable economic resources. Skilled workers are necessary to run some key industries, high-tech and skill-intensive sectors in particular, to generate economic rents for authoritarian leaders to sustain power. Thus, authoritarian leaders have strong incentives to co-opt certain segments of the population that are an important input to production (Kim and Gandhi 2010). Even in authoritarian countries that primarily depend on rents from natural resources, skilled workers are a critical production input as they possess necessary expertise and skills. For instance, Haber et al. (2003) suggest that authoritarian governments tend to provide selective property rights to certain group of people who possess specific technologies or know-how to run the industry that provides a significant proportion of government tax revenues. Second, skilled workers, who are often educated, are more able to organize themselves and thus could be a greater threat to authoritarian regimes.²⁶ Moreover, skills are closely associated with wealth. In this sense, skilled workers or the middle

²⁶The middle class is often co-opted in an authoritarian regime, as the middle class has the potential to threaten regime stability and pressure for democratization. Modernization theory suggests that with growing economic power, the middle class becomes increasingly aware of democratic principles and post-materialist values, intolerant of authoritarian rules, and thus a driving force of democratization (see, e.g., Huntington 1991; Moore 1966; Rueschemeyer et al. 1992).

Figure 1.3: Size of Winning Coalition and the Representative Person in an Autocracy

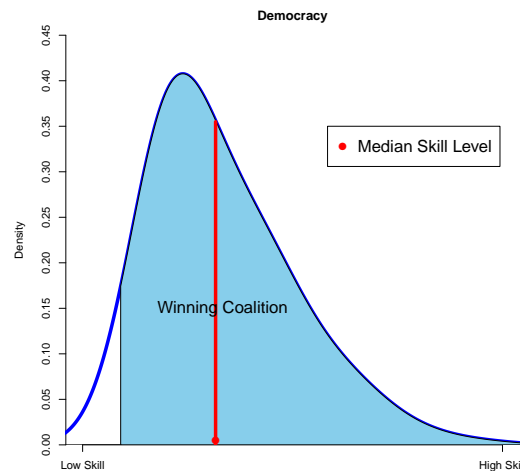


class is relatively easier to be co-opted by extending material benefits as their interests are closer to the elites' (Acemoglu and Robinson 2006). On the contrary, unskilled workers often face the problem of collective action and thus are less likely to impose a great threat.²⁷

In order to retain office, authoritarian leaders have to secure the political support of the winning coalition. When distributional issues are at stake, the policy that maximizes political support within the winning coalition is the one preferred by the representative person. With a small winning coalition consisting only of the population on the right side of the distribution (see Figure 1.3), the representative person is a typical skilled worker. The FDI policy preferred by the representative person is the one that maximizes the overall well-being of the winning coalition and thus political support. Given the distributional consequences of high-skill and low-skill intensive FDI, authoritarian leaders are likely to adopt favorable policies toward high-skill intensive FDI to target

²⁷For instance, although there are tens of thousands protests and demonstrations by workers and peasants due to corruption, unpaid wages and pensions, or environmental deterioration every year in China, these events have been more narrowly focused on local and specific concerns and have not yet posed a serious, nationwide threat to the regime (Sandby-Thomas 2011).

Figure 1.4: Size of Winning Coalition and the Median Voter in a Democracy



skilled workers in exchange for political loyalty.

In a democracy, where the franchise is expanded, the mass poor are empowered to choose political leaders. Moreover, political competition, one of the fundamental features of democracy, induces political leaders to adopt policies that appeal to the majority. Under universal suffrage and majority rule, the median voter plays a decisive role in political competition (Downs 1957; Hotelling 1929). In order to win election and retain office, democratic leaders must adjust their policies to be responsive to the preferences of the median voter. With a large enfranchised population in developing countries, the winning coalition expands to include the masses of unskilled workers (see Figure 1.4). Consequently, the skill level of the median voter declines and the median voter is now a typical unskilled worker. Democratization creates new coalitions that are politically influential and weakens the political cleavages of vested interest groups (Weyland 2002: 60). With more unskilled workers included in the winning coalition, the policy preferences of the winning coalition differ significantly from those in an autocracy in various realms, including FDI policy. In contrast to skilled workers, unskilled workers favor low-skill intensive FDI because this sort of FDI is more likely to increase their employment opportunities and wages. Therefore, democratic

leaders are likely to adopt favorable policies to attract more low-skill intensive FDI.

However, in general domestic capital is likely to hurt from FDI inflows due to increasing competition.²⁸ More efficient foreign firms can reduce domestic firms' market shares, therefore increasing the production costs of domestic firms and leading to a decline in their productivity (Aitken and Harrison 1999). Incumbent domestic firms may actively lobby government to restrict the entry of foreign firms (see, e.g., Chari and Gupta 2008). However, to maximize political support and retain office, politicians have incentives to adjust FDI policy strategically. Given the underlying distribution of skills within the winning coalition, political leaders decide how much high-skill or low-skill intensive FDI should be attracted to maximize political support. Thus, both types of FDI are determined simultaneously. Democracy or an increase in the level of democracy will induce political leaders to adopt liberal policies to attract more low-skill intensive FDI. It should be noted that, whether FDI is high-skill or low-skill intensive is relative to the average skill intensity of existing production within a country. It is possible that low-skill intensive FDI into a relatively developed country is more skill-intensive than that into a relatively less developed country. Therefore, I hypothesize that:

H1: Political leaders in democracies will adopt liberal policies to attract more low-skill intensive FDI and thus democracy, or an increase in the level of democracy, decreases the percentage of high-skill intensive FDI to total FDI.

²⁸See footnote 20 for a discussion of how foreign capital can either benefit or hurt domestic capital.

1.4 Empirical Analysis

1.4.1 Dependent Variable

To test this hypothesis, I have constructed a time-series cross-sectional dataset covering 38 developing countries from 1980 to 2008. I focus on developing countries for two reasons: (1) there are strong theoretical reasons that FDI into developed and developing countries may be driven by different factors. The knowledge-capital model suggests that horizontal FDI is prevalent among developed countries with similar factor endowments and market sizes, while vertical FDI originated in developed countries is likely to go to developing countries to take advantage of factor-price differentials (e.g., Markusen 2002; Yeaple 2003); (2) all developed countries are long-standing democracies and experience no regime change in the period of this study. Including these countries may bias the empirical results.

The dependent variable is the percentage of high-skill intensive FDI to total FDI, which is calculated based on the sectoral FDI data obtained from UNCTAD. Since I argue that democracies are likely to adopt a more liberal policy toward low-skill intensive FDI and thus associated with relatively higher low-skill intensive FDI inflows, my argument suggests that political regimes affect relative rather than absolute high-skill and low-skill intensive FDI inflows. Furthermore, what matters to the relative wages of skilled and unskilled workers is the skill intensity of FDI relative to the average of existing production within a country. Thus, the skill composition of FDI captures the underlying political logic.

Ideally, for every host country in each year, we require detailed employment information about all foreign firms that have invested and then classify them into high-skill and low-skill intensive. Unfortunately, such data are obviously too demanding and simply do not exist. Alternatively, we can classify FDI skill level in terms of the skill intensity of the industry to which it belongs. It is true that firms' skill levels vary greatly even within an industry. However, since I focus on relative labor

demand, it is reasonable to assume that firms in industries such as machinery and transportation equipment manufacturing are more skill-intensive and demand more skilled workers than those in textile and wood manufacturing. In other words, firms in high-skill intensive sectors, on average, employ more skilled workers than those in low-skill intensive sectors, *vice versa*. Based on this assumption, I am able to classify the skill intensity of different types of FDI.

The industrial classification used in the UNCTAD FDI dataset is at the two-digit level of International Standard Industrial Classification (ISIC) Rev. 3.1 for manufacturing sectors and one-digit level for others.²⁹ The classification of industrial skill intensity is based on the ratio of skilled workers (with twelve years or more education) to unskilled workers (with less than twelve years education). The data come from Nunn and Treffer (2006), Antweiler and Treffer (2002), and Milner and Mukherjee (2009). Among all 30 industries, 13 are classified as high-skill intensive.³⁰ They are publishing, printing and reproduction of recorded media; coke, petroleum, products and nuclear fuel; chemicals and chemical products; machinery and equipments; electrical and electronic equipment; precision instruments; motor vehicles and other transport equipment; finance; business activities; public administration and defense;³¹ education; health and social services; and community, social, and personal activities.³² Others are classified as low-skill intensive. However, the empirical results are not sensitive to the specific classification.³³

After classifying industrial skill intensity, I calculate the percentage of FDI in high-skill intensive industries to overall FDI as a measure of the dependent variable. However, there are only a few countries reporting detailed sectoral FDI data. A lot of cases are missing. After dealing

²⁹Due to the constraints of data availability, I am unable to go to further disaggregated industry levels.

³⁰Some manufacturing industries are aggregated because more detailed industrial FDI data are not available. For instance, textiles, wearing apparel, dressing and dyeing of fur are combined as textiles, clothing and leather. Since these manufacturing activities are closely related to each other, such kind of aggregation does not affect the classification of skill intensity.

³¹Given the sensitivity of this industry, in most countries, this category is 0.

³²This sector is classified as skill-intensive because it includes activities of business, employers and professional organizations, as well as recreational, cultural and sporting activities that are clearly skilled-labor intensive.

³³The results are robust and consistent within some range of skill intensity as shown in Figure 1.5 in the Appendix. The upper bound is electrical and electronic equipment industry and the lower bound is hotels and restaurants industry.

with these missing values,³⁴ I am able to obtain 486 observations in total covering 38 developing countries from 1980 to 2008 before pairwise deletion of missing values in exploratory variables. Data coverage within countries ranges greatly, from 1 to 29 observations.³⁵

1.4.2 Independent Variable

The key independent variable is political institutions. I employ three sets of commonly used measures in the literature: the democracy score from the Polity IV project (Marshall and Jaggers 2010), the size of the winning coalition (Bueno de Mesquita et al. 2003), and the dichotomous political regime variable constructed by Cheibub et al. (2010).³⁶

The Polity IV project collects data on the political characteristics of 163 countries and economies from 1800 to 2008. The political regime index constructed by Marshall and Jaggers (2010) combines five factors measuring domestic political characteristics: (1) the competitiveness of the process for selecting a country's chief executive, (2) the openness of this process, (3) the extent to which institutional constraints limit a chief executive's decision-making, (4) the competitiveness of political participation within a country, and (5) the degree to which bidding rules govern political participation within it. These five factors are used to construct an 11-point index of democratic (DEMOC) and autocratic (AUTOC) scores. This measure has been widely used in the studies on the relationship between political institutions and foreign policies (see, e.g., Jensen 2003; Li and Resnick 2003; Milner and Kubota 2005; Milner and Mukherjee 2009; Oneal and Russett 1999).

³⁴See the Appendix for a description on how missing values are treated.

³⁵See Table 1.5 in the Appendix for data availability.

³⁶Another commonly used measure of political institutions is the index of political rights constructed by Freedom House. However, given its subjectivity and the complex items used to aggregate the seven-point scale measure, it is unclear what this measure really captures. My argument is about the size of the winning coalition and the degree of political competition. Questions used to construct the political rights index include: Are there free and independent media? Are there free trade unions and other professional organization, and is there effective collective bargaining? Is there personal autonomy? Is there equality of opportunity? Apparently, this measure contains much more information than the size of the winning coalition and political competition. Using this index makes the underlying causal mechanism unclear. See Cheibub et al. (2010) for a more detailed discussion.

Following the existing literature, I use the difference between DEMOC and AUTOC as a measure of political regime ranging from -10 for an extremely autocratic state to 10 for an extremely democratic state. This measure is appropriate for testing the hypothesis, since I argue that not only democracy but also an increase in the degree of democracy is associated with a low proportion of high-skill intensive FDI. In addition, I utilize the political competition (POLCOMP) and the competitiveness of participation (PARCOMP) in the Polity IV dataset to capture the level of political competition. My argument suggests that political competition, one fundamental feature of democracy, induces politicians to appeal to the unskilled median voter. Thus I expect that more severe political competition is associated with a higher percentage of low-skill intensive FDI.

The size of the winning coalition is central to the argument. With an increasing size of the winning coalition, the median voter's policy preferences shift dramatically. Following Bueno de Mesquita et al. (2003) and Morrow et al. (2008), I construct the size of the winning coalition (W) as follows: three components of the Polity IV project are used, XRCOMP, XROPEN, and PARCOMP, which measure the competitiveness of executive recruitment, openness of executive recruitment, and competitiveness of political competition, respectively. W is awarded one point if XRCOMP is greater than or equal to 2, or if XROPEN is greater than 2, or if PARCOMP equals 5. W is assigned another point if it is not a military regime.³⁷ The final W score is normalized to range from 0 to 1.

Finally, I utilize Cheibub et al.'s (2010) dichotomous measure of democracy and dictatorship. This measure is minimalist. A country is classified as a democracy when the four requirements are met:

“1. The chief executive must be chosen by popular election or by a body that was itself popularly elected.

³⁷In the original measure, the authors use the data of non-military and non-military-civilian regimes from Banks (1996). Given the time coverage of the sample in the chapter, I need the latest data on military regimes. Thus, I utilize the regime variable from Cheibub et al. (2010) to code military regimes

2. The legislature must be popularly elected.
3. There must be more than one party competing in the elections.
4. An alternative in power under electoral rules identical to the ones that brought the incumbent to office must have taken place” (Cheibub et al. 2010: 69).

This measure is appropriate for testing the argument because the classification is based on how the chief executive is selected. When the chief executive is chosen through popular elections, politicians have to secure a large winning coalition and adopt policies that appeal to the majority of voters.

1.4.3 Alternative Explanations and Control Variables

1.4.3.1 Human Capital and Skill Endowments

Obviously, national human capital and skill endowments play a critical role in determining the geographic distribution and composition of FDI (Carr et al. 2001; Yeaple 2003; Zhang and Markusen 1999). Due to comparative advantage, high-skill intensive FDI may favor locations that are relatively abundant in skilled workers. If the ratios of factor endowments between MNCs and host countries are extremely different, it might not be economically efficient to produce goods in host countries. Yeaple (2003) finds evidence that U.S. MNCs in high-skill intensive industries favor skill-abundant countries, while those in low-skill intensive industries prefer skill-scarce locations. I expect that a country endowed with more human capital and skills is associated with a higher percentage of high-skill intensive FDI inflows.

H2: Human capital and skill endowments are positively correlated with the percentage of high-skill intensive FDI.

I utilize a country’s real GDP per capita and gross secondary school enrollment rate as proxies

for its human capital and skill endowments. A country's level of economic development is closely related to its human capital and skill endowments. Clearly, economic development helps improve education facilities and increase labor force's literacy and sophistication, all of which contribute to the accumulation of human capital and skill upgrading. Thus, real GDP per capita is able to capture a country's human capital and skill endowments. The real GDP per capita data comes from the World Bank's *World Development Indicators* (WDI), which is in constant 2005 international dollars (PPP adjusted). This variable is logged to deal with skewed distribution. To some extent, the gross secondary school enrollment rate is a direct measure of human capital. One weakness is that the data availability is really poor for developing countries. The World Bank's Education Statistics only report schooling data every 5 years for the 1980s. To maximize the number of observations, missing values are linearly interpolated, given the fact that human capital is accumulated over time. For the last three years (2006-2008), I use schooling data from 2005.

1.4.3.2 Market Size and Economic Growth

A large market size and high economic growth rate are particularly attractive to high-skill intensive FDI. A sizable market helps firms decrease unit cost and achieve potential economies of scale. High-skill intensive FDI often requires large research and development (R&D) expenditures and a high input of physical capital. In such cases, a large market is important to bring down unit cost and obtain production efficiency. All things being equal, high-skill intensive FDI should favor large economies. Economic growth rate is a strong signal of future economic development. Stable economic growth increases domestic income and consumer demand for goods and services, which enhances MNCs' long-term commitments (Noorbakhsh et al. 2001; Root and Ahmed 1979; Schneider and Frey 1985). In this sense, economic prospects are crucial to high-skill intensive FDI that involves a large capital investment and long-term commitment. Therefore, it is expected that a large market size and high economic growth rate help attract more high-skill intensive FDI than a

small market with a low growth rate. I utilize real GDP in constant 2005 international dollars (PPP adjusted) and annual GDP growth rate to measure a country's market size and economic growth rate, respectively. The data comes from WDI as well. To deal with skewed distribution, real GDP is logged.

H3: A larger market size and higher economic growth rate help attract a larger share of high-skill intensive FDI.

1.4.3.3 Natural Resource Endowments

Despite the fact that investment in manufacturing and service sectors constitutes the majority of current global FDI flows (UNCTAD 1998), the availability of natural resources is still an important determinant of FDI inflows in least developed countries with a small market size (see, e.g., Asiedu 2006). Firms in primary sectors involving mining and quarrying in developing countries tend to be less skill-intensive.³⁸ Thus, countries abundant in natural resources are likely to attract a relatively high share of low-skill intensive FDI. To proxy for countries' natural resources endowments, I use the percentage of fuel, ores and metals exports in total exports (see, e.g., Ades and Tella 1999; Treisman 2000). The data is from WDI as well.

H4: Natural resource endowments decrease the percentage of high-skill intensive FDI.

³⁸The skill intensity of mining, quarrying and petroleum industry varies greatly across developed and developing countries. In some cases, firms in primary sectors such as petroleum extraction can be high-skill intensive. The U.S. data show that mining, quarrying and petroleum industry is high-skill intensive while the China data indicate that it is low-skill intensive. In the sectoral FDI dataset, only a few number of countries report FDI data in the mining, quarrying and petroleum industry. Including this industry in the construction of the dependent variable reduces the sample size by more than 80 observations. However, the empirical results of the analysis are not sensitive to the inclusion or exclusion of primary sectors and whether the mining, quarrying and petroleum industry is classified as high-skill or low-skill intensive. See additional robustness checks in the Appendix.

1.4.3.4 Trade Openness

Trade liberalization tends to have mixed effects on FDI inflows. On the one hand, the knowledge-capital model suggests that restricted trade regimes are associated with more horizontal FDI due to the “tariff jumping” motive. On the other hand, vertical FDI should be negatively affected by trade protection, as the motivation of this sort of FDI is to take advantage of factor-price differentials and ship intermediate or final goods back to home countries. A restricted trade system increases the cost of vertical FDI and thus reduces its incentive to locate abroad (Carr et al. 2001; Markusen 1995). Models of MNCs speculate that horizontal FDI is more common among advanced countries with similar market sizes and factor endowments; vertical FDI is more likely to go to developing countries to make use of cheap labor. In this regard, a restrictive trade regime hurts FDI inflows in developing countries. Whether liberal trade policies are more attractive to high-skill or low-skill intensive FDI is thus dependent upon the extent to which they engage in trade. In addition, trade openness may contribute to human capital accumulation and labor sophistication through interactions with other countries, which can help attract high-skill intensive FDI. To control for the effect of trade openness, I employ the standard measure of trade openness in the literature—the sum of exports and imports as a percentage of GDP. The data is obtained from WDI. This variable is logged to deal with skewed distribution. One concern of this measure is that openness can be endogenous to FDI composition given that a substantial part of trade is in fact conducted by MNCs. To mitigate this problem, as a robustness check I turn to Sachs-Warner’s dichotomous index of trade openness that gauges a country’s trade policy orientation and is thus less endogenous to FDI.³⁹

H5a: Trade openness increases the ratio of high-skill intensive FDI inflows.

³⁹The Sacks-Warner index classifies a country’s trade regime as closed if one of the five criteria is met: “(1) Average tariff rates of 40 percent or more (TAR). (2) Nontariff barriers covering 40 percent or more of trade (NTB). (3) A black market exchange rate at least 20 percent lower than the official exchange rate (BMP). (4) A state monopoly on major exports (XMB). (5) A socialist economic system (as defined by Kornai 1992) (SOC)” (Wacziarg and Welch 2008: 190).

H5b: Trade openness increases the proportion of low-skill intensive FDI inflows.

1.4.3.5 Economic Crisis

Macroeconomic instability increases the risks and uncertainty of conducting business in host countries, therefore influencing foreign investors' expected returns. It is well documented that economic reform is more likely to be implemented during economic crisis (e.g., Edwards 1995; Weyland 2002). Such economic reforms usually contain a basket of policies to stabilize macro-economy. The effects of economic crisis on FDI inflows are rather complex. On the one hand, macroeconomic volatility increases risks and uncertainty, thus deterring foreign investors. Moreover, stabilization packages often consist of rigid fiscal policies and control of capital accounts, all of which negatively impact FDI. On the other hand, countries in economic crisis are often forced to adopt favorable policies toward FDI as it is a committed long-term financial source. This is especially important for countries undergoing balance-of-payment crisis when governments are unable to obtain foreign exchange through other channels. How high-skill and low-skill intensive FDI respond to economic crisis and government favorable policies depends on their degree of risk aversion toward macroeconomic instability. Thus, we could have two alternative hypotheses:

H6a: Economic crisis reduces the proportion of high-skill intensive FDI as it is more sensitive to macroeconomic instability.

H6b: Economic crisis decreases the share of low-skill intensive FDI as it is more sensitive to macroeconomic instability

Following Tornell (1998),⁴⁰ two notions of economic crisis are used: (1) Economic Crisis (EC Crisis)—either the country's inflation rate is no less than 40% with an increase of at least 20% from previous year, or its GDP per capita reduces by more than 25%; (2) Balance-of-Payment Crisis (BP Crisis): the country's total foreign reserves are less than the value of three-month imports. The data

⁴⁰See also Milner and Kubota (2005).

of inflation and total foreign reserves in months of imports come from WDI.

1.4.3.6 International Institutions

International institutions, such as the World Trade Organization (WTO), International Monetary Fund (IMF) and various trade agreements, bind actors to commit to a specific set of liberal economic policies, thus mitigating the problem of “obsolescing bargain” and making government’s commitment more credible (Büthe and Milner 2008). In this regard, membership in international institutions helps attract FDI. Whether international institutions impact the skill composition of inward FDI or not hinges on high-skill and low-skill intensive FDI’s sensitivity to the risk of government expropriation. Most case studies on the obsolescing bargain model have focused on extractive sectors that entail high fixed costs. Once invested, fixed capital assets become “sunk” and the bargaining power starts to shift to host government (Vernon 1971, 1980). When applying the model to manufacturing sectors, extant literature suggests that capital- and technology-intensive MNCs have more bargaining power than labor-intensive ones, as they possess arcane and proprietary firm assets. The complexity of R&D and the pace of technological change in skill-intensive sectors are often beyond the reach of host countries. Consequently, the bargaining power over time shifts towards MNCs possessing firm-specific capital, technology and managerial skills (Kobrin 1987).⁴¹ Moreover, governments in developing countries treat FDI as an important means of acquiring advanced technology and that makes the bargaining power lean towards MNCs. Thus high-skill intensive FDI should be less vulnerable to government expropriation. Therefore, I hypothesize that participation in international institutions increases a country’s proportion of low-skill intensive FDI intake. I do a principal factor analysis on a country’s WTO membership and the number of accumulative bilateral investment treaties signed to obtain a factor score as a measure of its involvement in international institutions.

⁴¹For a case study of the automobile industry, see Bennett and Sharpe (1979); for pharmaceuticals, see Gereffi (1978).

H7: Involvement in international institutions induces more low-skill than high-skill intensive FDI, and thus increases the fraction of low-skill intensive FDI.

1.4.4 Empirical Results

Due to missing values in the sectoral FDI data, the sample is extremely unbalanced. The number of observations within countries ranges from 1 to 29. Given that, a multilevel model (MLM) provides a better model fit than a classic ordinary least squares (OLS) model. OLS models with no pooling give too much weight to groups with a few observations, resulting in bigger standard errors and imprecise estimates (Gelman and Hill 2007). MLMs shrink the intercepts to group means when the number of observations is low within groups (close to complete pooling) and move intercepts to fixed effects with no pooling when the number of observations is large within groups. The partial pooling nature of MLMs provides more reasonable parameter estimates than pooled (random effects) and unpooled (fixed effects) designs when the number of observations within groups is low (Gelman and Hill 2007; Shor et al. 2007).

I estimate an MLM with varying intercepts across both countries and years to control for country and year effects.⁴² The model is constructed as follows:

$$HighSkillFDI_{i,t} = \alpha_{j[i]} + \beta_{t[i]} + \varphi * LDV + \gamma * Democracy_{i,t-1} + \phi X_{i,t-1} + \varepsilon_{i,t} \quad (1.1)$$

$$\alpha_j \sim N(\mu_\alpha, \sigma_\alpha^2)$$

$$\beta_j \sim N(\mu_\beta, \sigma_\beta^2)$$

α_j and β_t are intercepts varying across countries and over time respectively, drawn from normal distributions with means of μ_α and μ_β and standard deviations of σ_α and σ_β , respectively. φ ,

⁴²In MLMs, country and year effects are drawn from common normal distributions. In classic OLS regressions with fixed effects, the intercepts are country- and year-specific.

and γ are coefficients to be estimated for the lagged dependent variable (LDV) and democracy respectively, which are constant across all units. An LDV is included to mitigate the problem of serial correlation⁴³ and model the dynamic process of FDI inflows.⁴⁴ X is a $N \times K$ matrix of K control variables and ϕ is a vector of K coefficients to be estimated. All control variables are lagged one period to deal with possible endogeneity. Models are estimated using *lmer* in R.⁴⁵

I start from some key determinants of the skill composition of FDI: democracy, GDP per capita, and schooling. Model 1 in Table 1.1 presents the results. The regression coefficient of democracy is -0.63, statistically significant at a 95% confidence interval. This result supports my argument that an increase in the level of democracy reduces the percentage of high-skill intensive FDI. When all other variables are held constant, one standard deviation increase of the democracy score (5.97 units in the sample, roughly corresponding to the difference of the democracy scores between Nigeria and Uruguay in 2002) will reduce the percentage of high-skill intensive FDI by 4.12%. The effect is substantively large. Given that the sum of the percentages of high-skill and low-skill intensive FDI is 100%, a 4.12% decrease of the percentage of high-skill intensive FDI leads to a 4.12% increase of the percentage of low-skill intensive FDI simultaneously. The difference between these two percentages is actually 8.24%.

In addition, the coefficient of GDP per capita has the expected regression sign and it is statistically significant beyond the conventional level. This implies that higher human capital and skill endowments measured by per capital GDP are strongly associated with a larger share of high-skill intensive FDI. Schooling, measured by gross secondary enrollment rate, does not have a significant

⁴³ A unit-root test for the dependent variable rejects the null hypothesis at 1% level that all panels contain unit roots.

⁴⁴ There are some debates about whether to include an LDV or not when estimating time-series data. Achen (2000) suggests that adding an LDV can cause downward bias of other explanatory variables' coefficients and even make them insensible and insignificant. Through Monte Carlo simulations, Keele and Kelly (2006) find that in the presence of dynamics, an OLS model without an LDV is biased and the bias could be dramatic due to model mis-specification. They suggest that an OLS model with an LDV performs better than other models if theory implies dynamic processes. In this case, models without an LDV do show stronger effects of democracy than those with an LDV.

⁴⁵ Given the controversy in calculating the P-values in MLMs, the significance levels are reported based on the 90%, 95% and 99% confidence intervals obtained from 1000 simulations.

Table 1.1: Multilevel Models with Varying Intercepts across Countries and Years

Model	(1)	(2)	(3)	(4)	(5)	(6)
Democracy	-0.63** (0.31)	-0.63** (0.31)	-0.64** (0.31)	-0.70** (0.32)	-0.74*** (0.32)	-0.67** (0.33)
Lagged DV	0.07 (0.06)	0.07 (0.06)	0.06 (0.06)	0.06 (0.06)	0.05 (0.06)	0.05 (0.06)
Ln (GDP per capita)	17.04*** (4.45)	14.20*** (4.57)	14.07*** (4.66)	11.72** (5.06)	10.45** (5.18)	10.42** (5.12)
Schooling	0.03 (0.13)	-0.02 (0.13)	-0.02 (0.13)	-0.05 (0.14)	-0.06 (0.14)	0.01 (0.15)
Ln (GDP)		4.73** (2.44)	4.73* (2.51)	6.2** (2.86)	5.91** (2.94)	7.12** (3.08)
Economic Growth		0.05 (0.28)	0.05 (0.28)	0.01 (0.28)	0.05 (0.29)	0.04 (0.29)
Natural Resources			0.00 (0.11)	-0.02 (0.11)	-0.04 (0.11)	-0.06 (0.11)
Trade Openness				7.49 (6.11)	8.07 (6.18)	9.19 (6.23)
Economic Crisis					1.97 (6.80)	1.66 (6.81)
Balance-of-Payment Crisis					-5.82* (3.48)	-6.82* (3.61)
International Institutions						-2.85 (2.58)
Constant	-120.87*** (33.38)	-211.77*** (55.59)	-210.66*** (56.79)	-257.34*** (70.52)	-241.34*** (72.44)	277.31*** (78.01)
Region Dummies	✓	✓	✓	✓	✓	✓
Observations	330	330	330	330	330	330
Number of Countries	33	33	33	33	33	33
Number of Years	28	28	28	28	28	28
σ_y	22.06	22.16	22.15	22.07	22.02	22.04
σ_a	18.35	16.46	16.99	17.70	18.43	17.94
σ_b	1.85	1.88	1.95	1.99	1.42	1.67

Notes: The dependent variable is the percentage of high-skill intensive FDI to total FDI. All right-hand-side explanatory variables are lagged one period. Coefficients of region dummies and country and year effects are not reported. *** significant at 99% confidence interval; ** significant at 95% confidence interval; * significant at 90% confidence interval.

effect on the skill composition of FDI, though its slope is in the right direction. It may be that its

impact has already been captured by GDP per capita.⁴⁶

In Model 2, I add GDP and economic growth rate to the regression. Including these two variables does not change the sign or magnitude of democracy's coefficient. In addition, the results indicate that a large market size measured by GDP is significantly associated with a high proportion of high-skill intensive FDI. The coefficient of economic growth rate has the expected regression sign but is not statistically significant. In Models 3, 4, 5 and 6, I add more control variables, including natural resource endowments, trade openness, economic crisis, balance-of-payment crisis, and membership in international institutions. We can see from Table 1.1 that, in all models, democracy is negatively and strongly associated with the percentage of high-skill intensive FDI to total FDI, which is consistent with the results in Models 1 and 2. Moreover, the results show that GDP per capita and GDP are positively and significantly associated with a high proportion of high-skill intensive FDI. Rather, balance-of-payment crisis is negatively correlated with the percentage of high-skill intensive FDI and its coefficient is statistically significant at a 90% confidence interval. This implies that balance-of-payment crisis tends to have a larger negative impact on high-skill than low-skill intensive FDI. All other variables seem to have no significant effect on the skill composition of FDI, though most coefficients have expected regression signs.

The results above have shown that democracy or an increase in the degree of democracy is negatively and significantly associated with the percentage of high-skill intensive FDI to total FDI, which strongly supports my argument that political regime type makes a difference in the skill composition of FDI. To check whether the results are sensitive to a specific measure of democracy, I turn to alternative measures. In Models 1 and 2 in Table 1.2, I utilize political competition (POLCOMP) and competitiveness of participation (PARCOMP) from the Polity IV project. Given that political competition is the underlying force that drives politicians to use FDI policy to reward their core constituencies, conceptually these two variables are better measures than the composite

⁴⁶The Pearson correlation between GDP per capita and schooling is 0.58 in the sample.

Table 1.2: MLMs: Alternative Measures of Political Institutions

Model	(1)	(2)	(3)	(4)
Political Competition	-1.77*** (0.68)			
Competitiveness of Participation		-4.28*** (1.78)		
Winning Coalition			-19.32*** (7.42)	
Regime Dummy				-8.22* (4.30)
Lagged DV	0.04 (0.06)	0.04 (0.06)	0.05 (0.06)	0.05 (0.06)
Ln (GDP per capita)	10.48** (5.15)	11.24** (5.23)	12.22** (5.22)	10.01* (5.25)
Schooling	0.03 (0.15)	0.03 (0.15)	0.01 (0.15)	0.05 (0.15)
Ln (GDP)	7.32** (3.12)	6.98** (3.13)	7.59*** (3.08)	7.27** (3.19)
Economic Growth	0.04 (0.29)	0.04 (0.29)	0.03 (0.29)	0.02 (0.29)
Natural Resources	-0.09 (0.11)	-0.11 (0.12)	-0.07 (0.11)	-0.04 (0.12)
Trade Openness	10.27* (6.28)	9.96 (6.29)	9.33 (6.20)	8.31 (6.28)
Economic Crisis	0.94 (6.79)	0.8 (6.81)	1.35 (6.79)	1.68 (6.81)
Balance-of-Payment Crisis	-7.47** (3.60)	-7.86** (3.63)	-6.24* (3.60)	-6.59* (3.61)
International Institutions	-3.3 (2.53)	-4.09* (2.53)	-3.62 (2.52)	-3.61 (2.55)
Constant	-277.83*** (78.51)	-271.96*** (78.68)	-291.74*** (78.30)	-273.81*** (80.06)
Region Dummies	✓	✓	✓	✓
Observations	330	330	330	330
Number of Countries	33	33	33	33
Number of Years	28	28	28	28
σ_y	21.95	21.96	21.91	21.93
σ_a	18.29	18.41	17.91	18.86
σ_b	1.06	1.43	2.12	2.33

Notes: The dependent variable is the percentage of high-skill intensive FDI to total FDI. All right-hand-side explanatory variables are lagged one period. Coefficients of region dummies and country and year effects are not reported. *** significant at 99% confidence interval; ** significant at 95% confidence interval; * significant at 90% confidence interval.

democracy score. Using POLCOMP and PARCOMP does not affect the overall fit of the model. To some extent, POLCOMP and PARCOMP have even larger effects on the skill composition of FDI. One standard deviation increase in POLCOMP and PARCOMP reduces the percentage of high-skill intensive FDI by 4.87% and 4.79% respectively. The slopes and magnitudes of other coefficients do not change too much except that the coefficient of international institutions is statistically significant at a 90% confidence interval in Model 2. A country's membership in international institutions seems to attract more low-skill intensive FDI. In Model 3, I employ a direct measure of the size of the winning coalition. As shown in Table 1.2, this variable is statistically significant beyond the conventional level. When all other variables are held constant, one standard deviation increase in the size of the winning coalition (0.26 units) reduces the percentage of high-skill intensive FDI by 5.02%. Finally, in Model 4, the dichotomous measure of democracy and dictatorship is used. The coefficient of the dichotomous variable is negatively and statistically significant at a 90% confidence interval. This finding is pretty consistent with my argument that democracies attract a larger share of low-skill intensive FDI. For example, *ceteris paribus*, a transition from autocracy to democracy decreases the percentage of high-skill intensive FDI by 8.22%.

The analysis, so far, has shown that democracy is strongly associated with a low share of high-skill intensive to total FDI and that the results are not sensitive to alternative measures of democracy. However, one possible rejection is that the results may suffer from omitting unobservable country-specific variables. Although we have modeled country and year effects using MLMs, the assumption in MLMs is that country and year effects come from some normal distributions. If we believe that countries in the world do not share any common characteristics, the results obtained from MLMs may still suffer from omitted variable bias. To control for these fixed effects, I employ an Arellano-Bond dynamic panel data model. A fixed effects model basically uses within-group variation to obtain parameter estimates. In such a case, the proposed theory is about how a change in the degree of democracy affects the difference in the skill composition of FDI. Thus

Table 1.3: Arellano-Bond Dynamic Panel Data Estimator

Model	(1)	(2)	(3)	(4)	(5)
Democracy	-1.29*** (0.48)				
Political Competition		-3.51** (1.42)			
Competitiveness of Participation			-10.76*** (4.16)		
Winning Coalition				-27.67*** (10.01)	
Regime Dummy					-11.77** (5.22)
Lagged DV	-0.17* (0.10)	-0.18* (0.10)	-0.18* (0.10)	-0.16* (0.09)	-0.15 (0.10)
Ln (GDP per capita)	-67.93* (39.46)	-76.91** (35.83)	-67.29* (37.55)	-62.01 (38.84)	-68.47 (42.92)
Schooling	0.10 (0.40)	0.05 (0.36)	0.11 (0.37)	0.08 (0.42)	0.12 (0.42)
Ln (GDP)	45.21 (33.11)	56.61* (30.69)	50.06 (31.76)	45.14 (33.12)	46.03 (37.64)
Economic Growth	0.54* (0.28)	0.50* (0.27)	0.52** (0.25)	0.48* (0.29)	0.49* (0.29)
Natural Resources	0.64** (0.33)	0.60* (0.31)	0.55* (0.32)	0.64* (0.35)	0.67* (0.35)
Trade Openness	16.65 (10.65)	18.18* (10.86)	22.36* (11.55)	17.31 (10.53)	16.05 (10.52)
Economic Crisis	4.70 (6.94)	4.82 (6.75)	4.99 (6.80)	4.15 (7.07)	4.27 (7.17)
Balance-of-Payment Crisis	-9.02 (6.33)	-9.65 (6.31)	-10.34* (6.09)	-8.68 (6.15)	-9.65 (6.40)
International Institutions	6.35** (2.88)	5.37* (3.04)	3.85 (3.40)	3.75 (2.99)	3.20 (3.31)
Constant	-606.15 (496.55)	-796.89* (481.42)	-723.03 (483.33)	-644.19 (501.45)	-617.52 (577.16)
Observations	284	284	284	284	287
Number of Countries	30	30	30	30	31
χ^2	54.06	33.31	30.41	60.45	46.33
$P > \chi^2$	0.00	0.00	0.00	0.00	0.00

Notes: Robust standard errors in parentheses

*** significant at 1%; ** significant at 5%; * significant at 10%;

an Arellano-Bond dynamic panel data model is appropriate because it estimates the coefficients of first differences. Another advantage of this model is that it uses previous first-differences as instrumental variables for current ones, which helps mitigate possible endogeneity problems.

In Table 1.3, I present the results obtained from Arellano-Bond dynamic panel data models. We can see that a larger increase in the level of democracy is strongly associated with a larger reduction in the percentage of high-skill intensive FDI. In addition, all the coefficients of other political regime variables are negative and statistically significant. These results are fairly consistent with those in Table 1.1 and 1.2.

Finally, to further check the robustness of the findings, I run additional regressions by excluding primary sectors, controlling for political constraints and partisanship, and using Sachs-Warner's trade orientation index. The empirical results are not sensitive to alternative model specifications. All detailed discussions and results are presented in Table 1.4 in the Appendix.

1.5 Conclusion

This chapter contributes to the literature by identifying a skill bias in the sectoral composition of inward FDI across political regimes in developing countries, and by providing a political economy explanation. High-skill and low-skill intensive FDI, through employing different combinations of and thus changing the relative demand for skilled and unskilled workers, generate distinct income effects on these two types of labor. Given these distributional consequences, the motivation for political survival shaped by domestic political institutions leads politicians in autocracies and democracies to adopt different policies toward high-skill and low-skill FDI to extent benefits to their core constituencies, which results in a skill bias in the sectoral composition of inward FDI across political regimes. The empirical evidence based on available sectoral FDI data strongly supports my argument. The results are robust and consistent across various model specifications.

However, one caveat is that the results should be read as tentative given that the limited availability of sectoral FDI data for developing countries.

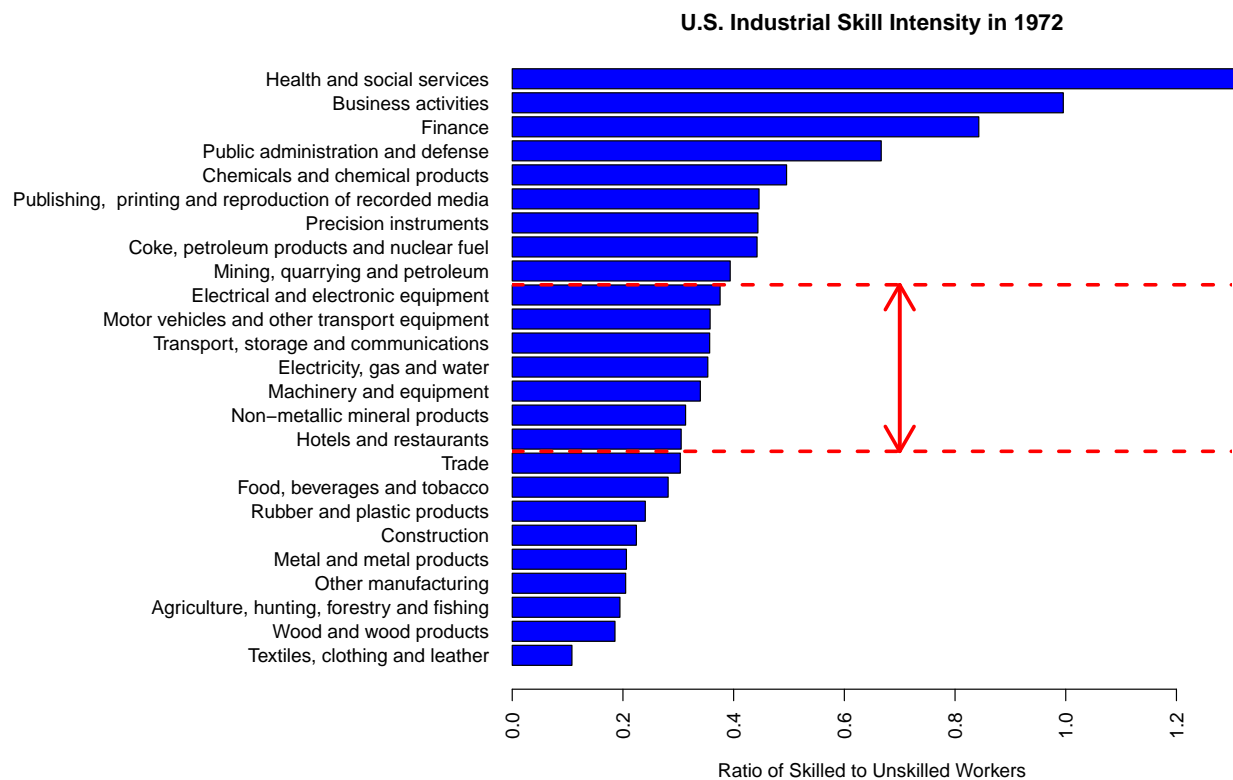
Following the political economy of trade literature and recent developments in the studies on the politics of FDI, this chapter builds an analytical framework that combines domestic interests with the mediating role of national political institutions. Moreover, it highlights labor's heterogeneous preferences toward high-skill/low-skill intensive FDI and calls for research on more nuanced accounts of the distributional consequences of cross-border factor movements and in particular FDI flows.

In addition, this chapter underscores the role of domestic politics in studying economic liberalization. The "race-to-the-bottom" argument suggests that international economic forces have exerted such a powerful influence that nation states have little discretion in the realm of foreign economic policy making. Given the increasing mobility of global capital, any deviation from a free-market policy would be punished by capital flight. However, this study suggests that the effects of international economic forces are actually channeled by domestic politics (see also Keohane and Milner 1996; Milner 1997). Politicians make strategic calculations when deciding on economic liberalization. The findings of this research encourage scholars to further explore the dynamic domestic political roots of foreign economic policy.

Lastly, although this study shows a skill bias in the sectoral composition of inward FDI across political regimes, many variations within autocracies and democracies are left unexplored. Yet, the political economy framework developed in this chapter provides a useful analytical tool for future research. For instance, although authoritarian countries in general have smaller winning coalitions than democratic states, autocratic leaders rely on a variety of domestic coalitions to maintain authority. These variations should have important implications for foreign economic policy including FDI policy, therefore providing fertile research opportunities.

1.6 Appendix

Figure 1.5: Classification of FDI Skill Intensity



Data Sources: Antweiler and Trefler (2002), Milner and Mukherjee (2009), and Nunn and Trefler (2006).

1.6.1 Missing Values in the Sectoral FDI Data

In the UNCTAD dataset, there are many empty cells. Regarding these missing values, there are two possibilities: either the country does not report the data (truly missing) or the missing value is actually 0.⁴⁷ To distinguish actual 0s from truly missing values, I first add up FDI data in the primary, secondary, tertiary, and unspecified sectors, and then compare the sum with the total inward FDI data reported by UNCTAD. If the difference between these two is less than \$ 1 million,⁴⁸ all missing values in the primary, secondary, tertiary, and unspecified sectors are imputed with 0s. After replacing missing values with 0s for these four sectors, I impute 0s within the primary, secondary, and tertiary sectors using the same method. If the difference between the sum of FDI in sub-categories and total FDI in each of the three sectors is less than \$ 1 million, all missing values in sub-categories are imputed with 0s.

In doing so, I am able to obtain 486 observations in total, covering 38 developing countries from 1980 to 2008 before pairwise deletion of missing values in exploratory variables. Data coverage within countries varies greatly, from 1 to 29 observations.⁴⁹ In fact, I do not impute too many missing values. Most are actually 0s. There are only 13 observations for which the absolute difference between the sum of inward FDI in the primary, secondary, tertiary and unspecified sectors and total FDI reported by UNCTAD is bigger than \$ 0.5 million. Only 29 observations have the difference larger than \$ 0.1 million, which is about 5.97% of the sample size.

⁴⁷In some cases, truly missing values and 0s are not distinguished in the dataset. In other cases, countries may receive 0 total FDI or 0 FDI in particular industries in a given year.

⁴⁸To increase the number of observations, we can lift the criterion to \$ 2 or \$ 5 million. However, in doing so, we may introduce bias by imputing too many 0s. Thus, I use \$ 1 million as the threshold. In most cases, \$ 1 million only constitutes a tiny percent of total FDI inflows. For those countries that receive less than \$ 1 million FDI, it is also reasonable to treat sectoral FDI inflows as 0 because such a small amount of FDI will not affect their economies significantly. Thus politicians have fewer incentives to manipulate FDI policies in order to reward their constituents. For a robustness check, I exclude those cases in which total FDI is less than \$ 1 million and sectoral FDI data are missing. Actually the regression results are even stronger. The results are also supported by the distribution of democracy scores for these countries that receive less than \$ 1 million FDI. There are more autocracies than democracies. The mean democracy score is -3.85 for the 35 observations with absolute inward FDI less than \$ 1 million. When we treat these cases as 0s, the estimated coefficient of democracy is in fact biased downward.

⁴⁹See Table 1.5 for data availability.

1.6.2 Additional Robustness Checks

1.6.2.1 Primary Sectors

In the construction of the dependent variable, I classify primary sectors as low-skill intensive. It may raise some problems given the heterogeneous skill levels in these sectors. The extraction of coal, metal ores, and non-metallic minerals in developing countries tend to be less skill-intensive, while petroleum and natural gas extraction can be high-skill intensive. To check whether the results are substantially influenced by the primary sector data, I exclude primary sectors in the construction of the dependent variable and then re-estimate Model 6 in Table 1.1. Model 1 in Table 1.4 shows the results. Excluding primary sectors does not change the results substantially. Democracy is negative and highly significant beyond the conventional level. By excluding primary sectors, I find that democracy has an even stronger effect on the skill composition of FDI. All else being equal, one standard deviation increase in the democracy score (5.97 units) will reduce the percentage of high-skill intensive FDI by 6.81%.

1.6.2.2 Political Constraints

Scholars have suggested that democracy is more attractive to FDI because democratic institutions such as veto players and audience costs help mitigate the political risks associated with government expropriation and policy instability, making democratic governments more credible to investors (e.g., Jensen 2003, 2006). Due to the plurality of interests and political competition in democracies, a country's level of democracy is positively correlated with its degree of political constraints. The causal mechanism in the political economy framework developed in this chapter lies in the logic of political survival and political competition. It is politicians' incentives to retain office that drive them to strategically use FDI policy to secure for political loyalty. If low-skill intensive FDI actually favors countries with more political constraints and a higher level of policy predictabil-

ity, or if high-skill intensive FDI prefers those countries with fewer political constraints, then the empirical results may be spurious.

To check whether political constraints are actually the underlying driving force, I include the political constraint index constructed by Henisz (2010) as a control variable (see Model 2 in Table 1.4). Adding this variable does not change the magnitude or the significance level of democracy's coefficient too much. Democracy has a coefficient of -0.74, which is statistically significant at a 90% confidence interval. The political constraint variable turns out to be statistically insignificant.⁵⁰ These results show that it is democracy and political competition rather than political constraints that drive the skill bias of the sectoral structure of FDI.

1.6.2.3 Partisanship

In addition, scholars have documented that government political ideology plays a significant role in determining their FDI policy. Pinto (2004) shows that left-wing governments are more likely to welcome FDI because FDI benefits their core constituencies—labor. Pinto and Pinto (2008) further suggest that left-oriented governments encourage the type of FDI that complements labor while right-oriented governments support the type of FDI beneficial to domestic capital. In this case, we would expect that left-wing governments in developing countries will support low-skill intensive more than high-skill intensive FDI given that the former employs a higher ratio of unskilled workers who are the majority.

In Model 3, I add party orientation as a control variable. The party orientation data comes

⁵⁰The insignificance may be caused by the collinearity between democracy and the political constraint index. The Pearson correlations between the democracy score and political constraint index is 0.70. I also run additional regressions by replacing democracy with POLCOM, PARCOMP, the size of the winning coalition, and the dichotomous regime variable. All the coefficients of alternative measures of democracy are negative and statistically significant. The Pearson correlation between the political constraint index and POLCOM, PARCOMP, the size of the winning coalition, and the democracy dummy are 0.65, 0.53, 0.63, and 0.72, respectively. At least for models using POLCOM, PARCOMP, and the size of the winning coalition, collinearity is not a serious concern.

Table 1.4: MLMs: Additional Robustness Checks

Model	(1)	(2)	(3)	(4)
Democracy	-1.14*** (0.38)	-0.74* (0.42)	-1.39*** (0.52)	-0.61* (0.39)
Political Constraints		3.05 (11.16)		
Partisanship			-1.75 (2.32)	
S-W Openness Index				10.68** (5.57)
Lagged DV	0.08 (0.06)	0.05 (0.06)	-0.08 (0.07)	-0.03 (0.07)
Ln (GDP per capita)	11.48** (5.66)	11.01** (5.38)	12.94 (8.73)	12.85* (6.71)
Schooling	0.06 (0.17)	0.01 (0.15)	-0.24 (0.21)	0.04 (0.24)
Ln (GDP)	5.08 (3.31)	6.88** (3.16)	4.38 (4.42)	4.90 (3.83)
Economic Growth	0.12 (0.35)	0.03 (0.30)	-0.09 (0.34)	-0.01 (0.36)
Natural Resources	0.01 (0.12)	-0.05 (0.12)	0.08 (0.15)	-0.02 (0.14)
Trade Openness	4.60 (7.07)	9.4 (6.37)	6.29 (8.29)	
Economic Crisis	10.62 (8.07)	1.8 (6.94)	10.54 (9.10)	3.44 (7.18)
Balance-of-Payment Crisis	-6.45 (4.24)	-6.68* (3.70)	-4.63 (4.19)	-8.03* (4.39)
International Institutions	-1.04 (2.99)	-2.68 (2.62)	4.51 (3.47)	-7.19* (3.76)
Constant	-220.2 (84.63)	-280.12*** (79.90)	-215.68** (113.03)	-210.99 (93.61)
Region Dummies	✓	✓	✓	✓
Observations	330	326	227	247
Number of Countries	33	32	28	27
Number of Years	28	28	24	22
σ_y	26.41	22.21	20.80	21.96
σ_a	18.21	18.28	26.56	22.28
σ_b	0.48	1.18	3.77	4.07

Notes: The dependent variable is the percentage of high-skill intensive FDI to total FDI. All right-hand-side explanatory variables are lagged one period. Region dummies, and country and year effects are not reported. *** significant at 99% confidence interval; ** significant at 95% confidence interval; * significant at 90% confidence interval.

from the World Bank's Database of Political Institutions.⁵¹ The inclusion of the party orientation variable does not change the results substantially. The coefficient of democracy is negative and statistically significant at a 99% confidence interval. In addition, partisanship does have a negative impact on the percentage of high-skill intensive FDI but its coefficient is not statistically significant.

1.6.2.4 Trade Openness

Another concern is the possible endogeneity between FDI and the measure of trade openness given that a large part of trade is in fact conducted by MNCs. To mitigate this problem, I use Sachs-Warner's dichotomous trade openness index as a robustness check. This variable measures the actual trade policy orientation that is arguably less endogenous to FDI flows. The data are only updated to 2001 by Wacziarg and Welch (2008), which reduces the sample to 247 observations. The results in Model 4 in Table 1.4 show that the coefficient of democracy is quite consistent with those in other model specifications. In addition, the results indicate that trade openness has a significant positive impact on the skill composition of FDI. All else being equal, moving from a closed to an open trade regime will increase the percentage of high-skill intensive FDI by approximately 10.68%.

In sum, these robustness checks have shown that the empirical results are not sensitive to the exclusion of primary sectors, the addition of the political constraint and partisanship variables, or the possible endogeneity between FDI and trade openness.

⁵¹This variable is coded according party platforms and agendas, which may not reflect the nuances of actual policy orientation. However, these are the most comprehensive data for developing countries from 1980 to 2008.

Table 1.5: Data Availability

Country	Year	Obs.	FDI	High-Skill FDI	Low-Skill FDI	DEM	GDP	GDP PC
Argentina	80-04	21	4136.19	922.24	3213.95	5.29	26.48	9.16
Armenia	93-08	15	241.24	48.35	192.89	3.53	22.88	7.92
Azerbaijan	93	1	0.01	0.00	0.01	-3.00	23.72	7.89
Bangladesh	83-4,9,95-08	17	426.31	92.55	333.76	2.41	25.51	6.78
Bolivia	80-89	10	33.54	1.52	32.02	5.50	23.62	8.03
Bosnia & Herzegovina	04-08	5	1044.76	438.77	605.99		23.88	8.74
Brazil	96-00,02-08	12	24310.40	9628.16	14682.24	8.00	28.02	9.02
Cambodia	80,95-08	15	294.31	57.62	236.69	1.21	23.42	7.04
Cape Verde	88-95	7	0.22	0.00	0.22		20.23	7.42
Chile	80-08	29	2385.46	459.22	1926.23	4.14	25.45	8.99
China	07-08	2	83581.66	53436.27	30145.40	-7.00	29.58	8.57
Croatia	93-08	16	1694.53	1030.17	664.36	3.19	24.70	9.38
Dominican Republic	93-98	6	337.88	12.35	325.53	6.67	24.35	8.43
Egypt	01-04	4	385.16	280.13	105.03	-6.00	26.44	8.32
El Salvador	82	1	-1.00	0.00	-1.00	2.00	23.56	8.18
Ethiopia	92-00	9	90.08	5.00	85.08	0.78	24.09	6.20
Fiji	02	1	0.53	0.23	0.30	5.00	21.91	8.30
Guyana	80,95	2	37.50	0.21	37.29	-0.50	21.19	7.64
Kazakhstan	93-05	13	1761.88	694.78	1067.10	-4.46	25.19	8.65
South Korea	80-06	27	2604.12	1742.04	862.08	3.52	27.04	9.44
Kyrgyzstan	99-02	4	12.95	-0.60	13.55	-3.00	22.73	7.32
Macao	82,85-90,00	8	-0.09	0.00	-0.09		22.55	9.81
Macedonia	97-07	11	232.27	71.59	160.68	7.64	23.34	8.82
Madagascar	81-82,08	5	223.78	5.08	218.70	-3.40	23.17	7.00
Mauritania	96,98-06	10	171.03	0.00	171.03	-5.60	22.20	7.39
Mauritius	81,88-01	15	43.48	6.89	36.59	9.93	22.76	8.85
Mexico	94-08	15	18556.93	9746.42	8810.51	6.80	27.78	9.37
Morocco	86	1	0.55	0.00	0.55	-8.00	24.79	7.84
Mozambique	81,85	2	0.35	0.00	0.35	-8.00	22.30	5.93
Nicaragua	81,83,85-6,88,90	6	0.12	0.00	0.12	-1.17	22.90	7.76
Nigeria	90-05	16	1704.35	0.00	1704.35	-1.25	25.88	7.30
Oman	93	1	393.30	4.20	389.10	-9.00	24.22	9.69
Pakistan	02-08	7	2853.24	1322.14	1531.10	-2.57	26.54	7.68
Paraguay	80-01	21	83.19	23.64	59.55	0.05	23.55	8.29
Peru	80-90	11	41.69	14.74	26.95	7.09	25.41	8.63
Philippines	80-98	19	572.87	245.35	327.52	2.89	25.70	7.78
Russian	08	1	26900.20	8661.00	18239.20	4.00	28.37	9.60
Saudi Arabia	06-08	3	26944.33	15578.67	11365.67	-10.00	26.99	9.99
Serbia	04-08	4	2383.99	1276.03	1107.96	8.00	24.90	9.08
Singapore	81-06	23	1499.85	1371.97	127.88	-2.00	25.17	10.17
Syrian	80-84	5	0.03	0.00	0.03	-9.00	24.21	8.13
Trinidad & Tobago	80-07	28	434.13	8.22	425.92	9.25	23.50	9.47
Tunisia	80-1,4,6-0,02-08	14	828.49	77.98	750.51	-5.43	24.47	8.51
Turkey	02-08	7	8928.71	5075.71	3853.00	7.00	27.36	9.28
Tanzania	87,90-1	3	-0.15	0.00	-0.15	-6.00	23.82	6.78
Uruguay	01-07	7	701.38	130.56	570.82	10.00	24.14	9.13
Venezuela	80-07	26	1383.23	282.12	1101.11	7.77	26.06	9.20

Data source: UNCTAD.

Chapter 2

FDI Policy in China and Taiwan: A Brief Comparison

Abstract

This chapter briefly examines FDI policy in China and Taiwan. It suggests that different coalition structures in authoritarian and democratic countries can have important implications for FDI policy. In China and pre-democratic Taiwan, co-opting a skilled constituency creates incentives for both governments to attract high-skill intensive FDI, while in democratic Taiwan, electoral concerns induce leaders to welcome less skill-intensive FDI to benefit their broad unskilled constituencies. Qualitative evidence revealed in this chapter is, in general, consistent with the empirical findings in the previous chapter.

2.1 Introduction

In the previous chapter, I argued that distinct institutional constraints lead political leaders in autocracies and democracies to have different preferences for high-skill and low-skill intensive FDI. Authoritarian leaders, who rely on the support from a small winning coalition that often includes skilled workers, have incentives to attract a higher proportion of high-skill intensive FDI to benefit and co-opt skilled workers. In contrast, democratic leaders, who depend on a broad winning coalition with a majority of unskilled workers, have incentives to attract a larger share of low-skill intensive FDI to appeal to the unskilled median voter.

The empirical evidence based on available sectoral FDI data in developing countries has suggested that democracy or an increase in the level of democracy is strongly associated with a large share of low-skill intensive FDI. This finding strongly supports my argument that political regime type influences the skill composition of FDI in developing countries. To elucidate the causal mechanisms and show how different domestic coalitions in authoritarian and democratic countries affect FDI policy, this chapter explores FDI policy in China and Taiwan. A comparison between China and Taiwan allows me to control for many unobservable characteristics that are related to history, culture, religion, etc. that could be endogenous to FDI policy. Thus, I am able to focus on the key explanatory variable: political regimes. Furthermore, the change of political regime in Taiwan allows me to examine how a democratic transition empowers the majority of unskilled workers and thus exerts considerable influence on FDI policy.

The qualitative evidence presented in this chapter suggests that attracting high-skill intensive FDI is an important means for both China and pre-democratic Taiwan to promote industrial upgrading and economic development as well as to benefit and co-opt their skilled constituencies. In democratic Taiwan, electoral concerns generate incentives for political leaders to attract the type of FDI that can benefit their unskilled constituencies.

2.2 China's FDI Policy in the Era of Reform and Opening

2.2.1 FDI Policy under Deng Xiaoping's Leadership

Before the era of reform and opening, China largely modeled its political and economic institutions off the Soviet Union and adopted an extreme version of import-substitution development strategies. To achieve the goal of a self-reliant industrial economy, the Chinese Communist Party (CCP) was committed to developing capital-intensive heavy industries. The government maintained an overvalued currency and suppressed the prices of agricultural products and industrial inputs to subsidize heavy industries. Foreign trade was monopolized by the central government and exports served to finance imports of industrial inputs, such as machinery and equipment. During this period, foreign investment was, more or less, banned in China. Under such an isolated system, the big winners were the “communist coalition,” including heavy industries, inland provinces, the military, and the central government agencies, while agricultural sectors, light industries, and coastal provinces that would benefit from participation in the global market were the primary losers (Shirk 1996: 188).

When Deng Xiaopeng took power in 1978, he decided to open China up to the outside world. China's reform and opening came as a tremendous surprise to the world. This step toward liberalization was interpreted as a strong signal that the Party had abandoned class struggle during the period of Mao Zedong and switched to primarily promoting economic development and modernization in the post-Mao era (Dickson 2003: 89). In this sense, the reform was to re-legitimize the regime “on a technocratic rather than revolutionary-utopian basis” (Nathan et al. 1997: 58). Economically, after decades of isolation and an emphasis on import substitution to realize industrialization, declining domestic savings could not support capital investment. Foreign exchange reserves were exhausted due to the extreme import-substitution strategy. In June 1978, foreign exchange reserves were only \$2.61 billion, and, adding gold reserves, total reserves were approx-

imately \$6.22 billion (Chinese Academy of International Trade and Economic Cooperation 2008: 42; hereafter CAITEC). Undoubtedly, foreign investment could have served as an important means to bring scarce capital and greater foreign exchange reserves into China (Cui 2008: 85-8; Lardy 1992). In addition to economic rationales, there were even more important political considerations behind China's reform and opening.¹ After the death of Mao Zedong, China underwent a contest for political power between Deng Xiaoping and Hua Guofeng, who was chosen by Mao as a successor and believed to be a champion of the traditional communist coalition. In order to confront conservative groups in the Party and consolidate his power, Deng Xiaoping strategically appealed to agricultural and light industries and coastal provinces that were underprivileged and marginalized in the centrally planned economy. Given China's abundance of unskilled labor, these industries and regions benefited from integration into the global economy and therefore became a strong supporting coalition for Deng. By offering these constituencies greater economic opportunities in global markets, Deng was able to build a new internationalist coalition of political support (Shirk 1993, 1994, 1996).

In 1979, the People's Congress passed the *Law of the People's Republic of China on Chinese-Foreign Equity Joint Ventures*. Then, in April 1982, the attraction of foreign investment, as state policy was incorporated into the constitution as an amendment. These laws established legal status for foreign firms operating in China. The first joint venture, Beijing Air Catering Company, was formed in September 1979. Meanwhile, four Special Economic Zones (SEZs) were founded in Shenzhen, Zhuhai and Shantou in Guangdong Province, and Xiamen in Fujian Province to attract foreign investment by offering preferential policies, including tax incentives and a good business environment. Soon afterward, the Chinese government opened 14 more coastal cities and established five economic open zones, including the Pearl, Yangtze, and Min River Deltas. In 1988, the State Council established Hainan Province as the fifth SEZ and in 1990 decided to develop

¹For seminal works on the political logic of China's reform and opening, see Shirk (1993, 1994, 1996).

the Pudong New Area in Shanghai. Since then, thousands of open areas, economic development zones, and science and technology parks have been set up, legally or illegally, by all levels of government.

As a political strategy to win the political support from previously disenfranchised agricultural and light industries and coastal regions, the central government delegated authority to coastal provincial governments to conduct international trade and attract foreign investment. This policy enabled coastal provinces to reap benefits from economic integration by taking advantage of their comparative advantages. The abundance of unskilled labor made China an attractive destination for low-skill and labor-intensive foreign investment that engages in processing trade. In the early period of reform and opening, China mainly focused on attracting low-skill labor-intensive FDI. Tax incentives were a primary policy used to attract foreign investment. In December 1981, the National People's Congress passed the *Foreign Enterprise Income Tax Law*, and, in February 1982, the Ministry of Finance issued *Implementation Rules of Foreign Enterprise Income Tax Law*. According to these implementation rules, all foreign firms that are scheduled to operate for more than 10 years are eligible for an income tax exemption for the first profit-making year and a 50% income tax reduction in the second and third years.² At that time, China welcomed all types of foreign investment and did not discriminate among foreign investment into different industries. These preferential tax policies applied to all foreign investment. However, total FDI into China was highly limited. At the early stage of reform and opening, firstly, China still held a skeptical view about foreign investment, worrying about Western imperialism. Secondly, Western investors were wary of China's political atmosphere. As of 1986, the accumulative absorption of FDI was only \$8.30 billion—on average, about \$1.04 billion per year. Foreign investment was mostly concentrated on labor-intensive processing projects, as well as hotel and service facilities (Cui 2008: 159).

²In September 1983, this policy was extended such that foreign firms were granted income tax exemption for the first two profit-making years and a 50% income tax reduction from the third to fifth year (Cui 2008: 50).

During this period, China made great efforts to attract overseas Chinese investment from Hong Kong, Macau, and Taiwan. Overseas Chinese were less concerned about political uncertainty and were more willing to invest in Mainland China given their geographic advantages and close ties with China. In addition, the Chinese government provided overseas Chinese-invested firms more favorable treatment. For instance, in addition to all the preferential policies offered to foreign firms, Taiwanese firms enjoyed extra tax incentives in SEZs, including an income tax exemption for the first four profit-making years and a 50% income tax reduction in the fifth and sixth years (CAITEC 2008: 51). The State Council issued *Provisions on the Encouragement of Investments by Compatriots from Taiwan* in July 1988 and *Provisions on the Encouragement of Investments by Overseas Chinese and Compatriots from Hong Kong and Macao* in August 1990. Additionally, in September 1990, the 15th meeting of the 7th National People's Congress Standing Committee passed the *Law of the Protection of the Rights and Interests of the Returned Overseas Chinese and the Family of Overseas Chinese*. Not only did these laws and regulations protect the interests of overseas Chinese-invested firms, they also served as strong signals that the Chinese government was committed to establishing a positive investment environment for all foreign investors. Consequently, foreign investment grew steadily in the mid and late 1980s. As of 1991, the accumulative absorption of FDI was about \$23 billion—on average, \$1.9 billion per year. The majority came from Hong Kong, Macao, and Taiwan. For instance, in 1991, the total volume of FDI from these three regions reached \$2.95 billion, accounting for approximately 68% of total FDI inflows. In light of the sectoral distribution of FDI, prior to 1986, foreign investment concentrated on low-skill service sectors such as hotels and facilities. From 1986 to 1990, the share of productive investment increased dramatically from about 45% to more than 90% (CAITEC 2008: 41). Productive investment mainly concentrated on low-skill and labor-intensive industries such as textile, wearing apparel, plastic products, metal products, household appliances, and others.

Clearly, the disenfranchised agricultural population, light industries, and coastal provinces un-

der the centrally planned system have huge incentives to participate in the global economy. These sectors have comparative advantages and are the primary beneficiaries of China's initial reform and opening policy, given the abundance of unskilled labor in China. In the 1980s, the inflows of low-skill intensive FDI boosted exports, increased employment (for both urban and migrant workers), and stimulated economic growth, especially in coastal provinces. In addition, the fast growth of coastal regions had a demonstration effect. Having witnessed coastal provinces' successes, more and more inland provinces began demanding preferential policies from the central government to participate in the world economy. The initial reform and opening policy created vested interests tied to the international market. Thus, Deng was able to build a new constituency, or an internationalist coalition, for political support to consolidate his power (Shirk 1994, 1996).

2.2.2 FDI Policy under Jiang Zemin's Leadership

Since economic reforms began, the social base of the CCP has shifted from the proletariat to wealthier peasants, capitalists, managers, professionals and other well-educated individuals (So and Hua 1992; Solinger 2003). Under Mao, China created a system that guaranteed the basic needs of workers and poor peasants, while discriminating against professionals and capitalists (Li 2003: 91). Under Deng's leadership, official rhetoric dictated that China's reform and opening should encourage a portion of China's citizens to take the lead in generating wealth. The initial openness created a larger number of economic winners in Chinese coastal areas. Entry of foreign firms, in addition to creating jobs for urban and migrant workers, increased the demand for managers, professionals, and other highly skilled personnel.

In 1989, Jiang Zemin became the general secretary of the CCP. Under Jiang's leadership, the Party continued its transformation. During this period, the social base of the Party changed from workers and peasants to intellectual and economic elites (Kang 2002: 2). The Tiananmen Square events in 1989 accelerated the transformation of the Party to a substantial extent. Ever since then,

political stability has been a top priority (Shirk 2007: 39). The Party learned from the demonstrations that unsatisfied college students and intellectuals could be a significant threat to the regime. To prevent potential political opposition, the Party has made every effort to co-opt political and economic elites (Shirk 2007: 66). Moreover, since abandoning class struggle as its primary objective, the Party, in order to maintain its legitimacy, has increasingly relied on sustaining high economic growth to extend material benefits to the society in exchange for political support. The commitment to economic development has also caused the Party to appeal to entrepreneurs, technocrats, and skilled workers who possess necessary expertise and skills (Dickson 2000).

Since the events of Tiananmen Square, the Party has actively recruited and co-opted college students who might otherwise threaten the regime. For instance, in all higher institutions directly administrated under the Ministry of Education, only 1.2% college students were Party members in 1990, but the figure increased to 8% in 2003.³ In 2008, it rose further to 11%. College student members accounted for approximately 38.5% of new recruits in 2009,⁴ which was in sharp contrast to the Party under Mao that discriminated against professionals with higher education (Walder 2004). The Party also modified its membership criteria and extended its base to include private entrepreneurs and the burgeoning middle class, so as to preempt their demands for democratic participation (Shirk 2007: 67). In the 2001 congressional speech celebrating the CCP's 80th anniversary, Jiang Zemin stated that the Party should welcome entrepreneurs, technicians, managers in private and foreign enterprises, professionals, and individual business owners who had contributed to economic development.⁵

This new policy was further developed in Jiang Zemin's theory of "Three Represents," which states that the Party should represent "advanced productive forces," "advanced culture," and "the

³*Xinhuanet News*, 28 October, 2003, http://news.xinhuanet.com/newscenter/2003-10/28/content_1147377.htm (accessed August 16, 2011).

⁴*China Education Daily*, 16 December, 2010, http://www.jyb.cn/high/gdjyxw/201012/t20101216_406269.html (accessed August 16, 2011).

⁵Jiang Zemin, 2001, Congressional Speech Celebrating the CCP's 80th Anniversary. See http://news.xinhuanet.com/ziliao/2001-12/03/content_499021.htm, accessed August 10, 2011.

fundamental interests of the broad masses.” The “Three Represents” were developed by Jiang’s academic followers out of the recognition of the significance of the growing middle class—a group of people identified more with the educated and wealthy rather than workers and peasants (Nathan and Gilley 2003: 193). Although the three categories cannot be precisely defined, the “Three Represents” might be roughly viewed as corresponding to an upper class (i.e., private entrepreneurs), a middle class (i.e., white-collar workers), and a working class (i.e., workers and peasants) (see Solinger 2003: 948-51). One important signal from the “Three Represents” is that the Party has abandoned its key task of class struggle under Mao and is now committed to economic development and modernization. To achieve this goal, the Party has actively recruited people who possess the expertise and skills that could help meet the challenges of economic development and globalization. Moreover, the “Three Represents” imply that the Party “should stand for the middle classes as much as or more than the workers and peasant” (Nathan 2003: 14). With China’s deepening integration into the global economy, the Party is now “speak[ing] for a competitive, modern and sophisticated constituency, prepared to merge into and contend with superior members of the global economy,” while the under-educated and the unskilled people have been marginalized (Solinger 2003: 952-53).

Why would the CCP transition to stand for a competitive and sophisticated constituency that includes entrepreneurs, managers, professionals, intellectuals, and other white-collar workers, while relegating its traditional constituency of blue-collar workers and peasants? To the leftist view, this move is a departure from orthodox Marxism that champions the interests of the broad working class and peasants (Lawrence 2000: 35).

There are at least two chief reasons for this transition. First, the CCP learned valuable lessons from the Tiananmen Square demonstrations as well as the collapse of the Soviet Union and former eastern European countries. On the one hand, intellectuals and skilled workers who are often educated are more able to organize themselves, and thus could be a greater threat to authoritarian

regimes. Therefore, the Party actively recruits educated youth to preempt any future political opposition movements. On the contrary, the mass unskilled workers often face the problem of collective action. Although there are tens of thousands protests and demonstrations by workers and peasants due to corruption, unpaid wages and pensions, or environmental deterioration every year in China, these events have been more narrowly focused on local and specific concerns and have not yet posed a serious, nationwide threat to the regime (Sandby-Thomas 2011).

Second, skilled workers are valuable economic resources. When authoritarian leaders are committed to economic modernization, the highly educated and skilled people, such as entrepreneurs, managers and white-collar workers, tend to be co-opted first and their interests are thus likely to be served, as they possess the knowledge, expertise, and skills that are necessary for economic development. In this sense, the CCP has adapted to its new environment and challenges by co-opting those who possess the resources and skills the Party depends on and who pose a threat to the Party (Dickson 2003).

The shift in the Party's constituencies has important implications for China's economic policy, including FDI policy. Attracting foreign investment and in particular high-skill intensive FDI has served as an important means for the government to sustain a vibrant economy with tremendous growth and to extend material benefits to the upper and middle classes in exchange for political support. In 1997, the 14th Party Congress recognized the private sector—including foreign invested enterprises—to be an important component of China's "socialist market economy." Jiang Zemin emphasized that the private economy played an important role in meeting people's diverse demands, increasing employment, and accelerating economic development (CAITEC 2008: 11).

In the period of Jiang's leadership, China strongly preferred and encouraged high-skill intensive FDI. In the report of the 14th Party Congress made by Jiang Zemin, he said that China should actively attract foreign investment and guide investors toward infrastructure, basic industries, firms'

technological transformation, and into capital- and skill-intensive industries.⁶ In 1995, China for the first time released *Interim Provisions on Guiding Foreign Direct Investment and Guiding Catalogue of Industries for Foreign Investment*.⁷ These two regulations explicitly express government preferences for FDI into different industries and served as a basic guideline for FDI regulations. These regulations stress encouraging foreign investment with new, high and advanced technology. The *Guiding Catalogue* classifies all industries into four different categories for foreign investment: encouraged, permitted, restricted, and prohibited. Most high-tech and skill-intensive industries are listed as encouraged. Accordingly, both central and local governments offer preferential policies, including tax incentives, exemption of land use fees, favorable financial treatment, etc., to the type of foreign investment classified as encouraged. In 1997, the Chinese government updated the *Guiding Catalogue* and more high-tech and skill-intensive industries were added into the category of encouraged.

Not only did these government policies help attract FDI into China, but they also guided foreign investment into desired industries. From 1992 to 2001, the government approved 347,522 foreign-invested firms, and the total volume of inward FDI was \$370.17 billion with an average annual growth rate of 42.1%. During this period, more and more giant multinational corporations (MNCs) from Western countries chose China as an important investment location. The proportion of high-skill intensive FDI increased dramatically. In 2001, among the 500 biggest MNCs in the world, 400 had made investment in China and set up many high-tech and petrochemical projects, as well as R&D centers (CAITEC 2008: 58). In 2002, MNCs had established more than 400 R&D centers in China, mainly in electronic communications, petrochemicals, and biopharmaceuticals. In light of the distribution of industrial FDI inflows, for instance, the contractual FDI value⁸ in high-skill

⁶Jiang Zemin, 1992. *jiakuai gaige kaifang he xiandaihua jianshe bufa, duoqu you zhongguo tese shehui zhuyi shiye de gengda shengli* (Accelerate Reform and Opening and the Drive for Modernization, Seize Greater Victory for Socialism with Chinese Characteristics), Report of the 14th Party Congress.

⁷An earlier version of *Interim Provisions on Guiding Foreign Direct Investment* was issued in 1987 for internal circulation within government agencies.

⁸The data of actual realized FDI value are not reported.

industries, including petroleum products and coke, chemicals and chemical products, machinery and equipment, transportation equipment, and electronics and telecommunications equipment, increased to \$19.9 billion, accounting for approximately 41% of total contractual FDI value in the manufacturing sectors.⁹

Large inflows of FDI and skill-intensive investment in particular have helped China sustain a high economic growth rate, especially in the late 1990s when half of SOEs were unprofitable and deeply in debt (Gallagher 2002: 351). Moreover, huge inflows of capital- and skill-intensive FDI have helped the CCP serve the interests of new constituencies by creating many high-paid jobs for professionals, technicians, and other white-collar workers. These upper and middle classes enjoy high incomes, own cars, and consume foreign luxury products. Working in foreign-invested firms has been the top choice for college graduates, particularly in the 1990s and early 2000s. According to one report by Shanghai's labor and social security bureau, in 2003, wages of managers, professionals, and clerical workers were among the highest. Workers with a master's or higher degree earned 4.4 times more than those with only middle school education. Massive foreign investment has helped expand the middle class that is in general satisfied with the status quo and has little interest in demanding democratic participation; rather, they show greater interest in material well-being (Li 2003).

Since the mid-1990s, the high achievers, in addition to entrepreneurs, have been managers, professionals, and skilled employees in both the public and private sector due to an increasing demand for their expertise and skills (Tomba 2004: 4). On the contrary, those of the broad working class are the victims of China's reform. After the 15th Party Congress in 1997, China started restructuring its large-scale, inefficient SOEs. The official slogan for the new policy is "Holding the Big, Release the Small (*zhuada, fangxiao*)"; that is, the government would allow a huge number of small- and medium-size SOEs to change ownership and even go bankrupt. As a consequence,

⁹Statistics on FDI, 2002

millions of workers were laid off or dismissed with little compensation. A majority of them were female and low-educated workers. A modest estimate of the nationwide unemployment rate in 2002 was about 15-20% (Forney and Gough 2002; see Solinger 2003: 945). During the restructuring, FDI was welcomed to participate in the privatization and treated as a means to save SOEs (Gallagher 2002: 351). Given the effective deflation in the late 1990s and the falling profitability of township and village enterprises, foreign-invested export industries were the main source of growth and job creation (Breslin 2007: 184-5). However, many laid-off employees, and especially female and low-skilled ones, were not able to find jobs again. The unemployment rate remained extremely high in the late 1990s and early 2000s. At that time, thousands of protests and riots were led by laid-off workers (see Solinger 2003). According to Zheng Bijian, vice president of the Central Party School, the restructuring of the SOEs was to promote advanced industries and eliminate backward ones; during this process when the backward is replaced by the advanced, the overall quality of the working class is further improved.¹⁰ However, this policy led other scholars to write, “It is the unemployed factory workers and abandoned peasants who are striking and rioting in greater numbers while most of the middle class in Beijing and Shanghai revel in their newfound comfort” (Li 2003: 93).

2.2.3 FDI Policy under Hu Jintao’s Leadership

In 2002, General Secretary Hu Jintao and Premier Wen Jiaobao came to power. Decades after reform and opening began, the CCP’s political legitimacy increasingly rests upon sustaining economic growth and generating material benefits for society. These circumstances have prompted the Party to appeal to entrepreneurs and high-skilled workers for economic development and modernization. In the post-Jiang period, the Party has explicitly used the term “middle class” for its

¹⁰Zheng Bijian, “*sange daibiao zhongyao lunshu yu mianxiang ershiyi shiji de zhongguo gongchandang* (Three Represents Important Discourse and the CCP Facing the 21st Century,” *People’s Daily*, May 18, 2000.

goals of social change. The Party intends to build a large middle class because a small number of wealthy elites are viewed to be politically unstable (Breslin 2007: 180-1; Tomba 2004). In 2002, the 16th Party Congress launched a new agenda to build a well-off society in an all-around way (*quanmian jianshe xiaokang shehui*). To this end, high-tech and skill-intensive FDI could serve as one important vehicle, since this type of foreign investment could help upgrade China's industrial structure and create high-quality jobs for the growing middle class.

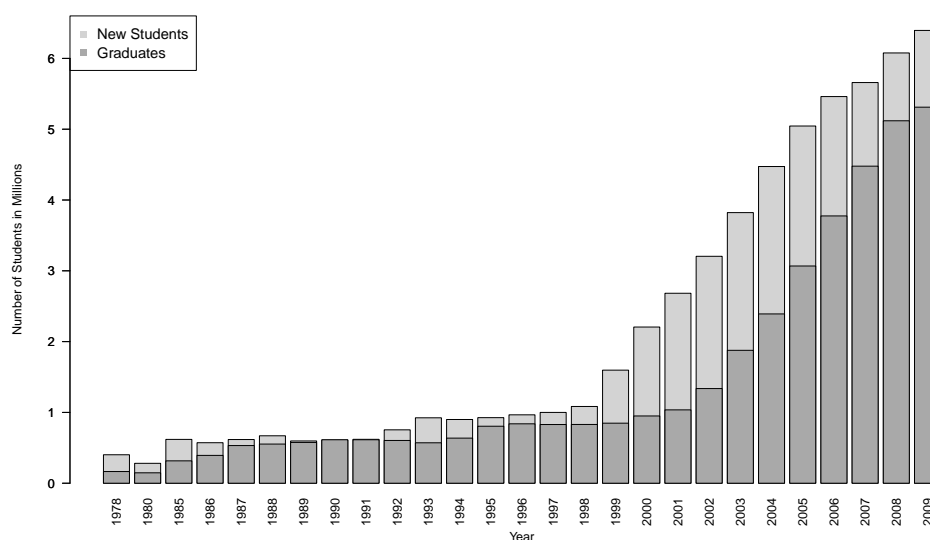
During this period, China has consistently encouraged high-tech foreign investment. Hu Jintao stated in several speeches that China should selectively guide industrial foreign investment, make efforts to attract MNCs to transfer high-technology and high value-added production stages and R&D centers, and deepen China's openness to foreign investors in high- and new-tech industries and advanced manufacturing sectors.¹¹ In order to attract more high-tech and skill-intensive foreign investment, in 2003, China issued the *Catalogue of Encouraged High- and New-Tech Products for Foreign Investment*. In 2007, a new version of the *Guiding Catalogue of Industries for Foreign Investment* was released, which emphasized encouraging more foreign investment into high- and new-tech industries, modern service sectors, high-end production, modern agricultural industries, and infrastructure.

Since the early 2000s, the dramatic increase of college graduates has created additional incentives for the government to attract more skill- and knowledge-intensive FDI to generate employment opportunities for college graduates. In 1999, the State Planning and Development Commission and the Ministry of Education decided to expand higher education enrollment by 0.46 million to 1.53 million in total,¹² which was a 42% increase from the previous year—the largest annual

¹¹See *zai xinde lishi qidianshang jixu kuoda duiwai kaifang* (Continuing the Expansion of Openness at the New Historical Starting Point), http://www.southcn.com/nflr/zhongxinzu/gcxx/content/2007-09/30/content_4253456.htm (accessed August 17, 2011); *zhonggong zhongyang guanyu wanshan shehui zhuyi shichang jingji tizhi ruogan wenti de jue ding* (Decision of the Central Committee of the CCP on Several Issues Concerning the Improvement of the Socialist Market Economy), <http://www.people.com.cn/GB/shizheng/1024/2145119.html> (accessed August 17, 2011).

¹²The actual number of newly enrolled students was 1.60 million in 1999 (*China Statistical Yearbook*).

Figure 2.1: Number of New Students and Graduates in Higher Education Institutions in China, 1978-2009



Data Source: *Statistical Yearbook of China*.

increase since 1978. This sudden expansion of higher education is considered to be a policy instrument for stimulating domestic consumption and thereby promoting economic growth. We can see from Figure 2.1, the number of new students in higher education institutions grew steadily from 0.40 to 1.08 million from 1978 to 1998, with an annual growth rate of about 10%. However, from 1999 onward, the number of new students has expanded even more dramatically. The new enrollment numbers in higher education institutions increased to 6.4 million in 2009. As a consequence, millions of college graduates have entered the job market every year from the early 2000s onwards, which has posed the serious challenge to the government of creating enough jobs for these students. Given the experience of the Tiananmen Square student demonstrations, unemployed college students are particularly worrisome because they could potentially organize opposition movements that threaten political stability (Shirk 2007: 30). The government has thus taken active measures to increase college students' employment, including developing knowledge- and skill-intensive in-

dustries and service sectors, subsidizing universities to create more research associate positions, and providing occupational training.¹³

In particular, the government seeks to attract foreign investment into the service outsourcing sector¹⁴ to create job opportunities for college graduates. In October 2006, the Ministry of Commerce, jointly with the Ministry of Industry and Information Technology, the Ministry of Science and Technology, the Ministry of Education, and the Ministry of Finance, released the *Notice of Ministry of Commerce on Implementing the “Thousand-Hundred-Ten Project” of Service Outsourcing*. According to the *Notice*, the goal of the “Thousand-Hundred-Ten Project” is to develop 10 internationally competitive hubs for outsourced services, promote 100 world famous MNCs to outsource to China, and cultivate 1000 medium- and large-size service outsourcing companies with international qualifications.¹⁵ In addition, the *Notice* states that government will allocate special funds for training college graduates (including junior college graduates) to enhance their expertise and skills; government encourages service outsourcing companies to develop training programs for new graduates, graduating students, and newcomers; furthermore, the goal is to create 200,000 to 300,000 job opportunities for college graduates in five years, effectively solving the problem of qualified personnel shortages in this industry and the issue of employing college graduates. Accordingly, the government provides service outsourcing firms with no more than 4,500 RMB training support for every new college student recruit with at least a one-year contract.¹⁶ In the

¹³“Wen Jiaobao: wuxiang xincuooshi bushu jinnian daxuesheng jiuye (Five New Measures to Arrange This Year’s College Students’ Employment),” *Zhongguang Jiaoyu*, 26 May, 2011, http://www.cnr.cn/jy/jyzs/201105/t20110526_508035690.html (accessed July 20, 2011).

¹⁴Firms in this sector are skilled-labor intensive. They are outsourcing services—including information technology outsourcing (ITO), business process outsourcing (BPO), and knowledge process outsourcing (KPO)—vendors. In order to reduce costs and increase competitiveness, firms and MNCs in particular have increasingly chosen to outsource some business activities to more specialized services providers in countries such as India and China.

¹⁵Ministry of Commerce. 2006. *Notice of Ministry of Commerce on Implementing the “Thousand-Hundred-Ten Project” of Service Outsourcing*, <http://wzs.mofcom.gov.cn/aarticle/n/200610/20061003463779.html> (accessed January 2, 2012).

¹⁶Ministry of Education and Ministry of Commerce. 2009. *Several Suggestions on Strengthening the Service Outsourcing Personnel Training and Promoting College Graduates’ Employment*, <http://file.mofcom.gov.cn/moffile/search/pages/detail.jsp?seqno=13212> (accessed January 3, 2012).

new version of the *Guiding Catalogue of Industries for Foreign Investment* released in 2007, the service outsourcing industry is listed as encouraged. With strong government support and preferential policies, FDI into the service outsourcing industry has increased dramatically. One official in the Ministry of Commerce's Department of Foreign Investment Administration emphasized that the service outsourcing industry had become an important channel for college students' employment; among the 0.7 million newly hired employees in this industry, 0.5 million (71.4%) were college graduates, which was about 12% of total college graduates in the same period.¹⁷

2.2.4 Industrial FDI Policy in China since the Mid-1990s: A Closer Look

The above analysis has suggested that the change in the CCP's underlying social base has important implications for China's FDI policy. During the early period of reform and opening, in order to build a new coalition of political supporters, Deng Xiaoping strategically appealed to agricultural and light industries and coastal regions. At that time, the government focused on attracting low-skill and labor-intensive FDI to benefit these industries and regions. Under Jiang Zemin, the CCP gradually transformed itself to represent the private entrepreneurs and the emerging middle class. In this process, the Chinese government actively attracted FDI and high-skill intensive FDI in particular to promote economic development and extend benefits to the upper and middle classes in exchange for their political support. Under Hu Jintao, the government has continued to encourage high-tech and skill-intensive FDI. Additionally, the sudden increase in the number of college graduates has magnified the government's incentive to attract high-skill intensive FDI to increase job opportunities for these students as the government is well aware of the fact that unemployed college students could pose a considerable threat to political stability.

Since systematic sectoral FDI data are not available, I am not able to track the pattern of the

¹⁷“zhongguo quannian chengjie fuwu waibao hetong zhixing jine chao 100 yi meiyuan (China Undertakes More Than \$10 Billion Contract Execution Value in Service Outsourcing throughout the Year),” *NetEase*, 23 June, 2010, <http://tech.163.com/10/0623/14/69SCA4GC00094DFU.html> (accessed August 17, 2011).

skill composition of inward FDI over time. Alternatively, I have coded an original dataset of industrial FDI policy since the mid-1990s. This dataset allows me to examine the relationship between industrial skill intensity and openness toward FDI.

Up until now, the Chinese government has issued six *Guiding Catalogues of Industries for Foreign Investment* in 1995, 1997, 2002, 2004, 2007, and 2011 (effective January 30, 2012), respectively. These *Guiding Catalogues* classify all industries into four categories for foreign investment: encouraged, permitted, restricted, and prohibited. These *Guiding Catalogues* serve as the basic guidelines for FDI regulations. Accordingly, the central and local governments design specific promotion or restriction policies, including various tax incentives, exemption or reduction of land use fees, bank loan support, joint venture requirement, etc. Clearly, foreign investment in encouraged industries is granted preferential policies, while investment in restricted industries does not enjoy such policy favoritism and is subject to strict government screening. Based on the five *Guiding Catalogues* released from 1995 to 2007, I have coded an original dataset of FDI policy at the International Standard Industrial Classification (ISIC, Rev. 4) 4-digit level. In the coding, I assign a score of 1, 2, 3, or 4 to each respective industry classified as prohibited, restricted, permitted, or encouraged. Therefore, a higher score indicates that the industry is more open to foreign investment. However, items listed on the *Guiding Catalogues* are much more disaggregated than industries at the ISIC 4-digit level. To deal with this problem, I adopt the following strategy. First, each industry at the 4-digit level receives a score of 3 by default. Then if there are any items within each 4-digit level industry listed as either prohibited, restricted, or encouraged, this industry receives another score of 1, 2, or 4. For instance, if there are some subcategories within one ISIC 4-digit level industry classified as encouraged, this industry receives another score of 4. If there are still other subcategories classified as restricted, this industry is assigned a third score of 2. Therefore, it is possible that one industry may receive multiple scores, as some subcategories may be encouraged while others restricted or even prohibited. In these cases, I take the mean value of

these multiple scores as a measure of each industry's level of openness toward foreign investment.

Table 2.1: Industry-Level Skill Intensity and FDI Openness in China

Model	(1)	(2)	(3)
Skill Intensity	1.34***	0.89***	1.49***
(Skilled/Unskilled Workers)	(0.21)	(0.24)	(0.37)
Capital Intensity	-0.01*	-0.00	0.00
	(0.00)	(0.00)	(0.00)
Industrial Concentration	-1.09***	-1.38***	-3.42***
	(0.36)	(0.36)	(0.69)
State-Owned Enterprises	-0.88***	-0.55**	-0.98**
	(0.25)	(0.26)	(0.43)
WTO	0.77***	0.59***	0.38*
	(0.20)	(0.19)	(0.20)
Constant	2.94***	2.88***	2.92***
	(0.05)	(0.06)	(0.09)
Fixed Year Effects	×	✓	✓
Fixed Industry Effects	×	×	✓
Observations	926	926	926
Number of Industries	189	189	189
Number of Years	5	5	5

Notes: Standard errors in parentheses

*** significant at 1%; ** significant at 5%; * significant at 10%;

With this data, I then examine whether a higher level of skill intensity is associated with a higher level of openness toward FDI at the industry level. Industry-level skill intensity is measured by the ratio of skilled to unskilled workers in each industry. Skilled workers are defined as those with junior college education or higher. In the regression, I control for industry-level capital intensity (fixed assets per capita), industrial concentration (ratio of firms with assets of at least RMB 100 million), share of SOEs' assets, and a dummy variable of WTO, which is equal to 1 if the industry is opened up under WTO rules. All data come from 2004 and 2007 *China Economic Census Yearbooks*. That means I only have two periods of data for all explanatory variables. Therefore, the data of 2004 census are used for the period of 1995 to 2002, and those of 2007 census for the period of 2004 to 2007. Since data for explanatory variables are available at the ISIC 3-digit

level, I aggregate the dependent variable by taking the means of FDI openness scores at the 4-digit level for each 3-digit level industry. All results are presented in Table 2.1.¹⁸ We can see that level of skill intensity is positively and strongly associated with openness toward FDI, even when both fixed industry and year effects are considered. For the substantive effect, take Model 1 for example, when other variables are held constant, an increase in the level of skill intensity from its mean to maximum value will raise the score of FDI openness by 1.01. The results illustrate that China is more open toward FDI in more skill-intensive industries. However, one caveat is that skill intensity could be endogenous to FDI inflows, as FDI into skill-intensive industries will increase the demand for skilled workers in these industries. In addition, the results indicate that more concentrated industries are less open to FDI, and a large presence of SOEs is associated with a low level of openness toward FDI. Capital intensity seems to have no effect on FDI openness. All these results are sensible.

2.3 FDI Policy in Taiwan

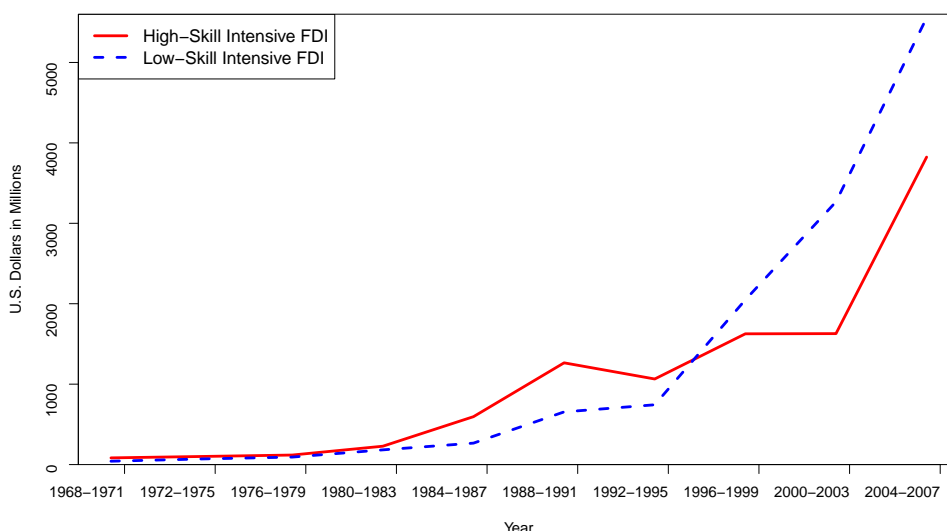
What is the pattern of FDI inflows in a democracy? How does a democratic transition affect government FDI policy? And how does political competition shape FDI policy in Taiwan? In this section, I will briefly examine FDI policy in Taiwan.

In Figure 2.2, I plot the levels of high-skill and low-skill intensive FDI inflows into Taiwan from 1968 to 2007.¹⁹ As illustrated in the graph, before democratic transition, Taiwan received more high-skill intensive FDI than low-skill intensive FDI.²⁰ When democratic transition began in the late 1980s and early 1990s, the volume of high-skill intensive FDI declined, while inward low-skill

¹⁸Service sectors are excluded from the analysis, as most service sectors are still highly restricted to foreign investment due to considerations such as national security and public propaganda.

¹⁹To control for short-term volatility, data are averaged over four-year spans.

²⁰It should be noted that “high-skill” and “low-skill” are relative to the average skill intensity of existing production within a country. Thus, low-skill intensive FDI into Taiwan can be more skill-intensive than low-skill intensive FDI into China, as Taiwan is more developed and endowed with more human capital and skills.

Figure 2.2: High-Skill & Low-Skill Intensive FDI in Taiwan, 1968-2003

Data Source: Investment Commission, Ministry of Economic Affairs, Taiwan.

intensive FDI continued growing. In the late 1990s and 2000s, inflows of low-skill intensive FDI exceeded high-skill intensive FDI. In other words, after its democratic transition, Taiwan received a higher proportion of low-skill intensive FDI relative to high-skill intensive FDI.

The bivariate Pearson correlation between democracy and the percentage of high-skill intensive FDI to total FDI is -0.63, statistically significant beyond the conventional wisdom. To further examine whether an increase in the level of democracy is associated with a reduction of the proportion of high-skill intensive FDI, I conduct some simply regression analyses.²¹ In the regressions, I control for GDP per capita, GDP, economic growth rate, trade openness, a time trend, and two dummy variables respectively indicating the periods of WTO negotiation and membership.²² All results are presented in Table 2.2.²³ The regression results show that an increase in the level of

²¹Taiwan's data are not used in the cross-national analysis as they come from a separate data source.

²²I do not control for human capital in the regressions because human capital—measured by the ratio of population with junior college or higher education—is highly correlated with GDP per capita. The Pearson correlation between these two variables is 0.96.

²³Dicky Fuller tests for all models reject the null hypothesis that there is no co-integration.

Table 2.2: Democracy and Skill Composition of FDI in Taiwan

Model	(1)	(2)	(3)	(4)
Democracy	-1.61** (0.62)	-2.02*** (0.71)	-1.60** (0.62)	-2.66*** (0.89)
Lagged DV	0.10 (0.16)	0.09 (0.16)	0.09 (0.16)	0.09 (0.17)
Ln (GDP per capita)	7.32 (6.84)	-47.24 (45.99)	19.88 (14.14)	7.56 (7.58)
GDP	0.14 (0.18)	0.51 (0.36)	0.05 (0.20)	0.15 (0.27)
Economic Growth	1.18* (0.63)	1.65** (0.74)	1.29* (0.64)	1.41** (0.66)
Time		3.38 (2.82)		
Trade Openness			-0.34 (0.34)	
WTO Negotiation				15.45 (9.70)
WTO Membership				18.67 (13.26)
Constant	-34.46 (61.03)	374.11 (345.98)	-115.86 (100.75)	-46.13 (62.44)
Observations	40	40	40	40
R^2	0.51	0.53	0.52	0.54

Notes: The dependent variable is the percentage of high-skill intensive FDI to total FDI. Dicky Fuller tests for all models reject the null hypothesis that there is no co-integration. Standard errors in parentheses. *** significant at 1%; ** significant at 5%; * significant at 10%.

democracy reduces the percentage of high-skill intensive FDI to total FDI. These results are robust and consistent when alternative explanations are considered. However, one question still remains: How does a democratic transition affect FDI policy-making in Taiwan? In order to have a direct comparison with China, I will focus on the period since Chiang Ching-kuo rose to power in the early 1970s.

Following its defeat in the civil war and retreat to Taiwan, the Kuomintang (KMT, the Chinese Nationalist Party) transformed itself into a quasi-Leninist party, with a goal of reunifying

Mainland China in the near future. Martial law was already declared in 1948 prior to the retreat. Under the goal of retaking Mainland China, the KMT pursued an import-substitution development strategy. The government relied heavily on SOEs and had tight control over the entire economy. The government also maintained an overvalued currency. Agricultural and light industries were suppressed to subsidize heavy industries for industrialization. Although the government promulgated the *Statute for Investment by Foreign Nationals* in 1954 and the *Statute for Investment by Overseas Chinese* in 1955, Taiwan did not attract too much foreign investment in the 1950s due to government emphasis on import substitution and the development of indigenous firms. In the 1960s, Taiwan embarked on an export-led growth strategy.²⁴ In 1960, the government issued the *Statute for the Encouragement of Investment* that offered preferential policies including a five-year tax holiday, 18% tax reduction after five years, and four-year tax exemption for reinvested earnings to foreign firms that exported most of their output and met local content requirements (see Ku et al. 2009: 10). Consequently, foreign investment that engages in processing trade grew rapidly in the 1960s.

In the early 1970s, Chiang Ching-kuo assumed leadership of the KMT after the death of Chiang Kai-shek. During the period of Chiang Ching-kuo, the KMT underwent extraordinary transformation. Within the KMT elites, the elder Mainlanders were gradually replaced by a younger, better-educated, and more technologically sophisticated generation. There are several factors that caused such a transformation. In the late 1960s and early 1970s, the KMT had almost abandoned its revolutionary goal of retaking Mainland China and made local Taiwan affairs and economic modernization its primary objectives. To meet this new goal, the KMT was in need of personnel who possessed relevant economic expertise and skills. According to Bruce Dickson, Chiang Ching-kuo initiated this transformation in order to build a new coalition of supporters. Although Chiang Ching-kuo had held many posts in the government and security system before, he did not

²⁴See Haggard (1990: 77-99) for a discussion of Taiwan's transition from import-substitution to export-led growth.

have a strong support base within the party at the time of the power succession. He strategically used organizational changes to recruit educated youth and create a supporting coalition (Dickson 1997). In addition, in the early 1970s, there was an increasing demand for political participation by intellectuals, claiming that specialists should have more power and rights. To preempt their political opposition movements, the KMT actively recruited educated young people with political ambition, especially local Taiwanese (Cheng and White 1990: 6-7). For instance, from 1967 to 1976, a third of college students were recruited into the KMT, accounting for more than 57% of all new recruits (Dickson 1997: 126).

This transformation coincided with a change in the KMT's economic strategy to deepen export-oriented industrialization (Cheng 1990: 169). In the 1970s and 1980s, the Taiwanese government decided to upgrade its industrial structure and develop high-tech and skill-intensive industries. On the one hand, this strategy prompted the KMT to appeal to entrepreneurs, technocrats, and high-skilled workers. The recruitment of young intellectuals and technical experts was responsible for the KMT expertise and skills necessary for economic development and modernization. On the other hand, co-opting the emerging elites and middle class gave the government strong incentives to develop high-tech and skill-intensive industries to create job opportunities for and bring benefits to its new constituency.

During this period, the Taiwanese government strongly encouraged foreign investment into electronics, machinery, and petrochemical industries. In the 1970s, the government modified the *Statute for the Encouragement of Investment* to offer extra tax incentives to capital- and skill-intensive foreign investment. In 1981, the government announced its goal of developing strategic industries and selected information, electronics, machinery, etc. as key strategic industries. To attract high-tech and skill-intensive foreign investment, the Hsinchu Science and Industrial Park was established in 1980. Investors in the park receive a fix-year tax holiday, import duty exemption, and other favorable financial and foreign exchange arrangements. To be eligible for these investment

incentives, foreign investment must be in the new emerging industries, in line with the government's domestic industrial development goals, and hire a reasonable quantity of skilled workers (Ku et al. 2009: 13). From 1980 to 1991, more than 100 firms invested in the park, primarily involved in manufacturing computers, integrated circuits, and communications and optical products; these firms generated more than 200,000 jobs (Ku et al. 2009: 21). In addition to creating jobs for the emerging middle class, large inflows of high-tech and skill-intensive FDI provided opportunities for highly skilled talent, overseas returnees in particular, to start their own firms.²⁵ Domestic entrepreneurs also benefited from the entry of high-tech firms. Many high-tech local firms such as Acer, Lite-On, Taiwan Semiconductor Manufacturing Company, and United Microelectronics grew to be global competitors.

Democratization in the late 1980s and early 1990s has reshaped the political landscape in Taiwan.²⁶ With democratization, the masses have a chance to voice their preferences that political leaders have to be responsive to. In 1990, Taiwan started its bid for GATT membership. Accordingly, Taiwan launched large-scale economic reform and liberalization, opening up many industries to foreign investors. During the WTO negotiation process, the public's support played a critical role in resisting domestic firms' lobbying.²⁷ Chi Schive, the former WTO negotiator for the service sectors, gave one example of the parcel delivery industry. At the time, domestic carriers strongly lobbied the government and opposed the entry of foreign competitors, including UPS, FedEx, and DHL. Nonetheless, the public and media overwhelmingly supported the government's decision in belief that it was beneficial to Taiwan.²⁸ Evidently, the masses' demand was one of the driving forces of economic liberalization in the 1990s.

In 2000, the Democratic Progressive Party (DPP) took power, marking the government's first

²⁵This impression comes from most government officials and experts whom I interviewed.

²⁶A close examination of democratization in Taiwan is beyond the scope of this study. For works of democratization in Taiwan, see, e.g., Nathan (1987), Nathan and Ho (1993), Tien and Chu (1996), and Tien (1996).

²⁷Chi Schive, personal interview.

²⁸Ibid.

party change in Taiwan's history. Meanwhile, an unprecedented economic crisis from the bursting of the IT bubble in the United States swept over the island's economy. Exports fell dramatically, and the unemployment rate skyrocketed. According to official statistics, the unemployment rate soared to 5.28% in November 2001, reaching its highest level in decades.²⁹ Most of the unemployed workers were poorly educated. The situation was exacerbated by the fact that firms in Taiwan's manufacturing industries were increasingly relocated to Mainland China. Since then, job creation has moved to the top of both the DPP and KMT agendas.

To increase employment, particularly for the unskilled and lower educated population that is often viewed as the political base of the DPP, the government launched a series of economic programs. In the short term, the government focused on temporary projects, including a 20 billion NTD public service expansion program to create 115,000 jobs for elder and unskilled workers within one year.³⁰ These public service jobs included digitalizing library resources, cleaning streets and public facilities, and killing mosquitoes in tropical areas. Moreover, the government subsidized small enterprises to hire unemployed workers.³¹ In the long term, the government aimed mainly to deal with the problem of three *zhongs* (*zhongnanbu*, *zhongxiaoqiye*, *zhongxiajiecheng*, i.e., central and southern areas, medium and small enterprises, and the middle and lower classes) by developing the Central Taiwan Science Park and Southern Taiwan Science Park, balancing government budget allocation between the north and the south, investing in public infrastructures in the south, and encouraging Taiwanese firms located in Mainland China to invest domestically, even in the name of foreign investment.³²

With these government plans, the unemployment rate declined to around 4% in subsequent years.³³ Nonetheless, the economic situation in the 2000s did not significantly improve. In 2008,

²⁹Directorate-General of Budget, Accounting and Statistics, Executive Yuan, Taiwan.

³⁰Ho Mei-yueh, former minister of the Ministry of Economic Affairs, personal interview.

³¹Ibid.

³²Ibid.

³³Directorate-General of Budget, Accounting and Statistics, Executive Yuan, Taiwan.

the KMT won the election and took office again. Later that year, the unemployment rate started to increase again and reached more than 6% in July 2009. Although the KMT is traditionally closer tied to big enterprises and social elites, electoral competition has led the KMT to cater to the middle and lower classes. In order to stimulate Taiwan's economy, Ma Ying-jeou immediately started talks with Mainland China to normalize cross-strait economic and trade relations. On June 30, 2009, the government decided to open up 192 items on the list of Taiwan's industrial classification to investment from the Mainland. Among them, 64 items are within manufacturing sectors that include automobiles, textiles, and rubber and plastic products; 117 items are within service sectors, including wholesale and retail, tourism, and transportation; the other 11 items are public facilities projects (Ku et al. 2009: 104). Most high-tech and high-skilled manufacturing and service sectors remain closed or restricted to foreign investment from the Mainland. One year later on June 29, 2010, after a series of negotiations, Taiwan and China signed a preferential trade agreement called the Economic Cooperation Framework Agreement (ECFA) to reduce tariffs and trade barriers. This step has been viewed as the most significant agreement since Taiwan split from Mainland China in 1949.³⁴

These economic policies have encountered harsh criticism from the opposition party (DPP) and pro-independence groups that worry products and investment from Mainland China will undermine Taiwan's "sovereignty" and increase market competition.³⁵ Up to now, China's outward FDI has mainly concentrated on the low-end manufacturing sectors of textiles, apparel, and metal products, as well as labor-intensive service sectors, such as wholesale and retail, construction, and transportation. According to Tung Chen-yuan, the former deputy minister of Mainland Affairs Council, the current decisions to open Taiwan's market to Mainland China are, to a large extent, related to employment issue in Taiwan. The government intends to use the Mainland's resources

³⁴"Taiwan and China Sign Landmark Trade Agreement," *BBC News*, 29 June, 2010, <http://www.bbc.co.uk/news/10442557> (accessed August 18, 2011).

³⁵For instance, on April 25, 2010, Ma Ying-jeou and Tsai Ing-wen (the Chair of the DDP) held a television debate on the possible impact of the ECFA on Taiwan.

to stimulate the economy.³⁶ Additionally, Ma Ying-jeou has emphasized that Taiwan's openness to investment from the Mainland can help create a more dynamic employment environment.³⁷

The brief comparative case studies of China and Taiwan suggest that domestic coalition building has important implications for FDI policy. In the case of China, during the period of initial reform and opening, Deng Xiaoping strategically appealed to previously disenfranchised agricultural and light industries and coastal provinces to build a new supporting coalition. By delegating more authority to these industries and regions to conduct international trade and attract FDI, Deng was able to win the support from the new constituencies to confront the conservative groups in the CCP and consolidate power. Under Jiang Zemin's leadership, the Party transformed itself to represent a competitive, modern, and sophisticated constituency including entrepreneurs, managers, professionals, intellectuals, and other white-collar workers. Events of Tiananmen Square accelerated this transition. Since then, the CCP has actively recruited college students and co-opted the middle class to preempt political opposition. Furthermore, the Party intends to build a large middle class that is believed to buttress social stability. To meet these goals, attracting FDI and high-skill intensive FDI in particular serves as an important means. Large inflows of high-tech and skill-intensive FDI not only have contributed to economic growth, but also have helped serve the interests of the new constituencies. During the period of Hu Jintao, the sudden surge in the number of college students has magnified the CCP's incentive to attract more knowledge- and skill-intensive FDI to create job opportunities for college graduates.

In the case of pre-democratic Taiwan, the KMT under Chiang Ching-kuo abandoned its revolutionary goal of retaking Mainland China, switching its central aims to economic development and modernization, as well as transforming itself to stand for elites and the emerging middle class. The KMT actively recruited educated youth and co-opted social and economic elites to build strong

³⁶Tung Chen-yuan, personal interview.

³⁷*Xinhua News*, 23 February, 2011, http://big5.xinhuanet.com/gate/big5/news.xinhuanet.com/tw/2011-02/23/c_121115523.htm (accessed August 18, 2011).

support from the upper and middle classes. This transformation led to a change in Taiwan's economic strategy to develop high-tech and skill-intensive industries. During this period, the government strongly encouraged high-skill intensive FDI to stimulate economic development and extend benefits to the emerging middle class. Democratic transition in the early 1990s has reshaped Taiwan's political landscape. With electoral competition, both the KMT and DPP have moved to the center to appeal to the majority—the working class. Political competition has driven both parties to focus efforts on attracting the type of FDI that can create jobs and bring benefits to unskilled workers. The high unemployed rate among the elder and unskilled workers throughout the 2000s has reinforced this incentive.

Both cases indicate that authoritarian regimes tend to build a small domestic coalition consisting of entrepreneurs, managers, professionals, intellectuals, and white-collar workers for both political and economic reasons. This type of domestic coalition building shapes the economic policies—including FDI policy—pursued by authoritarian regimes. In order to sustain political support from this coalition, authoritarian leaders prefer high-skill intensive FDI to stimulate economic growth and extend benefits to their skilled constituencies. In contrast, democratization makes political leaders appeal to the mass majority, i.e., unskilled workers. Thus, democratic leaders have incentives to attract the type of FDI that can create jobs for their unskilled constituencies.

2.4 Conclusion

This chapter briefly examines FDI policy in China and Taiwan, providing preliminary evidence that different coalition structures in authoritarian and democratic regimes have important implications on FDI policy. In China and pre-democratic Taiwan, in addition to promoting economic development and industrialization, co-opting the emerging middle class creates additional incentives for both governments to encourage inflows of high-skill intensive FDI to extend material benefits to

skilled constituencies. In democratic Taiwan, political competition leads both the KMT and DPP to welcome less skill-intensive FDI to appeal to broad unskilled constituencies. Evidence from both China and Taiwan suggests that coalition buildings under different political regimes are likely to play a role in shaping government FDI policy.

However, it should be noted that, one important motivation for both China and Taiwan to attract high-skill intensive FDI is to promote technological progress, industrial upgrading, and economic development. This motivation, together with the distributional consequences of high-skill intensive FDI, reinforces authoritarian leaders' incentives to attract this type of FDI. In democratic regimes, although political leaders have incentives to attract high-skill intensive FDI for the purpose of industrial upgrading and economic development, political competition induces leaders to cater to the majority of unskilled workers. Attracting less skill-intensive FDI is one means to achieve this goal. Nevertheless, one should not consider low-skill intensive FDI into Taiwan to be necessarily the same as that into China. Factor endowments still play a critical role in determining FDI inflows into developing countries (e.g., Markusen 2002; Yeaple 2003). Therefore, we should expect that FDI into Taiwan is in general more skill-intensive, since Taiwan is more developed and endowed with more human capital and skills. What matters is the skill intensity of FDI relative to the average skill intensity of existing production within the country.

An important caveat is that democratization and economic liberalization, including FDI liberalization, can happen simultaneously rather than constitute a causal relationship between the two variables. However, the Taiwan case study provides evidence that democratization empowers the masses to voice their preferences and thereby exert an influence on FDI policy. To address this argument, further research needs to examine FDI policy in countries that have experienced both a transition to democracy and reverse transition to authoritarianism.

Chapter 3

Individual Skill Endowments and Attitudes toward High/Low-Skill Intensive FDI: Evidence from a Survey Experiment

Abstract

This chapter examines individual preferences toward two different types of inward foreign direct investment (FDI)—high-skill and low-skill intensive. Using a variant of the specific-factors model, I show that inflows of these two kinds of FDI generate distinct distributional consequences for skilled and unskilled labor in host countries. High-skill intensive FDI, through employing a high ratio of skilled labor, increases the relative demand and wages of skilled workers. In contrast, low-skill intensive FDI, by employing a large proportion of unskilled labor, raises the relative demand and wages of unskilled workers. Given these distributional effects, I hypothesize that skilled workers are more likely to support inflows of high-skill intensive FDI, whereas unskilled workers prefer more inflows of low-skill intensive FDI. Empirical results from a survey experiment in China generally support my argument. This study underscores people's heterogeneous preferences toward different types of FDI and has direct implications for understanding the politics of FDI.

3.1 Introduction

Cross-border flows of foreign direct investment (FDI) are one crucial aspect of globalization. Multinational corporations (MNCs)—the vehicles of FDI—are now playing a significant role in the world economy. For instance, in 2009 MNCs' foreign affiliates contributed 11% of global GDP and hired 80 million workers (UNCTAD 2010, xviii). Nowadays, both developed and developing countries are competing to lure foreign investors. The growth of inward FDI is particularly phenomenal in developing and transition economies (UNCTAD 2010, xviii).

Scholars have devoted much effort to understanding the causes and consequences of FDI. Political scientists in particular are interested in why some countries are able to attract more FDI than others. Scholars have proposed many explanations highlighting both the internal and external features that make a country attractive to foreign investors. These explanations include democratic institutions, rule of law, political risks, membership in international institutions, and many others (see, e.g., Bütte and Milner 2008; Jensen 2003; Li and Resnick 2003).

Recently, some scholars have begun to use an “open economy politics” paradigm to study FDI and model FDI policy or the pattern of FDI flows as an endogenous outcome of the interactions between interest groups and politicians (see, e.g., Pandya 2007; Pinto 2004; Pinto and Pinto 2008). FDI inflows, like other cross-border economic activities, engender significant distributional consequences on domestic actors (see, e.g., Feenstra and Hanson 1996, 1997; Pandya 2010). Thus, domestic societal interests are likely to play an important role in shaping a country's FDI policy, as rational politicians must adopt policies to respond to the preferences of their constituencies in order to retain office. This literature deviates from previous research that focuses on the supply side of FDI (investors) to the demand side (workers, interest groups, and politicians), which has provided novel insight into the politics of FDI.

In examining the politics of FDI, understanding domestic actors' preferences for FDI policy

is critical, as these preferences serve as the micro-foundations of individuals or groups' political behavior, such as voting and lobbying. Even in an authoritarian country, a social planner needs to know the distribution of policy preferences in order to maximize political support. Recently, there has been a growing body of literature relying on public opinion data to study individual preferences toward foreign economic policies, trade and immigration policies in particular.¹ These studies have provided deep insight into the determinants of people's foreign economic policy preferences and lent support to political economy frameworks of foreign economic policy decision-making. However, little work has been done to examine the public's preferences toward FDI.²

In this chapter, I examine individual preferences toward two different types of FDI: high-skill and low-skill intensive. Using a variant of the specific-factors model, I show that inflows of high-skill intensive FDI, through employing a high ratio of skilled labor, increase the relative demand for skilled workers and thus their real relative wages. In contrast, low-skill intensive FDI, by employing a high ratio of unskilled labor, raises the relative demand for unskilled workers and thus their relative wages in real terms. Given these material consequences, I hypothesize that skilled workers are more likely to support high-skill intensive FDI, while unskilled workers favor low-skill intensive FDI more. To test this hypothesis, I adopt a survey experiment implemented in China in which respondents were randomly assigned one of two attitudinal questions about high-skill and low-skill intensive FDI, respectively. Empirical results show that people with higher skill levels are significantly more likely to support high-skill intensive FDI; to some extent, support for low-skill intensive FDI decreases along with individual skill level. Nonetheless, the difference is not statistically significant. The latter finding could be because skilled labor is scarce in China. Given their scarcity, skilled workers could benefit sufficiently from a relatively small demand from

¹On trade policy preferences, see, e.g., Baker (2005), Hainmueller and Hiscox (2006, 2007, 2010), Mayda and Rodrik (2005), O'Rourke and Sinnott (2001), and Scheve and Slaughter (2001b). On immigration policy preferences, see, e.g., Hainmueller and Hiscox (2007, 2010), Mayda (2006), and Scheve and Slaughter (2001a). On FDI policy preferences, see, e.g., Pandya (2010).

²Pandya (2010) is an exception.

low-skill intensive FDI.

The chapter is organized as follows. Section 3.2 briefly reviews the literature studying individual preferences over foreign economic policy. In Section 3.3, I use a variant of the specific-factors model to derive the distributional effects of high-skill and low-skill intensive FDI and proposes testable hypotheses. Next, Section 3.4 discusses the design and implementation of the survey experiment and empirical results. Finally, Section 3.5 concludes.

3.2 Literature Review

Political economy frameworks usually model foreign economic policies as an interactive outcome of interest groups' demand and politicians' supply.³ These models rely critically on the assumptions made about the distribution and aggregation of individual policy preferences. Therefore, examining these underlying economic policy preferences is crucial in validating these assumptions and ultimately understanding foreign economic policy-making. There has been a growing body of literature that uses survey data to investigate individual preferences toward foreign economic policies. The findings in this literature have provided strong support for the micro-foundations of political economy models on foreign economic policy-making.

A central theme in this literature is whether material interests are the main driving force of individual preferences. Much work has gone into testing the predications of two seminal models in the trade literature: the Stolper-Samuelson theorem (or the Heckscher-Ohlin model)⁴ and the specific-factors model.⁵ The Stolper-Samuelson theorem that assumes factors of production (e.g., capital and labor) are completely mobile domestically, asserts that owners of abundant factors

³For studies of trade policy, see, e.g., Dutt and Mitra (2002), Mayer (1984), Milner and Kubota (2005), Milner and Mukherjee (2009). For FDI policy, see, e.g., Pandya (2007), Pinto (2004), and Pinto and Pinto (2008). For exchange rate policy, see, e.g., Frieden (1991) and Frieden et al. (2010).

⁴See Stolper and Samuelson (1941).

⁵See Jones (1971) and Mussa (1974, 1982).

(e.g., capital in developed countries or labor in developing countries) benefit from free trade, while owners of scarce factors (e.g., labor in developed countries or capital in developing countries) suffer. Thus, preferences over trade policy are likely to vary with factors or classes. In contrast, the specific-factors model, in which one or more factor is assumed to be industry-specific, predicts that specific factors in export industries gain from free trade, while those in import-competing industries lose.⁶ Returns to specific factors are dependent upon the fortunes of the industry where they are employed. Therefore, domestic coalitions tend to form in line with industries or sectors. Overall, the literature finds that individual skills are positively and significantly associated with preferences toward free trade, which is interpreted as evidence to support the factor endowments model or the Stolper-Samuelson theorem (see, e.g., Mayda and Rodrik 2005; O'Rourke and Sinnott 2001; Scheve and Slaughter 2001b). These findings provide solid micro-foundations for political economy frameworks that use class coalitions to explain trade policy outcomes.

Although there is a growing interest in examining people's preferences over economic globalization, trade and immigration in particular, research on individual attitudes toward FDI is surprisingly scarce. There are at least two chief reasons for this scarcity. First, the relationships between different types of FDI and domestic factors are rather complex. The distributional consequences of FDI inflows depend upon a variety of parameters and are thus not well understood.⁷ In contrast, the Stolper-Samuelson theorem (or the Heckscher-Ohlin model) and the specific-factors model in the trade literature have clear predictions about people's material well-being under trade liberalization. Second, comprehensive survey data on FDI policy are not largely available,⁸ which significantly constrains research on public opinion about FDI.

With scholars' growing interest in FDI and an emerging literature studying the political econ-

⁶In these models, returns to the mobile factor increase relative to imported goods but decrease relative to exported goods. Whether owners of this factor gain or lose from trade depends on the pattern of their consumption (see Hiscox 2002: 594).

⁷For the distributional effects of FDI inflows, see, e.g., Blonigen and Slaughter (2001), Brown et al. (2004), Feenstra and Hanson (1996, 1997), Pandya (2010), Pinto and Pinto (2008), and Scheve and Slaughter (2005).

⁸Questions about FDI are rarely included in within- or cross-country public opinion surveys.

omy of FDI flows and policy, there is a demand for a better understanding of the determinants of individual preferences toward FDI. Pandya (2010) utilizes survey data from Latinobarometer to investigate public opinion about FDI, finding that individuals' skill levels are a strong predictor of their support for FDI, since inflows of FDI increase the demand for skills and MNCs tend to pay a higher wage premium to skilled workers. This finding provides evidence for the proposition that domestic labor, skilled workers in particular, in host countries benefit from inward FDI and thus become a driving force of FDI liberalization.

However, the literature tends to overlook the differences between different types of FDI that are likely to generate different distributional consequences on domestic factors. Individual preferences could vary with the kind of FDI that flows into the country. For instance, people's views about MNCs with different employment structures may differ depending on how these firms affect the domestic labor market. These heterogeneous preferences could be critical to understanding government policies toward different types of FDI. This chapter seeks to contribute to the literature by collecting original survey data on FDI and by studying individual preferences toward two different types of FDI: high-skill and low-skill intensive.

3.3 Distributional Consequences of High-Skill and Low-Skill Intensive FDI ⁹

The global movement of commodities generates significant distributional effects on domestic actors, which can lead to potential political conflicts (see, e.g., Rogowski 1987). Similarly, international flows of FDI, one key aspect of globalization, can generate both distributional and political consequences (see, e.g., Pandya 2010; Pinto 2004; Pinto and Pinto 2008).¹⁰ MNCs possess propri-

⁹Please note that most parts of this section are identical to those in Section 1.3.1 in Chapter 1.

¹⁰According to the factor-price equalization theorem, given perfect factor mobility, factor prices are solely determined by changes of commodity prices. The Rybczynski theorem states that any change in factor endowments will be

etary and intangible assets, such as advanced technology, brand names, managerial know-how, and access to markets, which are inefficient to directly contract or license. Thus MNCs arise to overcome these inefficiencies (Caves 1996; Markusen 2002). Investment by MNCs usually involves cross-border transfers of physical assets and changes of factor demand, therefore generating distributional consequences on domestic actors in host countries¹¹

Not all types of FDI are the same. Scholars often distinguish between vertical and horizontal FDI.¹² When engaging in vertical FDI, MNCs decompose various production stages into multiple countries to take advantage of factor-price differentials. The primary motive of vertical FDI is to locate production where intensively used factors are relatively cheap, which is often referred to as “efficiency-seeking.” Horizontal FDI is when an MNC duplicates its production in various countries to avoid high tariffs or trade costs, which is particularly “market-seeking.” Another dimension—MNCs’ level of skill intensity—is also an important determinant of MNCs’ investment behavior.¹³ High-skill intensive FDI involves MNCs that use sophisticated technology and hire a high ratio of skilled to unskilled workers. In contrast, low-skill intensive FDI utilizes unsophisticated technology and employs a high ratio of unskilled to skilled workers. Given their distinct employment structures, inflows of these two types of FDI can have different distributional consequences.

absorbed by the change in the output mix. These results together imply that changes of factor endowments do not have an independent effect on factor prices (see, Leamer and Levinsohn 1995). Actually this circumstance is a very special case, and there are many possibilities for factor prices not to be equalized—at least in the short term. For instance, an increase in capital stock will raise the wage in a specific-factors model with mobile labor and two kinds of immobile capital (see Brown et al. 2004; Pinto and Pinto 2008). In addition, a lot of research has shown that cross-border factor flows—changes of factor endowments—affect factor returns (Borjas 2001; Borjas et al. 1996, 1997; Facchini and Mayda 2009; Feenstra and Hanson 1996, 1997; Scheve and Slaughter 2001a).

¹¹Cross-border movement of FDI changes the factor returns in both home and host countries (see, e.g., Feenstra and Hanson 1996, 1997). Given that the focus of this chapter is the distributional effects of FDI in host countries, the following discussions simply ignore the influence of FDI in home countries.

¹²For models of vertical and horizontal FDI, see, e.g., Helpman (1984), Markusen (1984), Markusen and Venables (2000), and Markusen et al. (1996).

¹³For instance, it has been documented that MNCs’ skill intensity—measured by firms’ capital intensity, R&D, advertising expenditures, or ratios of non-production to production workers—is an important determinant of their investment strategies in various business environments. See, e.g., Henisz (2000), Javorcik and Wei (2009), Rodriguez et al. (2005), and Uhlenbruck et al. (2006).

In a variant of Jones's (1971) specific factors model,¹⁴ let us assume a small open economy endowed with the following factors: domestic capital (K), skilled labor (S), and unskilled labor (L). In developing countries, L is usually much larger than S ($L > S$). Let us further assume that domestic capital is industry specific (immobile) and labor is completely mobile across industries within the country but immobile internationally. Foreign capital (F) is completely mobile and seeks the highest returns globally. Furthermore, suppose that there are two sectors—high-skill and low-skill intensive—in the economy producing high-skill and low-skill goods (X, Y), respectively. The prices of these two goods are fixed, set by the world prices. In other words, changes in domestic production of X and Y do not affect their prices. By definition, the high-skill intensive sector utilizes a higher ratio of skilled to unskilled labor than the low-skill intensive sector. Put differently, producing one unit of X requires more skilled labor than producing one unit of Y . Supplies of domestic capital and both types of labor are fixed but supply of foreign capital is perfectly elastic. Full employment is maintained in the economy.

Given its cross-border mobility, FDI seeks the highest returns globally. Government is able to affect the patterns of FDI inflows into these two sectors by choosing differential FDI policies¹⁵ that could affect the expected returns of foreign capital.¹⁶ First, let us assume that the government chooses to eliminate restrictions on FDI in the high-skill intensive sector. It may even provide certain tax or policy incentives to attract FDI into this sector. Inflows of foreign capital raise capital endowments in this sector, thus increasing demand for both skilled and unskilled labor.¹⁷ On the

¹⁴See also Pinto and Pinto (2008). Their model allows foreign capital to either substitute or complement domestic capital.

¹⁵These policies include not only direct taxation on foreign capital, but also other restrictions on foreign capital, including joint venture, local ownership, and minimum export requirements, etc. See Pinto and Pinto (2008).

¹⁶The “race-to-the-bottom” literature suggests that globalization significantly constrains government policy space and autonomy. With regard to FDI, governments (especially those in developing countries) are forced to liberalize FDI regulations in order to competing for foreign capital. For discussions of this literature, see Garrett (1998) and Mosley (2003).

¹⁷The model assumes that foreign capital complements domestic labor. In theory, foreign capital could substitute labor. However, the existing literature tends to support that inward FDI has a positive effect on wages. See Brown et al. (2004) for a review of the literature.

one hand, since domestic capital is sector specific, entry of foreign capital decreases the returns of domestic capital in the high-skill intensive sector due to growing competition.¹⁸ Additionally, the consequent increase in the wage rate due to higher demand drives down the returns of domestic capital in the low-skill intensive sector. On the other hand, growing capital endowments in the high-skill intensive sector raise the marginal product of labor in this sector. Firms in this sector increase the output of X by inputting more labor until labor's marginal product is equal to its price. The expansion of output in X increases the demand for both types of workers, thus attracting both types of labor to move away from the low-skill intensive sector. Given that the high-skill intensive sector utilizes a higher ratio of skilled labor, foreign capital into this sector raises the demand for skilled labor more than that for unskilled labor. In order to compete for labor, firms' output in the low-skill intensive sector declines, freeing up a high proportion of unskilled workers. Consequently, the relative demand for skilled workers in the economy increases, while the relative demand for unskilled workers decreases. To maintain full employment, given the change of relative demand, the relative wages of skilled to unskilled workers increase.¹⁹ Overall, inflows of high-skill intensive FDI benefit skilled workers more than unskilled workers. However, given the abundance of unskilled labor in developing countries, unskilled workers could be worse off.

Second, suppose that the government liberalizes FDI regulations in the low-skill intensive sector. While foreign firms might employ a higher ratio of skilled to unskilled labor than their do-

¹⁸Here foreign and domestic capital are substitutive. More efficient foreign firms can reduce domestic firms' market shares, therefore increasing the production costs of domestic firms and leading to a decline in their productivity. This situation is what Aitken and Harrison (1999) interpret as the "market-stealing" effect, or negative technology spillover. In other cases, MNCs can also complement domestic capital through positive technology spillover or forward and backward linkages. If this sort of complementarity is sector specific, domestic firms in the other sector still hurt because labor is driven away. In cases where foreign capital is complementary to domestic capital in both the high-skill and low-skill intensive sectors, both domestic labor and capital gain from inflows of foreign investment.

¹⁹This change does not necessarily lead to a decline in unskilled workers' real wages, which is dependent on other parameters as well. In a two-country Heckscher-Ohlin model with both countries of significant size, Feenstra and Hanson (1996, 1997) show that capital movement from North to South increases the skilled wage and decreases the unskilled wage in both home and host countries. In their model, the less skill-intensive production that moves from North to South is considered to be more skill-intensive than the average production in South; thus, such capital movement increases the average skill intensity of production in both the home and host countries. For a detailed discussion of how FDI affects factor returns in various circumstances, see Brown et al. (2004).

mestic counterparts, they still, on average, use more unskilled labor in production in this sector than firms in the high-skill intensive sector.²⁰ Inflows of foreign capital into the low-skill intensive sector decrease the returns of domestic capital in both sectors due to increasing competition and the immobility of domestic capital. Moreover, increasing capital endowments lift the demand for both types of labor in the low-skill intensive sector. This time, the demand for unskilled labor is larger than that for skilled labor. Due to complete labor mobility, both types of labor are driven to the low-skill intensive sector. The relative demand for unskilled workers therefore rises in the economy, while the relative demand for skilled workers declines. Foreign capital into the low-skill intensive sector thereby increases the relative wages of unskilled to skilled workers.

The above analysis has shown that inflows of high-skill and low-skill intensive FDI affect the relative demand for skilled and unskilled workers differently, therefore generating distinct income effects on skilled and unskilled workers. These material consequences are likely to drive individual preferences toward these two types of FDI. Thus, I hypothesize that:

1. *Skilled workers more than unskilled workers favor high-skill intensive FDI.*
2. *Unskilled workers more than skilled workers prefer low-skill intensive FDI.*

However, it should be pointed out that, since skilled workers are scarce in developing countries, the effect of low-skill intensive FDI on the relative demand for skilled labor might be mitigated by the scarcity of this type of labor. In a country where skilled labor is scarce, the relatively small demand for skilled labor from low-skill intensive FDI could be sufficient. I thus expect that high-skill intensive FDI is more likely than low-skill intensive FDI to generate divided opinions about FDI between skilled and unskilled workers.

²⁰Foreign firms tend to be more productive and have technology advantages over domestic counterparts. For instance, in Feenstra and Hanson's (1996; 1997) studies of the effects of capital movement on the relative wages in both home and host countries, one assumption is that relatively labor-intensive production moving from a developed to a developing country is considered to be skill-intensive in the host country. However, it is also possible that MNCs could transfer production that is less skill-intensive than average production in the host country.

3.4 Empirical Strategy

3.4.1 Experimental Design

To test the above hypotheses, I employ a survey experiment to study people's attitudes toward these two types of FDI.²¹ A representative sample of the population aged between 18 and 60 was drawn in China's 10 major cities²² based on probability proportional to size (PPS) sampling. The survey was fielded through face-to-face interviews.²³ Each individual was randomly asked one of the two attitudinal questions about high-skill and low-skill intensive FDI respectively. In other words, each individual has an equal probability to receive each question. Randomization ensures in expectation that all distributions of the covariates and unobserved characteristics are balanced to allow direct comparisons. All tests suggest that covariates are balanced in these two samples.²⁴ The two questions were worded as follows:

1. *Do you agree or disagree that the Chinese government should encourage more high-skill intensive foreign firms (i.e., firms that use sophisticated technology and employ a high ratio of skilled to unskilled workers) to come and invest?*
2. *Do you agree or disagree that the Chinese government should encourage more low-skill intensive foreign firms (i.e., firms that use unsophisticated technology and employ a high ratio of unskilled to skilled workers) to come and invest?*

Answer options:

²¹The survey was granted exemption by the Institutional Review Board at Columbia University.

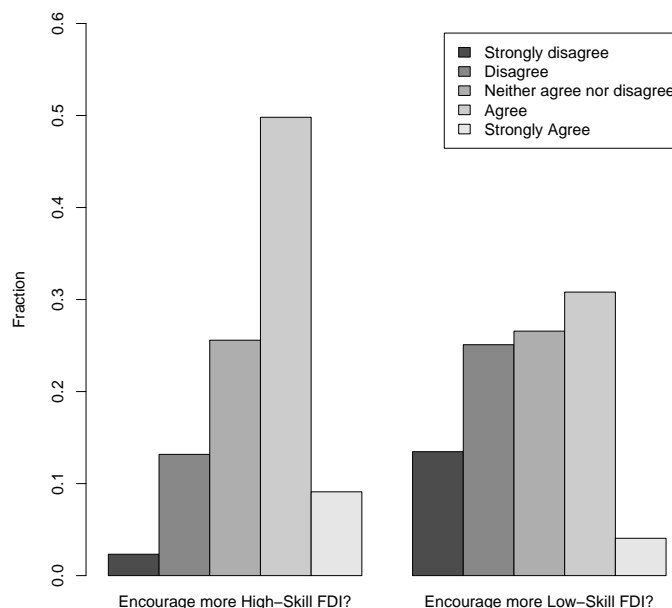
²²They are Beijing, Shanghai, Xiamen, Dalian, Guangzhou, Chengdu, Wuhan, Shenyang, Jinan, and Xi'an.

²³The survey was conducted through the Horizon Consultancy Research Group in China. The response rate was 33.08%

²⁴Both one-tailed and two-tailed t-tests suggest that the differences of means are not statistically significant.

1. Strongly disagree 2. Somewhat disagree 3. Neither agree nor disagree
4. Somewhat agree 5. Strongly agree
8. Refused 9. Don't know

Figure 3.1: Distributions of Individual Preferences toward High/Low-Skill Intensive FDI



The difference between the two questions is minimized to avoid framing bias.²⁵ The option of “Don’t know” was included to distinguish persons who didn’t understand the concepts of these two types of FDI from those who had neutral preferences. In total, the survey received a sample of 1,097 responses. Among them, 530 individuals received Question 1 and 567 had Question 2.²⁶ Figure 3.1 shows the distributions of support for high-skill and low-skill intensive FDI respectively. The graph illustrates two features. First, people’s opinions on FDI are divided. If all respondents

²⁵See Hainmueller and Hiscox (2010) for a similar design to study attitudes toward highly skilled and low-skilled immigrants.

²⁶Within the first group, 37 respondents chose “Don’t Know” and two refused to answer. In the second group, 13 chose “Don’t Know” and one refused to answer.

in both groups are pooled together, about 46% respondents somewhat agreed or strongly agreed that the Chinese government should encourage more foreign firms to come and invest, while 27% respondents somewhat disagreed or strongly disagreed. Second, Figure 3.1 shows that high-skill intensive FDI is in general preferred to low-skill intensive FDI. A simple t-test suggests that the difference is statistically significant. This could be a reflection of the Chinese government propagandizing its strong preference toward high-skill intensive FDI.

3.4.2 Measures of Respondents' Skill Levels

Since I hypothesize that skilled workers support high-skill intensive FDI more, and unskilled workers, in contrast, favor low-skill intensive FDI, individuals' skill levels are a key determinant of their preferences toward these two types of FDI. Following the existing literature (e.g., Baker 2005; Hainmueller and Hiscox 2010; Mayda and Rodrik 2005; Pandya 2010; Scheve and Slaughter 2001a,b), I utilize two measures of individual skills: educational attainment and market-oriented skills. Educational attainment is a categorical measure of respondents' formal education level: primary school or less, middle school, high school, junior college, and college or above. Hainmueller and Hiscox (2006, 2007) suggest that in addition to job skills educational attainment may also capture the influence of other factors such as exposure to economic ideas, information about various economic phenomena, and cultural values (e.g., tolerance and cosmopolitanism). Furthermore, Baker (2005) points out that formal education level overlooks "(1) experience-based or post-schooling acquisition of skill, (2) massive domestic and international variation in schooling quality, (3) differences in achievement within equivalent education levels, and (4) the fact that not all skills acquired through formal education are market-relevant" (927). Thus, following Baker (2005), I construct a variable of market-oriented skills obtained from a principal component factor

analysis of formal education,²⁷ monthly personal income²⁸ and occupation.²⁹ This measure only reflects “the income- and occupation-relevant aspects of formal education” (Baker 2005: 928).

3.4.3 Alternative Explanations and Control Variables

Existing research suggests that individual economic knowledge is a significant predictor of public opinion on economic policies (e.g., Walstad 1997; Walstad and Rebeck 2002). In particular, a college economics course has the most lasting effect on people’s attitudes toward economic issues (Gleason and Scyoc 1995; Saunders 1980; Walstad 1997; Walstad and Rebeck 2002). College graduates are more likely to be exposed to key economic concepts such as market competition, technology spillover, and comparative advantage, and thereof have a better understanding of the complex effects of economic policies.³⁰ This point is especially important for understanding the consequences of FDI policies due to the multifaceted impact of FDI on domestic capital, labor, and the national economy. To measure respondents’ economic knowledge, I asked the question: “Have you taken a course in economics or business?”³¹ The dichotomous economic knowledge variable is coded 1 if respondents said “Yes,” and 0 if otherwise.

Information plays a central role in public opinion formation. People usually judge public policies in terms of the expected utility for themselves, their families or community (Page et al.

²⁷I exclude respondents with primary school or less as this group of population is unlikely to be employed by foreign firms. See more discussions in the section of Empirical Results.

²⁸Monthly personal income is a categorical variable. Respondents were asked to place themselves into one of the 18 categories of their monthly personal income ranging from 500 RMB or less to more than 10,001 RMB. The question was worded as follows: “We would like to know to which level of your monthly income is equivalent. Here income refers to your wages, earnings from part-time jobs, and other material gains.”

²⁹I transfer respondent occupations into an ordinal variable as follows: (1) farmers, (2) service and sales workers, (3) manual workers, self-employed, and armed forces and police, (4) clerical workers in firms and government, (5) junior managers in firms and junior administrators in the government, (6) senior managers in firms and senior administrators in the government, and (7) professionals. See Baker (2005). Since this format is used to construct a measure of market-oriented skills, I exclude respondents who are not active in the labor market.

³⁰See Hainmueller and Hiscox (2006).

³¹In China, only colleges or graduate schools offer courses in economics and business. Thus, if respondents answered “Yes,” we can expect that they took economics or business courses in either college or graduate school.

1987: 23). The calculation of costs and benefits hinges on “beliefs about the state of nature, that is, beliefs about present and future facts and causal relationships” (Page et al. 1987, 23-24; see also (McCubbins and Page 1984)). Thus the kind information to which citizens are exposed is crucial in shaping their opinions on policy issues. Recent evidence shows that information exposure exerts a critical influence on individuals’ trade policy preference formation (Hainmueller and Hiscox 2006). In reality, it is costly for individuals to obtain detailed information about various government policies. Sometimes, the costs are so high that individuals lose interest in acquiring such information. Alternatively, most people tend to rely on cheaper information sources, including newspapers, radio and television, etc. Thus, citizens with more media exposure are more likely to be influenced by the kind of information revealed. To control for the information effect, I used a question that asked respondents how often they listen to, read, or watch economic or business news. Respondents were required to place themselves into one of the four categories: (1) Never, (2) One or Two Days a Week, (3) Three or Four Days a Week, or (4) Almost Every Day.³² Since FDI is believed to be a major driving force of China’s economic growth, the Chinese government has a strong pro-FDI stand in its propaganda. I therefore expect that the more the respondents are exposed to the media, the more likely they are to support FDI in general.

Nationalism can trigger anti-foreign sentiment and thus antagonism toward foreign investment. Mayda and Rodrik (2005) and O’Rourke and Sinnott (2001) find that national pride is positively and significantly associated with individuals’ trade protectionist attitudes. In her study of individual preferences over FDI, Pandya (2010) only finds limited evidence that nationalism is associated with opposition to FDI. To measure nationalism, I employed one similar question used by Mansfield and Mutz (2009):³³ To what extent do you agree or disagree with the following statement, “In China, our people are not perfect, but our culture is superior to others.”

In addition, public employees may suffer from FDI inflows. In China, reforming unprofitable

³²The question also included answer options of “Refused” and “Don’t Know.”

³³The question was originally used in Rankin (2001).

state-owned enterprises (SOEs) lies at the top of the government's agenda. Foreign firms are encouraged to participate in the privatization of SOEs and treated as a vital means to save these firms (Gallagher 2002). Public employees could lose from privatization due to the retrenchment of workers in the process of improving SOEs' efficiency and competitiveness. In fact, large-scale unemployment has led to numerous protests and social unrest (see Cai 2002; Chen 2000). Thus, I expect that public employees are less likely to have favorable attitudes toward FDI. Respondents are treated as public employees if they are employed by either SOEs or collective-owned enterprises.

FDI inflows may enhance market competition and thus drive down the price of consumer goods. Moreover, FDI can benefit consumers by increasing the variety of products, which is especially noticeable for high-income population, as more high-end durable consumer goods become available in the market. Therefore, income can be positively associated with individuals' support for high-skill intensive FDI while negatively for low-skill intensive FDI, since the latter is more likely to bring in cheap low-end products that dominate the poor's consumption basket.

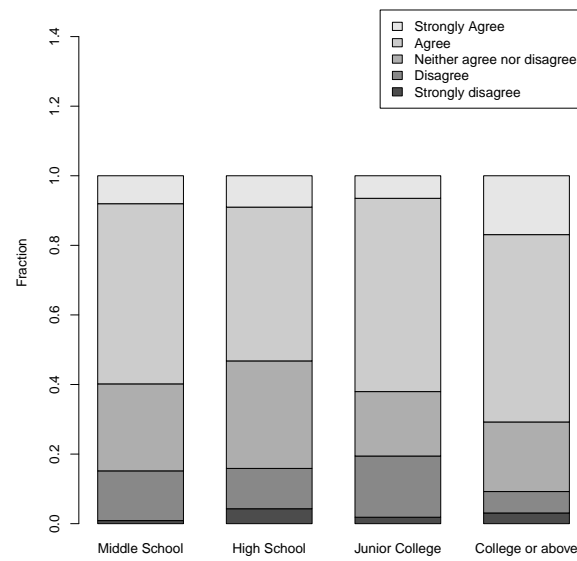
Finally, I also control for respondents' age and gender, given that the literature studying individual trade policy preferences suggests that female and older people are less likely to support trade liberalization (see, e.g., Burgoon and Hiscox 2008; Mayda and Rodrik 2005; O'Rourke and Sinnott 2001).

3.4.4 Empirical Results

3.4.4.1 Educational Attainment as a Proxy for Skills

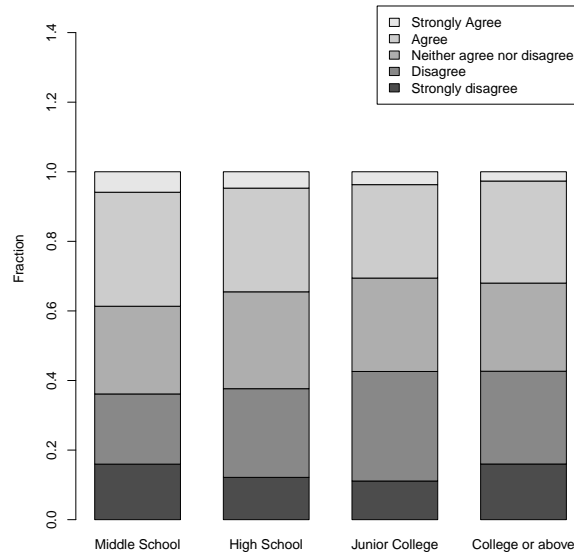
First, Figures 3.2 and 3.3 show the distributions of individual preferences for high-skill and low-skill intensive FDI, respectively. I exclude the category of primary school or less because this group of people is unlikely to be hired by foreign firms and their responses might be noisy. We can see

Figure 3.2: Support for High-Skill Intensive FDI by Respondents' Educational Attainment



from Figure 3.2 that for high-skill intensive FDI, the proportion of respondents stating “Strongly agree” or “Somewhat agree” increases with their education levels. However, the relationship is not completely linear. Respondents with only middle school education have a higher share of “Somewhat agree” than those with only high school education. The fraction of respondents choosing “Neither agree nor disagree,” “Disagree,” or “Strongly disagree” does not reveal a clear pattern. For low-skill intensive FDI (Figure 3.3), we can see a somewhat opposite pattern. The share of “Strongly agree” or “Somewhat agree” decreases with the level of educational attainment, while the fraction of “Disagree” and “Strongly disagree” increases with the level of educational attainment. Again, the relationship is, to some extent, non-linear. Respondents at the college education level or above have a smaller proportion of “Somewhat disagree” than those with junior college degrees; people with only middle school education have a higher fraction of “Strongly disagree” than the group with high school education. The distributions of individual FDI preferences are in general consistent with the predictions in the specific-factors model that skilled workers more

Figure 3.3: Support for Low-Skill Intensive FDI by Respondents' Educational Attainment



than unskilled workers prefer high-skill intensive FDI, while unskilled workers more than skilled workers favor low-skill intensive FDI.

To systematically examine the determinants of individual preferences for these two types of FDI, I estimate an ordered probit model. We do not have strong reasons to believe that a move, for instance, from “Strongly disagree” to “Somewhat disagree” is the same as that from “Somewhat agree” to “Strongly agree.” However, these five categories do represent respondents’ ordinal preferences. Thus, an ordered probit model is appropriate, which also estimates the unobserved thresholds between categories. The model is constructed as follows:

$$ProFDI_i = \alpha + \beta * HSIFRAME + \varphi * Skill_i * HSIFRAME_i + \gamma * Skill_i + \phi X_i + \varepsilon_i \quad (3.1)$$

Where $i = \text{high} - \text{skill intensive FDI}$ or $\text{low} - \text{skill intensive FDI}$

$ProFDI$ is an ordinal variable of FDI preferences ranging from 1—strongly disagree to 5—strongly agree. $HSIFRAME$ is a dichotomous variable that is equal to 1 if respondents were assigned a question about high-skill intensive FDI, otherwise 0. $Skill$ is a variable measuring respondents' skill endowments. X is a $N * K$ matrix of control variables. α is the constant, and β is the skill premium that respondents attach to high-skill intensive FDI. φ and γ are coefficients to be estimated for the interaction term and the skill variable. ϕ is a coefficient vector for X . ε is the error term.

The key hypothesis we want to evaluate is whether an individuals' skill level affects their attitudes toward high-skill and low-skill intensive FDI. First, I run separate regressions for the group assigned the question about high-skill intensive FDI and the one assigned the question about low-skill intensive FDI. Then I pool data together treating the former as the treatment group and the latter as the control group.³⁴ In Models 1 and 2 of Table 3.1, I respectively regress respondents' attitudes toward high-skill and low-skill intensive FDI on educational attainment (a proxy for skills) and a set of control variables. In Model 1, the coefficient of educational attainment is positive and statistically significant at the 10% level. In contrast, in Model 2, the slope of education is negative, but it is almost 0 and statistically insignificant. These results support my argument that skilled workers are more likely than unskilled workers to support high-skill intensive FDI. However, I do not find significant differences in respondents' attitudes toward low-skill intensive FDI across the skill spectrum, though the regression sign is in the expected direction. One possible interpretation for this finding might be that the declining relative demand for skilled workers resulting from inflows of low-skill intensive FDI could be mitigated by their scarcity in China. It is possible that scarce skilled workers could benefit sufficiently from low-skill intensive FDI.

To interpret the substantive effects of the coefficients from the ordered probit regressions, I

³⁴See Hainmueller and Hiscox (2010) for similar model specifications.

Table 3.1: Support for High/Low-Skill Intensive FDI: Educational Attainment

MODEL	(1)	(2)	(3)	(4)	(5)	(6)
FRAME	High-Skill FDI	Low-Skill FDI	FDI	High-Skill FDI	Low-Skill FDI	FDI
EDUCATION	0.12*	-0.00	-0.03	0.13*	-0.03	-0.06
	(0.07)	(0.06)	(0.06)	(0.07)	(0.07)	(0.06)
EDUCATION*HSIFRAME			0.12*			0.16**
			(0.07)			(0.08)
HSIFRAME			0.27			0.28
			(0.24)			(0.18)
FEMALE	0.18*	0.21**	0.22***	0.18*	0.20**	0.21***
	(0.10)	(0.10)	(0.07)	(0.10)	(0.10)	(0.07)
AGE	-0.00	-0.00	-0.00	-0.00	-0.01	-0.01
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
MONTHLY FAMILY INCOME	0.01	-0.02	0.01	0.01	-0.01	0.02
	(0.03)	(0.03)	(0.02)	(0.03)	(0.03)	(0.02)
ECONOMIC KNOWLEDGE	-0.52***	-0.12	-0.27***	-0.50***	-0.11	-0.25***
	(0.14)	(0.13)	(0.09)	(0.14)	(0.13)	(0.09)
NEWS EXPOSURE	0.13**	0.05	0.09**	0.12**	0.07	0.10**
	(0.06)	(0.06)	(0.04)	(0.06)	(0.06)	(0.04)
NATIONALISM	0.31***	0.33***	0.31***	0.30***	0.32***	0.30***
	(0.06)	(0.05)	(0.04)	(0.06)	(0.05)	(0.04)
PUBLIC EMPLOYEES	-0.14	-0.07	-0.10	-0.14	-0.06	-0.09
	(0.12)	(0.11)	(0.08)	(0.12)	(0.12)	(0.08)
CUT1	-0.43	-0.42	-0.21	-0.61	-0.47	-0.29
	(0.47)	(0.46)	(0.34)	(0.45)	(0.44)	(0.32)
CUT2	0.65	0.51	0.73**	0.48	0.45	0.65**
	(0.46)	(0.46)	(0.34)	(0.44)	(0.44)	(0.32)
CUT3	1.53***	1.27***	1.52***	1.36***	1.20***	1.44***
	(0.47)	(0.46)	(0.34)	(0.44)	(0.44)	(0.32)
CUT4	3.19***	2.75***	3.08***	3.02***	2.71***	3.00***
	(0.48)	(0.47)	(0.35)	(0.45)	(0.46)	(0.33)
Region Dummies	✓	✓	✓	✓	✓	✓
Obs.	476	521	997	462	509	971
Log Likelihood	-571.35	-709.68	-1303.07	-555.21	-692.76	-1269.36
Pseudo R ²	0.07	0.07	0.08	0.06	0.07	0.08
χ^2	79.79	103.34	225.45	76.30	98.56	215.13
$P > \chi^2$	0.00	0.00	0.00	0.00	0.00	0.00

Notes: Standard errors in parentheses;

*** p<0.01, ** p<0.05, * p<0.10

simulated the marginal probability of encouraging FDI (i.e., “Somewhat agree” or “Strongly agree” that FDI should be encouraged). For each simulation, I calculated the difference in the probabilities of supporting FDI when moving education level from primary school or less (the lowest level) to college or above (the highest level) and fixing all other variables at their median values. Basing on the 1000 simulations, I then obtained the mean and a 90% confidence interval of the 1000 differences. In Model 1, the marginal effect of education is 0.17 [0.01,0.34],³⁵ which suggests that moving respondent education level from primary school to college or above will increase the probability of supporting high-skill intensive FDI by 17% when all other variables are held at their medians. In contrast, the same increase in education level reduces respondent support for low-skill intensive FDI by 1.5% with a 90% confidence interval of [-0.17, 0.14].

Regarding other control variables, women are more likely than men to support both types of FDI. Women are 6.49% [0.57%, 12.76%] and 8.03% [0.82%, 14.16%] more likely than men to support high-skill and low-skill intensive FDI respectively. This finding is contradictory to those in the literature that women tend to have stronger anti-globalization sentiment. One possible explanation for the positive correlation might be that female consumers welcome foreign investment because it increases product variety and brings in high-quality goods. In addition, respondents’ economic knowledge is found to be associated with opposition to FDI. When all other variables are at their medians, having taken a course either in economics or business decreases the probability of supporting high-skill intensive FDI by 19.84% and low-skill intensive FDI by 4.58%, but only the former is statistically significant. The negative coefficients of the economic knowledge variable in both models, in itself, are interesting, as it is often expected that people exposed to economic ideas tend to have favorable opinions about globalization. The negative correlation between respondents’ economic knowledge and support for FDI could be because individuals knowledgeable in economics or business are more likely to pay attention to the adverse effects of FDI

³⁵Numbers in brackets are the 90% confidence interval. The 95% confidence interval is [-0.01, 0.36].

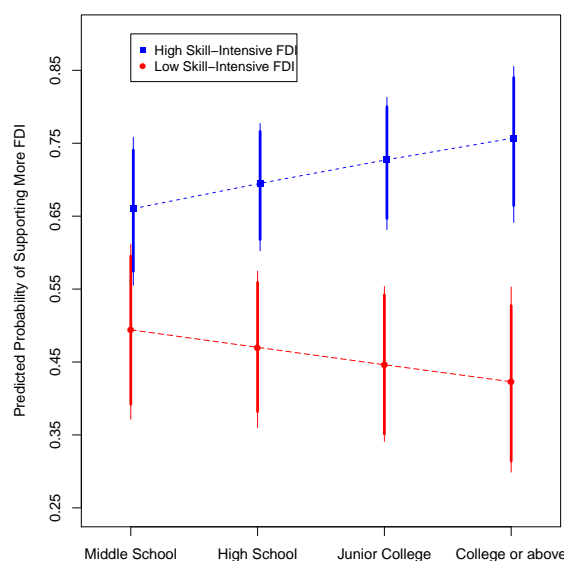
inflows, such as market competition, environmental deterioration, and income inequality.³⁶ News exposure, in contrast, increases respondents' support for FDI, especially high-skill intensive FDI. This finding can potentially be explained by the Chinese government's pro-FDI propaganda. Interestingly, nationalism is strongly correlated with favorable attitudes toward both types of FDI and both coefficients are statistically significant beyond the conventional level. One unit increase from its median value raises the probability of supporting high-skill intensive FDI by 9.89% [6.96%, 12.99%] and low-skill intensive FDI by 12.48% [9.61%, 15.60%] when all other variables are held at their medians. This positive relationship contradicts the existing findings that national pride triggers anti-globalization sentiment. One potential explanation for this positive correlation is that Chinese people may have a strong belief that FDI is conducive to China's economic development, and therefore national pride in fact spurs public support for FDI. This claim is reinforced by anecdotal evidence that the Chinese government justifies its liberalization of FDI policy with the aim of building a strong, modern nation state. Finally, older people are less likely to be in favor of FDI in general; family income is positively associated with support for high-skill intensive FDI but opposition to low-skill intensive FDI; public employees tend to oppose FDI. All these findings are sensible, but their coefficients are not statistically significant.

In Model 3, I treat the respondents receiving the question about high-skill intensive FDI as the treatment group and those having the question about low-skill intensive FDI as the control group. *HSIFRAME* is a dummy variable indicating the treatment, which measures the premium that respondents attach to high-skill intensive FDI. According to the predictions in the specific-factors model, we expect that the coefficient of education is negative while the one of the interaction term between education and *HSIFRAME* is positive. Results are presented in Model 3 of Table 3.1. A negative slope of education and a positive coefficient of the interaction term support my argument that individuals' support for low-skill intensive FDI decreases, while support for high-

³⁶In China, Western economic textbooks are widely used in college education. A considerable number of college teachers in economics or business departments actually have Ph.D. degrees from Western countries.

skill intensive FDI increases with their skill levels. The interaction term is statistically significant at 10%. Since *HSIFRAME* and the interaction term are highly correlated,³⁷ I test the joint significance of education, *HSIFRAME*, and their interaction term. The results yield a chi-square statistic of 85.61 and a p-value of 0.00.

Figure 3.4: Support for High/Low-Skill Intensive FDI by Respondents' Educational Attainment



MNCs usually own technology advantage over domestic firms and their employees need to possess a minimum level of skills. Thus, people with only primary school education or less are unlikely to be employed by foreign firms. In addition, given their limited level of formal education, we do not know how these respondents answered the questions. To deal with these possible noises, I exclude respondents with primary school education or less and re-estimate every model.³⁸ We can see from Models 4, 5 and 6, all results are substantively the same as those in Models 1, 2 and 3,

³⁷The Pearson correlation between these two variables is 0.95.

³⁸32 respondents reported that they obtained only primary school education or less, which is 2.92% of the sample. Including or excluding these people does not affect the regression results substantively.

except that the significance level of the interaction term between education and *HSIFRAME* in Model 6 increases to the 95% level. To better interpret the substantive magnitudes of education's coefficients, in Figure 3.4, I graph the predicted probability in favor of high-skill and low-skill intensive FDI (answers "Somewhat agree" and "Strongly agree") in Model 6 along with the 90% and 95% confidence intervals across respondents' education levels. The results were obtained from 1000 simulations. The graph clearly shows that the probability of favoring high-skill intensive FDI increases, while the probability of supporting low-skill intensive FDI decreases with respondent's skill level. These results are rather consistent with the predications in the specific-factors model. Additionally, the figure reveals that overall, high-skill intensive FDI is preferred to low-skill intensive FDI.

In brief, I find that individual skill level measured by educational attainment is positively and strongly associated with support for high-skill intensive FDI, but only find limited evidence that unskilled individuals have more favorable attitudes toward low-skill intensive FDI than skilled people. Additionally, the empirical results show that women strongly favor both types of FDI; national pride increases the probability in favor of FDI; economic knowledge raises respondents' opposition to high-skill intensive FDI, while news exposure increases individual support for high-skill intensive FDI. Both economic knowledge and news exposure do not exert a significant influence on people's attitudes toward low-skill intensive FDI.

3.4.4.2 Market-Oriented Skills

One possible rejection to the findings is that educational attainment used to measure skills may capture other factors such as economic knowledge, information, and cultural values.³⁹ This concern can be mitigated given the following facts. First, in the regressions, I have explicitly controlled for respondents' economic knowledge and degree of information exposure. Both variables have a

³⁹See Hainmueller and Hiscox (2006, 2007).

significant effect on respondents' attitudes toward FDI. Second, the slope of education is positive in the group of high-skill intensive FDI and negative in the group of low-skill intensive FDI, while both coefficients of economic knowledge are negative. Therefore, it is unlikely that education only captures the effect of respondents' exposure to economic ideas in college. Third, if people with college education are more likely to tolerate foreign cultures and have cosmopolitan views,⁴⁰ education should be positively correlated with pro-FDI attitudes in general. In fact, the results reveal a slightly negative relationship between respondents' level of education and their support for low-skill intensive FDI.

To further check whether the results are sensitive to the measure of skills that I have chosen, following Baker (2005), I constructed a variable of market-oriented skills.⁴¹ I conducted a principal component factor analysis on respondents' education, occupation, and monthly personal income, and one factor was loaded with eigenvalue greater than 1. This skill variable "capture[s] only the income- and occupation-relevant aspects of formal education" (Baker 2005: 928). As before, I first run separate regressions for these two groups and then model them simultaneously. All results are shown in Table 3.2. In the group of high-skill intensive FDI, the coefficient of market-oriented skills is 0.15 and statistically significant at 10% level, while the one in the group of low-skill intensive FDI is 0.05 and statistically insignificant. These findings are consistent with those using formal educational attainment as a measure of skills. In Model 3 of Table 3.2 where two groups are pooled together, the coefficient of the skill variable is almost 0 and the slope of the interaction term between the market-oriented skill variable and *HSIFRAME* is 0.14 with a p-value of 0.052. This finding illustrates that respondents' support for high-skill intensive FDI

⁴⁰The Pearson correlational between educational attainment and nationalism is 0.01 in the sample.

⁴¹Hainmueller and Hiscox (2006, 2007, 2010) split their samples into respondents in the labor force and those out of the labor force. The rationale behind this method is that the material effects or self-economic interests mainly result from participation in the job market; however, the influence of economic knowledge and cultural values should be carried on even when people are out of the labor force. Thus, we should expect that education has different effects on respondents' attitudes toward economic policies for people in the labor force and those out of the labor force. Unfortunately, I am unable to employ this method given data constraints; I do not have observations of respondents who hold a college degree or above and are currently out of the labor force.

Table 3.2: Support of High/Low-Skill Intensive FDI: Market-Oriented Skills

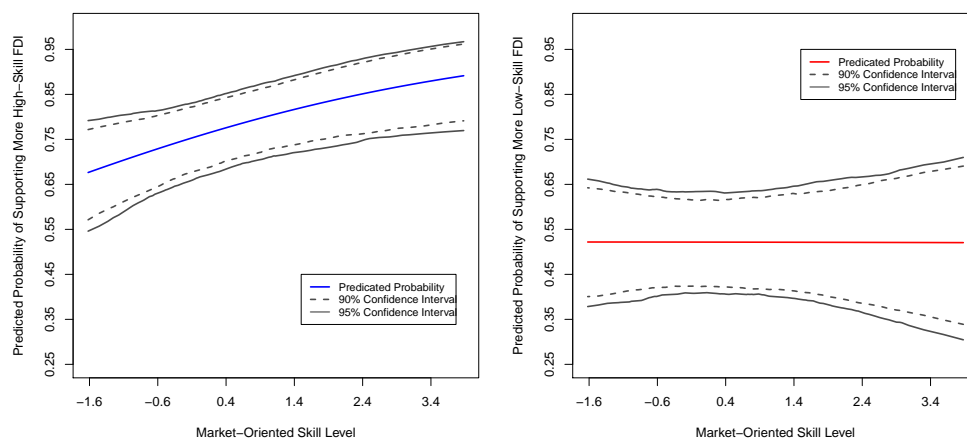
MODEL	(1)	(2)	(3)
VARIABLES	High-Skill FDI	Low-Skill FDI	FDI
SKILL	0.15*	0.05	0.00
	(0.08)	(0.07)	(0.06)
SKILL*HSIFRAME			0.14*
			(0.07)
HSIFRAME			0.65***
			(0.08)
FEMALE	0.22*	0.24**	0.25***
	(0.11)	(0.11)	(0.08)
AGE	-0.01	0.00	-0.00
	(0.01)	(0.01)	(0.00)
FAMILYINCOME	-0.01	-0.04	-0.01
	(0.04)	(0.03)	(0.02)
ECONOMIC KNOWLEDGE	-0.53***	-0.11	-0.26**
	(0.16)	(0.14)	(0.10)
NEWS EXPOSURE	0.13**	0.06	0.09**
	(0.06)	(0.06)	(0.04)
NATIONALISM	0.31***	0.30***	0.29***
	(0.06)	(0.06)	(0.04)
PUBLIC EMPLOYEES	-0.19	-0.09	-0.13
	(0.13)	(0.12)	(0.09)
CUT1	-1.22***	-0.44	-0.30
	(0.45)	(0.44)	(0.31)
CUT2	-0.18	0.51	0.64**
	(0.44)	(0.44)	(0.31)
CUT3	0.70	1.24***	1.42***
	(0.44)	(0.44)	(0.31)
CUT4	2.39***	2.69***	2.98***
	(0.45)	(0.45)	(0.32)
REGION DUMMY	✓	✓	✓
Obs.	404	440	844
Log Likelihood	-480.11	-601.72	-1101.49
Pseudo R ²	0.08	0.07	0.08
χ^2	79.89	88.26	203.79
$P > \chi^2$	0.00	0.00	0.00

Notes: Standard errors in parentheses;

*** p<0.01, ** p<0.05, * p<0.10

increases significantly with their market-oriented skill levels, whereas their support for low-skill intensive FDI almost does not change across the skill spectrum. The magnitudes and significant levels of all other control variables are not substantively different from those in Models 3 or 6 in Table 3.1. These results suggest that respondents' preferences for these two types of FDI are driven by their material concerns other than their exposure to economic information or cultural values.

Figure 3.5: Support for High/Low-Skill Intensive FDI by Respondents' Market-Oriented Skill Levels



In Figure 3.5, I graph the predicated probability in favor of high-skill and low-skill intensive FDI by respondents' market-oriented skill levels along with the 90% and 95% confidence intervals. These results are based on 1000 simulations using the coefficients in Model 3 of Table 3.2. The two graphics clearly show that when all other variable are held at their median values, the probability of supporting high-skill intensive FDI rises with the respondent's skill level, while the probability of supporting low-skill intensive FDI almost does not change across the skill spectrum. The results strongly support my argument that skilled workers are more likely than unskilled workers to support high-skill intensive FDI. As discussed before, the insignificant difference in respondents' support for low-skill intensive FDI could be a result of the fact that skilled labor is scarce in China.

3.4.4.3 Non-Linear Relationships

Finally, I explore possible non-linear relationships between education and individual preferences for FDI. Alternatively, I estimate the following model:

$$\begin{aligned} ProFDI_i = & \alpha + \gamma_1 * MiddleSchool_i + \gamma_2 * JuniorCollege_i + \gamma_3 * College_i + \\ & \varphi_1 * MiddleSchool_i * HSIFRAME_i + \varphi_2 * JuniorCollege_i * HSIFRAME_i + \\ & \varphi_3 * College_i * HSIFRAME_i + \beta * HSIFRAME_i + \phi * X_i + \varepsilon_i \end{aligned} \quad (3.2)$$

Where $i = high - skill\ intensive\ FDI$ or $low - skill\ intensive\ FDI$

High school education is the reference category. Again, I first run separate regressions for the groups of high-skill and low-skill intensive FDI and then pool the data together. All results are presented in Table 3.3. In Model 1, respondents with college education or above have a significantly higher probability of supporting high-skill intensive FDI than those with only high school education. The coefficients of junior college and middle school education are both positive but not statistically significant. In the group of low-skill intensive FDI (Model 2), people with junior college education are less likely to favor this sort of FDI. Nonetheless the coefficient is not statistically significant. Individuals with only middle school or at least college education are not very different from those with only high school education in terms of the probability of supporting low-skill intensive FDI. In Model 3 where the two groups are modeled simultaneously, we can see that the coefficients of junior college and college or above are negative, but their interactions with *HSIFRAME* are positive. Furthermore, the magnitudes of the two interaction terms' coefficients increase with the level of education. The slope of middle school education is almost 0 (0.03), and the slope of its interaction term with *HSIFRAME* is much smaller than those of the other two interaction terms, although it is positive. The interaction term between college or above and *HSIFRAME* is statistically significant at the 1% level, and all three interaction terms are

Table 3.3: Support for High/Low-Skill Intensive FDI: Non-Linear Relationships

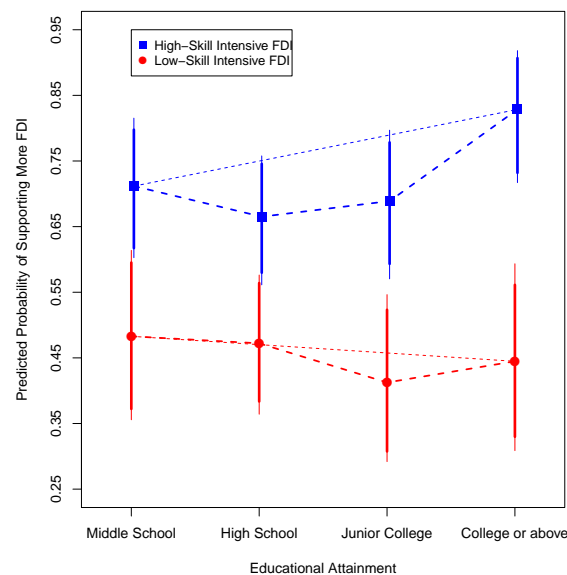
MODEL	(1)	(2)	(3)
	High-Skill FDI	Low-Skill FDI	FDI
MIDDLESCHOOL	0.11 (0.14)	0.06 (0.13)	0.03 (0.13)
JUNIORCOLLEGE	0.11 (0.14)	-0.13 (0.14)	-0.16 (0.14)
COLLEGE	0.66*** (0.21)	0.02 (0.18)	-0.07 (0.17)
MIDDLESCHOOL*HSIFRAME			0.11 (0.18)
JUNIORCOLLEGE*HSIFRAME			0.23 (0.19)
COLLEGE*HSIFRAME			0.60*** (0.23)
HSIFRAME			0.50*** (0.10)
FEMALE	0.20* (0.11)	0.20** (0.10)	0.22*** (0.07)
AGE	-0.00 (0.01)	-0.01 (0.01)	-0.01* (0.00)
FAMILYINCOME	0.00 (0.03)	-0.01 (0.03)	0.01 (0.02)
ECONOMIC KNOWLEDGE	-0.57*** (0.15)	-0.11 (0.13)	-0.28*** (0.10)
NEWS EXPOSURE	0.13** (0.06)	0.07 (0.06)	0.10** (0.04)
NATIONALISM	0.30*** (0.06)	0.33*** (0.05)	0.30*** (0.04)
PUBLIC EMPLOYEES	-0.13 (0.12)	-0.06 (0.12)	-0.08 (0.08)
CUT1	-0.80* (0.42)	-0.44 (0.41)	-0.20 (0.29)
CUT2	0.30 (0.41)	0.48 (0.41)	0.74** (0.29)
CUT3	1.20*** (0.41)	1.24*** (0.41)	1.53*** (0.30)
CUT4	2.86*** (0.43)	2.75*** (0.43)	3.10*** (0.30)
REGION DUMMIES	✓	✓	✓
Obs.	462	509	971
Log Likelihood	-551.38	-692.16	-1265.59
Pseudo R ²	0.07	0.07	0.08
χ^2	83.97	99.78	222.66
$P > \chi^2$	0.00	0.00	0.00

Notes: Standard errors in parentheses;

*** p<0.01, ** p<0.05, * p<0.10

jointly significant with a p-value of 0.06.

Figure 3.6: Support for High/Low-Skill Intensive FDI by Respondents' Educational Attainment: Non-Linear Relationships



To further illustrate the results, I graph the predicted probability of supporting FDI along with the 90% and 95% confidence intervals by respondents' educational attainment (see Figure 3.6). The figure does show some non-linear relationships between individual educational attainment and support for high-skill and low-skill intensive FDI. Respondents with college education or above are significantly more likely to support high-skill intensive FDI than other groups; in contrast, respondents with junior college and college education or above are less likely to support low-skill intensive FDI, but the differences are not statistically significant. In addition, the graph confirms the previous finding that, in general, people prefer high-skill to low-skill intensive FDI.

To sum up, the results from the survey experiment show that individuals' support for high-skill intensive FDI is positively and significantly associated with their skill level; to some extent, support for low-skill intensive FDI is negatively correlated with respondents' skill level, but the correlation

is not statistically significant. On the one hand, in China, the increase in the relative demand for unskilled workers resulting from inflows of low-skill intensive FDI could be moderate given the abundance of unskilled labor. On the other hand, skilled workers could benefit sufficiently from this type of FDI given their scarcity. This might explain why we do not see a significant difference in respondents' attitudes toward low-skill intensive FDI across different skill levels. Overall, these findings are consistent with the predications about the distributional effects of high-skill and low-skill intensive FDI in the specific-factors model. In addition, I find that women are more likely than men to support both types of FDI, contradictory to the notion that women are likely to be disadvantaged by globalization. The results also show that respondents with more knowledge in economics or business tend to oppose FDI. This anti-FDI sentiment is especially strong toward high-skill intensive FDI. Furthermore, I find strong nationalism is correlated with a high probability of supporting FDI. News exposure increases a respondent's likelihood to favor FDI, and this effect is statistically significant for high-skill intensive FDI. Finally, I do not find any significant effects of age, family income, and the status of public employees on respondents' preferences toward FDI.

3.5 Conclusion

International Political Economy scholars are in particular interested in investigating individual preferences over foreign economic policies, as these preferences serve as the micro-foundations of interest groups' political behavior, such as voting and lobbying. Undoubtedly, the existing literature relying on survey data has provided important insights into the determinants of people's foreign economic policy preferences. Given the fact that FDI flows are one essential part of globalization and MNCs are now playing a critical role in the world economy, the research on individual FDI policy preferences is surprisingly scarce. Therefore, there is a demand for the study of individual FDI preferences to further understand the politics of FDI.

This study contributes to the literature by examining individual preferences toward two distinct types of FDI: high-skill and low-skill intensive. Using a variant of the specific-factors model, I have shown that high-skill and low-skill intensive FDI can generate different distributional consequences for skilled and unskilled labor by changing their relative demand. Inflows of high-skill intensive FDI increase the relative demand for skilled workers and thus the relative wages of skilled to unskilled workers. In contrast, inflows of low-skill intensive FDI exert the opposite effect on the relative wages. Empirically, I employ a survey experiment implemented in China to examine these distributional consequences of these two types of FDI. The findings from the survey experiment are consistent with the predictions in the model. The probability of supporting high-skill intensive FDI increases with the respondent's skill level, measured by either formal educational attainment or market-oriented skills; whereas, to some extent, the likelihood of supporting low-skill intensive FDI decreases across respondents' skill spectrum.

The existing literature studying the political economy of FDI tends to treat labor as a single group that benefits from FDI inflows. This literature has certainly provided important insights into the relationships between foreign capital and domestic labor. However, it seems to oversimplify the connections between the two. This chapter has shown that the labor-market effects of FDI may depend on foreign firms' skill intensity relative to the average of existing production in the host country. These findings have important implications for studying the politics of FDI. On the one hand, inflows of high-skill and low-skill intensive FDI could result in potential social conflicts among different segments of labor. On the other hand, the distributional effects of high-skill and low-skill intensive FDI give politicians strong incentives to appeal to one or the other in order to privilege their core supporters.

Additionally, this study speaks to the literature studying individual preferences over trade and immigrant policies in several ways. First, scholars have suggested that information and economic knowledge play a critical role in determining individual preferences. In particular, the pro-trade

sentiment may be driven by people's exposure to economic ideas and cultural values such as tolerance and cosmopolitanism (Hainmueller and Hiscox 2006). Findings in this chapter confirm the crucial role played by information in public opinion formation. New exposure has a significant impact on people's attitudes toward both types of FDI. The results also suggest that respondents' economic knowledge does not necessarily lead to pro-FDI attitudes. People more knowledgeable in economics or business might pay more attention to the negative consequences of FDI inflows. Second, this research suggests that women are not always disadvantaged from globalization. A lot of research on the public's attitudes toward trade policy has identified that women tend to oppose trade liberalization (e.g., Burgoon and Hiscox 2008; Mayda and Rodrik 2005; O'Rourke and Sinnott 2001). Burgoon and Hiscox (2008) suggest that women's protectionist attitudes may result from the fact that they are less likely to be exposed to economic knowledge and information. In this chapter, I found that women in fact have stronger pro-FDI sentiment than men, which may suggest that women and men can have different opinions about different aspects of globalization. Finally, the strong and consistent positive correlation between nationalism and pro-FDI preferences implies that in certain circumstances nationalism can facilitate globalization, which runs counter to the existing findings that nationalism is harmful to economic integration.

Finally, this chapter underscores the significance of individual heterogeneous preferences over different types of FDI. To explore the complex roots of people's attitudes toward FDI, future research needs to dig more deeply into various categories of FDI. Given the heterogeneity in MNCs' levels of technological sophistication, employment structures, and motives for overseas investment, we have no reasons to assume that all kinds of MNCs have the same influence on domestic actors. Future research on the politics of FDI needs to assess such differences.

Chapter 4

Economic Integration and Corruption: The Case of China

Abstract

This chapter argues that higher levels of economic integration in terms of more inward foreign direct investment and trade flows could be associated with more corruption. To test this argument, I conduct a case study on China and draw from original data on the objective corruption cases reported by the procuratorate (*jian cha yuan*) to construct measures of corruption. Empirical evidence strongly supports my argument. This finding holds when the frequency of residents' witnessed corruption and the level of perceived corruption are used as alternative measures. Moreover, these results are robust and consistent even after law enforcement, possible endogeneity, and various political and economic variables are considered. The findings in this chapter contradict the conventional notion that economic integration contributes to decrease corruption and have important implications for domestic and global governance.

4.1 Introduction

How does economic integration—inward foreign direct investment (FDI) and international trade—affect corruption activities in host countries? Given the significant role that multinational corporations (MNCs) and trade are playing in the world economy and the substantive attention that both scholars and international organizations such as the World Bank and the United Nations have given to good governance, it is of great importance to understand the connections between economic integration and corruption. The general account in the literature is that deepening economic integration lowers the level of corruption because integration increases market competition and efficiency, reduces rents, and promotes the diffusion of good governance in host countries.

However, cross-border economic activities are not immune from corruption. For instance, corruption scandals involving foreign firms have frequently made headlines in China. MNCs, such as Avery Dennison, Avon, Daimler, Diagnostic Products, IBM, Lucent, Siemens, and UTStarcom, all have been found to be corrupt in China.¹ In 2006, the Transparency International (TI) surveyed 11,232 business executives in 125 countries, asking them about their experience with the business practices of firms from 30 leading exporting countries in their countries. The report shows that foreign firms from giant exporting countries have a considerable propensity to pay bribes in operating countries, especially in low income countries.²

The extant literature has overlooked the strategic interactions between foreign firms and host governments. FDI is different from other forms of capital flow, such as remittances and portfolio

¹For instance, in 2008, Siemens agreed to pay total fines and penalties of approximately 1 billion Euros in Germany and the U.S. because of paying bribes to foreign government officials to obtain business contracts. In China, Siemens paid bribes to government officials for businesses of metro trains and signal devices, high voltage transmission lines, and medical devices. U.S. Securities and Exchange Commission. 2008. *Securities and Exchange Commission v. Siemens Aktiengesellschaft*. <http://www.sec.gov/litigation/litreleases/2008/lr20829.htm> (accessed August 28, 2010). Between 2003 and 2007, Siemens paid bribes of 23.40 million U.S. dollars to five state-owned hospitals; through bribing government officials, Siemens obtained a contract of 838 millions U.S. dollars in high voltage transmission lines and 1 billion U.S. dollars in metro trains. *China Youth Online*, August 3, 2009.

²Transparency International. 2006. *Bribe Payers Index Analysis Report*. http://www.transparency.org/news_room/in_focus/2006/bpi_2006 (accessed March 13, 2011).

investment, in the sense that it involves the transfers of physical assets, human resources and technology, while demanding deep engagement and long-term commitment from parent companies. In this regard, MNCs—the vehicles of FDI—are sensitive to the political and economic conditions in host countries. Footloose foreign capital becomes illiquid *ex post*, under the risk of opportunistic government and joint-venture partner's expropriation (Vernon 1971, 1980). These distinctive characteristics of FDI give MNCs incentives and opportunities to exert potent influences on host countries. Existing studies have, for instance, shown that FDI inflows affect government spending and taxation (e.g., Garrett and Mitchell 2001), income distribution (e.g., Jensen and Rosas 2007), and labor rights (e.g., Mosley and Uno 2007). Yet, few studies address the impact of inward FDI on corruption.

Empirical evidence based on firm-level surveys indicates that MNCs are as likely as their domestic counterparts to engage in corruption (Hellman et al. 2000, 2002; Søreide 2006). Due to FDI's *ex post* immobility and the risks of expropriation, MNCs employ various strategies to protect their interests in host countries (see, e.g., Henisz 2000; Javorcik and Wei 2009; Rodriguez et al. 2005; Uhlenbruck et al. 2006). It is also possible for MNCs to resort to bribery as a means of obtaining business contracts, government services and advantages over their competitors, consequently exacerbating the problem of corruption. Likewise, trade may be connected to corruption as well. On the one hand, trade protection, especially the distribution of import licenses and quotas, gives government officials opportunities for corruption; on the other hand, competition for import licenses and quotas may take illegal forms of bribery (see Krueger 1974; Shleifer and Vishny 1993).

This chapter examines the relationship between economic integration and corruption in the context of China, one of the largest FDI recipients and trade nations, and a relatively underdeveloped country. It argues that economic integration leads to a high level of corruption in China. The regulations of investment and trade give rise to greater rent-seeking activities that lead to

more corruption. Furthermore, economic integration that brings in capital and resources expands opportunities for bribery and boosts up the level of bribe payments.

Testing the argument presents challenges of how to measure corruption in China. I rely on the “objective” corruption cases reported by the procuratorate (*jian cha yuan*) and collect an original dataset on the number of filed corruption cases, the amount of recovered corrupt funds and the number of senior cadres disciplined (at or above the county or division level, *xian chu ji*) for each province for each year from 1998 to 2007 to construct the measures of corruption at the provincial level. To deal with the fact that these measures are a mixed reflection of true corruption and the efficacy of law, in the empirical analysis, I control for several variables that influence government’s anti-corruption efforts. As robustness checks, I turn to survey data and use the frequency of residents’ “witnessed” corruption that is arguably a more objective and reliable measure, and the level of perceived corruption as alternative measures. The empirical evidence strongly supports my argument that economic integration increases the level of corruption in China. The results are robust and consistent even when we take into account possible endogeneity, selection bias and various political and economic variables.

The chapter is organized as follows. The next section reviews relevant literature. Then Section 4.3 discusses the mechanisms through which economic integration affects corruption in operating countries by focusing on inward FDI and presents the testable hypothesis in the context of China. Following that, Section 4.4 addresses the research design and measurement of corruption. Then in Section 4.5 systematic empirical analyses are conducted to examine the determinants of corruption in China. Section 4.7 concludes with a discussion of this study’s implications and future research revenues.

4.2 Literature Review

Corruption is generally defined as the “misuse of public office for private gain” (Bardhan 1997; Rose-Ackerman 1999). The publication of the Corruption Perceptions Index (CPI) by the TI has greatly contributed to the empirical research of corruption. Existing empirical studies have, for instance, shown that corruption undermines public goods provision, impairs domestic investment and retards economic growth (see, e.g., Fisman and Svensson 2007; Mauro 1995). In addition, a growing body of literature suggests that corruption negatively affects FDI inflows, because not only does bribery increase the costs of doing business, but also the secrecy of corruption adds uncertainty and risks (e.g., Malesky and Samphantharak 2008; Wei 2000; Wei and Shleifer 2000). Yet, few studies address the impact of economic integration in general, inward FDI in particular, on corruption. Among the existing studies, scholars tend to assert that deepening economic integration lowers the level of corruption because integration increases market competition and efficiency, reduces rents, and promotes the diffusion of good governance in operating countries.³ The causal mechanisms typically suggested in the literature can be classified into one of two broad categories: competition and diffusion.⁴

The competition argument hypothesizes that increasing competition from foreign products and firms reduces the rents enjoyed by domestic firms, thus decreasing the incentives for corruption (Ades and Di Tella 1999; Sandholtz and Gray 2003, 765-6; and Treisman 2007, 236). International competition drives down firms’ profits. If bribes are treated as extra taxes on firms, in the case of low marginal gains due to fierce competition, then corruption means higher business costs that can drive firms out of the market. Moreover, in a globalized world with high capital mobility, corrupt

³Robertson and Watson (2004) find that a rapid rate of increase or decrease in FDI leads to a high level of perceived corruption.

⁴In addition to these two arguments, scholars suggest that MNCs often have high corporate responsibilities and well-established internal corporate codes, and face regulatory pressures and legal constraints from both home countries and international anti-bribery conventions, all of which deter MNCs from engaging in corruption in host countries. See, Kwok and Tadesse (2006) and Rose-Ackerman (2002).

officials' ability to extract rents may be largely restricted because capital can simply choose to leave and look for alternative investment locations. According to this argument, competition associated with economic integration tends to decrease corruption.

Economic integration can also affect corruption through diffusion. Scholars argue that "[t]he interactions associated with trade and cross-border investment may also be mechanisms for the communication of ideas, values, and norms" (Sandholtz and Gray 2003, 767). Since advanced Western countries dominate both international trade and foreign investment, norms and values—such as democratic governance, rule of law and property rights protection—will be promoted globally through cross-border economic activities. Thus, the expectation is that the more deeply a country integrates into the global economy, the higher the likelihood that it will adopt these norms and values and will therefore be less corrupt. Moreover, neoliberal policies are found to be associated with a lower level of political corruption (Gerring and Thacker 2005). If globalization helps diffuse these policies, we should expect countries that are more integrated into the world economy to be associated with less corruption.

All of the above explanations are plausible. However, the strategic interactions between foreign firms and the host countries are much more complex than what has been suggested in the literature. Evidence based on firm surveys indicates that MNCs are as likely as their domestic counterparts to engage in corruption (Hellman et al. 2000, 2002; Søreide 2006), and have a considerable propensity to pay bribes in operating countries, especially in low income countries (Transparency International 2006). That MNCs adopt different entry modes in the host countries with differing levels of political and contractual risks has been widely documented (e.g., Henisz 2000; Javorcik and Wei 2009; Rodriguez et al. 2005; Uhlenbruck et al. 2006). Likewise, MNCs are likely to adjust their investment strategies according to the relative costs and benefits of corruption. It is possible that MNCs engage in corruption in the host countries where the legal infrastructure is underdeveloped and the government regulations are ineffective. Their activities consequently

make corruption worse. MNCs' activities can be "directed into illicit channels with highly detrimental social and economic consequences" (Hellman et al. 2000, 7). In a cross-national analysis, Pinto and Zhu (2008) finds that FDI inflows are likely to increase the level of corruption in less developed non-democracies while reduce corruption in advanced democracies.

Empirically, the existing literature studying economic integration and corruption relies heavily on the "subjective" measures of perceived corruption constructed by institutions such as the TI and the World Bank. Knack and Azfar (2003) point out that existing empirical work suffers from sample selection bias because small countries are less likely to be covered by most available corruption perceptions indices, and they tend to be more open given their small domestic markets. By including more small countries in their sample, they find that trade openness does not affect corruption significantly. Thus, the empirical evidence from cross-national analyses may be a function of the sample size in the regressions. Thus, a within-country research design that may limit the scope of generalization helps deal with the sample selection bias in cross-national analyses.

4.3 Inward FDI, Trade and Corruption

Both FDI inflows and international trade (especially imports) could affect corruption positively in host countries. In this section, I will discuss the causal mechanisms through which economic integration can affect corruption by focusing on inward FDI because scholars have already paid attention to the positive effect of trade regulations on corruption (e.g., Krueger 1974; Shleifer and Vishny 1993).

The first and most direct way that FDI inflows may cause corruption is that FDI regulations give rise to rent-seeking activities that may take illegal forms such as bribery. Host countries adopt various FDI policies that consist of rules and regulations governing the entry of foreign investors. These policies include investment pre-screening and approval, firm registration, business licensing,

etc. On the one hand, FDI regulations give government officials opportunities to demand bribes. On the other hand, foreign firms may have incentives to pay extra money in order to facilitate the approval process. For instance, a long waiting period means considerable costs to firms and even may result in the loss of business opportunities. In countries where legal infrastructure is underdeveloped and government regulations are ineffective, these rent-seeking activities could lead to more corruption.

Secondly, FDI inflows could affect corruption in host countries by bringing in capital and resources. Corruption is prevalent, and it is often a part of business practices in many developing countries. Resources accompanied with FDI inflows expand opportunities for bribery and hence increase the level of corruption (Robertson and Watson 2004). By bringing in more foreign money, FDI can boost up the level of bribes simply because there are now more resources available in the local economy. Furthermore, MNCs possess advanced technology, managerial skills and access to foreign markets, all of which are usually scarce in developing countries. Entry of foreign firms helps release these constraints faced by domestic firms or local governments, and thus helping extract more rents from the local economy that could potentially be shared between government officials and foreign investors (Pinto and Zhu 2008). This distinguishes FDI from domestic investment because indigenous firms in many developing countries usually do not have the technology to exploit local resources. In this sense, MNCs are more capable than domestic firms of internalizing the costs associated with local corruption. It should be noted that more rents do not necessarily lead to more corruption. Rent-seeking activities can take legal forms such as lobbying. However, in countries where legal infrastructure is underdeveloped and government regulations are ineffective, rent-seeking activities may take illegal forms such as bribery, thus leading to more corruption.

Thirdly, foreign firms' incentives to avoid uncertainty and risks in operating countries can lead to corruption activities.⁵ Investing in less developed countries involves considerable risks. Mobile

⁵Getz and Volkema (2001) suggest that in high uncertainty-avoidance cultures where people prefer stability and strong institutions, corruption tends to be rampant.

foreign capital possesses substantial bargaining power *ex ante*, but becomes illiquid *ex post*. The “obsolete bargain” model suggests that the bargaining power starts to shift to the host government at the moment when foreign investment takes place (Vernon 1971, 1980). A counter argument is that footloose capital can simply choose to exist and thus possesses considerable bargaining power over domestic government. However, FDI usually involves the transfers of physical assets, human resources and technology, while demanding deep engagement and long-term commitment from parent companies. It therefore becomes much less mobile after investment takes place. In host countries MNCs face a variety of political and economic hazards including information asymmetry, insecure property and contractual rights, frequent shifts of government regulation, expropriation from opportunistic joint-venture partner or host government, etc. Nonetheless, this kind of uncertainty and risks does not necessarily deter foreign investors. MNCs, in fact, actively adjust their entry modes to cope with the uncertainty and risks in host countries (e.g., Henisz 2000; Javorcik and Wei 2009; Rodriguez et al. 2005; Uhlenbruck et al. 2006). A consistent finding in the literature is that MNCs are more likely to partner with domestic firms and enter with a minority ownership in politically risky environments.

Likewise, it is possible that MNCs may manage uncertainty and risks in host countries through bribing public officials. In most developing countries, public goods (such as property and contractual rights protection) are under-provided, government regulations are discretionary, and policy shifts happen frequently. MNCs may therefore prefer to offer private payments to public officials in exchange for secure property and contractual rights and information about government policies and regulations. For instance, foreign firms are found more likely to be engaged in state capture to influence the formulation of public laws and government policies in transition economies (Hellman et al. 2000). Thus, MNCs’ incentives to avoid uncertainty and risks may intensify corruption activities in host countries.⁶

⁶It is also possible that corruption may induce more uncertainty and risks. However, whether corruption increases or decreases uncertainty and risks depends on the characteristics of corruption. Highly institutionalized or predictable corruption can be treated as taxes on firms. After paying bribes, firms receive government services. In such cases,

We have discussed that inward FDI could increase corruption in operating countries. International trade may also be connected to corruption (see, e.g., Krueger 1974; Shleifer and Vishny 1993). Government regulations on trade activities, especially the distribution of import licenses and quotas, generate huge rents in the market. On the one hand, government trade regulations give officials opportunities to demand bribes. On the other hand, rent-seekers compete for import licenses and quotas; these rent-seeking activities may take place through legal channels such as lobbying; however, in many cases it may take illegal forms such as bribery. Thus, international trade, especially imports under a restrictive trade regime,⁷ may cause corruption.

It should be noted that the above mechanisms through which economic integration increases the level of corruption are more likely to exist in less developed countries where legal infrastructure is undeveloped and government regulations are ineffective. In such countries, corruption is rampant and often a part of standard business practices; the likelihood of getting caught is low while the potential benefits of engaging in corruption could be potentially high. Therefore, economic integration may exacerbate the problem of corruption by bringing in more resources and expanding opportunities for bribery.

4.3.1 Economic Integration and Corruption in China

Since China's reform and opening began in 1978, FDI has flowed in steadily and trade has expanded quickly. Now China has become one of the largest FDI recipients and trade nations in the world. It is widely believed that inward FDI and trade have been the major engines of China's economic miracle. At the beginning of the reform and openness era, in order to safeguard foreign investors and attract FDI, China adopted a special economic zone (SEZ) policy. In the SEZs, the government provides investors with preferential packages, infrastructure support, flexible institu-

bribery can help reduce uncertainty and risks. By contrast, arbitrary or unpredictable corruption may be associated with uncertainty and risks. See, e.g., Malesky and Samphantharak (2008), Wei (1997), and Uhlenbruck et al. (2006).

⁷In order to promote exports, government usually has fewer restrictions on exports.

tional arrangements, etc. This policy has been demonstrated to be an enormous success. In the 1980s and early 1990s, FDI into China came primarily from Hong Kong, Taiwan, and overseas Chinese because of their familiarity and personal contacts with China. With China's successful experience with FDI and the spread of SEZs throughout the country, high-tech, long-term commitment and market-seeking FDI poured in gradually. Since the mid-1990s, OECD countries have become one of the major sources of FDI in China. Another feature of China's inward FDI is its extremely uneven geographic distribution. The provinces in the costal areas have taken the lion's share of China's inward FDI, and those in the mid-western and northeastern regions have received a minor part.

With the rapid growth of inward FDI, international trade has greatly expanded. In 1979, the total volume of international trade was only 18% of GDP, while the number in 2008 was more than tripled, approximately 62% of GDP. In China, trade is closely related to FDI. After China had adopted its reform and opening policy, SEZs were set up to attract foreign investment. In the earlier period, many SEZs were actually export processing zones, where foreign firms imported raw materials and exported assembled products by taking advantage of China's cheap labor. Until 1991, all output of FIEs was for export, and in 1992 China began to give significant access to the market-oriented FDI (Naughton and Lardy 1996, 278-9). As a consequence, a considerable share of trade in China is actually through FIEs. For example, exports and imports conducted by FIEs, on average, accounted for approximately 53% and 56% of total national exports and imports from 1998 to 2007.⁸

Nonetheless, the booming FDI inflows and international trade have generated some unintended consequences. In 2008, a high-ranking official in the Ministry of Commerce (MOC) was arrested for corruption of approving foreign investment. This case involved several high-ranking officials in government agencies in charge of regulating FDI, including the MOC, State Administration for

⁸ Author's calculation based on the data from *China's Statistical Yearbook*.

Industry and Commerce and State Administration of Foreign Exchange. In and of itself, the case is not unique. In 2004, a report by one private consulting firm pointed out that in the 500,000 corruption cases investigated by the Chinese government over the past ten years, 64% were related to international trade and foreign firms.⁹ In China, MNCs have been known to bribe officials through a variety of ways including offering government officials direct cash payments, occupational trainings, foreign trips, and oversea education opportunities for the officials' children.¹⁰

As discussed in the previous section, the positive effects of economic integration on corruption are more likely to exist in countries with underdeveloped legal infrastructures and ineffective government regulations. In China, despite the dramatic economic decentralization that have taken place during the past few decades, foreign investment and international trade are still highly regulated (Huang 2003), which can generate ample rent-seeking opportunities. Furthermore, MNCs have brought in scarce capital, technology and managerial know-how, and contributed significantly to economic development. Meanwhile, these foreign firms have generated huge profits from China's market.¹¹ The high rents enjoyed by foreign firms are likely to boost the level of bribes. Up until now, the political system in China is still restrictive, and free press is limited. The costs of engaging in corruption are thus relatively low while the potential benefits are relatively high. Therefore, I hypothesize that deeper economic integration in terms of more inward FDI and trade flows leads to higher levels of corruption in China.

⁹*China Youth Online*, July 24, 2009.

¹⁰*South China Morning Post*, October 8, 2007.

¹¹Thanks to the rapid economic growth during the past few decades, China's market has become a major revenue source for most MNCs. One prominent example is China's automobile industry. Overseas car makers such as Volkswagen, Ford, GM, Toyota and Honda have entered the China market since 1984, just a few years after China's adoption of the reform and opening policy. Now around 70% of the cars sold in the China's market are carrying non-indigenous brand names. China has become the biggest market and revenue source for many giant car makers. For instance, for the second-quarter of 2010, Volkswagen's operating profits in China were 518 million Euros, approximately 41% of the Group net income in the same period. *Bloomberg*, July 29, 2010, <http://www.bloomberg.com/news/2010-07-29/volkswagen-posts-biggest-quarterly-profit-in-two-years-on-golf-a5-demand.html> (accessed September 5, 2010).

4.4 Research Design

To test my hypothesis, I adopt a within-country sub-national research design and treat China's provinces as units of analysis. The within-country design allows me to deal with the sample selection problem in the cross-national analyses. As China's economy has been decentralized during the reform and openness era, provincial governments have obtained more and more policy autonomy. Despite its authoritarian regime, China is by far one of the most decentralized countries in the world (Landry 2008). Montinola et al. (1995) argue that China is a *de facto* federal system and the economic decentralization is "market preserving," thus a driving force of economic growth. All of these justify the use of provinces as units of analysis.

4.4.1 Measuring Corruption at the Provincial Level

The biggest challenge is how to measure corruption within China. Two measures of corruption—"subjective" and "objective"—are commonly used in empirical studies. Subjective measures of corruption are indices of perceived corruption constructed by institutions such as the TI and the World Bank. These indices are aggregated from different surveys of international and local businessmen as well as country experts and residents. Objective measures use the actual number of corrupt convictions as proxies for corruption. The quality and reliability of both measures are questionable.¹² Subjective indices are measures of opinions of corruption which are largely influenced by the respondents' cultural backgrounds, identification, and social norms.¹³ The opinions of international businessmen and country experts are also biased because the majority of them come from advanced Western countries. The problem of objective measures is that they are a mixed reflection of true corruption and the efficacy of enforcement. Recently, scholars have turned to

¹²See, e.g., Glaeser and Saks (2006) and Treisman (2007) for discussions of available sources of corruption measures and their problems.

¹³This problem is mitigated in a within-country setting.

another “objective” measure that surveys people or firms’ experienced corruption, such as the TI’s Global Corruption Barometer and the World Bank Business Environment Survey. The experienced corruption is arguably a more reliable measure because it is based on the respondents’ or firms’ own experience.

To deal with these problems in measuring corruption, I adopt several strategies to check the robustness of the findings. First, I rely on objective corruption cases as a proxy.¹⁴ These measures based on corruption cases give me advantages to capture different aspects of corruption, including the level of bribes in each corruption case, the per capita corruption burden and the frequency of high-ranking officials involved in corruption, all of which are critical to understand the consequences of cross-border economic activities. To deal with the fact that objective corruption cases are a mixed reflection of true corruption levels and law enforcement, I explicitly control for law enforcement in regression models. Then I turn to survey data and use “witnessed” corruption that is based on respondents’ personal experience. This variable is arguably a more objective and reliable measure of the prevalence of corruption, and is unlikely to be affected by law enforcement. Finally, perceived corruption is used as a robustness check as well.

The procuratorate (*jian cha yuan*), part of the government’s judicial system, is responsible for the investigation and prosecution of corruption cases. The procuratorate at the provincial level reports corruption cases investigated within its jurisdictions yearly. Corruption is usually defined as the misuse of public office for private gain. However, in China corruption is defined more broadly. It is “virtually any form of ‘improper’ behaviour by either a state official or a member of the Communist Party” (Wedeman 2004, 896-7).¹⁵ Since 1997,¹⁶ corrupt cases reported by the procuratorate have included graft, bribery, and misappropriation of public property, as well as violations of civil

¹⁴This approach has been widely used in the studies of corruption in states in the U.S., and recently in the research of national corruption in China. See, e.g., Glaeser and Saks (2006), Guo (2008), Meier and Holbrook (1992), and Wedeman (2004, 2005).

¹⁵For a discussion of the definition of corruption in China, see Wedeman (2004, 896-9).

¹⁶In 1997, China modified its criminal procedure law and the new law excluded copyright theft and fraud, tax evasion and resistance, and illegal imprisonment by non-state employees from corruption.

rights and official malfeasance by state employees. Apparently graft, bribery and misappropriation of public property are in accordance with the conventional definition of corruption. Ideally, the cases of the first three categories should be used as a measure of corruption. However, available data are not detailed enough to allow me to disaggregate corruption cases for each province.¹⁷ Fortunately, according to the available national data, the first three types of corruption accounted for an average of 82% of total corrupt cases filed by the procuratorate from 1998 to 2007. Thus, even if corruption is narrowly defined, the filed corrupt cases reported by the procuratorate can still be a good proxy.

To understand how corruption cases are investigated, it is important to elucidate the legal procedure. The procuratorate is responsible for both investigating and prosecuting economic crimes and criminal violations of discipline. It conducts an initial investigation to decide whether or not to accept a case (*shou'an*) for formal investigation. Based on a complete investigation of the accepted cases, the procuratorate files cases (*li'an*) with the People's Court if there is adequate evidence of crime, and it then serves as the prosecutor (Wedeman 2004, 910-911; see Du and Zhang 1990). The procuratorate investigates corruption cases from several sources: cases disclosed or reported by the public, cases referred by the supervisory bureaus that have the responsibility to monitor public officials and maintain administrative discipline, and those turned in by the disciplinary inspection committees that are responsible for investigating malfeasance of Party members.¹⁸ Therefore, the politicians' willingness and political strategies as well as the public awareness of corruption can all affect the investigation of corruption cases.

The information revealed in the *Procuratorial Yearbook of China* includes the total number of filed corruption cases, senior cadres disciplined (at or above the county and division level, *xian chu ji*), corrupt cases or persons involving the Party, administrative, judicial, and the economic

¹⁷Some provinces do have disaggregated data reported in the *Procuratorial Yearbook of China*.

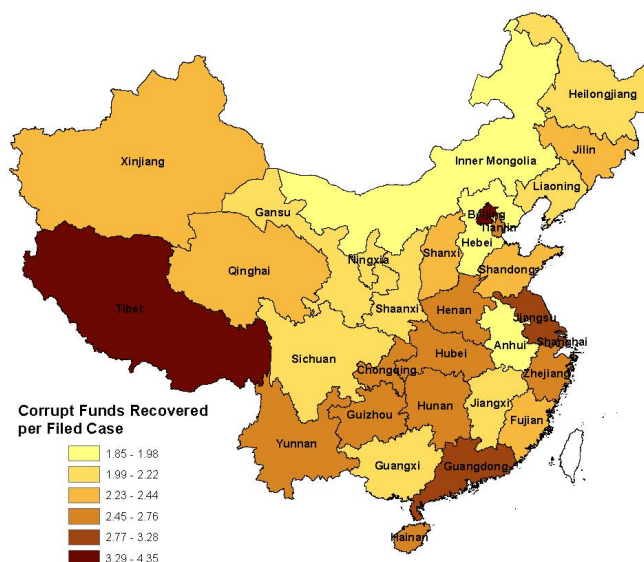
¹⁸In practice, the supervisory bureau and the disciplinary inspection committee conduct joint investigations because most state officials are Party members. Due to a lack of judicial authority, both authorities are limited to investigating non-criminal violations of administrative discipline and Party law (Wedeman 2004, 905).

supervision systems, and total corrupt funds recovered, and so on. Not all data are available for each province for each year. The most comprehensive and consistent data are the total number of filed corruption cases, the amount of corrupt funds recovered, and the number of senior cadres disciplined. I have thus collected the data on these three categories by reading various annual procuratorial reports for each province, from 1998 to 2007, to construct the measures of corruption.¹⁹

To understand what the data is measuring, it is important to clarify what the term “degree of corruption” means. Consider a simple example given by Lambsdorff: “10 percent of all public servants take a bribe of \$200 each, 5 times a year in exchange for awarding a contract that results in a gain of \$500 each for corrupt private contractors” (Lambsdorff 2000, 4). In this case, the level of corruption can be understood as “the frequency of corrupt acts, the amount of bribes paid or the overall gain that contractors achieve via corruption.” Since it is almost impossible to assess the overall gain that contractors obtained through corruption, I focus on the frequency of corrupt activities and the amount of the bribes. According to Wedeman (2004, 2005), corruption in China has intensified in terms of the amounts of corrupt money and “major cases,” but the total number of corruption cases has remained mostly unchanged since the 1989-90 anticorruption campaign. To capture the severity of corruption, I first utilize corrupt funds recovered per filed case as a measure of corruption that explicitly addresses the level of bribes involved in each case. Second, total recovered corrupt funds are used to capture overall bribes. This variable is normalized by total population²⁰ so that it gauges the per capita losses or burden of corruption. Finally, the level of corruption could be high because more high-ranking officials were involved. I employ senior cadres disciplined per 10,000 public employees to capture this dimension of corruption.

¹⁹Since the numbers of corruption cases of different categories are reported in the text of annual reports and there are no summary tables, for each province for each year, data were collected by the author and one research assistant separately to ensure accuracy. If any conflict arose, the author went back to the original *Procuratorial Yearbook of China* and made necessary corrections. China modified its criminal procedure law in 1997 and redefined the definition of corruption, so the statistics before and after 1997 are not comparable.

²⁰Empirical results are consistent if total recovered corrupt funds are normalized by GDP.

Figure 4.1: Corrupt Funds Recovered per Filed Case, 1998-2007

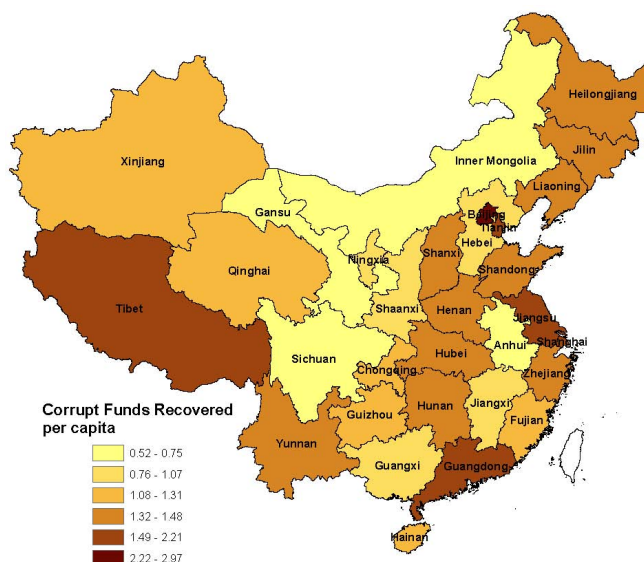
Notes: Corruption at the provincial level, measured by the natural logarithm of recovered corrupt funds per filed case. This variable is averaged from two 5-year periods: 1998-2002, 2003-2007.

It should be noted that corruption takes time to detect and the whole process of investigation and prosecution may last a few years. In addition, the actual number of corruption cases investigated each year may depend on leaders' political strategies and willingness. Thus, the annual number reported by the procuratorate may not well reflect each year's actual level of corruption. The temporal variation in the dataset could be misleading.²¹ To deal with this problem, I rely on cross-sectional variation and take an average of these three corruption variables for two periods, 1998-2002 and 2003-2007.²² To maximize the number of observations, I average the variables for each province that has at least one observation within each of the two 5-year spans. All three variables are logged in order to deal with skewed distributions.

Based on these three measures, Figures 4.1, 4.2 and 4.3 respectively show the spatial variation

²¹Simple OLS regressions with fixed effects based on panel data show that the results are consistent with those obtained from cross-sectional regressions.

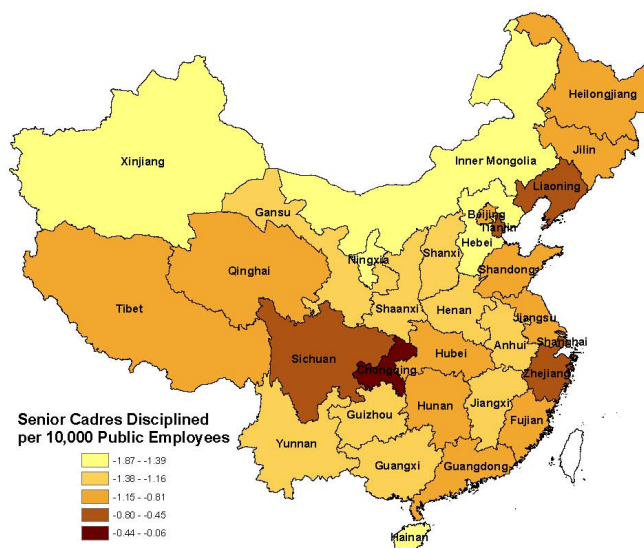
²²They are also consistent with government officials' terms in China.

Figure 4.2: Corrupt Funds Recovered per capita, 1998-2007

Notes: Corruption at the provincial level, measured by the natural logarithm of corrupt funds recovered per capita. This variable is averaged from two 5-year periods: 1998-2002, 2003-2007.

of the level of corruption across China between 1998 and 2007. We can see that all three figures show that the provinces located in the coastal, middle and southwestern areas tend to have high levels of corruption. Tibet, in particular, stands out as a corrupt province in the western areas, especially in terms of the corrupt funds recovered per filed case and per capita corruption losses.

The advantage of the data is that the reporting and classifying procedures are standard across provinces and consistent over time. Moreover, the data allows us to explore different dimensions of corruption. The major concern of these measures based on corruption cases is that they are a mixed reflection of true corruption and the effectiveness of law enforcement. The gap between the discovered and the true corruption levels is a function of the efficacy of law enforcement. To deal with this problem, I construct several measures of local government's anti-corruption efforts. In addition, I rely on survey data and use experience-based corruption index that is more objective and reliable and the level of perceived corruption as robustness checks.

Figure 4.3: Senior Cadres Disciplined per 10,000 Public Employees, 1998-2007

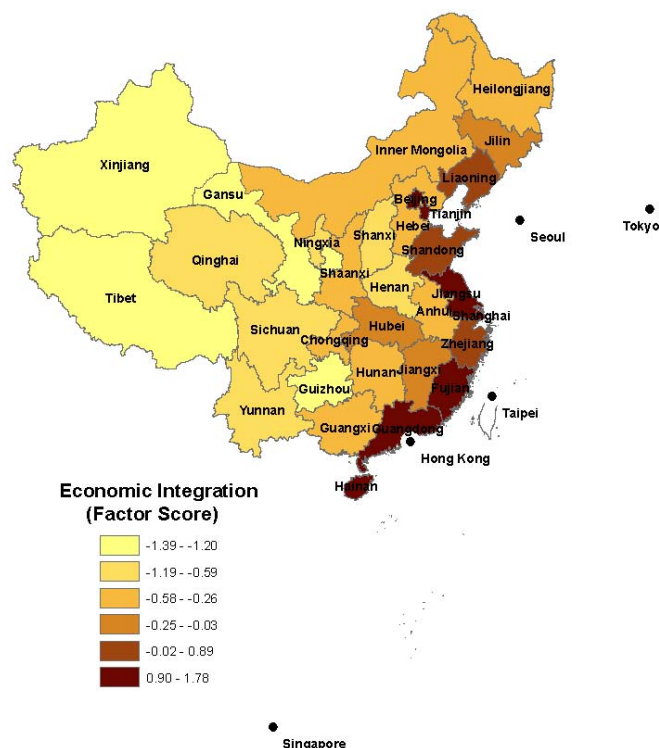
Notes: Corruption at the provincial level, measured by the natural logarithm of senior cadres disciplined per 10,000 public employees. This variable is averaged from two 5-year periods: 1998-2002, 2003-2007.

4.4.2 Independent Variable: Economic Integration

The independent variable is economic integration, which is measured by the percentages of inward FDI²³ and imports to GDP.²⁴ I focus on the import part of trade because government rarely has restrictions on exports and the literature suggests that import restriction is more likely to be associated with corruption (Krueger 1974; Shleifer and Vishny 1993). As discussed before, in China more than 50% imports are actually conducted by foreign invested firms and a substantial part of imports is intermediate inputs. In this sense, imports to a large extent reflect foreign firms' activities rather than market competition. In addition, imports are still highly regulated in China (Huang 2003). A Higher volume of imports is likely to generate more opportunities for corruption that

²³The use of FDI inflows allows us to capture the corruption related to the regulations of foreign firms' entry which is, according anecdotal evidence, a serious issue in China. It is also a good proxy for FDI stock given that the correlation between FDI inflows and stock is 0.94 for the period of this study. Empirical results are substantively the same if we use FDI stock.

²⁴The data comes from *China Data Online*. Both variables are logged to deal with skewed distribution.

Figure 4.4: Levels of Economic Integration in China's Provinces, 1998-2007

Notes: Economic integration at the provincial level is measured by the factor score of the natural logarithms of the percentages of inward FDI and imports to GDP. This variable is averaged from two 5-year periods: 1998-2002, 2003-2007.

is related to customs clearance and competition for import licenses and quotas. I thus conduct a principle component factor analysis of these two variables to obtain a factor score as a measure of economic integration. One factor component is loaded with Eigenvalue greater than 1. This factor component explains the 82.43% of the combined variance of these two variables. Figure 4.4 shows the spatial variation of economic integration across China. We can see that coastal provinces have higher levels of economic integration than inland provinces.

4.4.3 Law Enforcement

Since the measures based on corruption cases are a mixed reflection of true corruption levels and the efficacy of law, to estimate the direct effect of economic integration on corruption, we need to control for law enforcement in the regression equation. I use several measures to capture law enforcement and local government's anti-corruption campaigns. The first is a measure of "bureaucratic integration." Recently, scholars have suggested that China's central government has resorted to control provincial officials through its monopoly power of cadre appointment (Huang 1996; Sheng 2007, 2010). Huang and Sheng's studies find that the pro-center provincial leaders are more likely to implement policies in accordance with central government, fighting harder against inflation and getting less favorable fiscal treatment. "Bureaucratic integration gauges the propensity of provincial officials to comply with central policy directives by virtue of their future career prospects or prior career trajectories" (Sheng 2007, 414). Since anticorruption has been one of the central government's top priorities (Wedeman 2005), I expect that the more centrally-oriented provincial leaders are, the more vigorously they fight against corruption.

I use the bureaucratic integration variable initially constructed by Huang and extended by Sheng as one of the proxies for provincial leaders' anticorruption efforts. According to their positions in the party system and relevant work experience, provincial leaders are placed into one of the four categories: provincial leaders holding a concurrent position at the center are assigned a score of 4; those who have at least three years of work experience at the ministerial or vice-ministerial level in the central government are given a score of 3; provincial officials who have worked at least three years in other provinces get a score of 2; and lastly, "localists" who are promoted within the province are scored 1 (Sheng 2007, 414-17). High scores represent more centrally-oriented leaders, who thus are expected to devote more resources to fighting against corruption. This variable is only available up to 2005. For the period of 2003 to 2007, the data are averaged from year 2003 to 2005. I expect the bureaucratic integration variable to be positively correlated with the dependent

variables constructed from corruption cases, given that the more resources government devotes to fighting against corruption, the more corruption cases it detects.

The second measure is a dummy variable of the four municipalities directly administrated by the central government. Given their unique positions in the administrative system, I expect that the central government monitors these four municipalities more closely, and thus they fight harder against corruption and detect more corruption cases. The third measure of the local government's anticorruption efforts concerns the geographical distance between Beijing and other provincial capitals. The rationale is that, the further a province is from the national capital, the harder it is for the central government to watch the local government's policy compliance and malfeasance. Therefore, the provincial leaders' anticorruption efforts should diminish with the distance to Beijing.²⁵ I expect that the dummy variable is positively while the distance to Beijing is negatively correlated with corruption.

Alternatively, I could use the expenditure on public security agency, procuratorial agency, and the court of justice as a proxy for local government's anticorruption campaigns. However, this variable is problematic for at least two chief reasons. First, it is extremely highly correlated with total government expenditure that is commonly used to measure the size of government in the literature.²⁶ Second, more expenditures could result in more corruption rather than greater anti-corruption efforts.

4.4.4 Other Control Variables

Regarding the determinants of corruption in the literature, the most significant finding is that higher GDP per capita—a proxy for economic development—is associated with lower corruption levels even when possible endogeneity is considered (Treisman 2007). This finding has been confirmed

²⁵The distance is calculated using the ArcGIS 9.3 program.

²⁶The Pearson correlation of these two variables is 0.94 for the period of this study, which renders it impossible to identify the underlying causal mechanism.

by many other studies in both cross-national and within-country analyses (see, e.g., Ades and Di Tella 1999; Glaeser and Saks 2006; Knack and Azfar 2003; Sandholtz and Gray 2003). Economic development not only leads to the rationalization of economic and political systems, but it also contributes to the spread of education and literacy, all of which should help reduce corruption. However, GDP per capita is likely to be endogenous to both economic integration and corruption. Both FDI inflows and trade contribute to economic development, thus leading to the growth of GDP per capita. The endogeneity makes the causal relationship between economic integration and corruption ambiguous. To deal with this problem, I take advantage of a natural experiment created by China's reform and opening. Before the reform and opening, China had no foreign investment and few trade flows. Thus, I utilize the data from two periods before China's reform and openness: 1969-1973 and 1974-1978 as proxies for GDP per capita in 1998-2002 and 2003-2007 respectively. The pre-reform and opening GDP per capita variable not only helps mitigate the endogeneity problem, but it also helps reduce the collinearity between GDP per capita and economic integration. Moreover, it is a good proxy for GDP per capita from 1998 to 2007 as the Pearson correlation between these two GDP per capita variables is 0.84. Additionally, I include total GDP to account for the effect of the economic size, as the scale of an economy is also a critical determinant of the total amount of rents in the market. Again, I use GDP before the reform and opening era as a proxy to deal with possible endogeneity problem. Both GDP per capita and GDP data come from *China Statistical Yearbook*.

In addition, corruption may rise with the size of government, as bigger government means that officials have more resources under their control, thereby more opportunities for bribery (Glaeser and Saks 2006). Government size is measured by the percentage of government expenditure to GDP and the share of employees in state-owned units that include government agencies, Party organs, social organizations, and state-owned enterprises.²⁷ Education is believed to help reduce

²⁷Public employees in China are more broadly defined. For instance, managers and directors in state-owned enterprises and social organizations usually obtain the same status as government officials and sometimes are promoted

corruption because people's political participation and civic engagement are positively related to their education levels (see, e.g., Glaeser and Saks 2006; Treisman 2000). This variable is measured by the percentage of population aged 6 or above who have at least some college education. Scholars also suggest that the relatively high wages of public sectors to private sectors decrease the incentives for corruption (e.g., Treisman 2000). When a public employee has a high paying position, s/he has less incentive to jeopardize it by engaging in corruption. Thus we should expect that higher relative wages of public employees should be associated with less corruption. This variable is measured by the ratio of average wages of state-owned units to private sectors. Scholars have also found that gender impacts corruption (e.g., Swamy et al. 2001). Specifically, women tend to be more disciplined and less tolerant of corruption. Therefore, a government with more female employees should be less corrupt. I use the share of female employees in state-owned units to capture the influence of gender. Finally, I include a dummy variable for the second period to account for the effect of time trend given that corrupt funds tend to grow over time.

The data used to measure education, government expenditure, the size of public employees, and public employees' relative wages, all come from *China Statistical Yearbook*. Gender (the share of female public employees) is measured based on the data from *China Labor Statistical Yearbook*. Government expenditure is lagged a 5-year period to deal with possible endogeneity, and all other variables are averaged as the same periods of the dependent variables. The descriptive statistics and the correlation matrix of explanatory variables are shown in Tables 4.6 and 4.7 in the Appendix.

4.4.5 Endogeneity and Selection Bias

Scholars have documented that MNCs adjust entry mode in terms of political and economic risks in host countries (Henisz 2000; Javorcik and Wei 2009; Rodriguez et al. 2005; Uhlenbruck et al. 2006). I argue that MNCs adjust entry mode into the government and Party systems.

2006). Furthermore, empirical studies suggest that high levels of corruption are associated with less inward FDI (e.g., Malesky and Samphantharak 2008; Wei 1997, 2000). Thus, it is possible that corruption “selects out” investors of high quality at the first place and leads to less inward FDI. In addition, corruption may also make countries less likely to engage in trade relationships. Nonetheless, it should be noted that since this chapter argues that economic integration increases corruption, if the selection at the first stage were corrected, we would observe higher levels of economic integration in more corrupt areas. In such cases, OLS regressions tend to underestimate the positive effect of economic integration. Thus endogeneity should not be a serious concern here. To precisely estimate the coefficient of economic integration and to deal with the possible endogeneity and selection biases, I take advantage of the spatial variation in China’s levels of economic integration and use the geographic distance as an instrumental variable for economic integration. Following Jensen and Rosas (2007), Larraín and Tavares (2004) and Pinto and Zhu (2008), I construct an instrumental variable (IV) for China’s provincial economic integration using the weighted geographic distance between China’s provincial capitals and five major economic centers²⁸ around China. This instrumental variable is rooted in the gravity models of international trade and FDI flows (see, e.g., Carr et al. 2001; Caves 1996; Frankel and Romer 1999; Loungani et al. 2002; Markusen 1995; Rose 2004). Countries tend to trade more with their neighbors and FDI originated from wealthier countries is more likely to flow into closer regions.²⁹ I weigh the geographic distance by these five economies’ real GDP per capita to capture the fact that more

²⁸They are Hong Kong, Seoul, Singapore, Taipei, and Tokyo.

²⁹That geographic distance affects trade patterns is one of the most robust empirical regularities in the economic literature (see, e.g., Frankel and Romer 1999; Rose 2004). With regard to FDI, the knowledge-capital model suggests that efficiency-seeking (vertical) FDI tends to decrease with trade costs such as geographic distance, while market-seeking (horizontal) FDI increases with trade costs (Carr et al. 2001; Markusen 1995). In China, before 1992, the Chinese government gave no access to market-oriented foreign firms and thus all FDI was efficiency-seeking. Since 1992 when China started to open its market to foreign firms, efficiency-seeking FDI has still remained a considerable share. For market-seeking FDI in China, firms also tend to locate in areas that are closer to home countries, which give them advantages to import parts and components from parent firms. For instance, Japanese and Koreans firms tend to concentrate in north China, such as Beijing, Liaoning, Shandong and Tianjian, while firms from Taiwan and Hong Kong operate mainly in southeastern China, such as Fujian, Guangdong, and Zhejiang. Thus, geographic distance is a good predictor of economic integration in China.

developed countries tend to export more products and capitals. On average these five economies together accounted for approximately 59% of China's FDI inflows and 41% of imports from 1998 to 2007. We have reasons to believe that exogenous geographic distance and the five economies' real GDP per capita are unlikely to have a direct effect on China's provincial corruption except through the channel of economic integration.³⁰ Sensitivity analysis is used to assess to what extent the empirical results are sensitive to the potential violation of the exclusion restriction. The instrument variable is constructed as follows:

$$Z_{i,t} = \sum_{j=1}^5 \frac{1}{dist_{i,j,t}} \times GDP\ per\ capita_{j,t} \quad (4.1)$$

where $i = 1, 2, \dots, N$, $j = 1, \dots, 5$, and $t = 1, 2$.

This instrumental variable measures the geographic closeness of China's provinces to the five economic centers. Thus, I expect that the closer a province is to these five cities, the more economically integrated it is. Geographic distance is calculated using the ArcGIS 9.3 program. Real GDP per capita data of the five economies between 1998 and 2007 are from the *Penn World Table*.

³⁰Geographic distance impacts corruption through the activities that are related to distance. We have reason to believe that geographic distance has an effect on corruption primarily through the two major transnational economic activities—foreign investment and trade. However, it is possible that geographic closeness has an impact on corruption through labor movement, migration, or even the media. This kind of effects should be at margin because the cross-border movement of labor and migration is still limited in China and the government highly restricts foreign media. In addition, Hong Kong, Japan, Korea, Singapore and Taiwan are all considered to be less corrupt than China. Thus we should expect a negative effect of geographic closeness on corruption through labor movement, migration, and foreign media. If this is the case, the 2SLS models tend to underestimate the positive coefficient of economic integration on corruption.

4.5 Empirical Results

To examine the effects of economic integration on corruption, I estimate the following two-stage least square (2SLS) model:

$$EcoIntegration_{i,t} = \delta + \theta * GeoCloseness_{i,t} + X_{i,t}\pi + \mu_{i,t} \quad (4.2)$$

$$Corruption_{i,t} = \alpha + \beta * EcoIntegration_{i,t} + X_{i,t}\gamma + \varepsilon_{i,t} \quad (4.3)$$

Where $i = 1, \dots, N$ and $t = 1, 2$

Equation 4.2 and 4.3 represent the first and second stage regressions respectively.

$E[EcoIntegration, \varepsilon_{i,t}] \neq 0$ and $E[GeoCloseness_{i,t}, \varepsilon_{i,t}] = 0$. To deal with possible heteroskedastic errors, the Generalized Method of Moments (GMM) is used in 2SLS estimation.³¹

4.5.1 “Objective” Corruption Cases as a Proxy

Given the small sample size, I start with some key determinants of corruption: economic integration, GDP per capita, GDP, government expenditure, the size of public employees, and a time dummy. Model 1 in Table 4.1 presents the OLS regression results. We can see here that economic integration has a positive and significant correlation with corruption measured by corrupt funds recovered per filed case.

To deal with the reverse causality and selection bias, in Model 2, I fit a GMM 2SLS regression model using weighted geographic closeness as the instrumental variable for economic integration. In the first stage regression (Model 2a in Table 4.5 in the Appendix), the instrumental variable strongly predicts provincial level of economic integration and the *F-statistic* of the (excluded) in-

³¹All models are estimated using `outreg2` command with `gmm` option in Stata 11.

Table 4.1: DV: Corrupt Funds Recovered per Filed Case

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Economic Integration	0.44***	0.46***	0.43***	0.49***	0.41***	0.44***	0.48***
(Factor Score)	(0.10)	(0.09)	(0.11)	(0.08)	(0.08)	(0.08)	(0.09)
Ln (GDP per capita)	-0.50**	-0.53**	-0.52**	-1.02***	-0.46**	-0.79***	-0.71**
	(0.24)	(0.25)	(0.26)	(0.25)	(0.20)	(0.26)	(0.31)
GDP	0.04**	0.04**	0.04**	0.06***	0.04***	0.05***	0.05***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Ln (Government Expenditure, % GDP)	1.09***	1.11***	1.09***	1.35***	1.17***	1.30***	1.08***
	(0.36)	(0.31)	(0.31)	(0.31)	(0.29)	(0.30)	(0.30)
Public Employees	6.57	6.74	5.72	8.28**	-0.91	1.78	7.25
	(5.24)	(5.07)	(4.91)	(4.00)	(5.17)	(5.28)	(4.82)
Time	0.03	0.02	0.00	0.03	-0.12	-0.08	0.26
	(0.24)	(0.22)	(0.22)	(0.21)	(0.22)	(0.22)	(0.27)
Bureaucratic Integration			0.14*			0.04	0.02
			(0.08)			(0.07)	(0.07)
Dummy of Four Municipalities				0.77***		0.50**	0.61***
				(0.23)		(0.20)	(0.24)
Ln (Distance-Beijing)					-0.11***	-0.08***	-0.08**
					(0.03)	(0.03)	(0.03)
Schooling							-0.49*
							(0.25)
Public Employees'							0.26
Relative Wages							(0.24)
Gender							3.78
							(3.46)
Constant	6.94***	7.18***	6.82***	10.07***	8.88***	10.19***	7.84***
	(1.59)	(1.51)	(1.65)	(1.62)	(1.34)	(1.58)	(2.25)
<i>N</i>	61	61	61	61	61	61	61
<i>R</i> ²	0.37	0.37	0.40	0.44	0.46	0.49	0.51
<i>F</i> – <i>Statistic</i> (Excluded Instrument)		58.53	56.11	59.49	56.93	53.99	60.66
	OLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS

Robust standard errors in parentheses;

* significant at 10%, ** significant at 5%; *** significant at 1%.

strument is 58.53,³² which shows that the instrumental variable is valid and strong (see, Bound et al.

³²All exogenous variables (included instruments) from the second stage regression are included in the first stage regression. In the following 2SLS regressions, all *F*-statistics of (excluded) instruments in the first regressions are well above 10. See Table 4.5 in the Appendix for first stage regression results.

1995; Staiger and Stock 1997). After accounting for possible reverse causality and selection bias, the coefficient of economic integration increases from 0.44 to 0.46 and statistically significant at 1%, which supports my argument that economic integration raises the level of corruption in China. Compared with the regression results in the OLS model, the regression resins and magnitudes of other explanatory variables' coefficients do not change significantly.

Given that the dependent variable is a mixed reflection of true corruption and the efficacy of law, to estimate the direct effect of economic integration on corruption, we need to control for law enforcement. In Models 3, 4 and 5, I thus add three variables—bureaucratic integration, a dummy variable of the four municipalities directly administered by the central government, and the geographic distance between provincial capitals and Beijing—as proxies for local government's anti-corruption efforts. We can see that all three of these variables have expected regression signs and their coefficients are statistically significant, which suggests that centrally-oriented government officials are more likely to comply with the central government's anticorruption directives and thus detect more corruption cases; the four municipalities fight harder against corruption; while remote provinces are less likely to do so. After we control for local government's anticorruption efforts, economic integration still has a positive impact on corruption and its coefficient is statistically significant beyond the conventional level. Model 6 controls for the three variables simultaneously. In Model 7, I add more controls—education, public employee's relative wages and gender. Again, economic integration positively and significantly affects corruption. Substantively, take Model 7 for example, when all other variables are held constant, one standard deviation increase of economic integration will raise the level of corruption by 0.48 units, which are about ¥16,160.74 or \$2,486.27 per filed case. The amount is roughly equal to the 68% of the national average annual wage in 2007. The effect of economic integration on corruption is both statistically and substantively significant.

The results in Table 4.1 also show that economic development (GDP per capita) significantly

decreases corruption. In Model 7, all else being equal, one standard deviation change in GDP per capita decreases the level of corruption by 0.39 units, approximately ¥14,769.81 or \$2,272.28 per filed case. A larger economy and more government expenditures are strongly associated with higher levels of corruption. One standard deviation increase in these two variables will result in more corruption by 0.27 and 0.50 units respectively (roughly ¥13,099.65/\$2,015.33 and ¥16,487.21/\$2,536.49 per filed case), when all other variables are constant. All else being equal, one standard deviation change in education reduces corruption by 0.30 units (about ¥13,498.59/\$2,076.71 per filed case) and the effect is statistically significant.

We have shown that economic integration significantly increases corruption by raising the level of bribes involved in each case. The degree of corruption can also be related to the burden of corruption on the entire population. Take a hypothetical example of two places with a population of 30 and 50 people each. There are 5 corruption cases in place A and 2 in Place B respectively, both of which involve \$500 bribes in total. According to corrupt funds per filed case, we would think Place B is more corrupt than Place A. However, if per capita corruption losses are considered, Place A has a higher level of corruption than Place B. To capture the second dimension of corruption, I use recovered corrupt funds per capita as an alternative measure.

Table 4.2: DV: Corrupt Funds Recovered per capita and Senior Cadres Disciplined per 10,000 Public Employees

Dependent Variable Model	Corrupt Funds Recovered per capita				Senior Cadres Disciplined per 10,000 Public Employees					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Economic Integration (Factor Score)	0.29*** (0.09)	0.32*** (0.07)	0.26*** (0.07)	0.30*** (0.07)	0.33*** (0.08)	0.07 (0.08)	0.11** (0.05)	0.07 (0.08)	0.16*** (0.06)	0.19*** (0.06)
Ln (GDP per capita)	-0.23 (0.22)	-0.57*** (0.22)	-0.19 (0.19)	-0.47** (0.23)	-0.38 (0.29)	0.34* (0.17)	-0.12 (0.16)	0.34** (0.16)	-0.28* (0.17)	-0.39** (0.17)
GDP	0.03* (0.01)	0.05*** (0.02)	0.03** (0.01)	0.04*** (0.02)	0.04** (0.02)	-0.01 (0.01)	0.01 (0.01)	-0.01 (0.01)	0.02** (0.01)	0.03** (0.01)
Ln (Government Expenditure, % GDP)	0.60* (0.32)	0.76** (0.32)	0.64** (0.30)	0.76** (0.31)	0.58** (0.30)	-0.07 (0.20)	0.16 (0.14)	-0.07 (0.19)	0.23 (0.15)	0.23 (0.15)
Public Employees	8.27** (4.00)	9.68*** (3.39)	3.47 (4.67)	5.81 (4.68)	9.70** (4.60)	-5.73** (2.72)	-4.26** (1.69)	-6.60** (2.68)	-0.81 (2.22)	3.07 (2.93)
Time	0.03 (0.23)	0.05 (0.22)	-0.05 (0.23)	-0.02 (0.23)	0.27 (0.29)	0.18 (0.11)	0.17* (0.09)	0.17 (0.11)	0.22** (0.09)	0.25* (0.13)
Bureaucratic Integration	0.05 (0.07)			-0.03 (0.06)	-0.05 (0.06)	0.01 (0.05)			-0.09** (0.04)	-0.10** (0.04)
Dummy of Four Municipalities		0.52** (0.21)		0.41* (0.21)	0.52** (0.24)		0.73*** (0.16)		0.95*** (0.16)	1.00*** (0.14)
Ln (Distance-Beijing)			-0.07*** (0.02)	-0.05** (0.03)	-0.06** (0.03)			-0.01 (0.02)	0.03** (0.02)	0.05*** (0.02)
Schooling					-0.44 (0.30)				-0.02 (0.14)	-0.02 (0.14)
Public Employees' Relative Wages					0.14 (0.22)				0.47*** (0.14)	0.47*** (0.14)
Gender					4.61 (2.97)				-1.11 (1.85)	-1.11 (1.85)
Constant	3.03** (1.42)	5.13*** (1.45)	4.31*** (1.29)	5.62*** (1.43)	3.25 (1.98)	-2.76** (1.16)	-0.04 (0.97)	-2.51** (1.04)	0.44 (1.01)	0.49 (1.25)
N	61	61	61	61	61	60	60	60	60	60
R ²	0.37	0.40	0.41	0.43	0.46	0.36	0.55	0.36	0.60	0.64
F – Statistic (Excluded Instrument)	56.11	59.49	56.93	53.99	60.66	57.27	61.34	56.84	54.39	61.25
	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS

Robust standard errors in parentheses;

* significant at 10%, ** significant at 5%; *** significant at 1%.

The first 5 models in Table 4.2 reproduce Models 3-7 in Table 4.1. We can see here that in all models economic integration has a positive effect on per capita corruption losses, and its coefficient is statistically significant beyond the conventional level. Substantively, we take Model 5 for example, where one standard deviation increase in the level of economic integration will raise corruption levels by 0.33 units, which are about ¥1.39 or \$0.21 per capita, when all other variables are held constant. The results also indicate that economic development (GDP per capita) helps reduce corruption burden while a large economy (GDP), high level of government expenditure, and large size of public employees significantly contribute to more corruption losses. These results are consistent with those in Table 1 that uses corrupt funds recovered per filed case as the dependent variable.

The above two measures capture the degree of corruption in terms of the level of bribes in each corrupt case and corruption losses per capita. The results have shown that economic integration is positively and significantly associated with these two dimensions of corruption. The severity of corruption may relate not only to the amount of bribes but also to the number of high-ranking government officials involved. Thus, I construct a third measure of corruption—senior cadres disciplined per 10,000 public employees.

I again reproduce Models 3-7 in Tables 4.1 and present the results in Models 6-10 in Table 4.2. All coefficients of economic integration are positive and they become statistically significant (Model 7, 9 and 10) when the dummy of the four municipalities directly administrated by the central government is controlled for. The results indicate that economic integration is strongly associated with a high frequency of senior cadres involved in corruption. To interpret the substantive effect, I focus on Model 10. All else being equal, one standard deviation increase in the level of economic integration will raise the frequency of senior cadres involved in corruption by 0.19 units, which are roughly 1.20 corrupt senior cadres per 10,000 public employees.

To summarize the results in Tables 4.1 and 4.2, the most significant finding is that economic

integration leads to more corruption in China in terms of the level of bribes in each corruption case, the corruption losses per capita and the frequency of senior cadres involved. The results are robust and consistent across model specifications even when we take into account law enforcement, possible endogeneity and selection bias, and various political and economic variables. These findings strongly support my argument that economic integration leads to more corruption in China. Other consistent findings include: corruption decreases with economic development while increases with the size of economy; a higher level of government expenditure and a larger size of public employees are associated with more corruption. All other variables seem to have no consistent impact on the three aspects of corruption.

4.5.2 Witnessed Corruption and Corruption Perceptions

The empirical results based on the measures of corruption cases have shown that higher levels of economic integration are systematically associated with more corruption in China. However, the dependent variables provide one caveat, as they reflect a combination of underlying true corruption levels and the efficacy of law. If economic integration helps improve domestic governance and rule of law, thus leading to more corruption detections, the positive relationship between integration and corruption could undermine the claim in the chapter. Although I have employed three variables—bureaucratic integration, a dummy of the four municipalities directly administrated by the central government and the geographic distance between provincial capitals and Beijing—to control for local government's anticorruption efforts and law enforcement, these variables might not be perfect. To check the robustness of the findings, I rely on survey data and use people's witnessed corruption and corruption perceptions as alternative measures. If economic integration improves domestic governance and rule of law rather than lead to more corruption, people will experience less corruption and have a more favorable opinion of corruption in the provinces with higher degrees of economic integration.

Table 4.3: DV: Witnessed Corruption and Corruption Perceptions

Model	Witnessed Corruption	Corruption Perceptions
	(1)	(3)
Economic Integration	0.08***	0.14**
(Factor Score)	(0.03)	(0.07)
Ln (GDP per capita)	-0.14**	-0.33**
	(0.06)	(0.15)
GDP	0.00	0.00
	(0.00)	(0.01)
Ln (Government Expenditure, % GDP)	0.01	0.04
	(0.05)	(0.12)
Public Employees	2.51**	-4.68
	(1.20)	(3.72)
Schooling	-0.10	0.29
	(0.08)	(0.25)
Public Employees'	-0.07	-0.64***
Relative Wages	(0.07)	(0.18)
Gender	1.70**	6.88***
	(0.83)	(1.60)
Constant	0.46	2.35**
	(0.47)	(1.02)
<i>N</i>	26	26
<i>R</i> ²	0.29	0.49
<i>F</i> – <i>Statistic</i> (Excluded Instrument)	14.44	14.44
	2SLS	2SLS

Robust standard errors in parentheses;

* significant at 10%, ** significant at 5%; *** significant at 1%

The China Module of 2008 Asian Barometer Survey includes questions that ask inhabitants whether they have witnessed corruption and their opinions about local corruption. I use the question, “Have you or anyone you know personally witnessed an act of corruption or bribe-taking by a politician or government official in the past year?”³³ to construct an index of witnessed corruption, and the question, “How widespread do you think corruption and bribe-taking are in your local/municipal government?”³⁴ to generate a measure of the level of perceived corruption. For

³³The choices are: 1. Witnessed; 2. Never Witnessed; 8. Can’t Choose; 9. Decline to Answer.

³⁴The choices are: 1. Almost Everyone is Corrupt; 2. Most Officials are Corrupt; 3. Not a Lot of Officials are Corrupt; 4. Hardly Anyone is Involved; 5. Decline to Answer.

the index of witnessed corruption, I calculate the frequency of respondents who answered “Never Witnessed” in each province and then reverse this variable.³⁵ This measure is constructed based on respondents’ personal experience. Thus, it is likely to capture the pervasiveness of corruption in local governments, and is unlikely to be affected by law enforcement. For corruption perceptions, I take the means of respondents’ perceived corruption scores within each province and reverse the variable as a measure of corruption at the provincial level.³⁶ By doing so, I obtain an index of witnessed corruption and corruption perceptions for 26 provinces.³⁷ The empirical results based on these two alternative measures are presented in Table 4.3.³⁸

Model 1 is estimated using witnessed corruption index. We can see that economic integration has a positive and significant effect on the frequency of people witnessing corruption. This finding is consistent with what we have found using objective corruption cases as proxies for corruption levels. This rejects the notion that the positive relationship between economic integration and the corruption measures based on objective cases is simply due to the improvement in domestic governance and rule of law. Substantively, one standard deviation increase in the level of economic integration will raise the frequency of witnessing corruption by approximately 8% (1.14 standard deviations of the dependent variable), when all other variables are held constant. The effect is substantively large. In addition, we can see here that the regression signs of other explanatory variables are quite consistent with those obtained based on the measures of corruption cases. In particular, the results show that economic development is significantly associated with less witnessed corruption while the size of public employees is correlated with more witnessed corruption. The share of female public employees has a positive impact on the frequency of witnessed corruption.

³⁵The answer “Witnessed” could be biased because respondents might fear potential punishment.

³⁶By taking the means, we lose the information of respondents who declined to answer. Alternatively, I calculate the share of people who answered “Almost Everyone is Corrupt” and “Most Officials are Corrupt.” Empirical results are substantively the same.

³⁷The survey does not have information for Gansu, Hainan, Xinjiang, and Tibet. I exclude Ningxia Province because it only has 8 observations due to the loss of information during the survey implementation (based on personal contact with ABS staff).

³⁸All explanatory variables are from the second period (2003-2007) in Tables 4.1 and 4.2.

In Model 2, I utilize the level of perceived corruption as the dependent variable. The empirical results show that higher levels of economic integration are significantly associated with more perceived corruption. All else being equal, one standard deviation increase in economic integration will raise the level of perceived corruption by approximately 0.14 units, which are roughly 0.63 standard deviations of the dependent variable. Additionally, the results suggest that high levels of economic development and public employees' wages relative to private ones are strongly associated with a low level of perceived corruption, while the share of female public employees is positively and significantly related to perceived corruption, all of which are consistent with the findings based on corruption cases and the frequency of witnessed corruption.

Although we have concerns that the positive relationship between economic integration and corruption measured by objective cases might be attributed to the fact that integration contributes to the improvement of domestic governance and rule of law, thus leading to more corruption detections. If this is really the case, we should observe that people witness fewer corruption activities and perceive corruption more favorably in provinces with a higher level of economic integration. However, I have found that economic integration is positively and significantly associated with both witnessed and perceived corruption. These findings mitigate our worries that corruption cases are simply the results of law enforcement and provide evidence that these measures based on corruption cases do capture the true level of corruption, thus providing strong support for my argument that economic integration leads to more corruption in China.

4.6 Sensitivity Analysis of the IV Exclusion Restriction

One concern of the results above is the possible violation of the IV exclusion restriction. A valid instrumental variable requires that it effects the dependent variable only through the endogenous variable. A potential violation of the exclusion restriction presents one challenge to the regression

results. In this case, geographic distance impacts corruption through the activities that are related to distance. We have reasons to believe that geographic distance has an effect on corruption primarily through the two major transnational economic activities—foreign investment and trade. However, it is possible that geographic closeness influences corruption through labor movement, migration, or even the media. This kind of effects should be at margin because cross-border labor movement and migration are still limited in China and the government highly restricts foreign media. In addition, Hong Kong, Japan, Korea, Singapore and Taiwan are all considered to be less corrupt than China.³⁹ Thus we should expect a negative effect of geographic closeness on corruption through labor movement, migration, and foreign media. If this is the case, the 2SLS models tend to underestimate the positive coefficient of economic integration on corruption. Nonetheless, we might still worry that geographic closeness has an impact on corruption in some unobservable ways and thus the exclusion restriction could be violated.

As suggested by Conley et al. (2012), I conduct sensitivity analysis to assess to what extent the empirical results are sensitive to the possible violation of the exclusion restriction. The model can be set up as follows:⁴⁰

$$Y = X\beta + Z\gamma + \varepsilon \quad (4.4)$$

$$X = Z\lambda + v \quad (4.5)$$

Where Z is the (excluded) instrument (geographic closeness) for the endogenous variable of X (economic integration); $E(X\varepsilon) \neq 0$ and $E[Z\varepsilon] = 0$. γ is a parameter measuring to what extent the exclusion restriction is satisfied. In a normal setup, the term— $Z\gamma$ —does not appear in the structural equation (4.4). If the exclusion restriction holds, then $\gamma = 0$. We can estimate the two equations using a normal 2SLS regression. If the exclusion restriction is violated, $\gamma \neq 0$. Based

³⁹According to the TI, for instance, in 2007 the corruption perceptions indices (CPI) of Hong Kong, Japan, Korea, Singapore and Taiwan were 8.3, 7.5, 5.1, 9.3, and 5.7 respectively. China's CPI was 3.5 which was far below the five economies' CPIs.

⁴⁰See, Conley et al. (2012, 261).

on these two equations, we can conduct sensitivity analysis using the prior knowledge about the magnitude of γ .

In this case, we are more interested in the positive values of γ , because a negative γ will increase the slope of economic integration. I focus on two of the approaches recommended by Conley et al. (2012). The first approach is to specify a set of values for γ based on prior knowledge and obtain a union of confidence intervals for β . I want to see how large the γ could be so that we still obtain a significant positive coefficient of economic integration at the 95% level. The second approach is “local-to-zero approximation” that adopts a large sample approximation and treats the uncertainty of γ as sample uncertainty to obtain an approximate distribution for β (Conley et al. 2012, 264-65). This approach allows the levels of confidence intervals of β to depend on the probabilities of observing specific values of γ .⁴¹ Since we have reasons to believe geographic closeness affects corruption primarily through the channels of inward FDI and trade, γ should be small even if the exclusion restriction is violated. Thus, I choose a normal distribution for γ with a mean of 0 and a variance of σ^2 to capture the fact that there is a high probability of observing $\gamma = 0$. I conduct sensitivity analysis on Model 7 in Table 4.1 and Models 5 and 10 in Table 4.2. Results are presented in Table 4.4.

In Approach 1, we can see here that γ can be as large as 0.43, 0.23 and 0.10⁴² in these three models, we still observe a positive and significant effect of economic integration on corruption. The point estimates of economic integration are 0.19, 0.17 and 0.12 respectively. After we subtract the direct effect of geographic closeness on corruption, all else being equal, one standard

⁴¹In the case of a Gaussian prior for γ , $\hat{\beta}^{approx} \sim N(\beta + A\mu_\gamma, V_{2SLS} + A\sigma_\gamma^2 A')$, and $A = (X'Z(Z'Z)^{-1}Z'X)^{-1}(X'Z)$, where β and V_{2SLS} are the point estimates and variance-covariance matrix obtained from a normal 2SLS regression; μ_γ and σ_γ^2 are the mean and variance of the prior distribution of γ ; X and Z are the endogenous and instrumental variables respectively. See, Conley et al. (2012, 264).

⁴²If these numbers are the true coefficients of geographic closeness in equation 4.4, one standard deviation increase in geographic closeness will raise recovered corrupt funds per filed case by ¥11,926.84 (\$1,834.90), recovered corrupt funds per capita by ¥1.10 (\$0.17), and senior cadres disciplined per 10,000 public employees by 1.04 units when all other variables are held constant. These numbers represent considerably large effects of geographic closeness on corruption.

Table 4.4: Sensitivity Analysis of the IV Exclusion Restriction

Dependent Variable	Corrupt Funds Recovered per Filed Case	Corrupt Funds Recovered per capita	Senior Cadres Disciplined per 10,000 Public Employees
Approach 1			
Maximum γ for a Significant β	0.43	0.23	0.10
Point Estimate β (Economic Integration)	0.19	0.17	0.12
95% Confidence Interval	[0.00, 0.37]	[0.00, 0.35]	[0.00, 0.25]
Approach 2			
Prior Distribution of γ	$\gamma \sim N(0, 0.25^2)$	$\gamma \sim N(0, 0.15^2)$	$\gamma \sim N(0, 0.10^2)$
Point Estimate β (Economic Integration)	0.48	0.33	0.19
95% Confidence Interval	[0.09, 0.88]	[0.06, 0.60]	[0.00, 0.38]

The sensitivity analysis is based on Model 7 in Table 4.1 and Models 5 and 10 in Table 4.2.

deviation increase in economic integration will still raise corrupt funds recovered per filed case by ¥12,092.50, corrupt funds recovered per capita by ¥1.19, and senior cadres disciplined per 10,000 public employees by 1.13 units. These effects are substantively large. These results indicate that economic integration affects corruption positively and significantly even if we allow for a considerable deviation from the perfect instrumental variable. Next, I draw γ from prior normal distributions in which $\sigma = 0.25, 0.15$ and 0.10 for Model 7 in Table 4.1 and Models 5 and 10 in Table 4.2 respectively.⁴³ Again, we can see that even if we take into account the uncertainty about γ , the 95% confidence interval of economic integration's coefficient is still above 0 in all three

⁴³If these three numbers are the true coefficients of geographic closeness, all else being equal, one standard deviation increase in geographic closeness will raise recovered corrupt funds per filed case by ¥11,078.77 (\$1,704.43), recovered corrupt funds per capita by ¥1.06 (\$0.16), and senior cadres disciplined per 10,000 public employees by 1.04 units. In fact, we allow γ to vary beyond σ . Approximately 95% of the γ values range between -2σ and 2σ .

models. This finding confirms that the positive effect of economic integration on corruption is not sensitive to the potential violation of the exclusion restriction.

4.7 Conclusion

Today, it is widely believed that inward FDI and trade are the major driving forces of economic growth. Both developed and developing countries are so eager to lure foreign investors and expand trade that they often do not pay much attention to unintended consequences. This chapter argues that economic integration, multinationals' activities in particular,⁴⁴ may increase the level of corruption in host countries. To test this argument, I draw original data on objective corruption cases to measure corruption and use the frequency of residents' witnessed corruption and the level of perceived corruption as alternative measures. Empirical results show that economic integration has a positive and significant impact on corruption in China. Economic integration increases the level of corruption in terms of the amount of bribes in each case, the corruption losses per capita, and the frequency of senior cadres involved. These findings are robust and consistent even when law enforcement, possible endogeneity and selection bias, and various political and economic variables are considered.

This study calls for attention to the unintended consequences of globalization. MNCs are strategic investors seeking the highest possible returns globally. Given their advantages in the ownership of proprietary assets, they are likely to adjust their investment strategies to explore business opportunities even in risky environments (see, e.g., Henisz 2000; Javorcik and Wei 2009). Corruption is prevalent and often a part of business practices in many developing countries. Moreover, in these countries the legal infrastructure is underdeveloped and the government regulations are ineffec-

⁴⁴Additional empirical analyses based on simple OLS regressions indicate that FDI inflows has a more significant and larger effect on corruption than imports in terms of corrupt funds recovered per capita and senior cadres disciplined per 10,000 public employees.

tive. In such circumstances, foreign investors are likely to engage in corruption as a strategy to obtain business contracts, government services and advantages over their competitors, therefore exacerbating the problem of corruption; likewise, the rent-seeking activities of competing for import licenses and quotas can take illegal forms such as bribery, thus causing more corruption. It is important to understand the effects of economic integration on corruption in the specific context of domestic conditions.

The findings have direct implications for both domestic and global governance. Recently, good governance has been placed on the agenda of many scholars and international organizations such as the World Bank and the United Nations. The common notion is that a high quality of government is the prerequisite for a country to achieve economic growth and broad social development (Holmberg et al. 2009). The policy solutions suggested in this research tend to focus on international development assistance and the reform or reconstruction of domestic institutions. If MNCs, in some circumstances, undermine domestic governance through exacerbating corruption, more efforts need to be devoted to regulating foreign business' activities. Given MNCs' cross-border nature, it particularly demands close collaboration between host governments and the international community.

In addition, most studies on corruption in China rely on qualitative evidence and connect the causes of corruption to China's bureaucratic system, organization structure and the reform nature of the state such as the dual-pricing system, privatization and decentralization, while largely ignoring international factors.⁴⁵ As China has rapidly integrated into the global economy, undoubtedly, international actors play a significant role in the domestic arena. In this chapter, I have shown that economic integration is one significant determinant of corruption in China's provinces. This study engages with the broad literature on domestic consequences of international forces (see, e.g., Keohane and Milner 1996) and underscores the importance of taking international factors into

⁴⁵For works on corruption in China, see, e.g., Guo (2008), Lü (2000a,b), Manion (1996, 2004), Ting (1997), and Wedeman (2004, 2005).

account when studying China's economic reform and transition.

Finally, although the chapter has shown that multinationals' activities may effect corruption positively in certain countries, the findings do not reject that globalization in general helps improve governance. Rather, it encourages scholars to explore the domestic conditions that shape the influence of international factors. In addition, we still know little about how investors really behave in a risky and corrupt atmosphere. That is, which types of firms are more prone to corruption, e.g., resource-seeking vs. marketing-seeking, high-skill vs. low-skill, or diasporan vs. non-diasporan? How do foreign investors cope with risky locations? These questions are important to address in order to further disentangle the causal mechanisms linking economic integration and corruption, as they have significant policy implications for global anticorruption activities. Undoubtedly, these questions cannot be answered simply by using aggregate data, but provide fertile future research opportunities.

4.8 Appendix

Table 4.5: Results of First Stage Regressions in Table 4.1

Model	(2a)	(3a)	(4a)	(5a)	(6a)	(7a)
Geographic Closeness	1.38*** (0.18)	1.38*** (0.18)	1.40*** (0.18)	1.36*** (0.18)	1.37*** (0.19)	1.43*** (0.18)
Ln (GDP per capita)	1.08*** (0.19)	1.08*** (0.19)	0.94*** (0.24)	1.09*** (0.19)	1.01*** (0.25)	0.87*** (0.27)
GDP	-0.02 (0.02)	-0.02 (0.02)	-0.02 (0.02)	-0.02 (0.02)	-0.02 (0.02)	-0.01 (0.02)
Ln (Government Expenditure, % GDP)	-0.63*** (0.19)	-0.63*** (0.19)	-0.56*** (0.20)	-0.59*** (0.19)	-0.56*** (0.20)	-0.52*** (0.25)
Public Employees	3.40 (3.62)	3.16 (3.70)	3.93 (3.66)	-0.02 (4.19)	0.74 (4.55)	4.39 (5.62)
Time	0.11 (0.14)	0.11 (0.15)	0.12 (0.14)	0.05 (0.15)	0.06 (0.15)	0.06 (0.25)
Bureaucratic Integration		0.03 (0.07)			-0.01 (0.08)	-0.06 (0.08)
Four Municipalities			0.24 (0.24)		0.13 (0.28)	0.32 (0.28)
Ln (Distance-Beijing)				-0.05 (0.03)	-0.04 (0.03)	-0.03 (0.03)
Schooling						-0.08 (0.25)
Public Employees' Relative Wages						0.62* (0.32)
Gender						4.49 (3.25)
Constant	-13.70*** (1.05)	-13.69*** (1.06)	-12.93*** (1.29)	-12.66*** (1.23)	-12.37*** (1.40)	-14.38*** (1.92)
<i>N</i>	61	61	61	61	61	61
<i>R</i> ²	0.83	0.83	0.83	0.84	0.84	0.86
<i>F</i> – <i>Statistic</i> (Excluded Instrument)	58.53	56.11	59.49	56.93	53.99	60.66

Notes: Standard errors in parentheses

* significant at 10%, ** significant at 5%; *** significant at 1%

Table 4.6: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Ln (Corrupt Funds Recovered per Filed Case)	61	2.55	0.68	0.93	4.60
Ln (Corrupt Funds Recovered per capita)	61	1.34	0.62	0.07	3.00
Ln (Senior Cadres Disciplined per 10,000 Public Employees)	60	-1.03	0.41	-2.08	0.10
Frequency of Witnessed Corruption	26	0.13	0.07	0	0.25
Level of Perceived Corruption	26	2.44	0.21	1.96	2.81
Economic Integration (Factor Score)	61	-0.02	1.00	-1.60	1.96
Ln (GDP per capita)	61	5.68	0.55	4.83	7.63
GDP	61	8.26	5.37	0.40	22.18
Ln (Government Expenditure (% GDP))	61	-2.14	0.47	-2.95	-0.49
Public Employees (Proportion to Population)	61	0.06	0.03	0.03	0.19
Time	61	0.51	0.50	0	1
Dummy of Four Municipalities	61	0.13	0.34	0	1
Bureaucratic Integration	61	2.37	0.89	1	4
Ln (Distance-Beijing)	61	13.32	2.57	0	14.74
Ln (Education)	61	1.50	0.62	-0.27	3.24
Public Employees' Relative Wages	61	1.11	0.20	0.77	1.96
Gender (Share of Female Public Employees)	61	0.37	0.02	0.33	0.43

Table 4.7: Correlation Matrix of Explanatory Variables

Variable	Economic Integration	GDP per capita	GDP	Government Expenditure	Public Employees	Time	Dummy of Municipalities	Bureaucratic Integration	Distance- Beijing	Education	Public Employees' Relative Wages	Gender
Economic Integration	1.00											
GDP per capita	0.62	1.00										
GDP	0.51	0.37	1.00									
Government Expenditure	-0.40	0.09	-0.52	1.00								
Public Employees	0.24	0.61	-0.10	0.07	1.00							
Time	0.15	0.18	0.21	0.27	-0.31	1.00						
Dummy of Municipalities	0.34	0.65	0.09	-0.05	0.46	0.11	1.00					
Bureaucratic Integration	0.47	0.33	0.30	-0.11	0.20	-0.01	0.44	1.00				
Distance- Beijing	-0.38	-0.47	-0.06	0.05	-0.64	0.01	-0.52	-0.33	1.00			
Education	0.63	0.73	0.37	-0.17	0.49	0.44	0.51	0.35	-0.53	1.00		
Public Employees' Relative Wages	0.03	-0.10	0.00	0.15	-0.39	0.29	-0.12	0.04	0.10	-0.08	1.00	
Gender	0.32	0.30	0.11	-0.10	0.33	0.13	0.11	0.27	-0.20	0.49	0.00	1.00

Part II

Bibliography

Bibliography

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