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The effectiveness of macroeconomic variables on foreign exchange market

Mohammad Teymouri [*1], Zahra Kharazmi [2]

[1, 2] M.Sc. Students of Governmental Management, Faculty of Humanities, Sirjan Branch, Islamic Azad University, Sirjan, Iran

ABSTRACT

This study investigates the effects of macroeconomic variables and their role in development of foreign exchange market. The foreign exchange market is the mechanism by which a person of firm transfers purchasing power form one country to another, obtains or provides credit for international trade transactions, and minimizes exposure to foreign exchange risk. The foreign exchange transaction is an agreement between a buyer and a seller that a given amount of one currency is to be delivered at a specified rate for some other currency. The foreign exchange market provides the physical and institutional structure through which the money of one country is exchanged for that of another country, the rate of exchange between currencies is determined, and foreign exchange transactions are physically completed. Geographically, the foreign exchange market spans the globe, with prices moving and currencies traded somewhere every hour of every business day. The foreign exchange market consists of two tiers: the interbank or wholesale market, and the client or retail market. Participants include banks and nonbank foreign exchange dealers, individuals and firms conducting commercial and investment transactions, speculators and arbitragers, central banks and treasuries, and foreign exchange brokers.

Key Words: Financial development, Foreign exchange market, Economical growth

INTRODUCTION

The developing countries tend to tolerate greater volatility in international reserves, domestic interest rates and commodity prices than in exchange rates (Calvo and Reinhart, 2002). That foreign exchange intervention appears to be more common in emerging market countries is partly a reflection of structural characteristics of such economies that often contribute not only to greater exchange rate volatility, but also to larger effects of such fluctuations on the real economy. Indeed, when the foreign exchange market is thin and dominated by a relatively small number of agents, it is likely that the exchange rate will be volatile if the authorities do not provide some guidance and support. This problem is compounded if there is no track record of stable macroeconomic policies that can firmly anchor market expectations about future monetary and exchange rate policy. Underdeveloped and incomplete financial markets also imply that

Corresponding Author E-mail: Mohammad.teymouri@chmail.ir

hedging against exchange rate risk is costly and sometimes impossible, so that the costs of exchange rate volatility can be substantial for individual agents and for the economy as a whole. Undoubtedly, investment in the stock exchange constitutes an important part of the whole country's economy and the highest amount of capital is exchanged through stock markets across the world. Objective of investment in the stock is to obtain suitable return. Investors consider a set of variables and financial and non-financial factors simultaneously while they make decision to invest in the stock. Moreover, national economy is intensely affected by performance of the stock market. Also this market is available as an investment tool both for professional investors and the public. Since potential investors of the stock exchange are composed of an extensive group in the society providing a suitable context for extensive presence of this group and attracting their confidence, reinforcement and deepening of capital market would be led to one of the most basic tools of economic development. Decision-makers could determine behavior of stock prices more precisely by knowing effective factors on stock return and as a result they would make more proper decisions. Stock return is affected by all kinds of properties, changes of political and economical conditions, behavioral reaction of a large group of decision-makers, risk and many known and unknown factors (Buyuksalvarci, 2010). A strand of research has also highlighted the susceptibility of exchange rate movements, at least in the short run, to non-fundamental factors such as herd behaviour, information cascades and speculation (Frankel and Froot 1990; Allen and Taylor, 1992). In this context, intervention might affect the spot exchange rate either through its impact on current fundamentals, expectations about future fundamentals, or expectations not based on fundamentals. It is believed that stock return is determined by some macroeconomic variables such as interest rates, foreign exchange rate and inflation. Several studies have been conducted to show the impact of economic forces on stock returns in various countries. For instance arbitrage pricing theory by Ross (1976) and Chen et al. (1986) was applied to explain the impact of some macroeconomic variables on stock return in capital markets of America. Their findings reveal that industrial productions, changes in risk premium and changes in the term structure have a positive relationship with the expected stock returns. This is while the relationship among predicted and unpredicted inflation rate with expected stock returns is negative significantly (Raee and Puyanfar, 2011). The literature has focused discussion of these effects through four broad mechanisms: the monetary channel, the portfolio balance channel, the signalling channel and the microstructure or order flow channel. In the context of managed floating regimes, the usefulness of intervention depends on whether or not exchange rates can be influenced independently of the monetary policy stance since only in this case will intervention constitute a truly separate policy instrument. As such, much of the focus in the literature has been on whether interventions that are sterilised (ie not backed by changes in monetary policy) have any significant effect. While the standard textbook distinction between sterilised and unsterilised intervention is based on a quantity criterion (the impact on base money), in practice the relevant condition is whether or not interest rates are affected. Since both the demand for and supply of base money changes significantly day to day due to autonomous factors, maintaining short-term interest rates does not always require that the entire amount of intervention be offset in the domestic money market. It is argued that a large parallel market for foreign exchange with a high premium indicates of a basic disequilibrium in the foreign exchange market and trade regimes (Dordunoo, 1994) and, hence, involves substantial social and economic costs. The expansion of the parallel market for foreign exchange leads to the loss of government control over the economy as more and more of the official transactions are diverted to the parallel market. At the same time, the parallel premium for foreign exchange functions as an implicit tax on exports,

serving at once as a disincentive to export production and a source of hidden fiscal revenues (Pinto, 1988).

Foreign exchange market and financial development

The relationship between stock prices and the economy can be of a reversible model, the stock market may influence the economy as found by Smith (1990), or the economy may influence the stock market (Amadi and Odubo, 2002). Economic theory and empirical studies consider stock prices and thus, market index to be one of the best indicators of changes in economic activity. This intellectual curiosity gained ascendancy in the last two decades due to the increasing belief that real economic activities often impact on stock prices. For instance, Chen et al. (1986) argued and empirically showed that movements in macroeconomic variables affect future dividends as well as discount rates, thus affecting stock prices. Smith (1990), in his study of the American stock price behaviour, observed that stock prices usually decline shortly (on average, for months), before a recession begins and rise shortly before a recession ends. Changes in consumption and investment opportunities are priced in capital markets, hence stock price changes are related to innovations in economic variables (Goswami and Jung 1997). This is the case of macroeconomic variables and the stock market index. Fundamental analysis beliefs that stock prices are influenced by changes in money supply, interest rates, inflation and other macroeconomic indicators. It employs a general equilibrium approach, stressing the interrelations between sectors as central to the understanding of the persistence and comovement of macroeconomic time-series. The causes, effects and policy implications of the underground economy, in both developed and developing countries, have attracted attention in recent years as the expansion of this economy has been found to have adverse effects on the official economy. These effects are of particular concern to policy makers in developing economies, who are confronted with growing informal employment, parallel markets in goods and financial assets, specifically in foreign exchange, and capital flight. The parallel market for foreign exchange has reached a remarkable size in some developing countries. The existence of a large parallel foreign exchange market in developing countries is attributed to the deficiency of the legal institutions, which make operating in the formal sector excessively expensive. Researchers have found out that 30-35% of changes in stock price can be attributed to economy wide factors (Chandra, 2004). The variables employed in this study are essentially economy fundamentals, thus the study will therefore provide more details on fundamental analysis. According to Chandra (2004), the interest rates in the organized financial sector of the economy are guided within preferred range through monetary policy. However, for the unorganized financial sector, the rates are not controlled and may fluctuate widely depending upon the demand and supply of funds in the market. An investor has to consider the level and growth in interest rates prevailing in the different sectors of the economy, and evaluate their impact on the performance and profitability of companies. Chandra (2004) submits that a rise in interest rate depresses corporate profitability and also leads to an increase in the discount rate applied to equity investors; both of which have adverse impact on stock prices, and vice-visa. Therefore a rise in interest rate is expected to impact negatively on the performance of the organization. That is, stock price movement depends on the behaviour of fundamental factors. Thus, it can be argued that corporate earnings, which are themselves critical to stock price determination depend on such determinants as economic growth, prosperity and output growth, the availability of quality labour force as well as capital stock (Golob and Bishop, 1997). There are other factors which directly or indirectly bear on economic growth and prosperity, and thus influence the behaviour of stock prices (Oaikhenan, 2003). Maysami et al. (2005) identified short

and long-term interest rates, industrial production, price levels, exchange rate and money supply using cointegration for Singapore stock market. Other supporting literature includes Aga and Kocaman (2006), Abeyratna et al. (2003), Bilson et al. (1999), Bulmash and Trivoli (1991), Hondroyiannis and Papapetrou (2001), Emeni and Asein (2003) and Panetta (2002). Interest rate varies with time, default risk, inflation rate, and productivity of capital, among others (Chandra, 2004). Changes in interest rate encourage substitution between stock market and money market instruments, and speculative activities.

Financial development and economical growth

The relationship between financial development and economic growth has been extensively analysed in the literature. Most empirical studies conclude that the former, together with a more efficient banking system, accelerates the latter (Levine, 1997; Wachtel, 2001). Levine (2005) suggests that financial institutions and markets can foster economic growth through several channels, i.e. by (i) easing the exchange of goods and services through the provision of payment services, (ii) mobilising and pooling savings from a large number of investors, (iii) acquiring and processing information about enterprises and possible investment projects, thus allocating savings to their most productive use, (iv) monitoring investment and carrying out corporate governance, and (v) diversifying, increasing liquidity and reducing intertemporal risk. On the contrary, Lucas (1988) argues that the role of finance has been overstressed. The role of financial sector in economic growth has intrigued macroeconomists and financial economists for decades. Numerous econometric studies such as the ones by Fernandez and Galetovic (1994) and Arestis and Demetriades (1996) have led to conflicting results on causality, with some indicating reverse causality and others resulting in insignificant parameters. Arestis and Demetriades (1996), in particular, using twelve countries as case study, show that the direction of causality depends on the variable used and that each country exhibit different results. These results do not exhibit a pattern for developed or developing countries which confirms the hypothesis that institutional considerations and policies of countries do play a role in the relationship between finance and growth. Greenwood and Jovanovic (1990) model the dynamic interactions between finance and growth and emphasise the two-way causality between them. Financial intermediaries produce better information and improve resource allocation. An expanded system of financial intermediation is able to allocate more capital to efficient investments and thus to foster economic growth. Goldsmith's (1969) was the first to show empirically the existence of a positive relationship between financial development and GDP per capita. More precisely, they reported a positive and significant link between liquidity of stock markets and economic growth, but no robust relationship between the size of stock markets and economic growth. Bencivenga and Smith (1991) highlight the fact that, by eliminating liquidity risk, banks can raise economic growth. Financial intermediaries boost productivity, capital accumulation and growth by improving corporate governance. Existing studies typically focus on variables capturing the size, activity or efficiency of specific financial institutions or markets. Early contributions used aggregate data on banks for a large number of developed and developing countries including the ratio to GDP of monetary variables or financial depth indicators (credit to the private sector). Later studies on the link between financial development and economic growth have added indicators of the size and liquidity of stock markets, but these are available for fewer countries and shorter time periods. The same applies to indicators of the efficiency and competitiveness of financial institutions. Single country studies allow researchers to use more extensive micro-based data and/or analysis specific policy measures or reforms. Levine et al. (2000) found that the

development of financial intermediation affects growth positively, and that cross-countries differences in legal and accounting system largely account for different degrees of financial development. More recently, some authors have suggested that there is a positive relationship between financial deepening and per capita income in the transition economies (Égert et al., 2007; Backé et al., 2007). A positive effect of financial development on economic growth through its sources (capital accumulation and productivity), and even on income inequality and poverty, has also been reported (De Haas, 2001; Levine, 2005). King and Levine (1993) used mostly monetary indicators and measures of the size and relative importance of banking institutions and also found a positive and significant relationship between several financial development indicators and GDP per capita growth. Levine and Zervos (1996) included measures of stock market development and found a positive partial correlation between both stock market and banking development and GDP per capita growth.

The impact of financial development on foreign exchange market

The increased availability of financial instruments reduces transaction and information costs while larger and more efficient financial markets help economic agents hedge, trade, pool risk, raising investment and economic growth (Levine, 2005). According to the model the current prices of an equity share is equal to the present value of all future cash flow to the share. Thus, the determinants of share prices are the required rate of return and expected cash flows (Oyama, 1997; Gan et al 2006). Therefore any economic factors which influence the expected future cash flow and required rate of return in turn influence the share. Financial intermediaries perform an important function in the development process, particularly through their role in allocating resources to their most productive uses. Probably the relationship between stock prices and macroeconomic variables is well illustrated by Maysami (2000) Dividend Discount Model (DDM) than any other theoretical stock valuation model. Fama (1981) finds a strong positive correlation between common stock returns and real variables (i.e. industrial production, GNP, the money supply, lagged inflation and the interest rate) by investigates the relationships between stock prices and real activity, inflation, and money. Kaneko and Lee (1995) find similar results. By examining the relationship between inflation and stock prices 16 industrialized countries, Rapach (2002) agues that increase in inflation does not result in persistent depreciation of share real value. Exchange rate as an indicator of a currency movement is a monetary variable that affect prices of stock in a way similar to the inflation variable. Jorion (1990) found some relationship between stock returns of US multinational companies and the effective US dollar exchange rate for the period 1971-87 On the contrary, Soenen and Hennigar (1988) reported that US dollar effective exchange rate negatively affect US stock market index during 1980-86. Aggarwal (1981) finds positive relationship between revaluation of the US dollar and stock prices. Depreciation of the local currency makes import expensive compared to export. Import companies increase production cost, all the cost cannot be passing on to the consumers because of the competitiveness of the market. This reduces corporate earning, a determinant of stock prices according to the DDM. Adler and Dumas (1984) argue that even firms whose entire operations are domestic may be affected by exchange rates, if their input and output prices are influenced by currency movements. Some argue that depreciation of the local currency increase export and hence increase in stock prices. Luetherman (1991) found that depreciation of the local currency do not give home companies competitive advantage as argued. In the same way Solnik (1987) studies proved that exchange rate is non-significant factor in explaining development of stock prices.

Conclusion

The foreign exchange market is the mechanism by which a person of firm transfers purchasing power form one country to another, obtains or provides credit for international trade transactions, and minimizes exposure to foreign exchange risk. A foreign exchange transaction is an agreement between a buyer and a seller that a given amount of one currency is to be delivered at a specified rate for some other currency. A foreign exchange rate is the price of a foreign currency. The foreign exchange market consists of two tiers: the interbank or wholesale market, and the client or retail market. Participants include banks and nonbank foreign exchange dealers, individuals and firms conducting commercial and investment transactions, speculators and arbitragers, central banks and treasuries, and foreign exchange brokers. A foreign exchange quotation or quote is a statement of willingness to buy or sell at an announced rate. In the real world, quotations include a bid-ask spread. A bid is the exchange rate in one currency at which a dealer will buy another currency. An ask is the exchange rate at which a dealer will sell the other currency. The spread is the difference between the bid price and the ask price. This spread reflects the existence of commissions and transaction costs.

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