



Resource abundance and financial development: Evidence from China

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ABSTRACT

In this paper, we extend the debate on the resource curse by focusing on a new mechanism. Theoretically, resource abundance may have a negative influence on financial development by impacting trade openness, the demand for financial reforms, social capital accumulation and productive investments. Using provincial panel data of China, the empirical analysis confirms such a negative link between mineral resource abundance and financial development. The resource-rich regions tend to have a slower pace of financial development than resource-poor ones. Since the positive relationship between financial development and long-run growth is also confirmed by the analysis, our findings suggest that financial development constitutes an important mechanism through which resource abundance can impact economic performance.

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Introduction

Since the late 1980s, many studies have provided some evidence of a negative link between natural resource abundance and economic growth in developing countries (See, e.g. Sachs and Warner, 1995). The evidence triggered considerable debate about the causes of the resource curse (Rodriguez and Sachs, 1999; Neumayer, 2004; Stijns, 2005; Robinson et al., 2006; Papyrakis and Gerlagh, 2007; Zhang et al., 2008). Some previous research suggested that resource abundance tended to cause the so-called 'Dutch disease' (van Wijnbergen, 1984; Matsen and Torvik, 2005), led to rent-seeking and corruption (Baland and Francois, 2000; Petermann et al., 2007) and weakened public and private incentives to accumulate human capital (Gylfason, 2001). Although financial development is found to play an important role in the economic growth of developing countries (King and Levine, 1993; Levine and Zervos, 1998; Christopoulos and Tsionas, 2004; Guiso et al., 2004a), previous studies have paid little attention to the role of financial sector in the resource curse.

Understanding the relationship between resource abundance and financial development is important for three reasons. First, it can provide some new explanations for the resource curse. Since financial development constitutes an important mechanism for long-run growth, any impact of resource abundance on the financial sector can inevitably influence the pace of economic growth. This explanation may shed new light on the

resource-growth nexus. Second, understanding this relationship helps policy makers develop more sophisticated strategies for addressing the resource curse. It may provide a better sense of what the main economic results of resource abundance are and hence which strategies for promoting a change are most likely to be successful. Finally, analyzing this relationship can also provide a new explanation for the widely different levels of financial development across regions. It may deepen our understanding of the underlying mechanisms that help shape financial development.

To the best of our knowledge, the impact of resource abundance on financial development has not been analyzed before. With the aim of making a contribution to this topic, we compile provincial panel data of China to analyze the relationship between mineral resource abundance and financial development. Our empirical results provide some evidence of a negative link between them. This relationship offers new implications for policy makers in resource-rich developing countries.

The rest of the paper is organized as follows. The following section provides the literature review. The succeeding two sections describe the dataset and econometric approaches. The empirical results are reported in the penultimate section, and the last section concludes the paper.

Literature review

There are four mechanisms through which resource abundance can impact the pace of financial development. First, the exploitation of natural resources tends to shift factors of

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production away from the manufacturing sector (van Wijnbergen, 1984; Krugman, 1987; Gylfason et al., 1999). As a result, resource abundance tends to shrink the traded sector. But trade is found to play an important role in financial development by some previous studies. Because interest groups have different incentives to promote or oppose financial development (Rajan and Zingales, 2003), the strengthening of promoter relative to opponent industries resulting from trade liberalization is a good predictor of subsequent financial development (Braun and Raddatz, 2008). By analyzing the panel data of 42 developing countries during 1980–2003, the research of Baltagi et al. (2009) provided some evidence of a positive link between trade openness and financial development. Since this link is confirmed, resource abundance, which weakens the traded sector, may also have a negative impact on the pace of financial development.

Second, the economic rents of resource exploitation may increase opportunities for rent-seeking and corruption. Using cross-section data of more than 70 countries, the empirical analysis of Petermann et al. (2007) confirmed such a link between mining and corruption. Corruption may induce a lack of confidence in the government and hence undermine its policy credibility. But this kind of credibility is found to play an important role in economic development (see Yuxiang and Chen, 2010a). Because of low policy credibility, it will be difficult for the government to implement some financial reforms. Moreover, resource abundance may imbue people with a false sense of security (Sachs and Warner, 1999) and thus lead governments to lose sight of the need for financial reforms. But such reforms are necessary for some developing countries to encourage the development of their financial systems. More importantly, Baland and Francois (2000) argued that when the proportion of entrepreneurs to rent-seekers in the economy was initially low, resource booms tended to reduce the number of entrepreneurs running productive firms. Unlike rent-seekers, entrepreneurs are potential promoters of financial development. If the number of entrepreneurs is reduced by resource booms, financial development may also slow down because the demand for it is weakened. Therefore, resource abundance may retard financial development by increasing opportunities for rent-seeking and corruption.

Third, resource abundance in an economy tends to weaken private and public incentives to accumulate human capital (Gylfason, 2001; Gylfason and Zoega, 2006; Stijns, 2006). The natural wealth may blind the owners to the need for educating their children (Gylfason, 2001). Using cross-section data of 65 countries, the empirical analysis of Gylfason (2001) supported this relationship. Moreover, resource abundance may crowd out social capital in a similar manner (Woolcock, 1998; Paldam and Svendsen, 2000; Gylfason and Zoega, 2006). But social capital is a determinant of the level of trust. Its accumulation can affect the pace of financial development since financial contracts are trust-intensive. The empirical analysis of Guiso et al. (2004b) confirmed that social capital played a positive part in the degree of financial development across different parts of Italy. Therefore, the pace of financial development may slow down if social capital is reduced by resource booms.

Finally, through the above channels resource abundance may also reduce investments (Gylfason and Zoega, 2006). Specifically, Dutch disease tends to decrease the investments in manufacturing sector; rent seeking and corruption may hinder productive investment (Murphy et al., 1993). Moreover, stagnant human and social capital accumulation may have negative impacts on the investment in physical capital, because they are supplements to each other in productive firms. Therefore, the potential demand for external finance may be reduced by resource booms because of their negative impacts on the productive investment.

Consequently, the pace of financial development may be retarded by a resource boom.

In summary, resource abundance may have a negative influence on the pace of financial development by impacting trade openness, the demand for financial reforms, social capital accumulation and productive investments. This relationship has not been analyzed by previous studies. To provide some evidence, an econometric analysis is conducted in the following sections.

Data description and summary statistics

Some previous studies have pointed out that the pace of financial development is also affected by many institutional factors (see, e.g. Guiso et al., 2004b). Since it is difficult to control such factors in the cross-country regression, our analysis uses the provincial panel data of China over the period 1996–2006 to identify the impacts of resource abundance on financial development. The time span is decided by the data availability. Because the data of several provinces are unavailable, the sample includes twenty-nine provinces. All the data come from China Statistical Yearbook, China Land and Resources Almanac, China Mining Yearbook, and China Finance Yearbook.

Resource abundance

Three kinds of resource proxies were usually used by the previous research. They were estimated on the basis of resource export, reserve or production data. The ratio of resource exports to Gross Domestic Product was used in the influential research of Sachs and Warner (1995). Thus it became the most commonly used measure in previous studies. But Stijns (2005) found that the correlation between reserve data and primary exports was weak. Brunnschweiler and Bulte (2008) also pointed out that this ratio was, in fact, a proxy for resource dependence, which was endogenous to underlying institutional factors. They, therefore, used total natural capital and mineral resource assets in US\$ per capita as the variable of resource abundance. This kind of reserve proxy was also used by Stijns (2005) and Brunnschweiler (2008). In addition, the share of mineral production in GDP was also a commonly used proxy (see, e.g. Papyrakis and Gerlagh, 2004). Using the data of 95 countries, Stijns (2005) found that resource reserve and production data were strongly correlated.

Because China's province-level data of mineral exports are unavailable, the gross output value (GOV) of mineral extraction is used to estimate regional difference in resource abundance. Such data cover the main extraction of energy, metal and non-metal mineral resources and hence can be used to examine the effects of exploited mineral resources on the economy. They are more suitable for our empirical analysis than mineral reserves, because the latter's effect on an economy is uncertain and their total value is difficult to calculate accurately.

The ratio of the mineral extraction value to the gross output value of the whole industry is estimated as the resource dependence variable (%). Since what the resource curse theory focuses on is abundant resource rents instead of resource dependence (Brunnschweiler and Bulte, 2008), another abundance variable is also used in our econometric analysis to test the robustness of the results. It is the real value of mineral extraction at 1995 constant price divided by the population (yuan/person).

Financial development

In China, the enterprises' main access to external finance is provided by banks. Because of this bank-dominated characteristic

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