



Contents lists available at ScienceDirect

International Review of Financial Analysis



Foreign direct investment concessions and environmental levies in China

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ARTICLE INFO

Available online xxx

JEL classification:

F18
F23
G32

Keywords:

FDI
Subnational concessions
Pollution fees
Provincial development
Private equity
Entrepreneurial firms

ABSTRACT

We investigate how foreign involvement in the ownership of privately held entrepreneurial firms affects pollution fees levied by national and provincial governments in China (environmental levies). Because provincial governments have considerable control over environmental policies, differences in environmental levies provide a good proxy for measuring provincial concessions made for the purpose of attracting investment, and particularly foreign direct investment (FDI). Furthermore, because we consider privately held entrepreneurial firms rather than publically listed firms, foreign involvement in ownership provides a good proxy for FDI. We find that firms with foreign ownership do indeed pay lower environmental levies, which indicates that concessions are made to attract FDI to China. However, these concessions are conditional on the level of development of the province offering them, with better developed provinces providing fewer concessions for FDI. We also find that greater concessions are made to foreign joint venture firms having a foreign ownership stake of less than or equal to 50%.

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1. Introduction

Private enterprise has been the engine of economic growth around the world in both developed and emerging economies (Ball & Shivakumar, 2005). Within the private sector, the role played by privately held entrepreneurial firms is especially crucial. For example, in China such entrepreneurial firms account for over 60% of GDP and 80% of employment (Chen, Ding, & Wu, 2013). Entrepreneurial firms are relatively small, young, and growing firms that take risks to explore business opportunities (Markman & Baron, 2002; Shane, 2000). As such, these firms often face capital constraints, especially in emerging markets such as China, because they have limited access to local capital markets. To alleviate capital constraints, some domestic firms attract foreign capital to found joint ventures or wholly foreign-owned enterprises, so foreign direct investment (FDI) can be an important source of entrepreneurial financing. We investigate how foreign capital involvement in Chinese privately held entrepreneurial firms affects provincial concessions in the form of reduced environmental levies.⁴

FDI can be an important source of capital for promoting economic development and entrepreneurial activities. Not only does it provide a significant economic impact on countries and firms that receive investment (Sun, 1998), but also affects the investors of FDI companies (Ding & Sun, 1997). From the perspective of foreign firms, the decision to invest is determined by the risk-adjusted return on their investment, which in turn is determined by both firm and host-country or regional characteristics at the time of the investment decision. In particular, both country and location-specific characteristics may directly or indirectly influence the decision to invest. For instance, multinational corporations (MNCs) are mainly attracted by strong fundamentals such as market size, availability of skilled labor, and availability of infrastructure (Blomström & Kokko, 2003; Blonigen, 2005). Using a detailed analysis of data from 164 countries, Buchanan, Le, and Rishi (2012) find that a country's institutional environment can strongly affect FDI. However, apart from country-level characteristics, which are generally systematic in nature and are usually beyond the control of individual firms, incentives and concessions provided by host country governments also play an important role in affecting a foreign firm's decision to invest in a country or in a specific location (Blomström & Kokko, 2003). The United Nations Conference on Trade and Development (1996) (UNCTAD hereafter) reports various incentives and concessions that host countries might offer to attract FDI. These concessions come in many forms such as tax incentives, subsidies, grants, and preferential loans.

One of the most widely studied aspects of host country concessions given to MNCs is tax incentives. Rather than imposing encompassing low statutory tax rates, it is often more effective for host country governments to offer selective tax incentives, which have a smaller negative impact on fiscal revenue. Selective tax incentives may also serve

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¹ Tel.: +1 613 520 2600x1874.² Tel.: +1 306 966 2829.³ Tel.: +1 204 474 6752.⁴ Note that environmental levies are a fee on the pollution output of a firm payable to the government. While from an accounting perspective they differ from a tax (hence we use the term levy), from an economic perspective they have a similar effect, and therefore concessions on environmental levies could affect FDI similarly to other tax concessions.

as a signal of the host country's commitment to attracting FDI, and are often easier to implement than a general reform of the tax system (Bond & Samuelson, 1986). Even regional differences in tax incentives can play an important role in affecting a foreign firm's decision to invest in a particular location. For instance, Coughlin, Terza, and Arromdee (1991) contend that higher state taxes deter FDI in the U.S. Similarly, Hines (1996) reports that state taxes influence the pattern of foreign investment in the U.S.

Most of the academic research on concessions and incentives focus on country-level characteristics rather than regional characteristics. There are two main drawbacks associated with this broader country-level focus: First, do firms actually realize tax concessions associated with national incentives *ex post*? Second, do regional incentives amplify or offset national concessions? We address both of these concerns. We use the *ex post* fees levied on environmental pollution (environmental levies) as a firm-level proxy for concessions to test whether foreign capital investment actually results in lower levies. Furthermore, by considering provincial effects for the single country China, we avoid the usual problems that affect cross-country studies related to decomposing natural competitive advantages such as political, cultural, and other institutional effects, accounting standards, and other country-level effects, from concessions, as well as the difficulty of simply measuring concessions consistently across countries. While there are clearly differences among provinces, these effects are much less pronounced than they are among different countries.

Thus far, we have used the term FDI loosely. Before proceeding further, it is useful to define it formally. UNCTAD defines FDI as "investment made to acquire lasting interest in enterprises operating outside of the economy of the investor." FDI is different from usual portfolio capital inflows (generally known as "hot" money) in the sense that it is a "direct investment" in the local firms with the investors intending to gain an active voice and some degree of control. We consider private firms with no liquid secondary equity markets, so these firms are prime examples of direct investment.

We predict that firms with foreign capital involvement in China should enjoy favorable treatment from local, provincial governments in the form of lower environmental levies. However, we also expect that entrepreneurial firms in better developed provinces have less need for foreign capital, and therefore concessions in the form of lower environmental levies provided to encourage foreign involvement should be lower for better developed provinces. In other words, the interaction between foreign involvement and provincial development should positively affect environmental levies. We also anticipate that provincial governments will treat FDI investments more favorably when they are made jointly with local investors. These joint ventures can provide a number of benefits beyond investment and employment opportunities, such as technology and knowledge transfer, and allow local firms to participate in future growth opportunities.

We test our hypotheses by using an official source of data provided by the National Bureau of Statistics of China. One important source of value of this data set is that it provides proprietary information for a large set of privately held entrepreneurial firms that would otherwise be difficult to obtain.⁵ Our results confirm that environmental levies are one aspect of concessions provinces make to attract FDI to China. In general, we find that foreign investment reduces the environmental levies charged to firms. While concessions generally increase with the

ownership percentage, other factors might also be important for firms in which foreign ownership is dominant. We control for a number of provincial and firm specific factors that could also affect environmental levies, and our findings are consistent. We also find that the degree of provincial development mitigates the concessions given to foreign ownership. Better developed provinces tend to provide fewer concessions to firms with foreign ownership. These regional differences are consistent with prior studies documenting the existence of a domestic firm pollution haven in China (Di, 2007; Jiang, Lin, & Lin, 2013; Lu, Wu, & Yu, 2012). On the other hand, Dean, Lovely, and Wang (2009) show that at least some foreign investors are attracted to Chinese provinces with weak environmental standards; our finding of the existence of environmental levy concessions provides one explanation to such behavior.

It is worth noting that recent studies present mixed evidence on the impact of foreign firms on environmental pollution. Jiang et al. (*in press*) show that foreign firms in China tend to pollute less compared to state-owned enterprises, *ceteris paribus*, and Kirkulak, Qiu, and Yin (2011) find that the presence of FDI in China has no negative impact on the air quality. In contrast, Cole, Elliott, and Zhang (2011) find that foreign firms have a detrimental effect on environmental emissions in China in several cases, such as petroleum-like matter, waste gas, and SO₂. We find that foreign firms still receive concessions even after taking into consideration the possibility that they may pollute the environment less intensively than local firms.

Our results provide practical guidance to foreign firms that are considering making a direct investment in China. The decision about where to locate in China is complex, and provincial differences in environmental regulation and enforcement add to this complexity. Although our findings suggest that FDI is more likely to flow into regions with higher concessions, Dong and Torgler (2010) show that less developed provinces in China are also more corrupt, which deters foreign investors from entering these regions. As a result, the location choice requires a systematic consideration of both benefits and costs. Our findings also have policy implications for China. One aspect of the decentralization of environmental regulations is that provincial governments have a greater ability to provide concessions to foreign-owned firms for the purposes of attracting FDI, which could give foreign-owned firms a competitive advantage over purely domestic firms. This problem is exacerbated by the incentive system and opportunities for advancement associated with economic growth, particularly since pollution is largely a public (national and even international) cost. Together, the opportunity and incentive could lead provincial governments to compete with each other to weaken environmental standards for the purpose of attracting FDI. As such, there could be a role for the central government to limit the opportunity (by developing more comprehensive national standards) or the incentive (through political reform).

The remainder of this article is organized as follows. Section 2 examines the previous literature and develops hypotheses. Section 3 describes the data and methodology used to investigate our research questions. Section 4 discusses and analyzes the empirical results. Section 5 concludes and considers implications of the findings.

2. Previous literature and hypothesis development

2.1. Environmental levies charged in China

Environmental pollution is a serious concern in most jurisdictions, including China. China's main technique for managing pollution is a pollution levy system, in which a per unit fee is levied on specific forms of pollution (Dean et al., 2009; Wang & Wheeler, 2003). In this way firms are required to compensate for their negative environmental impact. Despite the simple nature of this process, its implementation can be very complex. For instance, 61 pollutants were identified as sources of

⁵ Jiang, Adams, and Jia-Upreti (2012) examine how managerial entrenchment affects the use of insurance in Chinese firms; however, they use survey data and a mix of both listed and private companies. Our employment of accounting information from purely private companies allows more accurate tests for our hypotheses, as survey data may be biased, and listed companies face different incentives and regulation in environmental control.

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