10

Financial Liberalization, Financial Deepening and Efficiency Implications in the Emerging Markets: Preliminary Evidence from Turkey

C. BULENT AYBAR

Abstract

The chapter investigates the implications of financial liberalization and financial deepening on the intertemporal behavior of stock returns[1] in the Turkish equity markets. The objective of the study is to test return predictability and the changes in this behavior in two qualitatively different time periods. The empirical findings indicate that return behavior does not change as the financial markets deepen in Turkey. Return characteristics qualitatively remain unchanged and return predictability continues. The adverse implications of this finding are rather severe and they are addressed in the conclusions.

Introduction

The recognition of the role of the well functioning financial markets in the economic development process has the emphasis shift on financial market development and financial liberalization. Massive support from supranational organizations such as the World Bank (mostly through the IFC) triggered an incredible process in some emerging countries which were later labeled as 'emerging capital

markets'. The objective of the grand design was both to help these countries to increase the domestic savings and to improve the allocational efficiency of the capital. Meanwhile a particular emphasis has been placed on the development of equity markets to facilitate long term as well as efficient fund allocations. Over a twenty year period, some developing economies have developed fairly active equity markets and managed to capture the attention of global portfolio managers. The rapid growth in the funds allocated to emerging markets (reaching $45.6 bn at the end of 1993) also led the proliferation of research directed towards these markets. Most of the current emerging markets research has focused on diversification and efficiency implications of these markets, in search of useful tips for portfolio managers. However, little attention has been paid to the fund allocation implications of the inherent pricing inefficiencies and the potential cost of these efficiencies to the local economies.

The objective of this chapter is to analyze the efficiency implications of the financial liberalization and financial deepening process in Turkey as an emerging market, through analysis of intertemporal behavior of stock returns. Intertemporal analysis of stock return behavior investigates predictability of future returns by using past return series over a period of time and questions the existence of detectable patterns that can be used to predict the future returns. The study focuses on two sub-periods between 1988 and 1995 to analyze the nature of predictability. The chapter then provides the background on the financial liberalization and the financial deepening process. The development of Turkish equity markets is then outlined and the potential implications of the return behavior in these markets is examined. The empirical findings of the study are presented and the chapter concludes with a brief discussion.

TABLE 10.1 *Capital Flows to Emerging Countries (bn$)*

	1990	1991	1992	1993	1994	1995
Aggregate Net Flows	101.9	127.1	155.3	207.2	207.4	231.3
Official Dev. Finance	57.9	65.5	55.0	53.0	48.6	64.2
Total Private Flows	44.0	61.6	100.3	154.2	158.8	167.1
Private Debt	15.3	19.0	39.6	40.3	43.8	54.8
Bank Loans	1.7	2.5	13.8	−4.9	9.2	17.1
Bonds	3.0	12.8	13.2	38.3	32.2	33.7
Other	10.6	3.7	12.6	6.9	2.4	4.0
FDI	25.0	35.0	46.6	68.3	80.1	90.3
Portfolio Equity	3.7	7.6	14.1	45.6	34.9	22.0

Source: World Debt Tables, 1996, The World Bank, Washington, DC.

The Evolution of the Turkish Financial System

The Turkish financial markets have undergone a massive restructuring and evolution since the 1980 stabilization and reform program. Traditionally, the system has been depressed by excessive regulation and dominated by the commercial banks with poor product portfolios.

An exhaustive list of the elements of the '*financial depression*' include interest rate ceilings, subsidized credit allocations to designated industries, exorbitant taxation, high reserve and liquidity ratios, intertwined ownership relationships between financial institutions and non-financial corporations, poor asset portfolios of the financial institutions, restrictions on the operations of foreign financial institutions and international transactions of the domestic banks, under-developed capital markets and overreliance on the bank financing, and finally government's excessive resort to deficit financing through the financial markets. However, none of these distortions were peculiar to the Turkish financial markets. They were rather common consequences of economic policies implemented in emerging countries over a long period of time spanning second half of the 1960s and the entire 1970s. These policies put the entire financial system and monetary resources at the discretion of the political authorities to facilitate the economic development, until they were challenged by the economists of the Stanford school. The most notable contribution came from McKinnon and Shaw, who developed a version of neo-classical financial theory, applicable to the emerging countries. They argued that the removal of the 'financial depression' and 'financial deepening' would accelerate the economic development through increasing savings and a more efficient resource allocation. The limitations in external financing faced by the emerging countries at the end of 1970s, created an imperative to mobilize the internal resources. Since then, policy recommendations made by the supranational institutions such as the IMF. and World Bank, focused heavily on financial liberalization. Turkish governments postponed the implementation of these rather new set of policy recommendations until the end of 1979. However, when the new government was inaugurated in November 1979, the necessity for a structural adjustment program was found inevitable by both the economic bureaucracy and the political authorities. Increasingly uneasy creditors of Turkey as well recognized that the short term adjustment programs to remedy balance of payments problems were not adequate for longer term stability. All of these factors and conditions combined, marked the initiation of Turkey's transition programs. The backbone of the program covering the financial system were embedded in the covenants of the Structural Adjustment Loans provided by the World Bank. A

three trench series loan included increasing details about the structure of the financial markets, and the reforms implemented by the Turkish government heavily inspired from these guidelines laying the foundations of the current structure of the Turkish financial system.

Until the 1980 transition, the intermediation end of the entire financial system was carried out by private and state-owned commercial and development banks. Although the emphasis on development of the capital markets dates back to the 1980 liberalization program, the central role of the banking system in the fund allocations has gradually shifted towards the capital markets since only early 1990s. The introduction of the capital markets law in 1982 and the establishment of the Capital Markets Board and Istanbul Stock Exchange (ISE) were milestones of the emergence of the modern Turkish financial markets. In the spirit of universal banking, capital markets operations and banking services are not strictly separated in the Turkish financial system. Most commercial banks are major players in the money and the credit markets as well as capital markets. However, brokers licensed to operate in the capital markets are not allowed to engage in traditional commercial banking activities such as lending and trade finance.

Structurally, the Turkish financial system lacked the private social security institutions, such as private pension funds, as major fund suppliers to the system. Instead, state owned social security institutions were to supply the wholesale funds to the system. However, these funds were appropriated by the government, through compulsory placements to the securities issued by the government. These institutions have increasingly been subject to political manipulations, and in less than a decade they are marginalized as fund suppliers to the financial system. Traditionally, in many developed economies, insurance companies have been another significant building block of the financial system. However, this segment of the system has never played a significant role in the Turkish financial system. This has been partly attributed to the excessive regulation of the industry which has recently been deregulated to allow product diversification and efficient funds management. The absence of the major institutional fund suppliers in the system leaves households and corporations as the major fund suppliers. The significance of the households or individuals become more transparent, as the corporations are fund deficit entities in aggregate.

As in many market economies, the surplus funds are demanded by individuals, corporations and the government. The most notable characteristic of the Turkish financial markets is the dominance of the government as a fund deficit entity. Never ending budget deficits, and inadequacy of the tax revenues, leave domestic and external

borrowing as the only sensible alternatives to printing money. Given the structural restrictions on the external borrowing, frequent resort to the domestic money and capital markets becomes inevitable. Therefore, crowding-out is phenomenal, and other fund deficit entities are left at a significant disadvantage to finance their potentially more efficient operations than the government. This mammoth presence of the government in the debt markets leaves but few choices to the corporations to finance their fund deficits: internally generated funds, short term commercial credits and equity financing. However, the banks become increasingly reluctant to extend their funds to corporations since funding the government is a fairly lucrative business with low risk. The recent surge in the IPOs and primary equity issues may safely be attributed to this phenomenon.

Deregulation and Financial Deepening

Interest rate ceilings imposed by the regulatory authorities during the 1970s were the basis of the negative real interest rates in the economy. This regulation motivated distortion had numerous adverse implications on the savings behavior of the households, while allocating funds to the corporations at negative real costs in inflationary periods.[2] The negative real rates of interest on deposits finally turned to positive in 1982. This dramatic switch in the interest rates along with high intermediation costs and reserve requirements triggered a jump in the credit costs. Immediately after this switch in 1982, bankruptcy of a range of inadequately regulated financial institutions strained the monetary authorities to loosen the tight control over the system. In the following period of 1983–86, the Central Bank smoothly guided the markets, and the real rates of interest fluctuated within a narrow band of several percentages. In the aftermath of the 1987 elections, the government continued to implement its liberalization policies. As a first step, the Central Bank controls on interest rates were removed. However, this deregulation in the banking system led to a cut-throat competition based on the interest rates offered for demand and time deposits, which sent the signals of destabilizing risk taking in the system. The Central Bank intervened to stop the run, and imposed interest rate ceilings. The implications of this episode of the liberalization were increasing real interest rates and high interest bearing loans to the corporate sector in the 1989–90 period. In the following period, banks stayed away from interest rate based competition, and tended to index deposit and credit allocation rates on the expected inflation. Today, the interest rates in the banking system are largely driven by the dynamics in the government debt markets.

As the deregulation-reregulation cycle continued in the banking system, the overall infrastructural evolution of the Turkish financial markets were promising. It could safely be claimed that the system had been deepening. Although financial deepening per se does not imply that the efficiency of the system is increasing, within the spirit of financial liberalization, it should be attributed some importance and interpreted as an improvement. The indicators of financial deepening (see Table 10.2) reveal that Turks' propensity to hold financial assets are rapidly increasing after a sharp decline in the 1978–80 period. The ratio of financial assets to GNP had sharply increased from about 22 percent in 1980 to 40 percent in 1987. This increasing trend persisted to date and reached to 44 percent in 1992 and 47.4 percent in 1994. This long lasting trend can safely be attributed to the increasing share of the public security issues and the foreign exchange denominated deposits.

The trends in the outstanding financial assets clearly demonstrate the evolution of the Turkish financial markets. As Table 10.3 demonstrates, the share of the commercial credits steadily declined among the total financial assets. The share of the banking sector in the net financial issues has also fallen sharply during the corresponding period.

Both of these indicators reveal the increasing share of the

TABLE 10.2 *The indicators of Financial Deepening (Percentages)*

	M1/GNP	M2/GNP	M2X/GNP	Fin.Assets/GNP
1980	13.8	17.2	17.2	22.8
1981	12.7	21.3	21.3	26.7
1982	13.2	25.0	25.0	31.2
1893	14.8	24.6	24.6	30.7
1984	10.8	24.2	25.4	32.2
1985	9.5	23.7	25.9	33.6
1986	10.3	23.6	26.8	35.2
1987	11.4	23.3	28.6	40.0
1988	8.6	20.8	26.5	37.2
1989	8.4	20.2	24.9	36.0
1990	7.9	18.1	22.6	34.2
1991	7.5	18.8	26.2	39.9
1992	6.2	15.9	25.3	44.0
1993	5.8	13.4	25.4	44.2
1994	5.3	14.5	29.4	47.4

Source: Public Financing, Financial Structure and Policies; Onder *et al.*, 1994, SPO and CBT.

TABLE 10.3 *Outstanding Aggregate Financial Assets[3] (Percentages)*

	1987	1988	1989	1990	1991	1992	1993	1994	1995*
Bank Credits	71.2	67.2	62.5	62.2	56.9	50.1	51.3	44.3	40.1
Public Securities	17.6	19.4	21.7	24.1	22.7	23.9	35.0	46.3	51.4
Private Sector	7	9.4	11.1	13.4	15.0	19.2	14.1	11.0	8.4

Source:

government in the financial sector. This trend has accelerated in 1994 and 1995, as the government issues flooded in the market. The increasing domination of the public sector in the financial markets are also visible in the flow data. As the aggregate fund allocations shrunk by 26 percent in real terms in 1994, the share of the government in the financial flows went up from 41 percent in 1993 to 58 percent in 1994. The corresponding figure reached at 66 percent in the first quarter of 1995. The increase in equity issues is the only trend standing against the government hegemony in the market. The preceding analysis shows that the liberalization of the financial markets accelerated the financial deepening. However, implications of these developments on the allocational efficiency is yet to be explored. Although the public dominance in the financial markets continues to cause crowding out, and the increasing resort of the government to the domestic capital markets (see Table 10.4) keeps the pressure on the real interest rates, remarkable infrastructural and operational progress in some segments

TABLE 10.4 *Securities by Issuing Sectors (Percent Share)*

Type of Security	1989	1990	1991	1992	1993	1994
Public Sector	88.1	84.4	89.1	86.6	82.6	91.5
Government Bonds	46.5	48.9	22.8	37.6	37.0	21.8
T-Bills	39.5	33.1	63.7	46.2	44.2	68.5
RSC & FIB	2.1	2.4	2.5	2.8	1.3	1.3
Private Sector	11.9	15.6	10.9	13.4	17.4	8.5
Common Stock	5.0	7.1	6.7	2.9	2.0	3.7
Corporate Bonds	3.1	3.0	1.5	0.5	0.2	0.1
Bank Bills	0.5	1.3	1.3	0.5	0.6	0.3
Commercial Chapters	2.4	0.8	1.2	0.6	0.3	0.0
P&L Sharing Certificates	2.0	0.0	4.0	0.0	0.0	0.0
Participation Certificates	0.8	3.4	0.1	0.1	1.3	0.3
Asset Based Securities	0	0	0	8.8	13.0	4.1

Source: Capital Markets Board Monthy Bulletin, various issues in 1994.

of the financial markets conjures up possible improvements in the allocational efficiency. The following section focuses on Turkish equity markets to identify any possible improvements.

Developments in the Turkish Equity Markets

Turkish Equity markets exhibited a remarkable progress in less than a decade. The 1980 liberalization program attributed a particular importance to the equity market development and the development plan has been successfully implemented. The establishment of the Capital Markets Board in 1982 initiated the infrastructural development, and inauguration of the ISE in 1986 started the development process. The number of companies traded in the ISE more than doubled in eight years, from 80 (40 in the active first tier market and 40 in the very thin second tier market) in 1986 to 176 in 1994. The daily trading volume reached at $197 million in 1995, after averaging around $92 million as compared to an average of only $50,000 in 1986. The market capitalization has also reached at the ranges of $30–35 billion, from the minuscule $657 million in 1986. The ISE has quickly moved on the learning curve and increased its operationally efficiency substantially. The trading system has evolved from a tender offer system to fully computerized electronic execution in 1994. The technological progress of the ISE was also accompanied by a remarkable development in the institutional infrastructure. As the impressive progress in secondary markets continue, the primary markets have also gained momentum. The equity issues in the market surged to TL37,000 billion in 1994 from as low as TL101 billion in 1986. The upward trend continued in 1995, as the issues increased by 100.2 percent reaching TL 25,552.2 billion in the first half of the year. The progress in the operational efficiency of the secondary markets, increasing resort to the equity finance by the corporations, the development of the investment banking services and corporate finance expertise are all expected to contribute to the sustainable growth of this segment of the capital markets. However, equity issues still account for a minuscule 3.7 percent of the total securities issued in the financial markets.

Possible Implications on the Return Behavior in the Equity Markets

Return behavior, both in cross-sectional and in time series analyses, provides information on the effectiveness of the asset allocation role played by the stock markets. Significant deviations of the return behavior from expectations may create an environment which is less likely to attract new investors, either domestic or foreign. This may

constrain the market's ability to generate savings and investments for the economy. In other words, return behavior may have significant implications on the capital flows and sheds light on the risk diversification benefits of the stock markets and cost of capital.

In this study, a subset of market efficiency tests will be used. Efficiency tests focus on the extent to which available information is absorbed in the individual stock prices. As indicated by Fama (1991), there are range of efficiency tests: tests for return predictability such as trading rules or autocorrelations (weak form efficiency tests), event studies (semi-strong form efficiency tests), or test for private information tests (strong form efficiency tests). The focus in this chapter is limited to tests for return predictability covering two sub-periods between 1988 and 1995. The return behavior has been through return predictability tests for each sub-period, and intertemporal return behavior was reported (predictability of returns over time). Predictability of returns can be evidence of market inefficiency if it is tested within the framework of an asset pricing model, and if the model used implies that the expected returns are constant through time. However, here a simple form of market predictability (autocorrelation) has been used as test of return predictability. The theoretical construct behind this simple test can be traced back to Fama (1965), and Granger and Morgenstern (1970). It is simply a test of the revised version of random walk hypothesis. The assumption that the returns are identically distributed is replaced by identical means following Granger and Morgenstern (1970), the condition that returns are independently distributed is replaced by uncorrelated returns since this assumption is sufficient for practical purposes. The test focuses on identifying serial correlation in the return series.

Although the identification of the significant serial correlations may not answer the question concerning the capital market efficiency due to the ambiguity of the test (Leroy, 1988), the pattern and signs of serial correlations may provide valuable insights into the asset pricing process. For instance dominance of positive first order serial correlations may result from slow adjustment to new information, insider information, averaged data or infrequent trading. On the other hand negative serial correlations may be induced by thin markets with wide fluctuations in prices about the intrinsic value, measurement errors in adjustment of capital transactions that create reversals in return series (Errunza and Losq, 1985).

There are numerous studies of intertemporal return behavior in emerging markets. In a recent study, Cleassens *et al.* (1995) report significant first order serial dependence in a Turkish sample using monthly returns of an IFC sample. This study uses a 31 company

sample and daily returns between 1988 and 1995. In order to analyze the intertemporal behavior of the daily stock returns two subsequent hypotheses are tested. The first general null hypothesis is that the daily returns are white noise, i.e. do not exhibit serial dependence for sub-periods of 1988–91 and 1991–95. The second null hypothesis tests the significance of differences of i-th autocorrelations in two sub-periods.

Empirical Results

Autocorrelation coefficients of 31 stocks and the ISE index has been estimated in two periods covering 1988–91 and 1992–95. In the first sub-period, only four return series were identified with no significant serial correlation at any lag. Twenty-seven of the 31 series exhibited significant serial correlation at various lags. Although serial correlation at lag one is consistent for 14 series, hikes in other lags are rather sporadic and do not reveal any pattern. The hypothesis that the series are white noise has been rejected for 11 of the 31 series and for the market index at the 5 percent and 10 percent significance levels. Although more series exhibited significant serial correlations, tests bases on Ljung-Box statistic up to six lags, fail to reject the hypothesis for 16 series with significant serial correlations.

The analysis for the 1992–95 period reveals that only three series have not exhibited any significant serial correlation at any lag, only marginally less than the previous period. First order serial correlations were found to be persistent in this period. While 28 series has been identified with serial correlations at various lags, 23 series exhibited serial correlation at lag one. Four of these 23 series have been identified with serial correlation at lag one only.

The hypothesis that the return series are white noise has been rejected for 19 series and the market index at the 5 percent and 10

TABLE 10.5 *Average Autocorrelation Coefficients for the Sample*

Lags	1988–1991	1992–1995
Lag-1	0.1377*	0.1026*
Lag-2	0.0451	–0.0392
Lag-6	0.0488	–0.0156
Lag-12	0.0841	0.00045
Lag-18	0.01213	0.00177
Lag-24	0.1689*	–0.0080

*The coefficients are significantly different than zero at 5 and 10% significance levels.

percent significance levels. This is considerably higher than 11 series rejected in the previous period. The test fails to reject the null hypotheses for 12 series in this sub-period.

Average autocorrelation coefficient at lag 1 is smaller in the sub-period 1992–95. However, the difference was found to be statistically insignificant. Although the average autocorrelations in lags 2, 6, 12 and 24 were found to be significantly lower in sub-period 1992–95, none of the average coefficients in these lags were significant except for the lag-24 in. The average coefficients in these lags also had sign differences as compared to the 1988–91 period.

Average coefficients for the index are not qualitatively different than the whole sample. Although the autocorrelation coefficient at lag one is smaller in the second sub-period, the difference is not statistically significant. Autocorrelation coefficients in other lags were found to be insignificant for both periods.

Conclusion

Structural developments in the Turkish financial markets have been analyzed and described in some detail during the chapter. As indicated earlier, the objective of the study was to explore the implications of these developments on the intertemporal behavior of the equity returns and interpret the implications of this behavior on the market efficiency. As demonstrated earlier, an exclusive test of market efficiency requires an underlying asset pricing model. In this study, due to the limitations of data, we focused on the predictability of the returns as an indicator, and analyzed the intertemporal nature of the return predictability. The empirical results suggest that the sample returns exhibit significant serial correlations at various lags, which allow predictive model building. Empirical results also suggest that nature of the returns do not change qualitatively over time during the 1988–95 period. Same findings apply for the market index during the sample period.

TABLE 10.6 *Autocorrelation Coefficients for the ISE Index*

Lags	1988–1991	1992–1995
Lag-1	0.2644*	0.2230*
Lag-2	–0.0368	–0.0306
Lag-6	0.0318	–0.0122
Lag-12	–0.0140	–0.0096
Lag-18	–0.0032	0.0067
Lag-24	–0.0427	–0.0180

*The coefficients are significantly different than zero at 5 and 10% significance levels.

Although return predictability and the non-random character of returns are not sufficient to reject the efficiency of the market, it raises serious concerns about the functioning of the markets. Although return predictability may be caused by a range of factors including market inefficiency, it may be perceived as an indication that the market is not a level playing field. If this is the case, in the long run it may keep uninformed investors from participating in these markets, reducing markets' depth and liquidity, and finally it negatively affects the role of the stock markets in the economic development process. Given the level of predictability observed in the Turkish equity markets, these outcomes threaten further development of the equity markets and their potential contributions to the economic development. Improved disclosure requirements, accounting standards and regulations preventing stock manipulations are the prerequisites for better return behavior and should be rapidly imposed on the markets by the policy makers

References

Aybar, C. B. (1992) A Descriptive Analysis of Stock Return Behavior in an Emerging Capital Market: The Case of Turkey, PhD dissertation, The Ohio State University, Fisher College of Business.

Aybar, C. B. (1995) Financial Market Analysis, in A Survey of Turkey, Supplement to *Euromoney*, August. Euromoney Publications, London.

Cleassens S., Dasgupta, S. and Glen, J. (1995) Return Behavior in Emerging Stock Markets, World Bank Economic Review, 9.1, pp. 131–151.

Errunza, V. and Losq E. (1985) The Behavior of Stock Prices in LDC Markets, *Journal of Banking and Finance*, Vol. 9, pp. 561–75.

Fama, E. (1965) The behavior of Stock Market Prices, *Journal of Business*, Vol. 38, pp. 34–105.

Fama, E. (1991) Efficient Capital Markets II, *Journal of Finance*, Vol. 42, No. 1, pp. 49–68.

Granger, C. W. J. and Morgenstern, O. (1970) The Random Walk Hypothesis of Stock Market Behavior, *Kyklos*, Vol. 17, pp. 1–30.

McKinnon, R. I. (1973) *Money and Capital in Economic Development*, Brookings Institution, Washington, DC.

Onder, I., Turel, O., Ekinci, O. and Somel, C. (1993) *Kamu Finansmani, Mali Yapi ve Mali Politikalar (Public Financing, Financial Structure and Policies)*, Tarih Vakfi Yurt Yayinlari, Ankara.

Sak, G. (1995) *Konsolide Butce Acigi ve Kamu Finansmanin Faiz ve Doviz Kurlarina Etkisi (The Implications of Consolidated Budget Deficit and The Share of the Public Issues on the Interest and Exchange Rates)*, May, Isletme Finansý, Ankara.

Shaw, E. S. (1973) *Financial Deepening in Economic Development*, Oxford University Press, New York.

Notes

1. Stock return behavior refers to the characteristics of the movements of returns over a period of time. Stock returns may move randomly in an unpredictable fashion (as posited in efficient markets hypothesis) as well as in detectable patterns defying the unpredictability hypothesis.
2. This has skewed the capital structure of the Turkish firms towards excessive use of leverage, which caused significant problems in 1980s as the real interest rates turned out to be positive.
3. Since the objective of the table is to exhibit trends, asset based securities and deposits were excluded in the table. The absence of these variables do not change the nature of trends.