



Asymmetric effects of financial development on South–South and South–North trade: Panel data evidence from emerging markets

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ABSTRACT

Using bilateral trade data in total and technology-and-skill-intensive manufactured goods for 28 developing countries that account for 82% of all developing country manufactures exports between 1978 and 2005, this paper explores the effects of financial development on the pattern of specialization in South–South and South–North trade. The empirical results using dynamic panel regressions and comprehensive sensitivity tests suggest that financial development in the South has an economically and statistically significant positive effect on the share of total and technology-and-skill-intensive manufactures exports in GDP, and total exports in South–South trade. In contrast, no such significant or robust effect of financial development is found in South–North trade. Overall, the positive effect of financial development is found to be asymmetric favoring South–South significantly more than South–North trade. In addition, financial development is found to be increasing technology-and-skill-intensive manufactured goods exports significantly more than total manufactured or merchandise goods exports.

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1. Introduction

In recent years a growing body of research has pointed out the level of financial development as a source of comparative advantage in international trade (Kletzer and Bardhan, 1987; Demircuc-Kunt and Maksimovic, 1998; Rajan and Zingales, 1998; Beck, 2002, 2003; Svaleryd and Vlachos, 2005). Accordingly, industries and sectors that are more dependent on external finance are shown to grow faster in countries with better developed financial systems. In particular, developing countries (the South) with low levels of financial development are found to have lower export shares and trade balances in industries (such as manufactures) that depend more on external finance. Given that industries with higher external finance needs also have larger scales, higher research and development (R&D), higher working capital and value added in production (Kletzer and Bardhan, 1987; Rajan and Zingales, 1998; Beck, 2002; Braun and Larrain, 2004), these findings have significant implications for development and long term growth in the South. Nevertheless, previous studies on the relationship between financial development and export structure have not differentiated the direction of trade within and between developing and developed countries. In this respect, there is also limited research

analyzing the potential effects of financial development on the choice of technology, especially with regard to high value-added manufacturing sectors in developing countries.

Furthermore, despite the radical increase in trade and cooperation among developing countries during the 1990s, the existing empirical research on South–South (S–S) trade is quite limited with only few studies examining its structure or determinants. The lack of academic interest in the determinants of S–S trade including the role of financial development is especially surprising given the recent increase in S–S trade volume as well as the initiatives by developing countries to increase their level of financial cooperation through UNCTAD or such regional organizations as the Bank of the South for trade and investment (UNCTAD, 2005a,b, 2007). The current paper, therefore, expands the previous research from a S–S and South–North (S–N) perspective by exploring the effects of financial development on the pattern (i.e. manufactures and technology-and-skill-intensive manufactures) and direction (i.e. S–S versus S–N) of developing country exports. In what follows, as the indicator of trade in manufactured goods in both S–S and S–N directions, we will use total manufactured exports as well as technology-and-skill-intensive (henceforth high-skill) manufactured exports relative to GDP, and relative to total merchandise exports. As a robustness test, we will also consider total and net merchandise exports as a share of GDP, and the trade balance in total and high-skill manufactured goods as a share of total trade. As the financial development indicator (*Finance*), we will use three

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alternative variables that are: a) credit to private sector by deposit money banks and other financial intermediaries as a share of GDP (CR), b) liquid liabilities as a share of GDP (M3); and c) an index of creditor rights (*Creditor*).

We conduct the empirical investigation using dynamic panel estimation techniques by Arellano and Bover (1995) and Blundell and Bond (1998) that help confront potential biases caused by unobserved country-fixed effects, reverse causality, and joint endogeneity. The empirical results using a panel of 28 countries (that respectively account for 82% and 86% of all developing country total and high-skill manufactures exports) with five-year intervals between 1978 and 2005 and employing a variety of robustness tests suggest that financial development has an economically and statistically significant positive effect on total and high-skill manufactures exports in S–S trade. In contrast, we did not find any robust or significant effect of financial development on manufactures exports in S–N trade, either as a share of GDP, or total exports. Accordingly, a 10% increase in *Finance* increases the share of manufactures exports to the South in GDP (total exports) in the range of 3.99–6.03% (3.64–6.34%) as opposed to 1.24–3.81% (0.73–3.84%) for exports to the North (whose coefficient estimates are found to be statistically insignificant).

Turning to high-skill manufactures exports, as predicted and consistent with the previous literature, we find that financial development increases them more than total manufactures exports. More importantly, however, we find that financial development increases S–S exports (in high-skill manufactures as a share of GDP and total exports) more than S–N exports at both economically and statistically significant levels. In fact, like total manufactures, the effect of financial development on S–N high-skill manufactures exports is found to be mostly insignificant. Looking at the economic effects, a 10% increase in *Finance* raises the share of high-skill manufactures to the South and North in GDP (in total exports) in the range of 5.22–10.2% (3.22–7.60%) and 4.22–6.31% (4.70–6.08%) respectively.

The paper proceeds as follows: Section 2 reviews the previous research on financial development, comparative advantage, and S–S trade. Section 3 introduces the hypotheses, methodology, and the data. Section 4 presents the results. Section 5 concludes.

2. Literature review

2.1. Financial development, pattern of specialization, and S–S trade

Capital market imperfections and financial constraints are known to affect firm level fluctuations in employment (Sharpe, 1994), inventories (Kashyap et al., 1994), investment (Fazzari et al., 1988), sales and short-term borrowing (Bernanke et al., 1996), and firm debt and balance-sheets (Krugman, 1999). In addition, the negative effect of recessions and banking crises on industrial growth is found to be increasing with the degree of external finance dependence and financial frictions (Braun and Larrain, 2004; Kroszner et al., 2007). Financial development is also shown to positively affect the level of R&D (Carlin and Mayer, 1999), and growth (Levine et al., 2000).¹

Recently, there has also been a growing interest exploring the effects of financial development on the pattern of specialization in international trade. The Heckscher–Ohlin model predicts the factor endowment to be a determinant of trade patterns. In this respect Kletzer and Bardhan (1987), building on the Heckscher–Ohlin model, is the first study providing a theoretical framework where credit market imperfections (when credit for working capital or trade finance is needed to pay for the cost of inputs before the receipt of revenues from sales) can lead to different comparative costs even with identical technologies and endowments (which has been a central theme in the North–South trade literature).² Empirically, a growing

number of research confirms the uneven effect of financial development on industrial and sectoral growth depending on external credit dependence for investment financing. Rajan and Zingales (1998) and Demircug-Kunt and Maksimovic (1998) show that industries that are more dependent on external finance grow faster in countries with better developed financial systems. Similarly, Beck (2002, 2003), Svaleryd and Vlachos (2005), and Hur et al. (2006) find that level of financial development determines the pattern of trade specialization. Accordingly, those countries with lower levels of financial development are found to have a lower share of exports in industries with higher external finance dependence. In addition, financial development also determines the degree of credit availability for international trade. Particularly, the lack of developed financial systems both increases the transaction costs and functions as a trade barrier if none of the trading parties can provide the trade financing (UNCTAD, 2005a, 2007).

Consequently, the level of financial development is of significant importance for developing countries. Since “not all goods are alike in terms of their consequences for economic performance”, the structure of trade matters for economic development and growth (Hausmann et al., 2007, p.1). In particular, exports in high-technology intensive industries are likely to generate larger spillovers (such as innovation and accumulation of physical and human capital) and linkages for development than lower-technology and labor intensive ones (Feder, 1983; Hausmann et al., 2007).³ An and Iyigun (2004) and Hausmann et al. (2007), for example, find that a higher export concentration in technology-and-skill-intensive goods generates higher per-capita GDP growth rates. Antweiler and Trefler (2002) also point out the importance of scale economies for understanding the factor content of trade resulting from industry-level externalities. Imbs and Wacziarg (2003) also examine the patterns of sectoral concentration within and across countries and find that (up to a threshold level of income) economic development is accompanied by increasing diversification of production rather than specialization.

Given that two thirds of developing countries depend on primary commodities with low value-added and small development potential for more than 50% of their export earnings (UNCTAD, 2005a), the question is “why do some economies find it easier to diversify from traditional to nontraditional products and keep the progression rolling along?” (Rodrik, 2004, p. 9). Indeed, firms in developing countries seeking to engage in the production and export of manufactures face various obstacles and our focus in this paper is on one such major constraint that is the level of financial sector development.⁴

We can illustrate the link between financial development and comparative advantage using a simple application of a two-country/two-sector Ricardian trade model (Beck, 2003). Assuming that primary goods exhibit constant returns to scale while manufacturing goods enjoy increasing returns to scale, the manufacturing sectors lose more from a lack of external financing. Accordingly, while primary goods sectors can continue to produce with an existing technology, the manufacturing sectors need working capital to acquire new technology (every period before the output is produced) whose cost increases with its quality. Therefore, holding everything else equal, both Kletzer and Bardhan's Heckscher–Ohlin model and the Ricardian version here predict that countries with better financial systems will have a comparative advantage in industries with higher external finance dependence (i.e. manufactures). However, considering a three country model, one in the North and two in the South, the level of financial development may have heterogeneous effects on the pattern and direction of trade. Accordingly, suppose that country 1 is in the North with a perfect capital market, and country 2 and 3 are in the South with similar but imperfect capital markets. While country 1 will have a

¹ For a critical review of this last point, see Demetriades and Hussein (1996).

² See, for example, Krugman (1981) and Dutt (1986).

³ Previous studies on N–S trade and uneven development also raised this point. See Darity and Davis (2005) for a comprehensive review.

⁴ For further discussion, see Rodrik (2004) and UNCTAD (2005a, 2007).

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