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**Effect of competitive behavior of foreign banks on competition of domestic banking sector In Sri Lanka**

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**ABSTRACT**

*Entry and operation of foreign banks is generally thought to have favorable effects on the development of host banking systems, through increased competition. By using an extensive set of panel data for the period 1996-2010, the present paper tries to empirically test the effect of foreign bank competition on the competition of the domestic banking sector of Sri Lanka. The degree of competition measured with Panzar Ross H statistic lends support for a moderately competitive domestic banking sector and low competitive foreign banking sector in Sri Lanka. More interestingly, the H statistics estimated for two sub sets depicts a counteraction in competitive behaviour. Contrary to common wisdom the results of the present study further indicate that, for the period 1996-2010, competitiveness of foreign banks has negatively affected on the competitiveness of the domestic banking sector in Sri Lanka*

**KEY WORDS:**

*foreign banking sector, bank competition, domestic banking sector, H-statistic, foreignness*

**1. INTRODUCTION**

Since the seminal work of Mackinnon - Shaw (1973) a number of under developed countries in South America, Africa and Asia that were regarded as repressed economies in terms of financial policies, undertook financial liberalization measures. Sri Lanka has not been an exception. A series of financial sector reforms, along with the economic liberalization policies were introduced in 1977 which lead to bank competitiveness. Technological innovations and policy measures taken over the past few decades have resulted in achieving the current level of growth and prosperity experienced by emerging economies (Guzman, 2001). Further, the last three decades have witnessed the emergence of vast financial markets straddling national boundaries. This enabled massive cross border capital flows from those who

have surplus funds and are in search of high returns to those seeking low cost funding. The borrowings or accessing the financial market of a country is not new; what is new is the enormous diversity of markets and instruments through which a firm can raise funds. Thus, new developments in information technology and further progress in liberalization and harmonization of the financial markets have strongly affected the financial environment in which financial intermediaries operate. These contributions in international integration, together with the entry of new types of competitors and entry of foreign banks in to local operations are likely to have contributed to banks' competitiveness in the era of globalization (Guzman, 2001).

International trade in financial services has become extremely important in recent decades. Banks have expanded internationally by establishing foreign bank subsidiaries or foreign branches. Most of the developed as well as developing countries now increasingly allow operation of foreign bank branches locally. A number of empirical studies provides evidence that entry and operations of foreign banks improve the efficiency and competitiveness in the domestic banking system. Hence the objectives of the present paper are twofold. First, to assess the degree of competition in the Sri Lankan banking sector as a whole and domestic and foreign banking sectors separately. And second, to assess the effect of foreign banks competition on competitiveness of Sri Lankan domestic banking sector. An extensive set of panel data for the period 1996 to 2010 will be used to analyze this relationship.

## **2. BANKING SECTOR IN SRI LANKA**

The banking sector in Sri Lanka, which comprises Licensed Commercial Banks (LCBs) and Licensed Specialized Banks (LSBs), dominates the financial system.<sup>1</sup> As at end of September 2010, the LCBs dominated the financial system with a market share of 43.8% of the entire financial system's assets and 83.5% of the banking sector's assets. Therefore, the health of the financial system depends to a large extent on the soundness of the LCBs (Sri Lanka Financial System Stability Review (FSSR), 2010). As at end-December 2010, the commercial banking sector comprised 22 LCBs. Based on ownership, these are divided in to three major components namely state banks, domestic private banks and foreign banks. There are two state banks – Bank of Ceylon and People's Bank. The Sri Lankan banking sector had been concentrated and dominated by these

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<sup>1</sup>The financial system of Sri Lanka consists of four main components. They are financial institutions, financial markets, financial infrastructure and the financial regulatory framework

two state banks that accounted for nearly half of commercial banking sector assets. Currently as a sector the domestic private banks record the biggest market share of the industry. As at the end of December 2010 this share had been 37.1 percent while it had been 34.4 percent and 12 percent for state commercial banks and foreign banks respectively. However two state banks still hold the largest assets share of the market.

The financial sector in Sri Lanka, reflecting a broad range of reforms introduced since the early 1990s, includes most of the institutional elements of a modern financial system. The financial services industry in Sri Lanka has been subjected to changes due to the reform measures introduced by the government including Central Bank and the industry. More recently, it seems that competition has also started to come from foreign sources. Changes in the national and international market environments, pressure applied by international organizations such as the International Monetary Fund (IMF) and the World Bank to relax controls and the introduction of new technologies, have made the financial sector more efficient.

### **3. FOREIGN BANK OPERATIONS IN SRI LANKA**

With the reform measures in 1977, new foreign bank branches opened their branches in Colombo giving more opportunities for international exposure and more room for competition. As a result the number of banks which had been eight in 1970 increased to 22 in 1985. After 1990 the number of domestic commercial banks increased. Thus, the number of domestic banks stood as 11 in 2000, while the number stood at 16 for foreign bank branches. Also, the rise in the number of domestic private banks helped to widen the domestic money market and strengthen links with the international financial market. However, the number of commercial banks operating in Sri Lanka declined from 26 to 22 when the operations of some foreign banks were taken over by domestic banks and some foreign banks ceased their local operations.<sup>2</sup> One of the major reasons for such decline in the number of foreign banks was the small size of the local market, and it became less profitable to continue with increased competition which came from domestic banks.

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<sup>2</sup> Nations Trust Bank acquired the business operation of Overseas Trust Bank of India Ltd. National Development Bank Ltd. acquired the business of a foreign bank, ABN-Amro Bank, while another foreign bank, Nova Scotia Bank ceased its operations in Sri Lanka and was absorbed by City bank during 2001. The Sri Lankan operations of Habib Bank AG Zurich were acquired by Hatton National Bank, while the local operations of American Express Bank were taken over by Nations Trust Bank in 2002. The local operations of S tandard Chartered Grind lays Bank were absorbed by Standard Chartered Bank in 2003.

Theoretically, this is expected in a competitive market setting. A firm in a competitive market may find itself experiencing economic losses if demand for its product falls or if the supply from other firms increases too rapidly (Stigler, 1957 quoted in Shelby, 2004). This may have caused most of the foreign banks to cease their local operations. This scenario is empirically true in many liberalized economies.

#### **4. REVIEW OF LITERATURE**

Until the 1970s, financial repression was commonly accepted as a condition necessary to promote investment and growth. A financial system is recognized as repressed when the financial system is subject to controls and limits which are deliberately imposed on financial prices (mainly interest rates) and volumes of financial magnitudes. The necessity of financial liberalization (and hence the competitiveness in the financial market) for economic growth in developing countries was clearly recognized in the economic theories presented by McKinnon (1973) and Shaw (1973). McKinnon - Shaw analyses concluded that alleviating financial restrictions in developing countries (mainly by allowing market forces to determine real interest rates) can exert a positive effect on growth rates as interest rates rise toward their competitive market equilibrium.

The traditional approach to competition has been to associate with more firms with more price competition and fewer firms with less price competitive behavior (this approach is also called 'structural approach'). This definition comes from a classic Industrial Organization argument, called the Structure-Conduct-Performance paradigm (SCP)<sup>3</sup> which assumes that there is a causal relationship running from the structure of the market to the firm's pricing behaviour, the firm's profits and degree of market power. In SCP paradigm competition or the market structure is reflected in concentration ratios (CR ratios) and the Hirschman Herfindhal index.

The non-structural approaches<sup>4</sup> posit that factors other than market structure (concentration) may affect competitive behaviour. This approach has been developed in the context of the New Empirical Industrial Organization (NEIO) literature. The ambiguous results of the concentration Empirical Industrial Organization (NEIO) literature. The ambiguous results of the concentration

<sup>3</sup> The Structure Conduct Performance (SCP) model dates back to the pioneering work of the Harvard economist Edward Mason, in the 1930s, and of his doctoral student Joseph Bain, in the 1950s.

<sup>4</sup> Non-structural approaches measure competition without using explicit information about the structure of the market. Instead, non-structural measures focus on obtaining estimates of market power from the observed behavior of banks

approach and the results of the emerging contestability literature<sup>5</sup>, both suggest that the competitive behaviour of banks is not necessarily related to the number of banks in a market or to their concentration but to other factors such as entry-exit barriers and the general contestability of the market (Baumol et al. 1982; Rosse and Panzar, 1977; Panzar and Rosse, 1987). In that perspective competitive behavior of domestic banking sector is related with the entry of foreign banks in to local operations.

However, when there is asymmetric information between borrowers and the lenders, a new bank finds it difficult to attract borrowers. This is also true for the locally operated foreign banks. The reason is that the opaque borrowers are locked in the existing banks through the lending relationships they have already established with them and are reluctant to incur a switching cost in the cause of changing their lender bank. Therefore, more proprietary information provides a larger incentive for incumbents to compete strongly for market share. This puts downward pressure on lending rates even in the absence of a large number of banks (Ariccia, 2001).

Claessens et al. (2001) show that the effect of foreign entry is very different in developed versus developing countries. An important concern in this context is the evidence suggestive of the possibility that foreign (and large national) banks have difficulty extending loans to informationally opaque small firms (Stiglitz, 2000; Berger et al. 2001, 2005).

In another cross-country study on banking structure, the role of foreign banks was investigated by Claessens, Demirguc-Kunt and Huizinga (2001) which showed that entry by foreign banks improves competition and makes domestic banking systems more efficient by reducing margins. Further, the results of Barth, Caprio and Levine's study (2003) also indicate that barriers to foreign-bank participation enhance bank fragility. The paper critically analyses this and stresses that it is not the actual level of bank concentration, rather it is the contestability of the market that is positively linked with bank stability. By relating the competitiveness indicator (estimated using a structural model) to a number of country characteristics, Claessens & Laeven, (2003) too confirm this relationship. Their findings reveal that greater foreign bank presence and fewer activity restrictions in the banking sector can make for more competitive banking systems. For their study they use an extensive set of bank-level data

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The theory of contestable markets was advanced as a generalization of the theory of perfectly competitive markets, (Baumol, 1982)

of banking systems of 50 countries. Moreover, they find some evidence that entry restrictions on commercial banks can reduce competition. This suggests that being open to new entry is the most important competitive pressure. Bayraktar and Wang (2004) focus on the banking sector of 30 countries for the period of 1995-2002 and reveal that foreign bank entry has significantly improved domestic bank competitiveness in countries which liberalized their stock market first. This finding was robust even after control for macroeconomic variables and after grouping countries by their sequence of liberalization.

There are also studies focusing on country-level experiences. In an early paper Cho (1990) finds that foreign bank presence in Indonesia contributes to increased competition in the banking industry. Denizler (2000) investigates foreign bank entry in Turkey's banking sector. He shows foreign bank entry has a strong competitive effect on the banking sector. It lowers the return on assets and overhead expenses. However, foreign banks had a market share of only between 3.5 and 5 per cent during the sample period 1970-1997 in Turkey. What is evident from these empirical findings is that foreign banks put competitive pressure on the domestic banks despite the market share of foreign banks in the local market. In contrast to these findings, Gormley (2007) shows that, foreign banks financed only a small set of very profitable firms upon entry, and that on average, firms were eight percentage points less likely to have a loan after a foreign bank entry, because of a systematic drop in domestic bank loans in India. While the potential benefits of foreign bank entry are many, this kind of evidence suggests that information asymmetries may prevent many firms in developing economies from realizing these benefits.

## **5. RESEARCH DESIGN**

The study applied New Empirical Industrial Organization (NEIO) approach, which measures competition without using explicit information about the structure of the market. And, the study used Panzar - Rosse (PR) model abbreviated as the H-statistic with some modifications to measure bank market competition in Sri Lanka. The Panzar-Rosse approach estimates the sum of elasticities (H statistic) of a firm's revenue with respect to input prices in a reduced form revenue equation. The measure is grounded in the idea that competitive firms are price takers and must pass through cost changes to customers, while a monopoly can vary output to maximize profits in the face of higher input prices. The PR model has been extensively used to analyze the nature of competition in mature banking systems, but only more recently in emerging markets' banking systems (Buchs and Mathisen (2005) for Ghana,

and Claessens and Leaven (2003). Being a non structural approach is the main reason for using this approach. It has some attractive features too, which explains its popularity in the empirical banking literature. The P-R revenue equation is easy to estimate by means of regression, with only few explanatory variables. Since the P-R model involves only firm-level data, it is robust to the geographic extent of the market. PR revenue test is based on a reduced-form equation relating gross revenue to a vector of input prices and other control variables as given in the Equation 1.

$$\log TR_{it} = \alpha + \beta_1 \log IPL_{it} + \beta_2 \log IPF_{it} + \beta_3 \log IPC_{it} + \lambda_1 \log TA_{it} + \lambda_2 \log NPL_{it} + e_{it} \dots \dots \dots \text{Equation 1}$$

The study estimates the PR model assuming three input and single output (gross interest revenue) production function, with other firm-specific control variables. Panzar and Rosse (1977), show that the sum of input price elasticities,  $H = \sum_{i=1}^n \beta_i$  reflects the competitive structure of the market. In this study, banks are considered as employing three factor inputs namely, labour, funds, and capital.

In *Equation 1* TR denotes total interest revenue, measured with the ratio of gross interest revenue to total assets (proxy for output price of loans), IPL is the ratio of personnel expenses to total assets (proxy for input price of labor), IPF is the ratio of interest expenses to total deposits (proxy for input price of deposits), and IPC is the ratio of other operating and administrative expenses to total assets (proxy for input price of equipment/fixed capital). *Equation 1* also includes a set of exogenous and bank-specific variables that may shift the revenue schedule. Specifically, TA (total assets) of the bank was incorporated to control for potential effects of size on interest revenue. Another control variable is NPL. If the non-performing loans are kept existing and continuously rolled over, the resources are locked up and banks' ability to earn interest would be low. Assuming this effect on interest revenue of the bank, NPL was incorporated in the model as a control variable. The definition of NPL of this study is, the ratio of non-performing loans to gross loans of the bank. The subscript *it* denotes the *i*<sup>th</sup> bank in *t*<sup>th</sup> year, as the model use panel data. In order to test the bank competitiveness for whole banking sector, H statistics were re-estimated for two subsets as foreign and domestic banking sector separately.

Assuming the correlation of a time series with its own past and future values in bank revenues, following Ordinary Least Squares (OLS) to estimate the revenue model seems to be problematic. Thus, in estimating the equation, the study followed an Estimated Generalized Least-Squares (EGLS) procedure instead of applying the method of (OLS) because estimators of the former are more efficient with a large sample. In the EGLS procedure, the study used the Period Seemingly Unrelated Regression (SUR) weights correct for both period heteroskedasticity and general correlation of observations within the given cross-section.

Finally the effect of foreign bank competitiveness on domestic banking sector was estimated by using following OLS procedure.

$$Com\_Dom = \int \{\alpha + \beta(Com\_For)\} \text{-----Equation 2}$$

Where, *Com-Dom* is the competition of domestic banking sector while *Com-For* is the competition of foreign banking sector.

In terms of bank types, the study only considers commercial banks and excludes saving banks from the sample. Therefore the sample covers the 22 banks in the commercial banking sector. This includes 11 local banks and 11 foreign banks operating in Sri Lanka. The study uses an extensive bank level set of panel data for the 15 years from 1996 to 2010. The unavailability of past bank level data limited the study's time horizon for a period of 15 years. The main sources of data are the Annual Reports of individual banks and Annual Reports of the Central Bank of Sri Lanka.

**6. RESULTS AND DISCUSSION**

Although foreign banks operate for a long time in Sri Lanka their contribution to the total banking is less. Before going to calculating competition scores for banks, it is worth having a closer look on behaviour of asset concentration of foreign banks.