



Trade, Financial Openness and Economic GROWTH: Panel Data Evidence from MENA Countries

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Centre d'Etudes sur la Mondialisation, les Conflits, les Territoires et les Vulnérabilités

Université de Versailles Saint-Quentin en Yvelines

47 Boulevard Vauban

78047 Guyancourt Cedex

www.cemotev.uvsq.fr



UNIVERSITE PARIS-SACLAY



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TRADE, FINANCIAL OPENNESS AND ECONOMIC GROWTH: PANEL DATA EVIDENCE FROM MENA COUNTRIES

Samouel BEJI*

Zouhair FERJANI[◆]

Abstract

In this paper we test, the Rajan and Zingales (2003) hypothesis on the effectiveness of simultaneous openness: financial openness and trade openness. According to Rajan and Zingales (2003) a simultaneous openness of trade and finance is necessary to act on financial development in the presence of financial and industrial incumbents. Our aim is to test that hypothesis but regarding economic growth. To do so, we use a GMM panel data method on a sample of 18 countries from MENA region. The study time span is 1984-2014. The main result shows the non effectiveness of Rajan and Zingales (2003) assumption for MENA countries. The reason is that simultaneous openness of trade and openness does not seem to have a positive and significant effect on growth.

Keywords

Financial Openness, Trade Openness, Financial Development, Growth, GMM.

I. INTRODUCTION

 ^{*}Corresponding author: Assistant Professor at Faculty of Economics and Management of Sousse (University of Sousse-Tunisia). Researcher Affiliate at MoFID (Money and Development Finance, University of Sousse). *E-mail*: <u>samouel.beji@fsegso</u>.rnu.tn. *Phone*: (+216) 53 521 700. *Address*: 7 rue Constantine, Ezzahra 2034. Tunisia.
* Teaching Assistant at University of Saint Quentin en Yvelines (France). Associate Researcher at CEMOTEV

⁽University of Saint Quentin en Yvelines). <u>E-mail</u>: <u>ferjenizohair@yahoo.fr</u>. *Phone*: (+33) 6 52 52 49 46.

Empirical studies related to development issues consider financial and trade openness as key determinants for growth. There are also plenty of studies on the sense of causality and channels through which financial and trade openness affect economic growth. In fact, for more than a decade, scholars have debated the possible link between trade policies and economic performance. While liberal economists advocate the need for liberalization to enhance growth (Kearl et al 1979; Bhagwati 2004), others suggest protectionism as the way forward for a better development. This controversy continues nowadays, yet we live in a period of intense trade. To name but a few, Krugman (1994), Rodrik (1995) and (2012) and Stiglitz (2002) were skeptic about that link. They argue that the relationship between openness and growth is weak, otherwise non-existent. Two problems arise from that controversy. First, until recently, theoretical models could not establish a pertinent link between trade strategies and rapid growth equilibrium. Second, empirical literature was tempered by serious problems of data availability.

Besides, it is commonly admitted that financial development (considered by orthodox literature as a consequence of financial openness) is an important determinant for growth (Levine 2004; Demetriades and Andrianova 2004; Demetriades and Hussein 1996; Goodhart 2004). Rajan and Zingales (2003) focused their interest on the existence of local financial agents, what they call "incumbents". These agents reap the benefits of the absence of financial openness (and thus the absence of international competition) to extract high rents from their preferred positions. Thus, they prevent the expansion and the development of financial and banking markets, for fear of eroding their rents on local markets. Rajan and Zingales (2003) argue the need for a simultaneous trade and financial openness in order to tackle these roadblocks and achieve financial development. They contradict the theory of "sequencing" of McKinnon (1991) by assuming that simultaneous financial and trade liberalization weaken the opposition to opening conducted by the incumbents.

However, despite the importance of the topic, economists have devoted a rather substantial amount of attention to double openness issue in countries with sophisticated and well-functioning financial markets. Much less is known about these mechanisms in economies with less developed financial systems. Except Baltagi et al (2009) and as much as we know, the literature lacks a cross-country or cross-regional study able to produce general results about trade and financial openness in these countries. Specifically, in MENA countries, the uncertainty that surrounds the impact of synchronized openness on output remains visible.

This study tries to fill this gap and foster research in this area. The aim is to show if a simultaneous trade and financial openness could be profitable for growth in MENA countries. We use econometric techniques applied on panel data for 18 countries from MENA region over the period of 1984-2012. The paper is structured as follows: Section II offers a brief description of the link between trade openness and growth as stated in the literature; Section III provides an overview of the relationship between financial development and economic growth; Section IV is dedicated to the consequences of financial openness on growth; Section V is dedicated to the empirical methodology by explaining the model specification and

presenting the data used to estimate the equation proposed as well as reporting the results; Section VI presents the main findings and concludes.

II. TRADE OPENNESS AND ECONOMIC DEVELOPMENT

Economic policies enhancing export promotion and trade liberalization were among the most recommended strategies for developing countries. International economic and financial institutions played a prominent role in promoting such strategies since the beginning of the 1980's. Indeed, since the end of the 1970's until the end of the 1990's, there were numerous empirical studies attesting the positive link between trade openness and growth (Michaely 1977; Kormendi and Meguire 1985; Dollar 1992; Edwards 1993; Sachs and Warner 1995; Frankel and Romer 1999).¹ The origins of the theoretical underpinnings of this link are double. On the one hand, the neoclassical approach explains the gains from trade liberalization by comparative advantages whether they are coming from natural endowments (Hecksher-Ohlin model) or technological differences (Ricardo model). On the other hand, literature on endogenous growth stipulates that trade openness affects positively per capita income and growth through economies of scale and technological diffusion across countries. These endogenous growth theories view that openness to international trade provides access to imported products with high technological added value. It also facilitates the production of goods that require research and innovation for a better specialization (Harrison, 1996). In the same vein, Romer (1986) and Lucas (1988) added other arguments in favor of trade liberalization. Romer (1992), Barro and Sala-i-Martin (1995) were among others demonstrating that countries more open to the rest of the world have a greater capacity to absorb new technologies from developed countries. Barro and Sala-i-Martin (1995), for example, supposed a world with two countries: a developed country and a developing one. Those two countries do not have the same endowments and capital movements are not allowed in this world. Technological innovations take place exclusively in the developed country (the leader), while the developing country (the follower) merely imitates new technologies from the leading country. The equilibrium growth rate in the developing country depends only of imitation costs and its initial stock of knowledge. If imitation costs are lower than those of innovation, the follower country would grow at a faster rate than the leader. Thus, it will be a trend towards convergence between the two countries. In this kind of model, it is expected to link imitation costs to openness degree: the more open a country is, better would be the capture of new ideas and other technologies from the rest of the world and lower would be imitation costs. (Obstfeld and Rogoff, 1996).

However, Grossman and Helpman (1992) consider that protectionism instituted by the implementation of restrictions on trade can be beneficial in some cases. Indeed, it encourages investment in innovative, research-intensive sectors and protects infant industries from

¹ Blancheton. B (2004) : "Ouverture commerciale, croissance et développement : Malentendus et ambiguïtés des débats", *Première Journée du développement du GRES* « Le concept de développement en débat », 16-17 septembre 2004.

international competition. They point out the Schumpeterian assumption that increased competition could discourage innovation by lowering expected profits. Yannikaya (2003) quotes Lucas (1988), Young (1991), Grossman and Helpman (1991) and Rivera-Batiz and Xie (1993) to show that trade integration affects countries differently even if it increases the global growth rate.

The ambiguity that characterizes the relationship between trade openness and growth in literature has led to its consideration from an empirical standpoint. Given the difficulty to measure openness, economists used different empirical indicators to assess that link. Anderson and Neary (1992) developed an "index of trade barriers" which includes the effects of tariff and non-tariff barriers. However, it is only available for a small group of countries. But the majority of studies have adopted the sum of exports and imports as share of GDP as an indicator of trade openness. Frankel and Romer (1999) found a strong link between trade openness and growth with taking into account the endogeneity of trade and choosing geographical variables as control variables. Irwin and Tervio (2002) found the same result by using the method of instrumental variables for three different periods: pre- World War I, the interwar, and the post-war periods. Other empirical studies have focused on the relationship between average tariff rates and growth. Lee (1993), Harrison (1996) and Edwards (1998) found a negative relationship between these rates and growth. Rodriguez and Rodrik (1999) have tried to reproduce the results of Edwards (1998). They found that the average tariff rate has a positive and significant effect on the total factor productivity growth for a sample of 43 countries over the period 1980-1990.

Studies of Harrison (1996), Edwards (1998) and Sala-i-Martin (1997) chose the black market premium (BMP) as a proxy for the severity of restrictions on trade in goods and services. They demonstrated the existence of a negative relationship between BMP and growth. However, Levine and Renelt (1992); Rodriguez and Rodrik (1999) argue that BMP is correlated with unfavorable policies such as high inflation, high external debt ratio and weakness of the rule of law. Hence, the use of BMP is considered as a poor approximation and does not necessarily reflect reality. Yanikkaya (2003) used a wide range of indicators of openness on a bunch of countries over the past three decades. The results of his study showed the existence of a significant and positive relationship between trade openness and growth. However, the same study showed a positive correlation between proxies for tariff barriers and growth in less developed countries.²

We propose to consider the second part of the hypothesis of simultaneous opening. It is, in fact, the relationship between financial openness and growth which has been more controversy among theorists. The debate is explained by the specific nature of the financial

² Prabirjit. S (2007): "Trade Openness and Growth: Is there any Link", MPRA Paper 4997, p. 10.

system in the economy and the ambiguity of finance-growth nexus in a context of international capital mobility.

III. IS FINANCE A GROWTH FACTOR?

The importance of having a resilient and efficient financial system gives incentives to countries to implement the right policies for its development. This awareness is based on the assumption that financial sector can lead to growth. We should draw on the history of economic thought to find the source of this hypothesis. Indeed, since the eighteenth century, Smith (1776) discussed in the "Wealth of Nations", the role of banks in facilitating business. He argued that banking industry can develop the country. He specified: "Every increase or diminution of capital, therefore, naturally tends to increase or diminish the real quantity of industry, the number of productive hands, and consequently the exchangeable value of the annual produce of the land and labor of the country, the real wealth and revenue of all its *inhabitants*".³ In the nineteenth century, Bagehot (1873) drew attention to the fundamental role played by the British financial system in mobilizing and allocating financial resources to the most productive uses.⁴ A large part of literature on finance-growth nexus evokes the pioneering work of Schumpeter (1911). He noticed the positive impact of financial development on growth of per capita income. The main argument developed by Schumpeter is that services provided by financial sector encourage innovative activities and then boost growth (mainly allocation of capital to best projects without risk of potential losses due to moral hazard, adverse selection or high transaction costs). The empirical studies have confirmed these statements. A little later, Gurley and Shaw (1960) mentioned the role played by credit channel on funding real activity. They also argued that differences in levels of economic development could be explained by differences in financial systems.⁵ Hicks (1969) emphasized the importance of financial innovations that took place in the eighteenth century in the success of the first industrial revolution. However, the question raised following the emergence of this literature was whether financial sector plays a role in economic development or it follows "passively" a large movement of industrialization. Robinson (1952) considered that "where the enterprise leads, finance follows".⁶ But the most important contribution lending support to the neutrality of finance came in 1958 with the theory of Modigliani and Miller. They demonstrated (in a free taxes and free transaction costs world) that the economic value of an asset is independent of how it is funded from debt or equity. Goldsmith (1969) pointed out that there is no possibility to establish with confidence the direction of the causal mechanism. He considered that it was unclear whether financial factors are backing the acceleration of growth or financial development is merely a reflection of economic development.

³ Smith. A (1776): "An Inquiry into the Nature and Causes of the Wealth of Nations", *The Electronic Classics Series*, Jim Manis (Editor), PSU-Hazleton, Hazleton, PA, p. 223.

⁴ Abouch. M et Ezzahid. E (2007): "Financial Development and Economic Growth Nexus: The Moroccan Case", *11èmes Rencontres Euro-méditerranéennes*, Nice 15-16 novembre 2007, p. 2.

⁵ Trabelsi. M (2002): "Finance and Growth: Empirical Evidence from Developing Countries, 1960-1990", *Cahiers du Centre de Recherche et Développement en Economie (CRDE), Université de Montréal,* N°13, p. 1.

⁶ Robinson. J (1952): "The Generalization of the General Theory" in "The Rate of Interest and Other Essays", *Macmillan*, London, p. 86.

Whereas Goldsmith (1969) was doubtful on the issue, other economists have shown their skepticism regarding the role of financial development. For instance, Lucas (1988) considered that economists have overestimated the importance of finance as a determinant of economic growth. In the same vein, Rajan and Zingales (1998) argued that the two concepts could not be linked by a causal relationship. First, financial development and economic growth may be dependent on common omitted variables as propensity to save. Second, financial development (approximated by the amount of credits provided and the size of financial market) permits the forecasting of growth rate. This is possible because mere observation of the activity on financial markets allows the anticipation of future growth. Indeed, the financial market provides an idea about growth opportunities. The financial institutions lend more when considering that the economy will spend a period of expansion. Thus, financial development is a simple indicator of the economic health rather than a causal factor.

We can notice that the debate on the importance of finance in growth is present in literature since long time, and so far it continues to generate interest. Furthermore, no final outcome was found to this problem. On the contrary, many other issues have emerged from the main debate. Financial deepening could entail improvement of real factors - the investment as example – but it remains interesting to know whether the beneficial effect occurs via increasing the volume of investment or by improving its efficiency. The episode of "Great Recession" that began in 2008 and was triggered by the subprime crisis seems to do not fall in line with such analysis.

Besides, the contribution of McKinnon (1973) and Shaw (1973) in the debate on financegrowth nexus was determinant. They believed on the prominence of finance in bolstering economic development. On this basis, they were the first theorists arguing the abolition of restrictions on financial system for an optimal contribution to growth and better resources allocation. In fact, before the 1970's, governments distort financial markets and impose impediments to capital mobility in order to obtain resources to finance their deficits. Many emerging countries were inspired by McKinnon (1973) and Shaw (1973) to conduct financial openness policies since the late 1970s. At that time, financial openness was seen as the appropriate policy to enhance financial system performance and efficiency. These countries were advised by experts from international financial institutions, who trusted the recommendations of McKinnon and Shaw. The multiple financial crises experienced by most emerging countries that have adopted financial liberalization since the late 1990s have cast doubt on the advisability of adopting such recommendations.

The upgrading of the regulatory framework, having the right infrastructural and institutional bases, adopting good governance principles, having a healthy macroeconomic environment are among other prerequisites for a successful financial openness.

IV. THE COMPLEX RELATIONSHIP BETWEEN FINANCIAL OPENNESS AND GROWTH

The financial openness choice came after the knowledge of the existence of institutional and political obstacles that do not allow the financial system to grow in some developing countries. In fact, the McKinnon-Shaw framework of the "repressed" economy is based on the imposition by the governments of a set of policies, laws, formal regulations, and informal controls, that distort financial prices- interest rates and foreign exchange rates- and inhibit the operation of financial intermediaries at their full potential.⁷ The question to ask then is: how should countries do to overcome the obstacles posed by politicians? The solution proposed was the financial openness as a step for a larger financial globalization. It is defined as the liberalization of domestic financial markets, liberalization of domestic financial institutions and the removal of capital and exchange controls. Thus, it is possible for any agent to come from abroad and invest in the domestic financial market, acquire shares in banks or other financial institutions and vice versa. At this stage, it is necessary to distinguish between the two types of financial openness: full financial openness and limited financial openness. The later consists of liberalizing the current account and it is accompanied by a control on the participation of foreign investors in the country's financial institutions, as well as an exchange control. While the full financial liberalization is capital account openness accompanied by the abolition of any exchange control. Capital account openness is more difficult to achieve since it requires some prerequisites: control of inflation and budget deficit, diversification of the economic sources of income, modernization of the financial and banking system, sufficient level of exchange reserves, strength political institutions, good governance, etc. The financial openness is able to bolster the financial development and then growth by indirect and direct channels.

IV. 1. The Indirect Benefits of Financial Openness

Allow entry of goods, services and foreign investment in a domestic market formerly protected from international competition, entails lower market shares for the domestic companies. This decrease in profits leads them to seek external sources of funding. However, it is necessary for the financial system to solve information asymmetry problems before such request. Thus, domestic firms are more encouraged to accept the institutional reforms necessary to upgrade the domestic financial system. As a consequence, the enlargement of the domestic financial sector would boost growth. Rajan and Zingales (2003), as well as Svalaeryd and Vlachos (2002) find that trade openness will lead to better financial development through the mechanism described. Furthermore, the increased competition due to the foreign firms entry, would stimulate domestic firms and would encourage them to be more productive.

Due to financial openness, the possibility given to international financial institutions to invest in domestic ones is likely to promote financial development. It sharpens competition on domestic banking and financial markets. Indeed, when domestic firms acquire the ability to borrow from foreign credit institutions, it may be that domestic financial institutions lose

⁷ Denizer. C et al (1998): "The Political Economy of Financial Repression in Transition Economies", World Bank Policy Research Working Paper, N°2030, p. 3.

market shares. The same is available with the implementation of international financial institutions with local subsidiaries. To compensate this loss, domestic financial institutions have an incentive to seek new customers to lend them credits. However, these institutions need a certain type of information on potential borrowers to better monitor and minimize credit risks. Therefore, domestic financial institutions will support institutional reforms to improve accounting standards, financial information disclosure as well as the legal framework governing bankruptcies and collaterals. With the financial openness, domestic financial institutions would support legal reforms which would improve the institutional infrastructure. These reforms allow them to improve their profits and to strengthen their property rights which encourage investment.

IV. 2. The Direct Benefits of Financial Openness

The main benefit induced by financial openness is to improve the liquidity of financial markets and lower the cost of capital as a result. This is likely to stimulate investment and thus economic growth. The entry of foreign financial institutions on domestic markets, directly affects the financial development. Effectively, when those institutions access a local market, domestic operators feel compelled to improve their efficiency in order to ensure their "survival" with the new market conditions. Further, foreign financial operators provide domestic financial markets of best management practices gained from their experiences in the fields of finance and banking. Goldberg (2004) also adds that such practices enables and facilitates technology transfer from foreign institutions to domestic institutions. In addition, Mishkin (2003) argues that such openness allows the improvement of prudential supervision. Domestic regulators would acquire techniques of risk management that have been efficient previously in the countries of new entrants. Besides, foreign financial institutions do not have the same informational capital as the domestic institutions. Therefore, they act to improve the institutional environment and then ensure a better access to financial information.

After reviewing the literature on the relationship between financial openness and trade liberalization and its impact on economic growth, we will present an econometric study applied on MENA countries with evidence from panel dynamic model.

V. Empirical Study

The econometric model we have adopted is inspired from the work of Baltagi et al (2009).⁸ These authors tried to test the Rajan and Zingales hypothesis of the effect of simultaneous openness of trade and finance on financial development. In our study, we adopted the same model to test the effect of simultaneous openness on economic growth and not financial development. The countries composing our study sample are: Algeria, Bahrain, Egypt, Iran, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, Turkey, United Arab Emirates and Yemen. The time span is 1984-2014.

V.1. Model Specification

⁸ Baltagi. B, Demitriades. P and Law. S. H (2009): "Financial Development and Openness: Evidence from Panel Data", *Journal of Development Economics*, 89, pp. 285-296.

The equation to be estimated is:

$$\ln \text{GDP}_{\text{it}} = \alpha + \beta_1 \ln \text{GDP}_{\text{it-1}} + \beta_2 \ln \text{FD}_{\text{it}} + \beta_3 \ln \text{TO}_{\text{it}} + \beta_4 \ln \text{FO}_{\text{it}} + \beta_5 (\ln \text{FO}_{\text{it}} \times \ln \text{TO}_{\text{it}}) + U_{\text{it}}$$
(1)

With GDP is per capita GDP, FD is an indicator of financial development, TO is an indicator of trade openness, FO is an indicator of financial openness and FO*TO is the interaction term between financial openness and trade openness.

With: $U_{it} = \mu_i + \varepsilon_t + \nu_{it}$ where $\nu_{it} \to N(0, \sigma_{\nu}^2)$ (i.i.d)

 μ_i is a country specific fixed effect and ε_t is a time specific fixed effect.

We expose in what follows the adopted econometric method to estimate the model parameters.

V. 2. <u>Methodology</u>

Due to the dynamic nature of the model, a correlation between the lagged endogenous variable and the error term leads to biased and inconsistent OLS estimates. The inclusion of the lagged dependent variable in the equation implies a correlation between one of the regressors (lnGDP_{it-1}) and the error term (U_{it}) since the lagged dependent variable is function of U_{it-1} which includes the country specific effect (μ_i).

$$\ln \text{GDP}_{it-1} = \alpha + \beta_1 \ln \text{GDP}_{it-2} + \beta_2 \ln \text{FD}_{it-1} + \beta_3 \ln \text{TO}_{it-1} + \beta_4 \ln \text{FO}_{it-1} + \beta_5 (\ln \text{FO}_{it-1} \times \ln \text{TO}_{it-1}) + U_{it-1} (2)$$

With U_{it-1} =
$$\mu_i + \varepsilon_{it-1} + \nu_{it-2}$$

We notice the existence of a relationship between $\ln \text{GDP}_{\text{it-1}}$, which is a regressor in equation (1) and the country specific fixed effect μ_i which is included in the error term U_{it}. Because of this correlation, the estimation suffers from the Nickell (1981) bias, which disappears only if T tends to infinity. In order to heed for the autoregressive nature of the model, the preferred estimator in this case is General Method of Moments (GMM) suggested by Arellano and Bond (1991). This estimator basically differentiates the model to get rid of country specific effects or any omitted time-invariant country specific variables.⁹

However, there are two types of GMM estimator for dynamic panel data: the first-differenced GMM panel data estimator and the system GMM estimator. The first type of GMM estimator developed by Arellano and Bond (1991) takes first-differences to weed out unobserved time-invariant country-specific effects, and then instrument the right-hand-side variables in the first-differenced equations using levels of the series lagged two periods or more. The system GMM estimator thus combines the standard set of equations in first-differences with suitably lagged levels as instruments, with an additional set of equations in levels with suitably lagged

⁹ Baltagi et al (2009): "Financial Development and Openness: Evidence from Panel Data", *Journal of Development Economics*, 89, p. 287.

first-differences as instruments.¹⁰ Blundell and Bond (1998) have had tested this method with Monte Carlo simulations and have found that the GMM system is more efficient than the first differenced GMM estimator.¹¹ In practice, the GMM system estimator has several advantages given that it takes into account country-specific effects, while allowing addressing issues associated with endogeneity, measurement errors, and omitted variables.¹²

A special feature of the dynamic panel data GMM estimation is that the number of moment conditions increases with T. Therefore, a Sargan test is performed to check the overall validity of instruments. Moreover, in order to verify the assumption of the absence of serial correlation in error terms, we run a second test called the 2^{nd} order autoregressive test AR(2).

V.3. Data sources and variables description

In order to run our econometric models, we gathered data from different sources. According to the availability of these data, the treatment of incomplete panels is imperative. Each variable is then observed over a varying time period and the dynamic panel model for MENA countries is unbalanced.

The dependent variable GDP which is approached by the per capita GDP expressed in current international dollar is extracted from World Development Indicators Database of the World Bank (WDI-WB 2015).

For the financial development indicator, we took into account two indexes:

•*DCBS*: Domestic credit provided by the banking sector includes all credit to various sectors on a gross basis, with the exception of credit to the central government, which is net. The banking sector includes monetary authorities and deposit money banks, as well as other banking institutions. Examples of other banking institutions are savings and mortgage loan institutions and building and loan associations. This index is among the most used indicators for banking development. According to Rajan and Zingales (2003), it gives an assessment of the opportunities offered to an entrepreneur or a firm to fund their projects.

•*SMK*: Stock market capitalization of listed companies as share of GDP. The market capitalization (also known as market value) is the share price times the number of shares outstanding. Listed domestic companies are the domestically incorporated companies listed on the country's stock exchanges at the end of the year. Listed companies do not include investment companies, mutual funds, or other collective investment vehicles. It gives an assessment for the size of the financial market in a country. While this is perhaps the most important indicator of capital market development and is widely used in the literature, its

¹⁰ Bond. S. R et al (2001): "GMM Estimation of Empirical Growth Models" *CEPR Discussion Papers 3048*, C.E.P.R. Discussion Papers, p. 9.

¹¹ Blundell, R and S. Bond (1998): "Initial Conditions and Moment Restrictions in Dynamic Panel Data Models", *Journal of Econometrics*, *87*, *N*°1, p. 116.

¹² Kpodar, K and R J Singh (2011): "Does Financial Structure Matter for Poverty: Evidence from Developing Countries", *Policy Research Working Paper 5915, December*, p. 11.

main weakness is that it may fluctuate excessively over time, reflecting any excess volatility in stock prices.¹³

These two indexes are extracted from World Development Indicators Database of the World Bank (WDI-WB 2015).

Trade openness is measured by the sum of exports and imports as share of GDP. World Development Indicators Database of the World Bank (WDI-WB 2014) is the source of that indicator.

Financial openness is approached by KAOPEN, which is the Chinn-Ito index for financial liberalization. KAOPEN is based on the four binary dummy variables reported in the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER)*. These variables are to provide information on the extent and nature of the restrictions on external accounts for a wide cross-section of countries. These variables are:

- *k1*: variable indicating the presence of multiple exchange rates;
- *k2*: variable indicating restrictions on current account transactions;
- *k3*: variable indicating restrictions on capital account transactions; and
- *k4*: variable indicating the requirement of the surrender of export proceeds.

In order to focus on the effect of financial openness – rather than controls – Chinn and Ito (2005) reverse the values of these binary variables, such that the variables are equal to one when the capital account restrictions are non-existent. The source of this index is Chinn and Ito (2008) (updated to 2010). We also used other financial openness indexes:

LANEFINOP is a *de facto* financial openness index, unlike KAOPEN considered as *de jure* financial openness index. For Lane and Milesi-Ferreti (2007) LANEFINOP, which is the sum of foreign assets and liabilities as share of GDP, is more appropriate than KAOPEN. The source of this indicator is: Lane and Milesi-Ferreti (2007).

FINREFORM is constructed on the basis of 7 internal and external sub-indicators of financial liberalization:

- Credit controls and excessively high reserve requirements;
- Interest rate controls;
- Entry barriers;
- State ownership in the banking sector;
- Capital account restrictions;
- Prudential regulations and supervision of the banking sector; and
- Securities market policy.

¹³ Baltagi. B. H et al (2009): op, cite., p: 289.

Along each dimension, a country is given a final score on a graded scale from zero to three, with zero corresponding to the highest degree of repression and three indicating full liberalization. Since each of the seven components can take values between 0 and 3, the sum takes values between 0 and 21. The source of this indicator is: Abiad, Detragiache and Tressel (2008).

V.4. <u>Results</u>

We now report the results using the system GMM estimator. We used the White procedure to avoid eventual heteroscedasticity problem for the standard deviations.

	Expected Sign	(1)	(2)	(3)	(4)	(5)	(6)
Lagged Economic Development	(-)	0,522 (0,000)***	0,51 (0,000)***	0,568 (0,000)***	0,51 (0,000)***	0,511 (0,000)***	0,543 (0,000)***
DCBS	(+)	0,12 (0,008)***		0,113 (0,52)*		0,15 (0,043)**	
SMCLC	(+)		0,175 (0,02)**		0,03 (0,102)*		0,11 (0,16)
Trade Openness	(+)	0,365 (0,032)**	0,37 (0,036)**	0,348 (0,1)*	0,541 (0,004)***	0,671 (0,000)***	0,135 (0,458)
KAOPEN	(+) or (-)	-0,175 (0,067)*	-0,169 (0,087)*				
LANEFINOP	(+) or (-)			-0,577 (0,000)***	-0,342 (0,001)***		
FINREFORM	(+) or (-)					-0,311 (0,002)***	-0,244 (0,024)**
Interaction Term	(+) or (-)	0,051 (0,111)	-0,05 (0,03)**	-0,157 (0,000)***	-0,007 (0,024)**	-0,006 (0,044)**	-0,006 (0,024)**
Intercept		-2,5 (0,272)	-2,46 (0,366)	-3,331 (0,1)*	1,521 (0,134)	0,884 (0,393)	6,18 (0,000)***
Observations		429	418	336	464	633	334
Sargan Test		6,31 (0,111)	4,45 (0,067)	7,18 (0,311)	9,43 (0,226)	8,55 (0,067)	7,69 (0,8)
AR(1)		-1,59 (0,231)	-1,71 (0,087)	-1,83 (0,068)	-1,87 (0,062)	-1,27 (0,206)	-1,15 (0,25)
AR(2)		-1,16 (0,247)	-0,55 (0,585)	-1,88 (0,06)	-1,41 (0,158)	-1,38 (0,168)	-1,05 (0,296)
Wald Test		9,61 (0,000)	15,42 (0,000)	6,91 (0,000)	7,55 (0,000)	10,08 (0,073)	10,08 (0,073)*

Table. 1. Empirical results

<u>Notes</u>: Figures in parentheses are p-values. For AR(1), AR(2) and Sargan test, null hypotheses is respectively absence of first order, second order autocorrelation and validity of lagged variables as instruments. For Wald test, null hypothesis is explanatory variables joint insignificance. Financial development is considered as endogenous variable. Dummy time variables are included and are considered as exogenous variables.

***, ** and * denote significant at 1%, 5% and 10%, respectively.

We focus on coefficients β_3 , β_4 et β_5 since the former reflects the marginal effect of trade openness on economic development; the second reflects the financial openness effect and the last that of the interaction between these two types of openness. This interaction effect is expected to shed light on the simultaneous openness of trade and finance. In fact, the total effect of an increase in trade openness and / or financial can be calculated by examining the partial derivatives of economic development compared to two types of openness:

$$\frac{\partial \ln \text{GDP}_{it}}{\partial \ln \text{TO}_{it-1}} = \beta_3 + \beta_5 \ln \text{FO}_{it-1}$$
$$\frac{\partial \ln \text{GDP}_{it}}{\partial \ln \text{FO}_{it-1}} = \beta_4 + \beta_5 \ln \text{TO}_{it-1}$$

The assumption of Raguram and Zingales (2003) is satisfied if all coefficients are positive. However, the results show that only β_3 is significantly positive in all cases. This result remains robust whether financial development is approached by the ratio DCBS or SMK. Similarly, this finding does not change whether we take into account financial openness *de facto* or *de jure*.

These results confirm the idea of sequencing and gradualism in the conduct of economic reforms. In fact, according to McKinnon (1991), the capital account liberalization should be the last of a series of reforms and should take place once trade liberalization completed. In the same vein, Chinn and Ito (2006) found that for developed and developing Asian countries trade liberalization was a prerequisite for financial openness. Moreover, Haggard and Maxfield (1993) demonstrates that trade openness is a prerequisite for financial openness, while Leblang (1977) found no effect of trade liberalization on financial liberalization. Aizenman and Noy (2004) found a bidirectional relationship between financial openness and trade liberalization. However, they also found that financial openness leads to trade liberalization rather than the reverse. Tornell et al (2004) showed that financial liberalization has always followed the trade liberalization in the last two decades.

The coefficient β_4 representing the marginal effect of financial openness is significantly negative in all cases. This result confirms the thresholds approach findings for the realization of the globalization benefits. In fact, according to the proponents of that approach, the capital account openness is source of advantages and economic benefits even in developing countries. However, the occurrence of such benefits requires a bunch of economic prerequisites and institutional conditions. To this end, empirical studies focusing on the relationship between financial openness and growth have found that there may be threshold effects (Kose et al. 2006, Ito 2006). In other words, financial openness seems to have positive effects on the economy only beyond a given level of development. Effectively, when property rights are not protected or when laws are not enforced in a legal system, foreign direct investment cannot be effective in achieving their goals. Foreign investors are deemed to suddenly withdraw their funds and flee to invest them elsewhere at the slightest sign of trouble (cut and run).¹⁴

¹⁴ Prasad. E et Rajan. R (2008): "A Pragmatic Approach to Capital Account Liberalization", *Journal of Economic Perspectives*, 22(3), p. 154.

A country with no adequate laws for insolvency is likely to be severely affected in case of panic, precipitating the collapse of the companies in which foreign capital has been invested. In addition, the nature of foreign investment may be significantly different depending on the quality of the institutional infrastructure of the country. The institutional quality encompasses the quality of public and private governance, the legislative strength, government transparency, the level of corruption, etc. Faria and Mauro (2005) found that institutional quality in an emerging economy helps attract more foreign direct investment to the detriment of portfolio investment. These are more risky and easier to withdraw in case of panic. Another advantage of FDI is that foreign investors are more involved in the governance and enable the transfer of technology and managerial know-how that does not allow portfolio investment.¹⁵

VI. Conclusion

The aim of this paper is to test the Rajan and Zingales assumption about the rationality of simultaneous trade and financial openness. Even if they tested the impact on financial development, we chose to check the impact of liberalization of finance and trade on economic development. The underlying idea is that financial development acts positively on growth. Also it is one of the hypotheses that we tried to test in this paper. The results found in our study disprove the suggestions of Raghuram and Zingales (2003). Indeed, for the sample of countries considered, we found that only trade liberalization is beneficial to economic development as well as financial development. Financial openness is detrimental for growth in such conditions, which confirms the findings of the thresholds approach. Under that view, minimum levels of institutional development, macroeconomic stability and trade openness must be achieved. Only in such case, capital account liberalization can positively influence growth.

References

*Abiad. A, Detragiache. E and Tressel. T (2008): "A New Database of Financial Reforms", *IMF Working Paper* 266.

*Abouch. M and Ezzahid. E (2007): "Financial Development and Economic Growth Nexus: The Moroccan Case", *11èmes Rencontres Euro-méditerranéennes*, Nice 15-16 novembre 2007.

*Aizenman. J and Noy. I (2004): "On the Two Way Feedback between Financial and Trade Openness", *NBER Working Paper* 10496.

*Anderson. J and Neary. J. P (1992): "Trade Reform with Quotas, Partial Rent Retention and Tariffs", *Econometrica*, 60, pp. 57-76.

*Arellano. M and Bond. S (1991): "Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations", *Review of Economic Studies*, 58(2), pp. 277-297.

*Bagehot. W (1873): "Lombard Street: A Description of the Money Market", *H.S. King*, Londres.

¹⁵ Faria. A et Mauro. P (2005): "Institutions and the External Capital Structure of Countries", *IMF Working Paper*, N°236, p. 5.

*Baltagi. B, Demitriades. P and Law. S. H (2009): "Financial Development and Openness: Evidence from Panel Data", *Journal of Development Economics*, 89, pp. 285-296.

*Barro. R. J and Sala-i-Martin. X (1995): "Technological Diffusion, Convergence and Growth", *CEPR Discussion Paper* 1255.

*Bhagwati. J. N (2004): "In Defense of Globalization", Oxford University Press, NewYork.

*Blancheton. B (2004): "Ouverture commerciale, croissance et développement: Malentendus et ambiguïtés des débats", *Première Journée du développement du GRES* "Le concept de développement en débat", 16-17 septembre 2004.

*Blundell. R and Bond. S (1998): "Initial Conditions and Moment Restrictions in Dynamic Panel Data Models", *Journal of Econometrics*, 87(1), pp. 115-143.

*Bond. S. R, Hoeffler. A and Temple. J (2001): "GMM Estimation of Empirical Growth Models" *CEPR Discussion Papers 3048*, C.E.P.R. Discussion Papers.*Chinn. M. D and Ito. H (2006): "What Matters for Financial Development? Capital Controls, Institutions, and Interactions", Journal of Development Economics, 61(1), pp. 163-192.

*Chinn. M. D and Ito. H (2008): "A New Measure of Financial Openness", Journal of Comparative Policy Analysis, 10(3), pp. 309 – 322.

*Demetriades. P and Andrianova. S (2004): "Finance and Growth: What we know and what we need to know", in Goodhart. C (Eds.): "Financial Development and Growth: Explaining the Links", *Palgarve Macmillan*, New York.

*Denizer. C, Desai. R. M and Gueorguiev. N (1998): "The Political Economy of Financial Repression in Transition Economies", *World Bank Policy Research Working Paper*, N°2030.

*Dollar. D (1992): "Outward-Oriented Developing Economies really do grow more rapidly: Evidence from 95 LDCs, 1976-85", *Economic Development and Cultural Change*, pp. 523-544.

*Edwards. S (1993): "Openness, Trade Liberalization and Growth in Developing Countries", *Journal of Economic Literature*, 31, pp. 1358-1393.

*Edwards. S (1998): "Openness, Productivity and Growth: What do we really know?" *The Economic Journal*, 108, pp. 383-398.

*Faria. A and Mauro. P (2005): "Institutions and the External Capital Structure of Countries", *IMF Working Paper* 236.

*Frankel. J et Romer. D (1999): "Does Trade cause Growth?", *American Economic Review*, 89(3), pp. 379-399.

*Goldberg. L (2004): "Financial Sector Foreign Direct Investment and Host Countries: New and Old Lessons", *NBER Working Paper* 10441.

*Goldsmith. R. W (1969): "Financial Structure and Development", *Yale University Press*, New Haven.

*Grossman. G. M and Helpman. E (1991): "Growth and Welfare in a Small Open Economy" in Helpman. E and Razin. A (Eds.), "International Trade and Trade Policy" *MIT Press*, Cambridge MA, pp: 141-163.

*Grossman. G. M and Helpman. E (1992): "Innovation and Growth: Technological Competition in the Global Economy", *MIT Press*, Boston, M.A.

*Gurley. J. G and Shaw. E. S (1955): "Financial Aspects of Economic Development", *American Economic Review*, 45(4), pp. 515-538.

*Haggard. S and Maxfield. S (1993): "The Political Economy of Capital Account Liberalization" in Reisen. H et Fischer. F (eds): "Financial Opening: Policy Issues and Experiences in Developing Countries", *OECD*, Paris.

*Harrison. A (1996): "Openness and Growth: a Time-Series, Cross-Country Analysis for Developing Countries", *Journal of Development Economics*, 48(2), pp. 419–447.

*Hicks. J. R (1969): "A Theory of Economic History", Oxford University Press.

*Irwin. D. A and Terviö. M (2002): "Does Trade raise Income? Evidence from the Twentieth Century", *Journal of International Economics*, 58(1), pp. 1-18.

*Ito. H (2006): "Financial Development and Financial Liberalization in Asia: Thresholds, Institutions and the Sequence of Liberalization", *The North American Journal of Economics and Finance*, 17(3), pp. 303-327.

*Kearl. J. R, Pope. C. L, Whiting. G. C and Wimmer. L. T (1979): "A Confusion of Economists?" *American Economic Review*, 69, pp. 28–37.

*Kormendi. R and Meguire. P (1985): "Macroeconomic Determinants of Growth: Cross-Country Evidence", *Journal of Monetary Economics*, 16(2), pp. 141-163.

*Kose. A, Prasad. E, Rogoff. K and Wei. S-J (2006): "Financial Globalization: A Reappraisal", *IMF Working Paper* 189.

*Kpodar. K and Singh. R. J (2011): "Does Financial Structure Matter for Poverty: Evidence from Developing Countries", *Policy Research Working Paper 5915*, December.

*Krugman. P (1994): "Fluctuations, Instability and Agglomeration", *NBER Working Papers Series* 4616.

*Lane. P. R and Milesi-Ferretti. G. M (2007): "The External Wealth of Nations Mark II: Revised and Extended Estimates of Foreign Assets and Liabilities 1970-2004", *Journal of International Economics*, 73(2), pp. 223-250.

*Leblang. D. A (1997): "Domestic and Systematic Determinants of Capital Controls in the Developed and Developing World", *International Studies Quarterly*, 41, pp. 435 – 454.

*Lee. J. W (1993): "International Trade, Distortions and Long-Run Economic Growth", *IMF Staff Papers*, 40(2), pp. 299-328.

*Levine. R (2004): "Finance and Growth: Theory and Evidence", *NBER Working Paper Series* 10766.

*Levine. R and Renelt. D (1992): "A Sensitivity Analysis of Cross-Country Growth Regressions", *American Economic Review*, 82(4), pp. 942-963.

*Lucas. R (1988): "On the Mechanics of Economic Development", *Journal of Monetary Economics*, 22, pp. 3-42.

*McKinnon. R. I (1991): « The Order of Economic Liberalization: Financial Control in the Transition to a Market Economy », *Johns Hopkins University Press*, Baltimore.

*Michaely. M (1977): "Exports and Growth: An Empirical Investigation », *Journal of Development Economics*, 4(1), pp.49-53.

*Mishkin. F. S (2003): "Financial Policies and the Prevention of Financial Crises in Emerging Market Countries" dans Feldstein. M (Eds): "Economic and Financial Crises in Emerging Market Countries", *University of Chicago Press*, Chicago, pp. 93–130.

*Nickell. S (1980): "Correcting the Biases in Dynamic Models with Fixed Effects", *Princeton University Working Papers* 513.

*Obstfeld. M and Rogoff. K (1996): "Foundations of International Macroeconomics", *MIT Press*, Cambridge.

*Prabirjit. S (2007): "Trade Openness and Growth: Is there any Link", MPRA Paper 4997.

*Prasad. E and Rajan. R (2008): "A Pragmatic Approach to Capital Account Liberalization", *Journal of Economic Perspectives*, 22(3), pp. 149-172.

*Rajan. R. G and Zingales. L (1998): "Financial Dependence and Growth", *Chicago University and NBER*.

*Rajan. R. G and Zingales. L (2003a): « The Great Reversals: The Politics of Financial Development in the 20th Century », *Journal of Financial Economics*, 69(1), pp. 5–50.

*Rajan. R et Zingales. L (2003b): "Saving Capitalism from the Capitalists: Unleashing the Power of Financial Markets to Create Wealth and Spread Opportunity", *Crown Business*, New York.

*Rivera-Batiz. L and Xie. D (1993): "Integration among unequal's", *Regional Science and Urban Economics*, 23(3), pp. 337-354.

*Robinson. J (1952): "The Generalization of the General Theory" in "The Rate of Interest and Other Essays", *Macmillan*, London.

*Rodrik. D (1995): "Trade Strategy, Investment and Exports: Another Look at East Asia", *CEPR Discussion Papers* 1305.

*Rodrik. D (2012): "The Globalization Paradox: Democracy and the Future of the World Economy", *Norton*, New York.

*Rodrik. D and Rodriguez. F (1999): "Trade Policy and Economic Growth: A Skeptic's Guide to the Cross National Evidence", *NBER Working Paper* 7081.

*Romer. P (1986): "Increasing Returns and Long-run Growth", *Journal of Political Economy*, 94(5), pp. 1002-1037.

*Romer. P. M (1992): "Increasing Returns and New Development in the Theory of Growth", *NBER Working Papers* 3098.

*Sachs. J. D and Warner. A (1995), "Economic Reform and the Process of Global Integration", *Brookings Papers on Economic Activity*, 1, pp.1-118.

*Sala-i-Martin. X (1997): "I Just Ran Two Million Regressions", *American Economic Review*, 87, pp. 178–183.

*Schumpeter. J. A (1911): "Théorie de l'évolution économique, recherche sur le profit, l'intérêt et le cycle de conjoncture", *Payot (traduction française 1934)*, Paris.

*Smith. A (1776): "An Inquiry into the Nature and Causes of the Wealth of Nations", *The Electronic Classics Series*, Jim Manis (Editor), PSU-Hazleton, Hazleton, PA.

*Stiglitz, J (2002): "Globalization and Its Discontents", Norton, New York.

*Svalaeryd. H and Vlachos. J (2002): "Market for Risk and Openness to Trade: How Are They Related?" *Journal of Public Economics*, 57(2), pp. 364-395.

*Tornell. A, Westermann. F et Martinez. L (2004): "The Positive Link between Financial Liberalization, Growth, and Crises", *NBER Working Paper Series* 10293.

*Trabelsi. M (2002): "Finance and Growth: Empirical Evidence from Developing Countries, 1960-1990", *Cahiers du Centre de Recherche et Développement en Economie (CRDE), Université de Montréal*, N°13.

*World Bank (2001): "Finance for Growth: Policy Choices in a Volatile World", *World Bank* and Oxford University Press, Oxford.

*Yanikkaya. H (2003): "Trade Openness and Economic Growth: A Cross-Country Empirical Investigation", *Journal of Development Economics*, 72(20), pp. 57-89.

*Young. A (1991): "Learning by Doing and the Dynamic Effects of International Trade", *Oxford Economic Papers*, 51(1), pp. 15-39.