



Financial development and openness: Evidence from panel data

Badi H. Baltagi^{a,b}, Panicos O. Demetriades^{b,*}, Siong Hook Law^c

^a Syracuse University, United States

^b University of Leicester, United Kingdom

^c University Putra Malaysia, Malaysia

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ABSTRACT

This paper addresses the empirical question of whether trade and financial openness can help explain the recent pace in financial development, as well as its variation across countries in recent years. Utilising annual data from developing and industrialised countries and dynamic panel estimation techniques, we provide evidence which suggests that both types of openness are statistically significant determinants of banking sector development. Our findings reveal that the marginal effects of trade (financial) openness are negatively related to the degree of financial (trade) openness, indicating that relatively closed economies stand to benefit most from opening up their trade and/or capital accounts. Although these economies may be able to accomplish more by taking steps to open *both* their trade and capital accounts, opening up one without the other could still generate gains in terms of banking sector development. Thus, our findings provide only partial support to the well known Rajan and Zingales hypothesis, which stipulates that both types of openness are necessary for financial development to take place.

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1. Introduction

It is now widely accepted that financial development constitutes a potentially important mechanism for long-run growth (Levine, 2003; Demetriades and Andrianova 2004; Demetriades and Hussein, 1996; Goodhart, 2004).¹ The frontier of the literature in this field is, therefore, shifting towards providing answers to the question of why some countries are more financially developed than others. One influential contribution in this literature, which is the main focus of our paper, is the hypothesis put forward by Rajan and Zingales (2003). These authors argue that interest groups and, in particular, industrial and financial incumbents frequently stand to lose from financial development. This is because financial development creates opportunities for new firms to become established, which breeds competition and erodes incumbents' rents. They suggest that incumbents' opposition to financial development will be weaker when an economy is open to *both* trade and capital flows. Not only does trade and financial openness limit the ability of incumbents to block the

development of financial markets but may also create incentives for them to adopt a different stance towards financial development. Importantly, Rajan and Zingales (2003) suggest that trade openness without financial openness is unlikely to deliver financial development. If anything, they argue that it is likely to result in greater financial repression and loan subsidies, so that industrial incumbents obtain sufficient cheap finance to face competition. Similarly, they also suggest that financial openness alone may allow the largest domestic firms to tap foreign funds—which they may not need—but will not allow small or potential domestic firms access to funds. The domestic financial sector may see its profits threatened since industrial incumbents have access to international finance and may therefore push for liberalising access. However, it will face opposition by industrial incumbents who will continue to oppose financial development in order to prevent competition. Thus, "...cross border capital flows alone are unlikely to convince both our interest groups to push for financial development." (Rajan and Zingales 2003, p.22). Their analysis, therefore, suggests that the simultaneous opening of *both* trade and capital accounts holds the key to successful financial development.² This is clearly an important prediction of their hypothesis that lends itself to rigorous empirical analysis using modern econometric methods and data.

* Corresponding author.

E-mail address: pd28@le.ac.uk (P.O. Demetriades).

¹ Other fundamental mechanisms of growth include economic institutions, such as property rights. Claessens and Laeven (2003), for example, provide firm level evidence which suggests that the effect of better property rights on growth is as large as the effect of improved access to financing due to greater financial development. It has also been argued that where property rights are weak, financial development may not be sufficient to promote growth. Weak property rights may discourage investment even when bank loans are available (see Johnson et al. 2002).

² The Rajan and Zingales hypothesis, by highlighting the necessity of simultaneous current account and capital account openness for financial development to take place contrasts sharply with the sequencing literature, which advocates that trade liberalisation should precede financial liberalisation and that capital account opening should be the last stage in the liberalisation process (e.g. McKinnon, 1991).

Albeit an important question, the empirical evidence on the openness hypothesis remains relatively thin. The evidence provided by [Rajan and Zingales \(2003\)](#) is geared towards their main aim of explaining reversals in financial development during 1913–1999. As a result, their investigation is limited to a sample of twenty four, mostly industrialised, countries for which they could get data prior to World War II. Limited data availability also meant that the techniques that could be used could not take advantage of the time series variation available in more recent samples. Notwithstanding the importance and contribution of their empirical exercise, their cross-country snapshots at different points in time do not take full advantage of the time dimension, which can help to explain the evolution of financial development within countries. Other authors have examined related issues using larger samples but have not examined the openness hypothesis directly.³

This paper represents an attempt to provide direct evidence on the openness hypothesis using modern panel data techniques, which take full advantage of the time series variation available in recent samples. To this end, the paper addresses the empirical question of whether trade and capital account openness can help explain the recent pace in financial development, as well as its variation across countries in recent years.⁴ It also addresses the related question of whether the simultaneous opening of both the trade and capital accounts is necessary to promote financial development.

Our empirical approach involves regressing two of the most important indicators of financial development—private credit and stock market capitalization—on measures of trade and capital account openness, conditioning on variables suggested by related literature. In order to provide evidence on the simultaneous openness hypothesis, we interact the two openness terms, which allows us to examine whether the impact of one type of openness depends on the degree of the other type of openness. We use annual data in order to maximise sample size and to identify the parameters of interest more precisely.⁵ Because of this, it is essential that we allow for dynamics in the behaviour of the financial development indicators, to capture the possibility of partial adjustment towards the steady-state. We do this

³ [Chinn and Ito \(2006\)](#) find that capital account liberalization spurs equity market development once a threshold level of legal development has been attained, but do not test the simultaneous openness hypothesis. [Beck \(2002\)](#) shows that countries with better-developed financial systems have higher shares of manufactured exports in GDP and in total merchandise exports. [Svaleryd and Vlachos \(2002\)](#) find that there is a positive interdependence between financial development and liberal trade policies. [Levine \(2001\)](#) finds that liberalising restrictions on international portfolio flows tends to enhance stock market liquidity, and allowing greater foreign bank presence tends to enhance the efficiency of the domestic banking system. [Klein and Olivei \(1999\)](#) show that capital account liberalisation has a substantial impact on growth via the deepening of a country's financial system in highly industrialised countries, but find little evidence of financial liberalisation promoting financial development outside the OECD. [Huang and Temple \(2005\)](#) focus on the relationship between financial development and trade openness, but do not take into account capital account openness. There is also a large micro-literature investigating peripheral questions such as the impact of foreign bank entry on domestic banks ([Claessens et al. 2001](#)), the effects of stock market liberalization on equity prices ([Henry, 2000](#)), the impact of capital account liberalization on economic growth ([Bekaert et al. 2001](#)).

⁴ The importance of understanding the factors behind the pace in financial development in recent periods, alongside those that shape the cross-country variation, cannot be overemphasised. Consider, for example, the case of South Korea, a well known success story in terms of financial and economic development. During 1960–2004, South Korea's ratio of private credit to GDP rose from 12.3% to 98.21%, representing an eight-fold increase in one of the most important indicators of financial development in less than half a century. This massive leap forward constitutes a significant closing of the gap between South Korea and the 15 high income OECD countries, whose private credit to GDP ratio climbed from 66% of GDP in 1960 to 185% of GDP in 2004. As a result, South Korea's credit to GDP ratio rose from 18% of the average of the world leaders in 1960 to 53% by 2004. While it may be argued that Korea's spectacular financial development was exceptional, even the worldwide average of private credit to GDP increased by 54% during the same period. This figure, however, masks wide regional variation from 435% in South Asia to 165% in North Africa-Middle East and 37% in the Latin American-Caribbean region.

⁵ By contrast, [Chinn and Ito \(2006\)](#), who explore similar questions to ours, average out the annual data over five year periods, which results in an 80% reduction of their sample. This could explain why most of their variables are statistically insignificant.

by entering a lagged dependent variable on the right hand side, which, in turn, has implications for the choice of estimator. The preferred estimator in these circumstances is dynamic Generalised Method of Moments (GMM) developed by [Arellano and Bond \(1991\)](#), which differences the model to get rid of any country specific time-invariant variable. For comparison purposes we also report estimates using the fixed effects (within) estimator, even though in dynamic panels this is biased of order 1/T.

The openness hypothesis, as advocated [Rajan and Zingales \(2003\)](#), recognises that the decision to open an economy to trade and capital flows may be a political one. Thus, the correlation between openness measures—whether “de facto” or “de jure”—and financial development may reflect a common driving force, such as incumbents favouring both openness and financial development. Because of this, tests of the hypothesis should try to establish whether countries that happen to be more open to trade and capital flows due to factors beyond their control are also countries that are more financially developed. We therefore take several steps to ensure that our estimates capture the influence of the exogenous component of openness. To start with, the dynamic GMM estimator that we use eliminates any endogeneity that may be due to the correlation of country-specific, time-invariant, factors and the right hand side regressors. In addition, in the regressions in which we treat the openness terms as exogenous we use their lagged values to prevent simultaneity or reverse causality. Furthermore, we also report results in which we treat all the openness terms as endogenous using additional instruments suggested by related literature. These instruments include the trade openness of neighbouring countries and US capital flows, which are plausible exogenous drivers of a country's trade and financial openness, respectively, and are unlikely to be correlated with its financial development.

Our findings provide partial support to the Rajan and Zingales hypothesis. Specifically, while we find that both types of openness are statistically significant determinants of banking sector development, our findings also suggest that the marginal effects of trade (financial) openness are negatively related to the degree of financial (trade) openness. Hence, while closed economies can benefit most by opening up both their trade and capital accounts, we do not find any evidence to suggest that opening up one without the other could have a negative impact on financial sector development. Indeed, we find that there are positive benefits to be had from doing so, particularly for the most closed economies in our sample.

The paper is organised as follows. Section 2 outlines our empirical strategy, which encompasses specifying an appropriate dynamic model and estimation method. Section 3 describes the various data sets that are utilised in the estimation of the model. Section 4 reports and discusses the econometric results, reports robustness checks, makes comparisons to related literature, and outlines the main policy implications of our findings. Finally, Section 5 summarises and concludes.

2. Empirical strategy

2.1. Dynamic empirical model

Our empirical specification is aimed at explaining the pace in financial development and its variation across countries by utilising an empirical model that allows the testing of the main hypothesis of interest. Given this aim, our empirical strategy endeavours to make maximum use of both the time and cross-country dimensions of available data sets, which dictates using data at an annual frequency in the estimation.⁶ Using annual data for estimation purposes necessitates making an allowance for the possibility that the annual

⁶ Our empirical strategy differs from much of the empirical growth literature, which typically averages out data over five or ten year horizons, which is aimed at capturing the steady state relationship between the variables on hand. However, averaging out need not always capture the steady state equilibrium while the smoothing out of time series data removes useful variation from the data, which could help to identify the parameters of interest with more precision.

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