The Political Economy of Inflation:
Are Turkish Banks Potential Losers From Stabilization?
Caroline Van Rijckeghem

The Causes and the Impact of the Financial Crisis on the East Asian Economies
Kasım Eren

Russian Crisis: The Impact on the ISE
Research Department
Istanbul Stock Exchange

The ISE Review

Quarterly Economics and Finance Review

Now Online Access:

ISE REVIEW, Quarterly Economics and Finance Review published by the Istanbul Stock Exchange.

Starting with Volume 3 No: 10 issue (year 1999), full-text articles published in the ISE Review are now available through the Internet in pdf-format. Access to the printed version of the ISE Review for users with a fully paid subscription will be via an assigned password.

Abstracts:
Abstracts of all articles published in the ISE Review are available through the ISE website. The database covers all abstracts of refereed journal articles published since 1997. Abstracts of published articles are provided every three months, free of charge, following the publication of the ISE Review.

Access:
(1) http://www.ise.org /publictn.htm
(2) select: ISE Review

For further information, comments and suggestions please contact:
Tel: (90.212) 298 21 71   E-Mail: arastir@imkb.gov.tr

The ISE Review Subscription Order Form 1999

Please check appropriate box for one year subscription .
☐ US$ 30 for hard copy (4 issues) (US$ 7.5 per copy)
☐ US$ 15 via E-Mail (4 issues) (US$ 3.75 per issue)

Name ……………………………………………………
Title ……………………………………………………
Company ………………………………………………
Address …………………………………………………
City ……… State …………… Zip ………………
Phone ………………… Fax ………………………
E-Mail …………………………………………………

☐ Payment enclosed
☐ Wire transfer to Türkiye İş Bankası Borsa Branch Account no: 1125 30103 4599
   Please write the name of the publication and send us a copy
   Please do not send cash

In order to subcribe to the **"ISE Review"**
please fill out the following form and return to:

Saadet ÖZTUNA
Istanbul Stock Exchange (Research Dept.)
İstinye, 80860 İSTANBUL- TURKEY
Tel: 90 212 298 21 71
Fax: 90 212 298 25 00

The ISE Review

CONTENTS

THE POLITICAL ECONOMY OF INFLATION: ARE TURKISH BANKS POTENTIAL LOSERS FROM STABILIZATION?

Caroline VAN RIJCKEGHEM*

Abstract

Turkish banks are widely seen as potential losers from a stabilization program because the exchange risk premium on government domestic currency denominated debt would fall and because banks would lose inflationary revenues from demand deposits. This paper shows, using techniques from finance as well as regression analysis and a review of cross-country experience that, to the contrary, banks are likely to gain from stabilization, both because of the presence of a large maturity gap and because of increased financial intermediation.

I. Introduction

Turkey has had high and chronic inflation for about 15 years. In 1997, inflation was about 100 percent and the highest in the world, excluding countries suffering from civil strife or severe political instability. Inflation has, however, taken a stronger than ever presence in public discourse recently, and an IMF staff-monitored program was agreed to at the end of June 1998.

This paper is an attempt to contribute to a better understanding of the issues involved when thinking about the impact of stabilization on the profitability of the Turkish banking sector. There is a widespread view that banks could suffer under a stabilization program. Turkish banks are seen as benefiting from the risk premium which the government must pay on its domestic currency denominated debt while also reaping large inflationary revenue from demand deposits. With bank profitability currently

at low or negative levels, it would then be understandable that banks would resist reform.[1]

This paper argues that there are also a number of reasons why banks may benefit from disinflation. Most importantly, financial intermediation is likely to increase substantially, contributing to the profitability of the banking sector in both the short and long run. At the same time sharp drops in nominal interest rates can be expected to reduce funding costs more than they reduce interest revenues upon the inception of a stabilization program, reflecting the fact that banks tend to borrow short and lend long.[2] This paper systematically assesses these factors theoretically and empirically. It draws on work by Cilli and Kaplan (1997), who first examined the topic.[3] It finds using duration analysis that there will be important net positive effects for banks, at least in the first year following stabilization. Because of data limitations, only the Turkish banking system as a whole is analyzed.[4] Regression results for 11 listed banks on the Istanbul Stock Exchange confirm the importance of the interest rate effect. In reviewing the experience of Brazil, which provides a natural point of reference given the loss of inflationary revenues to banks of some 4 percent of GDP, the paper finds that as a whole Brazilian banks performed surprisingly well.

II. Risk premium on Government Debt

The argument that banks would lose from stabilization is based on the idea that with lower inflation, inflation and exchange rate variability are likely to fall, so that banks will earn a lower risk premium.[5] In recent years, this risk premium has been volatile, but averaged 10-15 percent up to the Russia crisis. Banks only earn this risk premium on their open foreign exchange positions; to the extent that banks hold treasury-bills but

---

[1] While bank profits appear positive in nominal terms, profits may not be sufficient to ensure a positive return on equity real terms (Banks Association of Turkey, 1997)

[2] The rally of bank stocks upon the announcement of the IMF staff-monitored program is testimony as to the importance of this effect. Interest rates (on March 10, 1999 paper, which expires before the 1999 elections) declined by some 15 percents between June 5, 1998 before Mr. Fischer's visit and July 3, 5 days after the signing of the IMF staff-monitored program).

[3] Similar issues have been examined for the case of Russia in 1996 by Zettelmeyer (1996) and for the United States by Santoni (1986), both of whom conclude that reductions in inflation and interest rates are good news for banks.

[4] Aleskerov and Yolalan (1997, 1998) are able to cluster banks according to a number of financial ratios, but information on the maturity of assets and liabilities, which is critical here, is not available.

[5] It is a reasonably well-established fact that high inflation is associated with more variable inflation. For instance, in the 106 country panel considered by Boyd, et al. (1996) the simple correlation between inflation and its standard deviation is 0.97.

finance these with TL deposits, margins are much smaller, and probably do not afford any "above-normal" profits, as can be seen from Figure 1. This chart shows funding costs based on 7-day repos and on borrowing in a foreign exchange basket (the US prime rate plus the 7-day ahead rate of depreciation of the USD-DM basket) and indicates that funding T-bills through repos was unprofitable in 1997. From this it should be clear that the base for extraordinary profits is the open position, not the total outstanding government debt. A decline in government debt, as may occur after stabilization, would thus not have any separate effect.[6]

Figure 1. Funding from FX and Repo
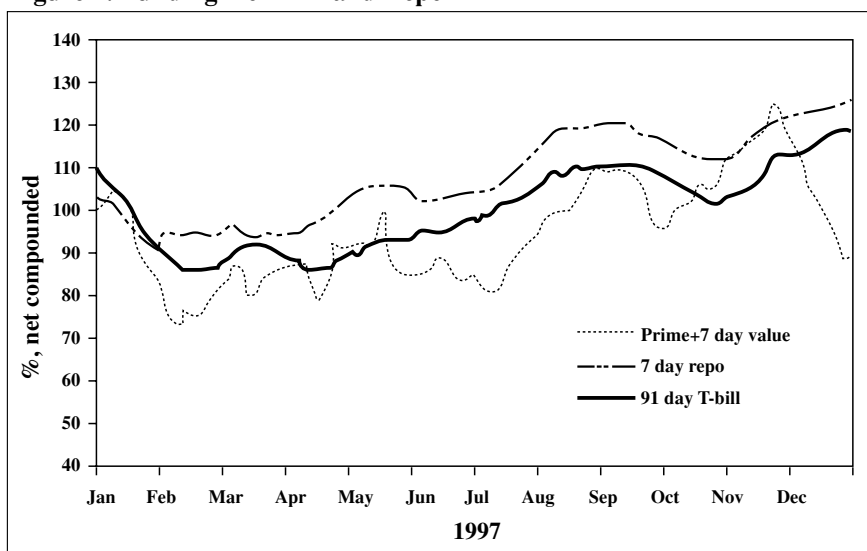
Source: Reuters

Estimates put these open positions at about 5 percent of GDP, or about 1/4 of total domestic currency denominated government debt.[7] Applying a foreign exchange risk premium of 10 percent to the base of 5 percent of GDP, under the assumption that this risk premium will disappear for the most part after stabilization, a potential reduction in profits of 0.5 percent of GDP is found.

---

[6] While interest rates on time deposits are lower than those on repos, time deposits bear reserve requirements and other costs, so that extending the analysis in Figure 1 to incorporate time deposits would probably not alter the conclusions. See Karakullukcu (1998).

[7] This estimate is somewhat greater than the level officially reported by the banks, reflecting the fact that banks have the possibility to circumvent prudential regulations. See Folkerts-Landau and Garber (1997).

III. Revenue from Demand Deposits

TL-denominated demand deposits (held by both individuals and firms) at first appear to be a great source of profitability due to high inflation. Such demand deposits typically earn 5 percent interest annually, whereas time deposit rates are twenty times this figure.

However, to obtain profits from demand deposits, over and beyond profits associated with time deposits, costs associated with the collection and maintenance of demand deposits need to be taken account as well. Demand deposits face higher reserve requirements than time deposits and entail the provision of services, such as the use of ATM machines, free of charge. Direct information on costs is not generally available,[8] but from an economic point of view, one would expect costs to closely track revenues because of competition in the banking sector as well as because of the existence of close substitutes for TL-denominated demand deposits, notably overnight repos and demand deposits in foreign currency. In the absence of information on costs, it is postulated that the real return on demand deposits (over and above the return on time-deposits) is 15 percent.

Assuming then that banks earn a real return of 15 percent on demand deposits, and applying this figure to the demand deposit to GDP ratio of 3 percent,[9] we find, revenue from demand deposits of 0.5 percent of GDP. This figure also corresponds to the reduction in profitability to be expected from stabilization of prices.

IV. Financial intermediation

A lower exchange risk premium can be expected to bring lower real interest rates for non-government borrowers and to thereby contribute to increased financial intermediation. At the same time, inflation affects the efficiency of the financial system (Boyd et al., 1996). Indeed, the experience of several Latin American countries, notably Brazil, suggest that banks have survived the drastic decline in inflation, and the reduction in revenue from demand deposits and "float" (worth an estimated 4 percent of GDP)[10] by increasing their commercial lending. Despite problems in a

---

[8] Assessing the costs associated with demand deposits requires an analysis of the allocation of labor and capital to various functions. Some work has been done in this area for a number of banks (e.g. Garanti, Yapi ve Kredi).

[9] Banks Association of Turkey, 1997.

[10] "Float" refers to the resources which are temporarily available to banks before they are credited to the accounts of bank customers. A large number of banks were restructured (the total number of banks shrunk from 271 banks in July 1994 to 248 at end 1997), but this appears to have been the result of a lending boom (demand deposits grew 165 percent and time deposits 40 percent in the first 6 months of the Real plan fueling lending growth of 44 percent during the first 8 months) in conjunction with the Tequila effect after the Mexican crisis, rather than of stabilization per se.

number of banks, average profitability, as measured by the return on aver-
age equity, remained high, on the order of 12 percent in June 1997. Stock-
price data for the two largest private banks with market capitalization of
USD 8-10 billion indicate that expectations initially were for an increase
in profitability (Figure 2). Not until end-1994, the timing of the Mexican
currency crisis, did stock prices of these banks decline. Today, stock
prices of the private banks exceed their July 1994 levels, indeed stock
prices are now multiples of what they were then.

Figure 2. Stock Prices: Largest Brazilian Banks, May 1994-May 1998
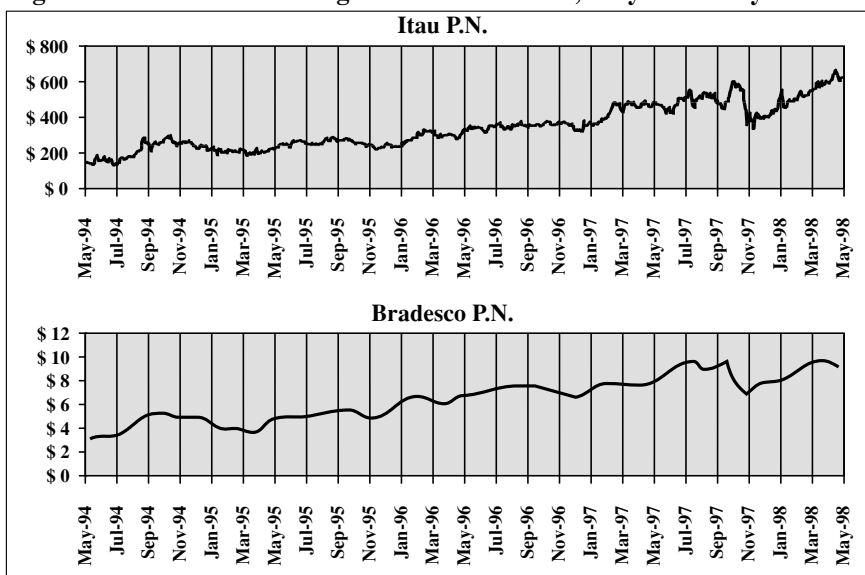
Source: Reuters

Recent evidence by Boyd, et al. (1996) further documents the existence
of a negative relationship between inflation and a measure of financial sec-
tor lending to the private sector. Splitting a 99 country sample into 4 quar-
tiles according to their inflation levels over the period 1960-89, the authors
find that financial claims to the private sector are only 15 percent of GDP
in the highest inflation quartile (with an average inflation of 70 percent)
compared to 34 percent in the lowest inflation quartile (an average infla-

---

[10] For a more complete description of developments in the Brazilian banking sector see the documents of the Ministry
of Finance's Secretariat of Economic Policy, "Restructuring of the Financial Sector" (de Barros et al., 1998) and
"Restructuring the Brazilian Banking System," Brasilia, August, 1996 (de Barros and de Almeida,1996), as well as
Van Rijckeghem (1998).

tion of 5 percent).[11] Financial claims on the private sector are also significantly correlated with inflation, after controlling for the level of economic development, political stability, the black market exchange rate premium, and the level of government expenditures, in regressions based on country averages.

Turkey still has much room for an increase in financial intermediation as can be seen from a comparison with other emerging market economies. Table 1 shows that Turkey ranked second lowest among 14 emerging markets in 1997. While it is difficult to interpret the implications for profits from these numbers, it should be clear from these numbers that profits could increase sizably for banks which are well-prepared for financial intermediation.

**Table 1. Intermediation Ratios in Emerging Markets, 1997
(percent of GDP)**

Argentina	19	Indonesia	65
Turkey	21	South Korea	71
India	25	South Africa	73
Brazil	26	Israel	74
Egypt	38	Singapore	100
Philippines	53	Thailand	103
Chile	56	Malaysia	133

Data Source: International Monetary Fund, International Finance Statistics, 1997.

V. Interest Rate Effects through Maturity Gap

Changes in interest rates have an effect on the profitability of banks because banks, by the nature of intermediation, tend to borrow short and lend long. The effect of a change (reduction) in interest rates can then be understood in two ways. First, it implies that interest revenue will tend to remain constant (stay high) even as interest expenditures adjust (fall), simply because of the shorter maturity of deposits. Interest income from loans and securities adjusts (fall) later, given their longer maturity. Hence, in the case of a reduction in interest rates, banks tend to experience an increase in net interest income, until all contracts are renewed at interest rates reflecting the change in anticipated inflation. A second way of looking at the effect of changes in interest rates is to calculate the present discounted value (PDV) of assets and liabilities of banks. A reduction in

---

[11] Using IFS line 32d for financial claims.

interest rate implies an increase in the PDV of both assets and liabilities. Existing instruments become more valuable in the face of a reduction in market rates, as they offer an unchanged coupon, that is they offer a yield above the market rate. Because banks tend to lend long and borrow short, the PDV of assets tends to increase more than the PDV of liabilities.[12] Hence, banks tend to benefit from a reduction in interest rates. These two ways of looking at the effect of changes in interest rates are equivalent. The PDV of the change in net interest income equals the change in the PDV of assets minus the change in the PDV of liabilities. In practice, the methods are implemented in different ways, however.

5.1. Maturity Gap Analysis:

The first method is implemented in the form of maturity gap analysis. This method involves calculating the gap between assets and liabilities of a certain maturity (the "gapping period"). The idea is that a larger gap indicates greater exposure to interest rate changes, so that a reduction in interest rate, for example, will lead to a greater increase in net interest income. Only "rate sensitive" assets and liabilities are considered, that is those assets and liabilities whose interest rate is not indexed to the inflation rate. To the extent that assets and liabilities are indexed, any gap will not lead to a change in net interest income.

The gap between assets and liabilities naturally differs depending on the "gapping period". For shorter gapping periods, the gap tends to be large (that liabilities with maturities of, e.g., 1 month or less are much larger than assets with maturities of 1 month or less), since banks borrow short and lend long, while for sufficiently long gapping periods, the gap approaches zero (that is, if total liabilities equal total assets). Because in practice, an inevitably arbitrary gapping period is chosen, this method yields different results from "duration analysis" which investigates the effect on the PDV of banks' balance sheets (see below).

Cilli and Kaplan (1997) apply maturity gap analysis to Turkey, setting the gapping period at six months. They exclude foreign exchange denominated assets and liabilities, which are not "rate-sensitive", as their interest rates automatically adjust in line with depreciation and inflation. They find that 64 percent of TL-denominated assets and 88 percent of TL-denominated liabilities have a maturity of 6 months or less (data refer to December 1996 as the series were discontinued). In TL terms this corre-

---

[12] For example, the value of very short term liabilities, such as repos, hardly changes at all in response to interest rates.

sponds to a 800 trillion maturity gap (in 1996 TL). The authors conclude from this that a 10 percent reduction in interest rates would lead to gains in net interest income of some 80 trillion, or 2.6 percent of rate sensitive liabilities, excluding off-balance sheet items. The authors also redo the calculations including off-balance sheet items, such as repos. When these items, which tend to reduce the maturity of liabilities, are included, the maturity gap is much larger as expected, amounting to some 3 quadrillion, so that a 10 percent reduction in interest rate yields an increase in net interest income of 300 trillion.

Similar exercises for public and private banks yield the following results. Including off-balance sheet items, a 10 percent reduction in interest rates yields a TL 136 trillion increase in net interest income for the public banks and a TL 150 trillion increase for the private banks.

The results are a bit mis-leading, however, as they imply-by applying an annual interest rate to the gap—that the maturity mis-match at the 6 month window is to stay in place for exactly one year, and was in place throughout during the first 6 months following an interest rate decline. Only then would changes in interest income equal the gap times the change in the annual interest rate.   To the extent that a maturity gap persists for gapping periods greater than 1 year, the increase in net interest income would be greater. To the extent that the maturity gap only emerged for gapping periods close to 6 months, rather than being present for short gapping periods, the increase in net interest income would be smaller. The complete maturity structure of asset and liabilities clearly has an effect on net interest income, but looking at the maturity gap for one gapping period cannot capture this.

 There is an additional concern with this methodology, which has to do with the effect of the structure of interest payments over the course of loans. Net interest payments increase because interest rates, and in turn interest income, on assets tend to decline with a lag. The contribution to the net present value of interest income, will, however, depend on the exact timing of interest payments, whether during the course of the loan, or on expiration of the loan. This is not taken into account in maturity gap analysis. Thus, two banks with equal maturity gaps, but one making "balloon loans" (where periodic payments reflect interest only, with the principal paid-off all at once when the loan matures) and the other making loans where principal payments are amortized over the course of the loan, will appear to be equally affected by a change in interest rates. However, the bank making balloon loans will tend to experience a greater increase in the PDV of net interest income, for equal changes in interest rates

because the average date of payments is further into the future.

To conclude, the discussion in the previous two paragraphs indicates that the maturity gap approach, while it can be useful in providing an indication of changing exposure to interest rate risk (for example an increase in the gap between assets and liabilities at a certain gapping period could give cause for concern), does not, however, provide an accurate representation of interest exposure at a point in time. For this reason, a second method-duration analysis-is often employed.

5.2. Duration Analysis:

The size of the effect of a change in interest rates on the equity value of banks can be obtained from duration analysis and can be shown to approximately equal

$$- (d_A \, A - d_L \, L) \, . \, \Delta i/(1+i)$$

where A are assets, L are liabilities, d_A is "duration" on assets, d_L is "duration" on liabilities, and i is the interest rate. Duration measures the timing of payments and is defined as the weighted average of the maturity of payments, with weights corresponding to the present discounted value of these payments.[13]

Duration is a more complete measure of an asset or liability's interest rate sensitivity than maturity because it takes into account the time of all cash flows-that is, it includes interest payments-as well as the asset or liability's maturity. However, and for this reason, calculating duration is demanding in terms of data requirements. Information on the maturity structure of assets and liabilities is available from Cilli and Kaplan (1997) for 1996[14] and refers to fixed-interest TL-denominated contracts.[15] Information on the timing of interest payments is not available (more on this below).

Duration analysis is an approximation which is valid only for small changes in interest rates. Because the changes under consideration here are large, a simulation analysis will be carried out. The underlying idea is very simple. It involves recalculating the present discounted value (PDV) of a banks' assets and liabilities under a new interest rate assumption. Details are given in an appendix.

---

[13] See for example Kohn, 1994, pp.704-706

[14] More recent data is not available as the Central Bank survey on which this data is based was discontinued. The data measure remaining time to maturity, not original maturity.

[15] Much of long-term lending occurs in foreign exchange. There is not much floating rate lending in Turkey.

There are a number of limitations of the data for the purpose of the analysis here, which fortunately tend to be offsetting in their effects on the calculations. First, the data exclude off-balance sheet data (mostly repos); as repos tend to be of shorter maturity than the underlying securities, this leads to a downward bias in the estimated benefits from an interest rate reduction. Second, non-interest earning assets (cash and reserve require-ments) and liabilities (demand deposits) are included in the data. Since these assets and liabilities are basically non-interest earning while also being of short maturity, the calculations will show a shorter duration for both assets and liabilities than the practically relevant duration. Non-interest earning TL assets are less than half TL-denominated demand deposits (Banks Association of Turkey, 1996), leading to an upward bias in the gains from a reduction in interest rates. Third, the analysis assumes that all contracts are carried out at the originally agreed interest rates; that is, borrowers cannot pre-pay their loans and refinance; furthermore defaults are assumed not to increase. Given that ex-post real interest rate on old contracts increase following stabilization, both contract renegotia-tions and increasing defaults are likely, with adverse consequences for banks. The analysis also ignores any hedging banks may be doing to pro-tect themselves against interest rate risk; such hedging implies smaller gains in case of interest rate declines. Fourth, the structure of interest and principal payments is not available. The exact structure is very important for duration analysis, with "balloon loans" implying high duration relative to loans where principal payments are amortized over the course of the loan. Because the majority of loans (as well as government securities) in Turkey take the form of balloon loans, we can fortunately circumvent this last data-limitation.[16]

Using this data, and assuming a balloon structure for both assets and liabilities, calculations yield estimated duration for assets, d_A, of 4.5 months, and for liabilities, d_L, of 2.7 months. The finding that the duration of liabilities is shorter than of assets is as one would expect, given that it is banks' business to engage in maturity transformation, taking deposits and transforming them into loans. This means one can expect banks to benefit from a reduction in interest rates.

Next, a simulation of the PDV of assets and liabilities for a hypothe-sized change in interest rates is carried out, using the method given in the

---

[16] The liability side poses no additional problems: deposits dominate the bank balance sheet and these take on a balloon structure by nature (interest accrues throughout, and principal is paid only when the deposit is withdrawn).

appendix. It shows that a reduction in monthly interest rates from 6.5 percent to 0.5 percent would bring a 1-time jump in value of banks of about 17 percent of TL-denominated assets, or 4.2 percent of GDP.[17]

Are such large effects merely theoretical? Regression analysis for 11 banks listed on the Istanbul Stock Exchange suggests not. In a regression of monthly rate of change of bank stock prices on a transformation of monthly time deposit interest rates, the coefficient on interest rate is significant at the 5 percent level for 6 banks, with coefficients on $\Delta i/(1+i)$ ranging from 0.8 to 2.1. At an interest rate level of 100 percent, just to give an example, this means that an increase of interest rates of 1 percent is associated with a reduction in stock prices of 0.4-1 percent. The regressions control for unanticipated inflation[18] and the general movement in the stock exchange (based on the ISE index for industrial activities) cover the period February 1991-September 1997.[19]

VI. On Other Short-term Effects of Stabilization on Turkish Banks

6.1. Surprises on Financial Condition of Banks and Enterprises

The absence of inflation accounting may have led to an over-reporting of earnings in financial statements. Traditionally, inflation tends to lead to over-reporting of earnings in financial statements, reflecting historical cost depreciation and inventory valuation. Given generous provisions for accelerated depreciation, over-reporting may be a lesser problem in Turkey. Nevertheless, to the extent that there is over-reporting, as the true financial condition of enterprises (and banks) becomes known, these enterprises may find their valuations falling in the stock market. This would depend on the effect of inflation not yet have not been discounted by the market. Where the issue has been studied (Canada and the US), the mandatory reporting of inflation adjusted accounts turned out not to make a difference for stock market valuation, but results may be very different for a high inflation economy.

6.2. Capital Inflows

Stabilization is likely to involve substantial capital inflows, which are intermediated by the banking sector, generating greater profitability in the

---

[17] See Van Rijckeghem (1998) for the detailed simulation methodology.

[18] This is calculated as the residual from a time-series analysis of the inflation rate carried out by Alper and Ucer (1998).

[19] Additional detail is given in Van Rijckeghem (1998). Guner and Danisoglu-Rhoades (1998) also examine the topic, and obtain similar results.

short run for banks, but increasing vulnerabilities later on.[20] Alternatively, to the extent that money is used as a nominal anchor, and capital inflows are sterilized, stabilization may lead to an increase in real interest rates on new contracts (in addition to an increase in ex post real interest rates for contracts established before stabilization). Either scenario can be problematic for banks.

6.3. Behavior of Real Interest Rates

While long-term real interest rates can be expected to fall, reflecting a reduction in risk-premium (see above), real interest rates could increase in the aftermath of stabilization, as is often the case in money-based stabilization programs, on account of tight monetary policy. In the case of exchange rate based stabilization, a reduction of real interest rates is expected on a priori ground.[21] The observation of increases in real interest rates even in exchange-rate based programs has been attributed to the use of money as a secondary nominal anchor (Vegh, 1992). High real interest rates would have negative consequences for banks through a higher rate of default among customers, but a detailed assessment of consequences for the economy in general and banks more specifically, of high real interest rates, lies outside the scope of this paper.

6.4. Output Developments

A related issue which has not been addressed in this paper but is crucial, is the overall output implication of a stabilization program. In Turkey, banks are closely associated with large conglomerates, which contribute a large fraction of GDP. Their response to stabilization is perhaps as crucial as the many issues addressed in this paper, but goes beyond the scope of the paper. In very broad terms, one could conjecture that, if the growth implications of a stabilization program are not severe, this would help banks enormously, both through the health of the conglomerates they are associated with and through their general portfolio.

VII. Conclusion

Theory, empirical results, and the experience of Brazil all lead one to expect mixed effects of stabilization on the banking sector. Permanent reductions in profitability are to be expected reflecting the loss of risk-pre-

---

[20] World Bank, 1997

[21] This is because inflation is likely to fall less than the rate of exchange rate depreciation, initially. If interest parity holds, real interest rates would decline. See Vegh (1992).

mium earned on open positions and the loss of inflationary revenues on demand deposits. Estimates put combined losses arising from these effects at 1 percent of GDP.

These losses can be juxtaposed with the permanent gain from increased financial intermediation and the temporary gain to be expected by banks which lend long and borrow short when interest rates decline. While difficult to measure accurately, these effects are shown to be potentially large. Turkey - with a ratio of financial claims on the private sector to GDP of 21 percent in 1997- has one of the lowest financial intermediation ratios among emerging markets. Empirical work by Boyd, et al. (1996) suggests that, on average, countries with inflation above 40 percent experience 17 percent of GDP lower financial claims on the private sector.

As for "interest risk" working to banks' advantage in the case of stabilization followed by a reduction in nominal interest rates, a simple simulation (not taking into account defaults, renegotiations, or off-balance sheet items) pointed to a one-time increase in profits of some 4.2 percent of GDP. [22] Regression analysis confirmed the existence of a link between interest rates and banks' stock prices, with coefficients indicating that a one percentage point reduction in interest rates is associated with a 0.4-1.1 percent increase in equity value. While extrapolation to a 100 percent change in interest rates would be misleading, as contracts are likely to be renegotiated given the change in environment, these findings nevertheless point to important positive effects for banks, which at least in the first year following stabilization would probably more than offset the 1 percent of GDP reduction in profit which could result from a reduction in risk premium and revenue from demand deposits.

Finally, a review of the Brazilian experience revealed that most Brazilian banks survived the decline in inflation and loss of some 4 percent of GDP in inflationary transfers to banks, and that the largest private Brazilian banks also performed well in the stock market. A number of Brazilian banks did go bankrupt and were liquidated.   Interestingly, the loss of the inflation tax may not have been the main factor at play. Stabilization brought with it a credit boom which in turn, in conjunction with the need to protect the balance of payments in the wake of the Mexico crisis, prompted a tightening of monetary policy, higher interest rates, and economic slowdown. From this it appears that the policy lesson for Turkey might be that its policy-makers will have to be careful after

---

[22] These simulations assumed that interest rates would decline from 100 percent to 10 percent annually.

stabilization and would be well-advised, at that time, to encourage the development of credit and interest risk assessment capabilities, implement measures to curtail a lending boom, and tighten prudential regulations and supervision.

Appendix: Simulation Method
Consider an individual balloon loan due T periods in the future, with principal equal to m. The PDV of payments (denoted by p_t) are:

$$p_1 = i_0.m / (1+i)$$
$$p_2 = i_0.m / (1+i)^2$$
$$...$$
$$p_T = (1+ i_0).m / (1+i)^T$$

Here i_0 represents the interest rate at which loans were negotiated and i represents the current market interest rate, where we have assumed a flat yield curve, so that the same interest rate discounts payments at all maturities. If all loans are assumed to take the form of balloon loans, and we assume contracted interest rates are equal across maturities, it is then a simple matter to aggregate the loans, m, to obtain aggregate M_t, i.e. the amount of loans with maturity t. The total payments coming due are then:

$$P_1 = [(1+i_0) . M_1 + i_0 . M_2+...+i_0 . M_T] / (1+i)$$

$$P_2 = [(1+i_0) . M_2 + ... + i_0 . M_T] / (1+i)^2$$
$$...$$
$$P_T = (1+i_0) . M_T / (1+i)^T$$

These P_t are straightforward to calculate if data on M_t are available, and can be simulated for different levels of interest rates, i. The calculation of duration is also straightforward:

$$d = (1.P_1 / P) +(2.P_2 / P) + (3.P_3 / P) + ...+ (T.P_T / P)$$

where $P = P_1 + P_2 + ... + P_T$

References

Aleskerov, Fuad, et al., *"Clustering Turkish Commercial Banks According to Structural Similarities,"* Yapi ve Kredi Bank Research Department Discussion Paper Series No. 97-2, 1997

—-, *"Structural Similarities of Turkish Commercial Banks,"* mimeograph, 1998

Alexeev, Michael V. and Clifford G. Gaddy, *"Income Distribution in the U.S.S.R. in the 1980s,"* Review of Income and Wealth, V, 39, No. 1, March 1993

Alper, Emre, and Murat Ucer, *"Some Observations On Turkish Inflation: A Random Walk Down the Past Decade,"* presented at the Center for Economics and Econometrics conference on Stabilization in an Emerging Market: The Case of Turkey on January 23, 1998 and forthcoming in Bogazici Journal.

Banks Association of Turkey, *"Banks in Turkey, 1996 and 1997"*, Istanbul, 1997-1998

Boyd, John H., et al., *"Inflation and Financial Market Performance,"* Federal Reserve Bank of Minneapolis Research Department Working Paper 537D, October 1996

Cilli, Huseyin and Cafer Kaplan, *"Analyzing the Impact of Disinflation on the Banking System: A Conceptual Note,"* mimeograph, Central Bank of Turkey, November 1997

Cowell, F. and Mehta, F., *"The Estimation and Interpolation of Inequality Measures, Review of Economic Studies"*, V. 49, pp. 273-290, 1982

de Barros, J.R.M., et al., *"Restructuring of the Financial Sector"* Ministry of Finance's Secretariat of Economic Policy Internet Communication www.fazenda.gov.br/ingles/irestru.html, February 1998

de Barros, J.R.M. and M.F. Almeida, *"Restructuring the Brazilian Banking System,"* Ministry of Finance's Secretariat of Economic Policy mimeograph, Brasilia, August 1996

Folkerts-Landau and Peter M. Garber, *"Derivative Markets and Financial System Soundness,"* IMF, 1997

Guner, Nuray and Seza Danisoglu-Rhoades, *"Interest and Exchange Rate Sensitivity and the Stock Returns of Turkish Commercial Banks,"* paper presented at the Second METU/ERC International Conference on Economics, September 1998.

Karakullukcu, Memduh, *"An Institutional Analysis of Domestic Debt Pricing in Turkey: Seeking a Structural Solution to a Structural Problem"*, mimeograph, 1998

Kohn, Meir, *"Financial Institutions and Markets"*, McGraw-Hill, New York, 1994

McDonald, J. and Ransom, M.R., *"Functional Forms, Estimation Techniques and the Distribution of Income"*, Econometrica, V. 47, No. 6, 1979, pp. 1513-1525.

Santoni, G. J., *"The Effects of Inflation on Commercial Banks,"* Federal Reserve of St. Louis Review, V. 68, No. 3, March 1986, pp. 15-26.

Siegel, S. and Castellan, N.J. Jr., *"Nonparametric Statistics for the Behavioral Sciences"*, second edition, McGraw Hill, New York, 1988.

Van Rijckeghem, *"The Impact of Stabilization on the Profitability of the Turkish Banking Sector: How Concerned Should Banks Be?"* The Banks Association of Turkey Working Paper No, 1998/2, July 1998

Vegh, C.A., *"Stopping High Inflation: An Analytical Overview,"* IMF Staff Papers, September 1992

World Bank, *"Private Capital Flows to Developing Countries: The Road to Financial Integration"*, Oxford University Press, Oxford, 1997

Zettelmeyer, Jeromin, *"Can Favorable Political Outcomes be Bad News for banks? Some Simple Theory, and an Application to the Russian Presidential Election,"* mimeograph, International Monetary Fund, September.

THE CAUSES AND THE IMPACT OF THE FINANCIAL CRISIS ON THE EAST ASIAN ECONOMIES

Kasım EREN*

Summary

In 1997, the world economy have witnessed the East Asian countries' economic crisis. Many countries in the region have been deeply affected from this development. This study deals with the causes and the impact of the East Asian crisis. For this purpose, it would be useful to consider pre-crisis period. In parallel, capital inflows to the East Asian developing countries and their economic indicators would be evaluated.

I. Introduction

About $670 billion of foreign capital has flowed into developing countries in Asia and Latin America in the five years from 1990-94, as measured by the total balance on capital account of these countries. This is about five times the $133 billion total of the previous five years, when there was a debt crisis and many of these countries had little or no access to international capital markets. Although there was a substantial decline in capital flows to developing countries in the immediate aftermath of Mexico's currency crisis in December 1994, in most cases capital inflows have resumed (Calvo et al., 1996).

Table-1 :Annual Long-Term Private Capital Net Flows, by Region (Billion $)

Region	1978-81	1982-89	1990	1991	1992	1993
Sub-Saharan Africa	4.7	2.5	0.9	1.5	0.7	2.1
East Asia and the Pacific	7.9	9.6	20.5	25.6	42.5	62.8
Latin America and Caribbean	28.9	10.3	10.7	22.8	27.9	57.7
Middle East and North Africa	4.1	3.5	0.2	-0.1	1.6	1.6
South Asia	0.7	2.8	2.6	3.0	1.8	5.6
Europe and Central Asia	7.3	5.8	9.6	4.6	24.3	27.8

Source:Eduardo-Fernandez Arias and Peter J. Montiel, *"The Surge in Capital Inflows to Developing Countries: An Analytical Overview,"* The World Bank Economic Review, Vol.10, January 1996.

* Ass. Prof. Dr. Kasım EREN, Yıldız Technical University, Faculty of Economic and Administrative Sciences, Istanbul. Tel: (212) 259 70 70 E.Mail: Kasim.Eren@yildiz.edu.tr and erenk@yildiz.edu.tr

   The factors (during 1990s) that encourage international flows of capital in the world, can be summarised as follows:

1-Sustained decline in world interest rates,

2-Recession in the United States, Japan and many countries of Europe,

3-Making significant progress of many heavily indebted countries toward improving relations with external creditors,

4-Begining to adopt sound monetary and fiscal policies as well as market oriented reforms including trade and capital market liberalisation (Calvo et al., 1996).

   It is necessary to evaluate the common characteristics and differentials of the countries in the region to understand the reasons of capital flows and probably it also would be useful to expose the reasons of the crisis. The reasons are explained in the following sections.

II. Common Characteristics of the East Asian Countries

2.1. High Growth Rates:

The Asian countries have realised high growth rates during the last decade. These high growth rates have accompanied by high investment rates and saving rates.

Table-2: Real Economic Growth of the Asian Countries (GDP) (%)

	1975-82	1983-89	1990	1991	1992	1993	1994	1995	1996	1997
Korea	7.0	9.6	9.5	9.1	5.1	5.8	8.6	8.9	7.1	6.0
Indonesia	6.2	5.5	9.0	8.9	7.2	7.3	7.5	8.2	8.0	5.0
Malaysia	7.1	5.4	9.6	8.6	7.8	8.3	9.2	9.5	8.6	7.0
Philippines	5.6	1.1	3.0	-0.6	0.3	2.1	4.4	4.8	5.7	4.3
Singapore	8.0	6.9	9.0	7.3	6.2	10.4	10.5	8.8	7.0	7.2
Thailand	7.0	8.1	11.6	8.1	8.2	8.5	8.9	8.7	6.4	0.6
Hong Kong			5.0	6.2	6.2	5.5	3.9	5.0	5.3	
China	6.0	10.7	3.8	9.2	14.2	13.5	12.6	10.5	9.6	8.8
Taiwan	8.5	9.2	5.4	7.6	6.8	6.3	6.5	6.0	5.7	6.7

Source: Foreign Trade Undersecretariat, *"Asian Crisis,"* Foreign Trade Journal, March 1998, Citation from IMF, World Economic Outlook, December 1997.

Calvo, Guilermo A., Leonardo Liderman, and Carmen M. Reinhart, *"Inflows of Capital to Developing Countries in the 1990s,"* Journal of Economic Perspectives.

2.2. High Saving and Investment Rates:

The countries in the region have realised considerable investment rates

Table-3: Investment and Saving Rates (% of GDP) I: Investment rates S: Saving rates

	1990		1991		1992		1993		1994		1995		1996		1997	
	I	S	I	S	I	S	I	S	I	S	I	S	I	S	I	S
Korea	36.9	35.7	38.9	35.7	36.6	34.9	35.1	34.9	36.1	34.6	37.1	35.1	38.4	33.6	35.0	33.1
Indonesia	36.2	31.8	35.6	31.1	35.9	33.4	29.5	28.7	31.1	29.5	31.9	27.7	30.8	27.5	31.6	28.0
Malaysia	31.3	29.1	37.3	23.2	33.5	30.1	37.8	27.7	40.4	33.8	43.5	34.7	41.5	37.8	42.8	39.3
Philippines	24.2	17.9	20.2	17.8	21.3	18.2	24.0	17.3	24.1	20.3	22.2	17.2	24.0	19.4	24.8	18.8
Singapore	35.9	45.3	34.2	46.6	36.0	48.4	37.7	46.2	32.7	50.8	33.1	51.1	35.1	51.3	37.4	51.3
Thailand	41.1	32.3	42.8	34.8	40.0	33.7	39.9	34.3	40.3	33.9	41.6	33.3	41.7	33.2	35.0	32.6
Hong Kong	27.4	35.9	27.2	33.8	28.5	33.8	27.5	35.7	31.9	33.8	34.9	31.9	32.4	30.0	35.1	31.3
China	34.7	37.8	34.8	37.8	36.2	37.3	43.5	41.3	40.9	42.0	40.2	40.2	38.7	39.3	37.6	41.2
Taiwan	23.1	30.5	23.3	30.3	24.9	28.9	25.2	28.7	23.9	27.0	23.7	26.7	21.2	25.9	22.2	25.4

Source: Calvo, Guilermo A., Leonardo Liderman, and Carmen M. Reinhart, *"Inflows of Capital to Developing Countries in the 1990s,"* Journal of Economic Perspectives.

during pre-crisis in the last decade. High investment rates had contributed achieving high growth rates.

2.3. Low Inflation Rates:
In spite of high growth rates, we meet reasonable inflation level in the region. High saving rates had contributed to this development.

Table-4: Inflation Rate (%)

	1991	1992	1993	1994	1995	1996	1997
Korea	9.30	6.22	4.82	6.24	4.41	4.96	4.45
Indonesia	9.40	7.59	9.60	12.56	8.95	6.64	11.62
Malaysia	4.40	4.69	3.57	3.71	5.28	3.56	2.66
Philippines	18.70	8.93	7.58	9.06	8.11	8.41	5.01
Singapore	3.40	2.32	2.27	3.05	1.79	1.32	2.00
Thailand	5.70	4.07	3.36	5.19	5.69	5.85	5.61
Hong Kong	11.60	9.32	8.52	8.16	8.59	6.30	5.83
China	3.50	6.30	14.60	24.20	16.90	8.30	2.80
Taiwan	3.63	4.50	2.87	4.09	3.75	3.01	0.90

Source: Giancarlo Corsetti et al., *"What Caused the Asian Currency and Financial Crisis?,"* 1998.

2.4. Current Account Deficits:
The countries in the region had current account deficits (except for Singapore and Taiwan) before the crisis. It should be stressed that, these deficits were not at high levels every year. Between 1990-1997 period, these deficits (as of GDP) were less than 5% for Korea, 1%-4% for Indonesia, 2%-9% for Malaysia, 2%-6% for the Philippines and 2%-8% for Thailand. Current account deficits generally accompanied by trade balance deficits. One question may be asked at this point: How deficits had been financed? This will be explained in this article.

2.5. Open Economy:
The East Asian countries pursued outwards-looking economic policies. These policies have increased the openness rate gradually. Figures in the Table-6 shows commercially and financially openness of some countries in the region. Figures in the Table-5 include 88 developing countries' average. It may be added that they were much less open financially than they were commercially.

**Table-5:Ratios of Trade and Gross Capital Flows (Annual average and as
a % of GDP)**

	Trade ratio 1980-89	Capital flow ratio 1980-89
Korea	38.57	5.42
Indonesia	25.99	4.96
Malaysia	62.43	9.10
Philippines	28.51	7.94
Thailand	31.48	6.20
Average	44.89	11.90

Note: Trade ratio refers to the openness as described below (see Table-6), while the capital flow ratio refers to the aver-
age ratio of the mean value of capital inflows and outflows to GDP.
Source: Peter J. Montiel, *"Capital Mobility in Developing Countries: Some Measurement Issues and Empirical
Estimates,"* The World Bank Economic Review.

East Asian countries have followed different paths in opening their
external capital accounts and domestic markets to foreign participation.
Indonesia has had an open account for over two decades, but only in the
mid-1980s did it begin to expand the range of domestic assets foreigners
could own, as part of a series of reforms to move the economy away from
heavy dependence on oil exports. Chronically high interest rates led to
short-term capital inflows as authorities liberalised the financial sector.
Malaysia and Thailand liberalised their capital accounts during the
1980s and attracted large amounts of foreign direct investment (FDI). The
Philippines began liberalising capital flows in the 1970s, but it was
caught with excessive debt levels in the 1980s because it had been less
successful than its neighbours in promoting growth and exports. The
Republic of Korea has been much more cautious, opening its capital
account and market to foreigners only after it had achieved a relatively
high per capita income. It encouraged the development of its domestic
capital markets before opening those markets to foreigners.

Table-6: Openness ((Exports+Imports)/2 as a % of GDP)

	1990	1991	1992	1993	1994	1995	1996	1997
Korea	30.04	29.38	29.38	29.04	30.47	33.59	34.36	38.48
Indonesia	26.30	27.18	28.23	25.26	25.94	26.98	26.13	28.22
Malaysia	75.23	86.52	76.64	87.72	92.15	97.42	91.50	93.55
Philippines	30.40	31.09	31.58	35.58	36.98	40.26	44.90	54.20
Thailand	37.76	39.24	38.98	39.69	40.99	44.88	42.19	46.69
Hong Kong	129.93	135.28	140.37	137.18	138.92	151.67	142.28	132.68
Taiwan	44.27	45.14	42.34	43.29	43.16	47.80	46.63	48.07

Source: Giancarlo Corsetti et al., *"What Caused the Asian Currency and Financial Crisis?,"* 1998.

2.6. Over-Valued Exchange Rate:

The countries in the region (except for Korea and Taiwan) have followed over-valued exchange rate policies between 1990-1996 period. In 1997 that crisis has come out, real exchange rates have declined sharply (see Table-10).

III. Economic Differences of the East Asian Countries
3.1. Foreign Debt:

Foreign debt ratio (as a percent of GDP) were volatile during 1990-1996 and also different for the countries in the region . In 1990 and 1996 they were 14% and 28% for Korea, 66% and 57% for Indonesia, 36% and 40% for Malaysia, 69% and 50% for the Philippines, 11% and 10% for Singapore, 33% and 50% for Thailand, 11% and 10% for Taiwan, respectively, (Corsetti et al.).

3.2. Short-Term Debt to Foreign Reserves:

Many of the countries in the region lived difficulties of heavy foreign debt on the one hand, some of the countries had not on the other hand.

Table-7: Short-Term Debt, World Bank Data   (% of foreign reserves)

	1990	1991	1992	1993	1994	1995	1996
Korea	72.13	81.75	69.62	60.31	54.06	171.45	203.23
Indonesia	149.28	154.62	172.81	159.70	160.36	189.42	176.59
Malaysia	19.54	19.05	21.12	25.51	24.34	30.60	40.98
Philippines	479.11	152.31	119.37	107.68	95.00	82.85	79.45
Singapore	2.65	2.67	2.35	2.04	1.75	1.78	2.60
Thailand	62.55	71.31	72.34	92.49	99.48	114.21	99.69
Hong Kong	23.52	21.78	18.38	17.09	16.49	14.16	22.35
China	31.49	24.68	66.76	68.33	33.04	29.62	23.74
Taiwan	21.56	20.21	21.00	23.64	21.76	21.64	21.31

Source: Giancarlo Corsetti et al., *"What Caused the Asian Currency and Financial Crisis?,"* 1998.

IV. Background Factors of the Crisis

The countries in the region have pursued very high growth rates without balance of payments but with current account problem. Capital inflows, especially foreign direct investment (FDI) have resulted in capital account surpluses and current account deficits were offset by the surpluses.

Table-8: Balance of Payments and Current Accounts   (Millions of US$)

	1991		1992		1993		1994		1995		1996		1997	
	BOP	CA	BOP	CA	BOP	CA	BOP	CA	BOP	CA	BOP	CA	BOP	CA
Korea	-1147	-8317	3724	-3944	3009	990	4614	-3867	7039	-8507	1416	-23006	-22979	-8167
Indonesia	1528	-4260	2070	-2780	594	-2106	784	-2792	1573	-6431	4503	-7663	-7189	-4816
Malaysia	1236	-4183	6618	-2167	11350	-2991	-3160	-4520	-1765	-7362				
Philippines	1755	-1034	1689	-1000	336	-3016	2327	-2950	1235	-1980	4338	-3953	-3094	-4303
Singapore	4197	4918	6100	5958	7578	4272	4736	11453	8599	14361	7396	14723	7940	14803
Thailand	4619	-7572	3029	-6304	3907	-6364	4169	-8086	7159	-13554	2167	-14692	-18250	-2917

Source: IMF, *International Financial Statistics*, August 1998.

The current account deficits of the East Asian countries were not considered a problem due to the countries' high savings ratios. This evaluation was naturally based on the assumption that in the long run the large investments in these countries would transform the current external deficits into surpluses (Hahnemann and Jessen). Remarkable point was

that FDI has facilitated to finance the current account deficits. They were outward-looking countries and, continuous growth rates and plausible inflation rates might have helped capital inflows. This possibility may have been the cause of the delay for noticing the problem. In 1997, contribution rate of capital inflows to current account deficits have reached a very high level for some countries (Thailand, Indonesia, Malaysia) where the crisis first broke out.

Table-9: Contribution of Inward FDI to Current Account Financing
(% of current account deficit)

	1990	1991	1992	1993	1994	1995	1996	1997
Korea	45.16	14.19	18.43	-59.39	20.92	20.88	10.11	34.82
Indonesia	36.58	34.79	63.92	95.16	75.54	67.58	80.83	97.11
Malaysia	268.05	95.58	239.18	180.13	98.27	90.10	110.84	139.28
Philippines	19.67	52.61	22.80	41.05	53.93	74.65	38.38	29.12
Thailand	33.57	26.60	33.52	28.35	16.90	15.26	15.90	103.84

Source: Giancarlo Corsetti et al., *"What Caused the Asian Currency and Financial Crisis?,"* 1998.

The common elements behind the crisis in Asia are exchange rate policies and foreign borrowings in the private non-financial sector (see Hahnemann and Jessen).

4.1. Over-Valued Exchange Policies:

The East Asian countries were persuading fixed-exchange-rate policy vis-à-vis US dollars. In the view of the appreciation of dollars against the Japanese yen in recent years the currencies of the countries in the region were appreciated against other currencies, especially Japanese yen which is an important trade partner of the countries in the region. So the countries' exchange rate policy have caused their competitiveness to deteriorate. Another contributing factor is the growing competition from India and China, which are beginning to make an impact at the low-wage end of manufacturing.

Table-10 presents 1990 as the base year and it can be observed that real exchange rates of the countries (except for Korea and Taiwan) have appreciated from 1990 to 1996. Korea and Taiwan have followed a more flexible exchange rate policy and experienced real depreciation during this period.

Table-10: Real Exchange Rates   End of year data

	1990	1991	1992	1993	1994	1995	1996	1997
Korea	96.00	91.50	87.70	85.20	84.70	87.70	87.20	58.60
Indonesia	97.40	99.60	100.80	103.80	101.00	100.50	105.40	62.40
Malaysia	97.00	96.90	109.70	111.00	107.10	106.90	112.10	84.90
Philippines	92.40	103.10	107.10	97.40	111.70	109.60	116.40	90.90
Singapore	101.20	105.70	106.00	108.60	111.90	112.70	118.20	114.40
Thailand	102.20	99.00	99.70	101.90	98.30	101.70	107.60	72.40
Hong Kong	99.70	103.90	108.50	116.00	114.50	116.00	125.80	138.40
Taiwan	96.50	95.70	95.70	91.40	92.60	90.40	89.60	89.20

Source: Giancarlo Corsetti et al., *"What Caused the Asian Currency and Financial Crisis?"*, 1998.

In general an exchange rate appreciation was correlated with a worsening of current account. Countries with appreciating currencies generally experienced a larger deterioration of current account, while countries such as China and Taiwan that had experienced a real depreciation exhibited current account surpluses. The decision to maintain a stable currency led to large capital inflows, attracted by favourable interest rate differentials and expectations of low exchange rate risk. The resulting strong real appreciation helped build the region's large and growing current account imbalances (Corsetti et al.).

4.2. Large Degree of Foreign Borrowings in the Private Non-Financial Sector:

Confidence in the fixed-exchange-rate policy has caused borrowers to take advantage of the interest-rate differential by covering part of their financing requirement with dollar-denominated loans at relatively low interest rates, without taking the exchange-rate risk into account. The capital inflows financing the region's large current account deficits were largely intermediated by local banks. Specifically, domestic banks borrowed from foreign banks and then, in turn lent on to domestic firms, so that when domestic firms experienced financial difficulties, domestic banks were faced with non-performing domestic assets and short term foreign-currency liabilities (Corsetti et al.). When the fixed-exchange-rate has to be abandoned a chain reaction is triggered whereby profits decline in the private non-financial sector gradually with an increase in the foreign debt denominated in the domestic currency. The buck is passed on to

the banks in the form of non-performing loans. The crisis have revealed weakness in both the financial system and in the authorities' financial supervision in the countries of the region (Hahnemann and Jessen).

Table-11: Bank Lending to Private Sector (% of GDP) and
**   Non-Performing Loans**

	1990	1991	1992	1993	1994	1995	1996	1997	NPL*
Korea	52.54	52.81	53.34	54.21	56.84	57.04	61.81	69.79	*8%*
Indonesia	49.67	50.32	49.45	48.90	51.88	53.48	55.42	69.23	*13%*
Malaysia	71.36	75.29	74.72	74.06	74.61	84.80	93.39	106.91	*10%*
Phillippines	19.17	17.76	20.44	26.37	29.06	37.52	48.98	56.53	*14%*
Singapore	82.20	83.34	85.06	84.14	84.21	90.75	95.96	100.29	*4%*
Thailand	64.30	67.70	72.24	80.01	91.00	97.62	101.94	116.33	*13%*
Hong Kong		141.84	134.20	140.02	149.00	155.24	162.36	174.24	*3%*
China	85.51	87.87	86.17	95.49	87.12	85.83	91.65	101.07	*14%*
Taiwan	100.41	108.99	126.43	137.23	146.89	149.49	146.05	146.23	*4%*

*: Non-Performing Loans (as proportion of total lending in 1996)
Source: Giancarlo Corsetti et al., *"What Caused the Asian Currency and Financial Crisis?"*, 1998.

Table-12: Foreign Liabilities and Assets   (US $ billion)

	1993	1994	1995	1996	1997
Korea					
Net Liabilities	30.02	40.43	58.16	80.08	62.50
Net Liabilities (banks)	20.88	29.24	43.83	59.47	39.56
Indonesia					
Net Liabilities	24.63	31.23	37.45	44.21	51.21
Net Liabilities (banks)	6	9.13	12.08	12.52	15.84
Malaysia					
Net Liabilities	-3.21	4.15	5.72	8.41	16.01
Net Liabilities (banks)	-5.53	2.36	2.76	4.25	13.01
Philippines					
Net Liabilities	0.80	-0.21	0.73	5.67	6.91
Net Liabilities (banks)	0.39	0.17	0.92	4.58	3.72
Singapore					
Net Liabilities	78.37	94.57	111.77	109.42	81.18
Net Liabilities (banks)	84.19	101.40	118.19	116.32	87.33
Thailand					
Net Liabilities	29.72	47.40	80.37	90.27	69.84
Net Liabilities (banks)	22.22	39.43	69.94	78.05	59.90
Hong Kong					
Net Liabilities	122.98	148.77	183.31	185.60	174.83
Net Liabilities (banks)	152.78	183.95	215	219.34	218.48
China					
Net Liabilities	-0.57	-3.49	9.63	13.21	23.68
Net Liabilities (banks)	-11.38	-15.94	-3.54	-1.67	9.36
Taiwan					
Net Liabilities			-13.90	-14.69	-14.04
Net Liabilities (banks)			-9.13	-9.44	-8.14

Source: Giancarlo Corsetti et al., *"What Caused the Asian Currency and Financial Crisis?"*, 1998, Citation from Bank of International Settlements (BIS): International Banking and Financial Market Developments.

V. The Impact of the Crisis on the Exchange-Rate Policies of the East Asian Countries

East Asia's good policy record, dynamic growth, outstanding export performance, and continued reliance on the private sector created a high level

of confidence among international investors. This was the feed-back system: More capital inflows, larger bank (domestic currency denominated) lendings, the higher investment rate and the higher growth rate. This system turned to vicious circle, when the confidence-providing factors were removed.

While stimulating capital inflows, over-valued domestic currencies decreased the countries competitiveness, and then export-oriented sectors had difficulties of repaying taken credits. When fixed-exchange-rate policies were abandoned, and great devaluation occurred, foreign investors have lost their own motivation coming from high capital profitability and reliance on countries' policies.

In this process the East Asian countries have employed different strategies and instruments (Hahnemann and Jessen): In May 1997 **Thailand** introduced currency restrictions which led to a temporary strengthening of the Thailand baht in the foreign-exchange market. This country abandoned the fixed-exchange-rate policy in July 1997. The **Philippines** allowed greater exchange-rate flexibility against the dollar. In October 1997, the central bank of the Philippines introduced a system with a fluctuation band for the peso vis-à-vis the dollar, and the central bank resumed its intervention in the foreign-exchange market. **Malaysia** has given higher priority to normalising the level of domestic interest rates than stabilising the exchange rate. One reason is a relatively modest foreign debt, which makes the private sector less exposed to exchange-rate fluctuations. In July 1997, intervention in support of the currency was suspended and the short-term interest rates dropped to the level before the crisis. As a result of this policy exchange rate volatility has increased. **Indonesia** reacted to the foreign-exchange crisis by raising short-term interest rates, and then by widening the fluctuation band for the Indonesian rupiah. In August 1997 Indonesia was forced to abandon the fluctuation band. Singapore was only moderately affected by the crisis. Short-term interest rates have remained by and large unchanged and the volatility of that exchange rate has been negligible. During October 1997 the **Taiwanese and Korean** currencies (Taiwan dollar and won) came under pressure. Taiwan abandoned its fluctuation band (±2.25) and the currency weakened. The Korean won (which was fluctuating since 1996) weakened more gradually during the entire year of 1997.

VI. Conclusion

In general, the crisis has been handled with hesitance and inconsistency in the countries in the region. This has exacerbated the uncertainty and fears of market participants. In the first instance, the principal task for the East Asian countries appears to stabilise their financial sectors including the establishment of effective financial supervision. High savings and high investment ratios of the East Asian countries indicate that in the longer term they can expect to achieve high growth rates once again (Hahnemann and Jessen). However, it is very difficult to draw firm estimations in an environment where the crisis continue and it may be expect that the East Asian countries become tigers again: They have open economic structures and, are able to realise high savings and investment rates in the future, besides now they have great experience.

APPENDIX: Some Economic Indicators of the Asian Countries (Billion $)

Country	GDP (PP)*	Exports	Partners	Imports	Partners
Korea	$647.2 (1996 est.)	$130.9 (f.o.b., 1996)	US 17%, EU 13%, Japan 12%.	$150.2 (c.i.f., 1996)	US 22%, Japan 21%, EU 13%.
Indonesia	$779.7 (1996 est.)	$49.8 (f.o.b., 1996)	Japan 27.1%, US 13.9%, Singapore 8.3%, Korea 6.4%, Taiwan 3.9%, China 3.8%, Hong Kong 3.6%. (1995)	$42.9 (f.o.b., 1996)	Japan 22.7%, US 11.7%, Germany 6.9%, Korea 6.0%, Singapore 5.8%, Australia 5.0%, Taiwan 4.5%. (1995)
Malaysia	$214.7 (1996 est.)	$84.6 (1996)	US 21%, Singapore 20%, Japan 12%, Hong Kong 5%, UK 4%, Thailand 4%, Germany 3%. (1995)	$83.2 (1996)	Japan 27%, US 16%, Singapore 12%, Taiwan 5%, Germany 4%, Korea 4%. (1995)
Philippines	$194.2 (1996 est.)	$20.5 (f.o.b., 1996)	US 36%, Japan 16%, Singapore 5%, Hong Kong 5%, UK 5%. (1995)	$33.3 (f.o.b., 1996)	Japan 22%, US 18%, Saudi Arabia 6%, Taiwan 5%, Korea 5%, Singapore 4%. (1995)
Singapore	$72.2 (1996 est.)	$144.8 (1996 est.)	Malaysia 19%, US 18%, Hong Kong 9%, Japan 8%, Thailand 6%. (1995)	$151.1 (1996 est., including goods for reexport)	Japan 21%, Malaysia 15%, US 15%, Thailand 5%, Taiwan 4%, Korea 4%. (1995)

APPENDIX: Some Economic Indicators of the Asian Countries (Billion $)

Country	GDP (PP)*	Exports	Partners	Imports	Partners
Thailand	$455.7 (1996 est.)	$57.3 (f.o.b., 1996)	US 21.0%, Japan 17.1%, Singapore 13.6%, Hong Kong 5.3%, Germany 3.5%, UK 3.0%, Netherlands 2.8%, Malaysia 2.4%.	$72.4 (c.i.f., 1996)	Japan 30.4%, US 11.9%, Singapore 6.3%, Germany 5.8%, Taiwan 5.1%, Malaysia 4.9%, Korea 3.7%, China 2.6%.
Hong Kong	$163.6 (1996 est.)	$197.2 (including reexports;f.o.b., 1996 est.)	China 33%, US 22%, Japan 6%, Germany 4%, UK 3%, Singapore 3%. (1995)	$217.2 (c.i.f., 1996 est.)	China 36%, Japan 15%, Taiwan 9%, US 8%, Singapore 5%, Korea5%. (1995)
China	$3.39 trilyon (1996 est.)	$151.07 (f.o.b., 1996)	Hong Kong, Japan, US, Korea, Germany, Singapore (1995)	$138.83 (c.i.f., 1996)	Japan, US, Taiwan, Korea, Hong Kong, Germany, Russia (1995)
Taiwan	$315 (1996 est.)	$116 (f.o.b., 1996)	US 27.6%, Hong Kong21.7%, EU 15.2%, Japan 10.5%. (1994 est.)	$102.4 (c.i.f., 1996)	Japan 30.1%, US 21.7%, EU 17.6%. (1993 est.)

*: purchasing power parity

Source: http://www.emulateme.com/economy/chinaeco.htm;   www.emulateme.com/economy/hongkeco.htm;
        www.emulateme.com/economy/indoneco.htm;   www.emulateme.com/economy/koreseco.htm;
        www.emulateme.com/economy/malayeco.htm;   www.emulateme.com/economy/philleco.htm;
        www.emulateme.com/economy/singapeco.htm;   www.emulateme.com/economy/taiweco.htm;
        www.emulateme.com/economy/thaileco.htm.

References

Arias, Eduardo-Fernandez and Peter J. Montiel, *"The Surge in Capital Inflows to Developing Countries: An Analytical Overview"*, The World Bank Economic Review, Vol. 10, No.1, January 1996.

Calvo, Guilermo A., Leonardo Liderman, and Carmen M. Reinhart, *"Inflows of Capital to Developing Countries in the 1990s"*, Journal of Economic Perspectives, Vol.10, No.2, Spring 1996.

Corsetti, Giancarlo., Paolo Pesenti, Nouriel Roubini, *"What Caused the Asian Currency and Financial Crisis?"* 1998, http://www.stern.nyu.edu/~nroubini/asia/AsianCrisis.pdf.

Foreign Trade Undersecretariat, *"Asian Crisis"*, Foreign Trade Journal, March 1998 (Published in Turkish).

Hahnemann, Niels Peter and Lars Krogh Jessen, *"The Currency Crisis in Southeast Asia"*, Danmarks Nationalbank, Monetary Review-[4th] Quarter 1997.

http://www.emulateme.com/economy/chinaeco.htm.

http://www.emulateme.com/economy/hongkeco.htm.

http:// www.emulateme.com/economy/indoneco.htm.

http://www.emulateme.com/economy/koreseco.htm.

http://www.emulateme.com/economy/malayeco.htm.

http://www.emulateme.com/economy/philleco.htm.

http://www.emulateme.com/economy/singapeco.htm.

http://www.emulateme.com/economy/taiweco.htm.

http://www.emulateme.com/economy/thaileco.htm.

The International Bank for Reconstruction and Development, *"Managing Capital Flows in East Asia"*, 1995, http://www.worldbank.org/html/extpb/manage.htm.

International Monetary Fund, World Economic Outlook, December 1997.

International Monetary Fund, International Financial Statistics, August 1998.

International Monetary Fund, *Exchange Arrangements and Exchange Restrictions*, Annual Report, 1996.

Montiel, Peter J., *"Capital Mobility in Developing Countries: Some Measurement Issues and Empirical Estimates"*, The World Bank Economic Review, Vol.8, No.3, September 1994.

RUSSIAN CRISIS: THE IMPACT ON THE ISE

Research Department*
Istanbul Stock Exchange

Abstract

Despite the declaration of the Russian government on August 14, that a devaluation would not be considered, just after a few days, the devaluation of the Ruble by 33 % against the dollar and the announcement of a debt moratorium that followed thereafter have initiated the Russian crisis. The effects of the Russian crisis were felt strongly in some of the Turkish sectors that have close economic and trade relations with Russia. Firstly, this study analyzes the relationship between the ISE and Russian Indices in 1998 and during the crisis period, in particular. Within the framework of the effects of the Russian crisis on the Stock Market of the Istanbul Stock Exchange (ISE), the price performances of the ISE traded companies which have close business activity with Russia and their relevant sectors are compared with other companies and sectors which do not have close business dealings with Russia as well as ISE-All Shares companies during the term of the prevalent crisis.

I. Introduction

One of the main reasons for the crises that prevailed in 1998 in Russia was the inability to establish infrastructural reforms that was necessary for the transition to market economy after the disintegration of the Soviet Union. In the period since the beginning of 1990's when the pricing policies were liberalized, efforts to liberate foreign trade and privatization schemes were accelerated, Russia was able to cope with the balance of payments and the inflation problem. The balance of payments registered a surplus in parallel to high petroleum revenues and the inflation rate that had jumped to a level of 2,500 % following the liberalization policies was pulled down to 10 % level.

In spite of all these positive developments, both the budget balance and the growth level could not be improved. Besides, the growing size of the unregistered economy led to a failure in the collection of taxes and the high amount of social security expenditures have contributed to the bud-

get gap. Moreover, the economic growth could not be sustained due to a contraction in investments.

An analysis of the developments in 1997 show that while total domestic and foreign debt ratio (as a percent of GDP) stood at 42 %, high share of short-term debt in total as well as the Russian government's inclination to borrow again in order to pay wages and salaries and to repay interest of previous debt have further exacerbated the increase in interest rates. Meanwhile, Russia's financial requirement increased due to the Asian crisis that began in July 1997, the slowdown in capital flows and the decline in petroleum prices. Following such developments, the IMF has prepared, in July 1998, an aid of $15.1 billion to be paid until the end of 1999. A portion of $12.5 billion was decided to be paid in 1998. Furthermore, additional financial aid amounting to $6 billion from the World Bank and $1.5 billion from the Japanese government were confirmed to be paid by the end of 1999 to the Russian government. (Undersecretariat of Foreign Trade, 1998).

As a result of the trade surplus attributable to petroleum revenues and external debt policies since 1992, the yearly average capital inflows increased to a level of $20-30 billion. As a consequence of the use of exchange rates as a "nominal anchor" to reduce inflation and the appreciation of domestic currency as a result of this policy, the real purchasing power of the ruble doubled between 1993-96. However, no financial measures were pursued during the same period. Money in circulation dropped sharply and the Russian government began to pay high interest on short-term debt. Stock market prices surged since the beginning of 1996 and higher interest rates and capital gains have both attracted foreign investors. Meanwhile, the intermediaries in Russia responded by taking long position in the Ruble and short position in the US dollar. Russian banks have directed their investments to short-term government securities by relying heavily on external sources, and as a result, most of these banks were bankrupt due to the devaluation of the ruble in August.

Due to the currency crisis, speculations in relation with the devaluation of the ruble against the dollar, could not be prevented and the Russian government devaluated the ruble by approximately 34 % on August 17, 1998 and announced a 90-day debt moratorium. However, all these efforts were still ineffective in healing the prevailing problems and the banking sector collapsed as a result.

In July 1998, bank reserves declined to $15 billion from $19 billion within two weeks while the public sector interest rates surged from 50%

to 340%. Meanwhile international investors' confidence was hampered, to a great extent, and important social problems prevailed due to limitations in the basic consumer products.

Under these circumstances, the government decided to suspend the reform programs implemented up-to-date with an aim to suppress public pressure on the government. Accordingly, gas and petroleum companies were decided to be nationalized yet again in order to inject money into the markets. However, this reform has increased concerns over creating hyper inflation once again. After the devaluation of the ruble, growing expectations that restrictive policies slated to reduce imports along with its adverse effects on production and investments aroused concern over social issues such as unemployment.

The shock waves that prevailed after the devaluation of the ruble in Russia, were also felt in all developed and developing countries. The resolution of the Russian crisis envisaged the implementation of a two-stage economic and financial plan. The first stage of the plan envisaged printing of more notes in order to control money in circulation, giving priority to the payment of salaries of retirees, workers and employees in the defense sector and army forces, supporting the banking sector via money injection, enabling the ruble to float freely and interlinking with gold and currency reserves. In the second stage, the anticipated measures included enforcing companies to pay their debts and taxes or compelling them to liquidate, supporting local industries and exporters, imposing a 20 % income tax and establishing a state-owned monopoly in the alcohol sector.

II. Sectors that Played a Role in Economic and Trade Relations between Turkey and Russia

Russia ranked second in Turkish exports in 1997. The major portion of these exports were comprised of textile, ready-wear, leather, food, hygienic, plastic and basic consumer products. In the meantime, natural gas and semi-finished goods constituted a major portion of Turkish imports from Russia. The number of incoming tourists from Russia stood at the second highest level after Germany. In addition, most of the contracting investments are being directed to Russia. According to data disclosed by the Turkish Building Association, about 26 % of ongoing foreign contracting business assumed by member firms of the International Building Contractors' are active Russia.

Foreign trade volume that had stood at $1.5 billion in 1992 tripled to a

level of $4.2 billion in 1997. Exports to Russia reached $7 billion while ongoing investments in Russia by Turkish contractors amounted to over $3 billion.

An analysis of the breakdown of Turkish exports to Russia shows that consumer products constitute the bulk of the sales. Accordingly, consumer products comprised 64.9% in 1996, 72.9% in 1997 and 71.1% of total exports to Russia in the period between January-may 1998. Semi-durable consumer goods such as ready-wear, shoes, household goods and toys; non-durable consumer goods such as hygienic products, medicine, stationary and processed consumer products including basic food products constitute the majority of consumer goods. Semi-finished goods that account for 20-25 % of exports to Russia are comprised of processed raw materials. (State Planning Organization, 1998).

According to the Standards International Trade Classification (SITC), exports to Russia are mainly composed of ready-wear products and accessories, textile yarn, textile and textile related products, shoes, grain and grain related products, fruits and vegetables, sugar products, perfumery, cosmetics and related pharmaceuticals, electronic machinery, equipment and vehicles.

Grain, flour, starch and dairy products, shoes, vehicles and automotive component parts, soap, plastic and plastic related products, woven products, sugar and sugar related products, paper and cardboard and alcoholic and non-alcoholic beverages constituted 15-50 % of total exports to Russia. This shows the significance of the performances of these sectors, to a large extent, on the Russia's economy.

Those products which have a high export share in their own sectors and which are mainly sold to the Independent States are as follows: grain, flour, starch and dairy products, shoes, soap, sugar and sugar related products, paper and cardboard and soft and alcoholic beverages. Although textile and ready-wear products constituted the majority of exports to Russia, their share in total exports stood at 6-7 % level. However, a considerable portion of the trade that totaled $5.8 billion in 1997 was comprised of textile and ready-wear products were subject to unregistered trade.

Meanwhile, about 90 % of Turkey's imports from Russia include processed or unprocessed industrial raw materials as well as unprocessed fuel and oil products.

III. Data and Methodology

The impact of the Russian crisis on the ISE Stock Market is analyzed in

two stages. The first stage analyzes the effect of the developments in Russia on the ISE-All Shares Index (ISE National-All Shares) and the ISE-100 Index (ISE National-100) and the second stage focuses on the impact of the crisis on the ISE companies which have close business relations with Russia. Correlation matrices, Granger Causality test and regression models were used in the analysis. The data belonging to companies that have business relations with Russia were obtained from IGEME (Export Promotion Center of Turkey) and DEIK (Foreign Economic Relations Organization) while market capitalization and closing prices of companies are sources of the ISE. The daily values of the Russian Traded Index were obtained from Reuters.

Although the existence of a high correlation coefficient between the two variables indicates a strong relation between them, it does not provide information about the direction. For this reason, the correlation coefficients between the ISE and Russian Indices were calculated and then the multiple regression model below was applied in order to determine the direction [Granger, (1969)].

T: time
L: lag
Y: daily closing values of Russian Traded Index
X: daily market capitalization of ISE companies

$$Y_T = \alpha_0 + \alpha_1 Y_{T-1} + \ldots\ldots\ldots + \alpha Y_{T-L} + \beta_1 X_{T-1} + \ldots\ldots\ldots + \beta_L X_{T-L}$$
$$X^T = \alpha_0 + \alpha_1 X_{T-1} + \ldots\ldots\ldots + \alpha X_{T-L} + \beta_1 Y_{T-1} + \ldots\ldots\ldots + \beta_L Y_{T-L}$$

In the model, the question is whether the X variable causes Y or not. The Granger approach provides analysis on how much of the current Y can be explained by past values of Y and whether adding the lagged values of X improves the explanation. If X is helpful in the prediction of Y which means that the coefficient of the lagged X values are statistically significant then Y is said to be "Granger-caused by X".

The hypothesis tested is;

$$\beta_1 = \ldots\ldots\ldots \beta_L = 0 \text{ , F-test}$$

H_0: company X is not effected from the Russian crisis.

IV. The Results

The behavior of foreign investors when the Russian crisis reached a peak in August as well as other domestic reasons that had adverse effects on expectations caused a sharp fall in the ISE National-100 Index. The ISE-100 Index which was at the 4,254.85 level, in Turkish lira terms, in the beginning of August, dropped by 38% to 2,635.14 level at the end of the month.

In August, the total monthly traded value that fell by 35% compared to the previous month, was 4.84 billion US dollars. Of this amount, 4.84 billion US dollars was realized in the National Market. The average daily traded value was 242 million US$.

The correlation coefficient between the Russian Traded and Russian MTMU Indices and the ISE-100 Index was 0.61 and 0.59, respectively, using 1998 daily data. The coefficient between the Russian Indices and the ISE-All Shares Index was 0.59 and 0.55, respectively. The R^2 reached a 0.89 level using the daily data after July 1998 which was the peak of the crisis. In other words, the changes in the Russian Traded Index can explain 89% of the changes in the ISE-100 Index. These high positive correlation coefficients indicate a high relation between these indices. After the Russian crisis the relation between the indices became stronger.

According to the Granger regression results, it is proved that a reciprocal relation exists between the Russian Traded, Russian MTMU Indices and the ISE-100 and ISE-All Shares Indices when one day lag is used. When the time lag is longer, the relation weakens. These results prove that the events in Russia has a short- term effect on the ISE. The ISE Indices in the short-term move in a parallel direction with Russian Indices as the two countries are geographically close and the business relations between the countries increased in recent years.

Figure 1. The Relation between the ISE-100 and Russian Traded Indices (Jan-98, Jan-99)

$$y = 790{,}18 \, x^{0{,}2476}$$
$$R^2 = 0{,}6064$$
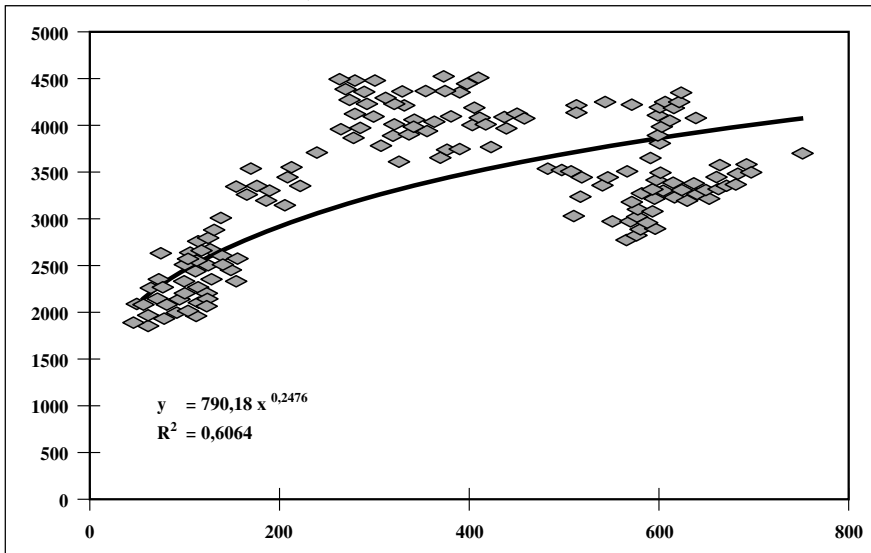
Note: Number of observations = 252

Figure 2. The Relation between the ISE-100 and Russian Traded Indices (July 98, Jan 99)

$$y = 8{,}7207x + 1470{,}8$$
$$R^2 = 0{,}8997$$
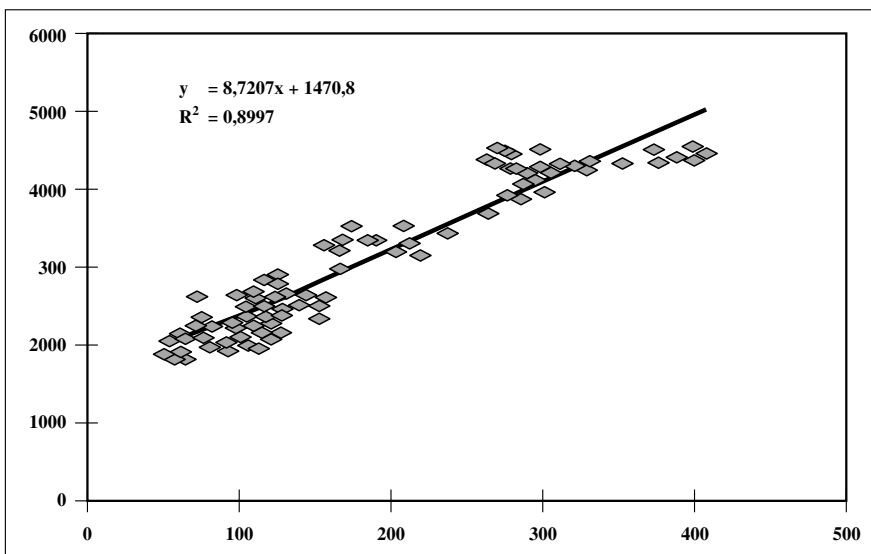
Note: Number of observations = 142

The regression analysis and the trend line in the graphs above show that the relation between the indices became stronger as of July and August when the Russian crisis was at the peak level. In Figure 1 and 2, the ISE-100 Index was taken as the dependent and the Russian Traded Index as the independent variable. Figure 1 shows that in the normal period, the indices are not correlated highly while a very strong relation occurs during the times of the crises. This is evident from figure 3 where both indices are drawn at 98=100 basis.

Figure 3. The Comparison between the ISE-100 & Russian Traded Indices (Jan.98=100)
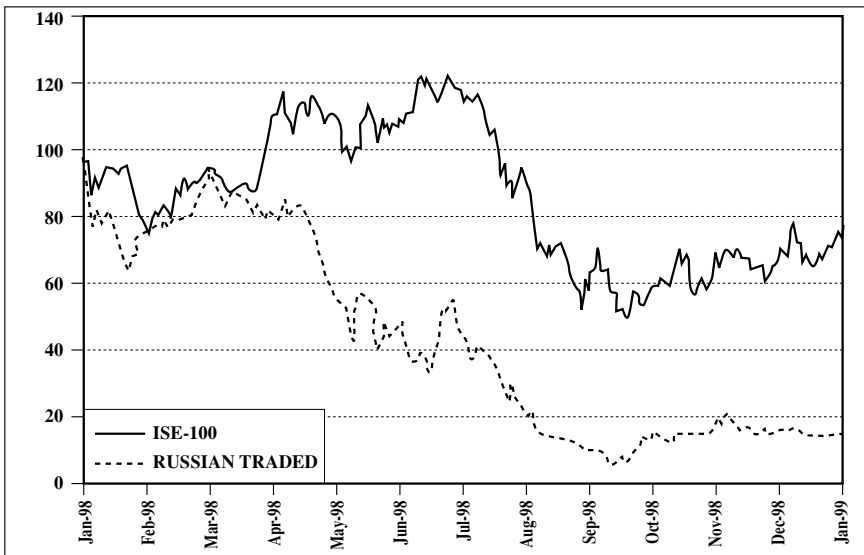
Another analysis is based on the effects of the Russian crisis on the shares of companies traded on the ISE which have close business ties with Russia and the Independent States. There is a positive correlation (except two companies) between price indices of the underlying companies' shares as well as Russian-Traded Index and Russian MTMU Indices. This result confirms the previous findings between the ISE Indices and Russian Indices.

Using the one day lag, the result of the Granger causality test applied to shares of companies traded on the ISE also shows a parallelism with the above findings. Hence, 23 companies out of the 33 total number of companies analyzed were influenced from the Russian Traded Index using one

day lag. When the time lag is longer, the number of effected companies decreases eventually. When 2 and 3 days lag is used, the number of companies influenced decreases to 18 and 13, respectively.

Among the companies that were effected significantly by the Russian Traded Index using one day lag regression model were: contracting companies operating in Russia; companies investing in Russia as well as the Independent States; contracting companies active in the telecommunications sector; manufacturing and marketing companies of textile products; companies operating in the chemical sector; manufacturer and exporter companies in the automotives and component parts sector; food manufacturing companies; manufacturing companies of durable electronic household goods; and companies operating in the metallurgy sector.

The majority of the 23 companies which were effected by the Russian Indices using one day lag, are associated with holding companies that either undertake heavy direct investments in Russia and the Independent States or operate in contracting business or export activities.

A sectoral analysis of the impact of the developments in Russia on the ISE Stock Market indices reveal that all sectoral indices have been influenced in the short-term. In the meantime, the coefficients of correlation between the ISE Sectoral Indices and the Russian-Traded and Russian MTMU Indices indicated a positive correlation close to 1 in all sectors except for two sectors.

Figure 4 and 5 presents a comparison of the performances of those companies which have business deals with Russia in comparison with the constituent companies of the ISE National-All Shares Index and the ISE National-100 Index. Market values calculated on the basis of price fluctuations and number of shares were used to compare performances. The base value for market values is taken as January 98=100. In that sense, these graphics were considered to reflect percentage returns. Accordingly, the ISE National-All Shares Index fell nearly by 20 % in 1998 while the return of companies which have business relations with Russia indicated a negative performance of 40 %. Figure 5 reveals the same comparison for the ISE National -100 companies.

Figure 4:   The Comparison of Performances between ISE-All Companies & C.H.B.R.R
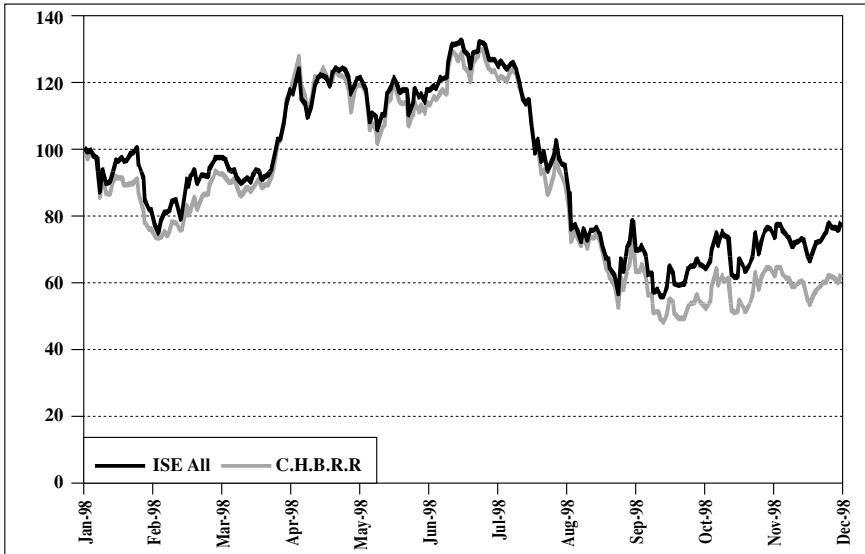
Note: CHBRR refers to companies that have business relations with Russia

Figure 5: The Comparison of Performances between ISE-100 & CHBRR
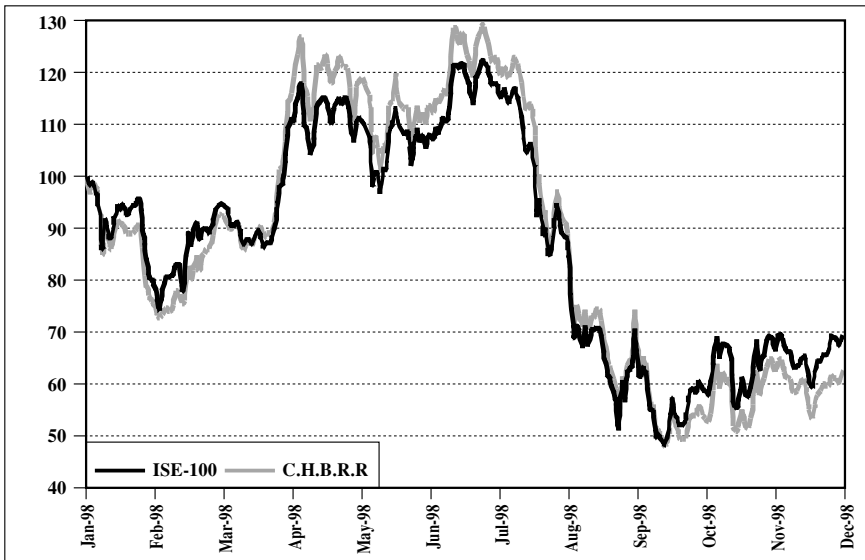
Figure 6: The Comparison of Performances between C.H.B.R.R & Others
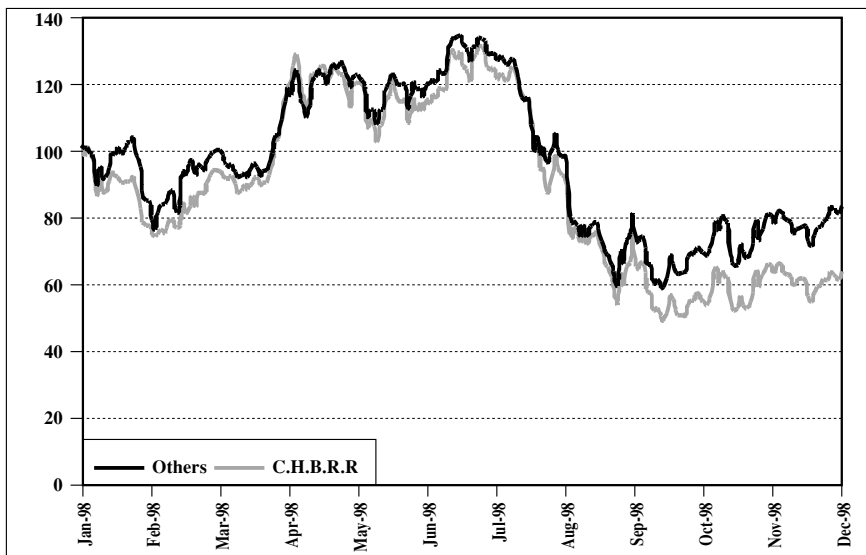
Figure 6 provides a comparison of the performances of companies that have business relations in Russia with other1 companies. Although both groups exhibited a parallel trend until mid-September, the return on companies having business relations with Russia was lower than other companies thereafter.

In order to examine the influence of the Russian crisis on the underlying sectors, performances of companies that have business relations with Russia were compared with other companies in the period between January 1998 and January 1999. The above mentioned methodology was used to compare performances. Those companies lacking 1998 data i.e. those that are newly offered to the public were not included in the analysis in order to prevent variations in total market values. The analysis were carried out on 10 sectors and the results point that in 8 sectors the performances of companies having business relations with Russia were lower than other companies within the underlying sectors. Another issue that deserves mentioning is that the performances of those companies which have business relations with Russia exhibited sharp declines in the period between July-September during which the crisis reached a peak phase.

---

[1] These companies were excluded from the ISE All Shares Index.

V. Sectoral Analysis

Figure 1: Manufacturing of Food, Beverage and Tobacco

Note: C.H.B.R.R. refers to companines that have business relations with Russia

The first sector subject to the manufacturing industry analysis, is the manufacture of food, beverage and tobacco sector. The performances of companies having business dealings with Russia -will be named as the first group hereafter- were lower than the other companies in the sector during 1998. The impact of the Russian crisis on the first group of companies was more severe after July, in particular.

Figure 2: Textile, Wearing Apparel and Leather Industries
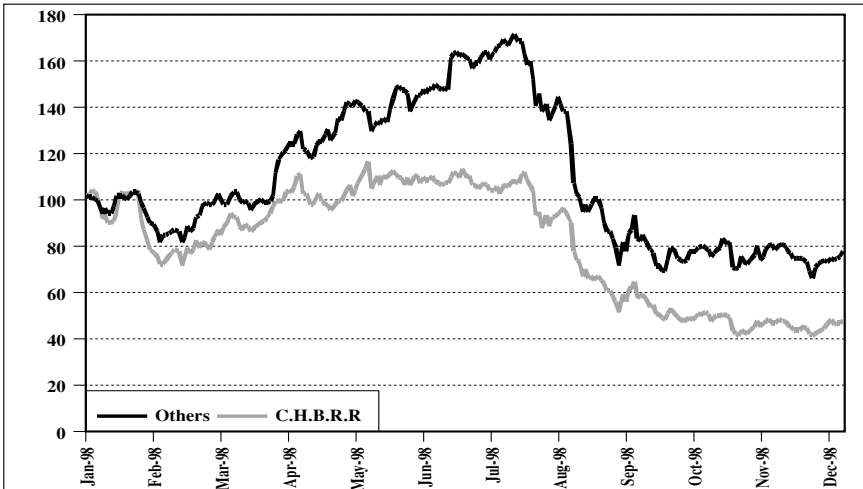
The return of the first group of companies in the textile, wearing apparel and leather industries fell about %20 in the beginning of 1998. The total fall in 1998 was 55%. The return of other companies in the sector followed a rising trend until the end of July, and began to decline thereafter. Although the fall in the return of other companies was sharper they outperformed the first group of companies as at end-1998.

Figure 3: Manufacture of Wood Products Including Furniture
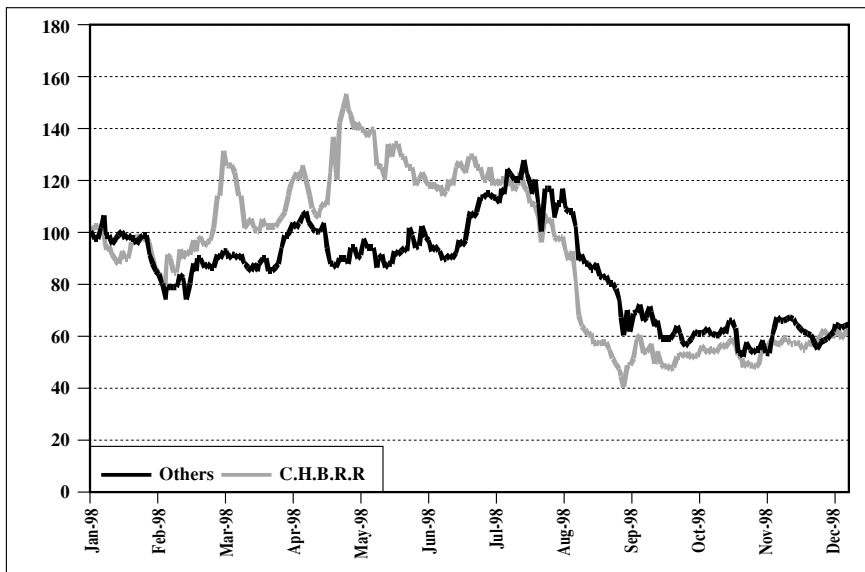
In the manufacture of wood products including furniture sector, the first group companies have outperformed the other companies within the sector by 20-50% until mid-July. However, the return fell dramatically by approximately 80% in the period between July and early-September. The return on other companies in the sector that do not have business dealing with Russia, also dropped by 50%, in the same period. Examined on annual basis, there is no significant difference in the returns of both groups.

**Figure 4:   Manufacture of Chemicals and of Chemical Petroleum,
              Rubber and Plastic Products**
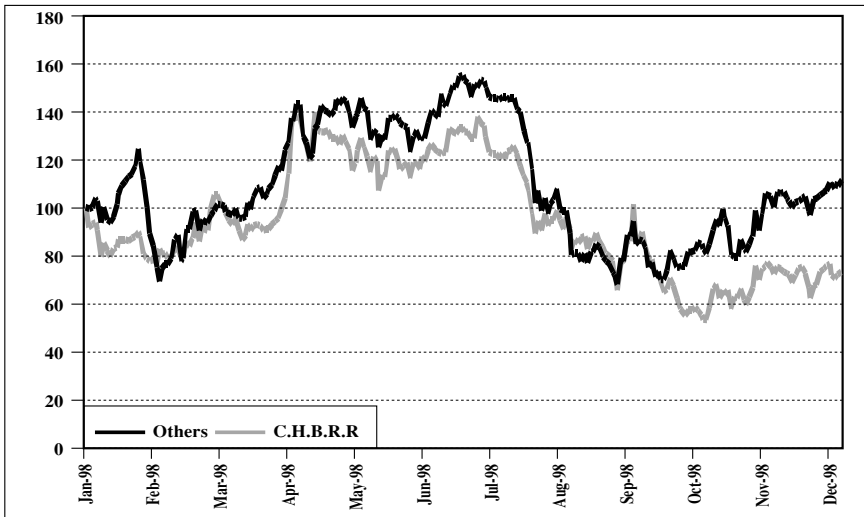
In the manufacture of chemicals and of chemical petroleum, rubber and plastic products sector, the returns of both groups (those which have business relation with Russia and other companies in the sector) moved in a parallel manner from the beginning of January 1998 until the first week of October, although slight variances also occurred in the same period. Since then, the performance of the first group companies continued declining while the other companies began to perform better. Therefore, it can be mentioned that the other companies out performed the first group companies by 20% at the end of 1998.

Figure 5: Manufacture of Non-Metallic Mineral Products
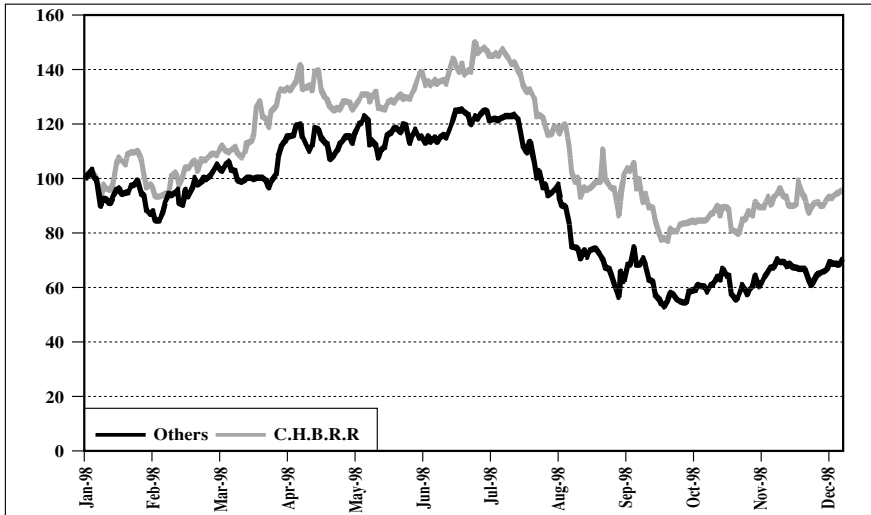
Manufacture of non-metallic mineral products sector is one of the unique sub-sectors in which the first group companies outperformed the others. This resulted from the fact that the first group of companies in the sector are large scale ones, and thus, their share in the domestic market is also very high.

Figure 6: Basic Metal Industries
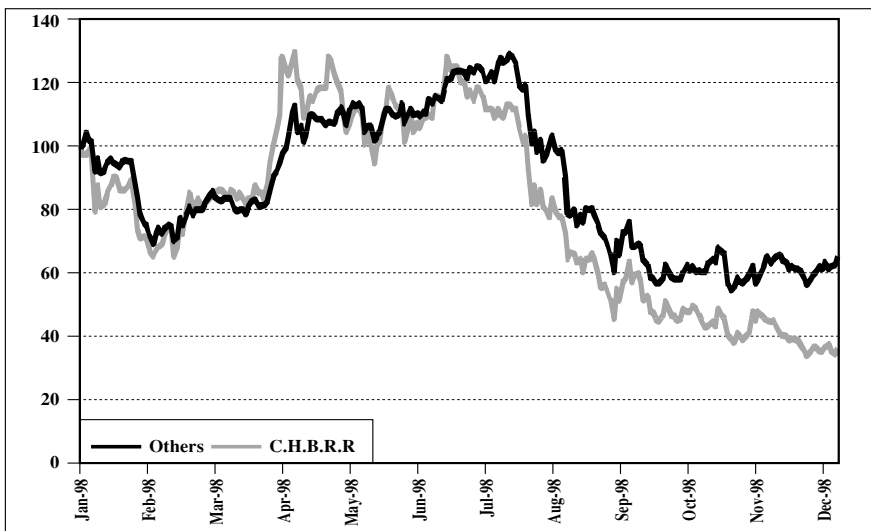
In the Basic Metal Industries Sector, the performance of the first group companies and the other companies within the sector proceeded in a parallel trend until July. Although the Russian crisis effected the whole sector; however, the declines in returns were 60 % and 40 % in the first group companies and others, respectively.

Figure 7:   Manufacture of Fabricated Metal Products, Machinery and Equipment
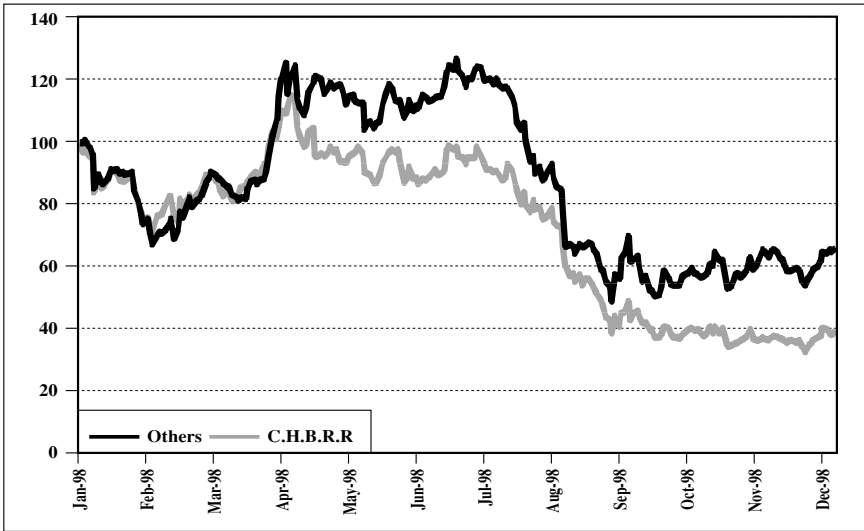
In the manufacturing of fabricated metal products, machinery and equipment sector, the performance of the first group companies started to decrease to a level below the performance of other companies. Although the returns of other companies declined more substantially after the Russian crisis broke out, the return, on annual basis, on shares of companies in the first group fell to lower levels than the other companies in the sector.

Figure 8: Wholesale and Retail Trade, Hotels and Restaurants
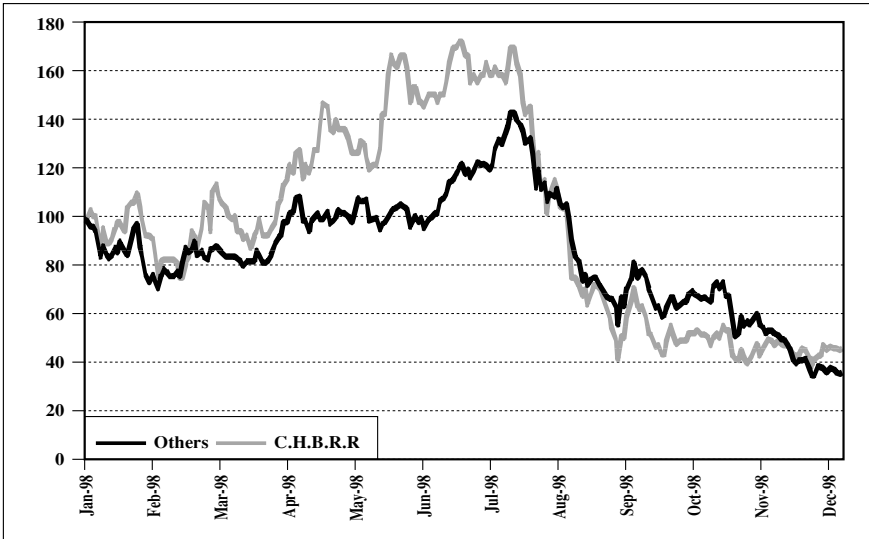
The analysis on the wholesale and retail trade, hotels and restaurants sector show that the performance of the first group companies was better than the others prior to the Russian crisis. However, due to the Russian crisis, the returns of companies in the first group fell sharply. These companies were effected intensely from the Russian crisis. In 1998, a negative average for the sector was obtained. Although the returns of the first group companies were also negative, they were realized slightly over the sector average.

Figure 9: Banks and Special Finance Corporations
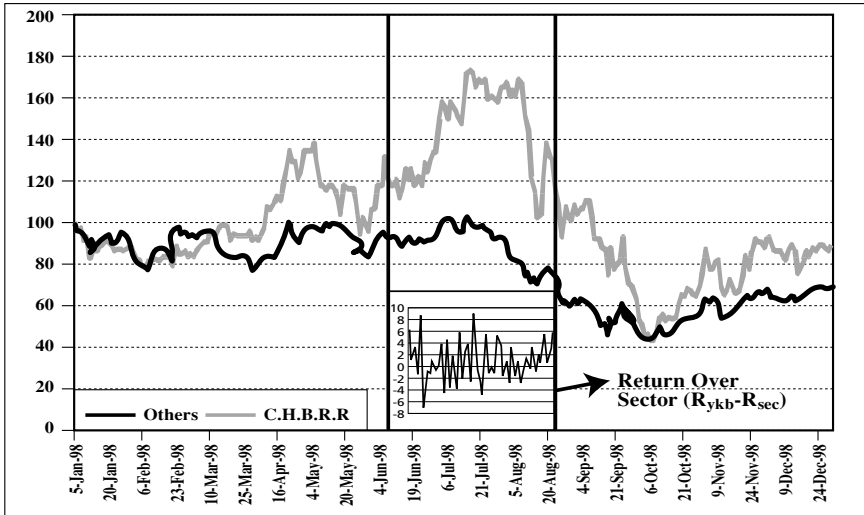
In the banks and special finance corporations sector, out of the banks that are   analyzed, only one bank has business relations with Russia. As it is evident from Figure 9, the return of this bank in the specified period exceeds the sector average. Considering that January 98=100, the return which increased up to 70% at the beginning of August began to decline after this date and reached 40 % in the second week of September. However, from thereafter, the return of the underlying bank rose to the level above the sector average.

Figure 10: Holding and Investment Companies
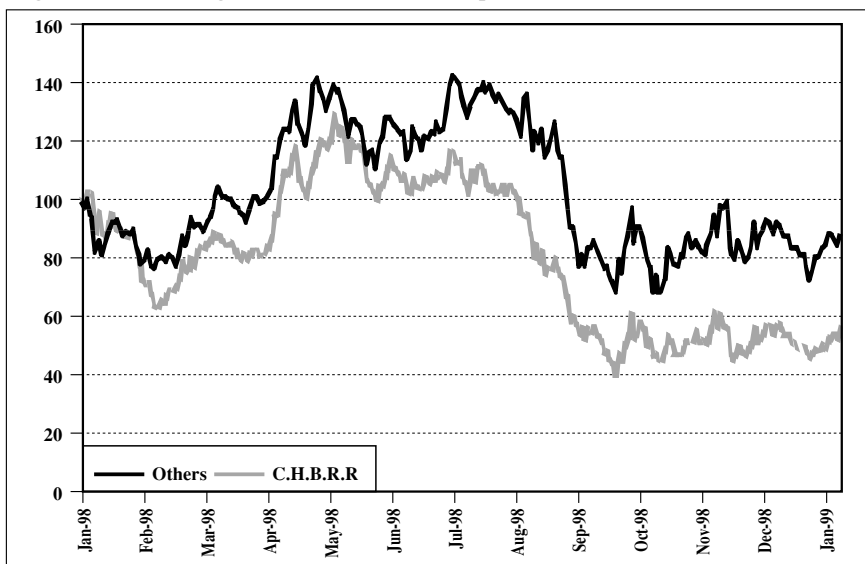
In the holding and investment companies sector, the performance of the first group companies is lower than the other companies in the sector in 1998. The average return of the sector for 1998, in general, is negative. The return is approximately -40 % on shares of first group companies and about -20 % on other companies' shares.

VI. Conclusion

The relationship of the ISE National-All Shares and the ISE National-100 Indices with the Russia-Traded and the Russia MTMU Indices in the period between July-December 1998 and in 1998 during which the effects of the Russian crisis prevailed, reveals the existence of a reciprocated and a strong correlation in the short run. Besides, as the period widens, the effect weakens and eventually disappears. When the price performances of companies that are traded on the ISE and which have strong business relations with Russia are analyzed, the number of companies that were effected with a one-day lag is found to be 33. The number of companies decreases to 18 and 13 as the lag increases to two days and three days, respectively. In the January-December 1998 period, the price performances of those companies, that were considerably effected by the crisis prevailing in Russia, were compared with the other companies (shares of companies included in the ISE- All Shares and the ISE-100 Index and

those which do not business relations with Russia), and their returns were found to be about 17% lower than the other companies. In addition, the price performances of companies were effected deeply were compared with the other companies within the same sector and were found to be lower than the sector average in 8 sectors out of the 10 sectors under analysis. The returns of companies having close business relations with Russia fell substantially, in particular, in the July-September 1998 period, when the effects of the Russian crisis reached a peak level. In the analyzed period, the ISE-All Shares, the ISE-100 as well as the 8 sectors out of 10 registered a negative return. When it is analyzed on sectoral basis, the most apparent performance difference were observed in the manufacture of food, beverages and tobacco; textile, wearing apparel and leather industries; manufacture of chemicals and chemical petroleum, rubber and plastic sectors. In the specified sectors, the performances differ by 37% on average.

References

Çelebi, Işın, *"Asya Krizi Işığında İthalat ve İhracata İlişkin Değerlendirme"*, Güneydoğu Asya Krizi ve Krizin Türkiye Ekonomisi Üzerine Muhtemel Etkileri Paneli, Ankara, 13.02.1998.

Davis, E.P., *"Debt, Financial Fragility, and Systemic Risk.; Oxford University Press, Clarendon Press, 1992,"* Reviewed by Guttentag, J., Journal of Economic Literature 32 (3), Sep.,1994, 1238-40.

Fischer, Stanley, *"The Asian Crisis: A View from the IMF"*, the Midwinter Conference of the Bankers' Association for Foreign Trade, Washington, D.C., January 22, 1998.

FIBV, Focus, Monthly Statistics, muhtelif sayılar.

Fortune, February 16, 1998, p.12.

ISE Monthly Bulletin.

İstanbul Tekstil ve Konfeksiyon İhracatçı Birlikleri (İTKİB), Hedef Dergisi, Mart 1998, s.84.

Krugman, P., *"The Danger of New Tax Cuts"*, Fortune, V131n2, Feb., 1995, p.45.

Krugman, P., *"Dutch Tulips and Emerging Markets"*, Foreign Affairs, July/Aug 1995, V74N4, pp.28-44.

Macesich, G., *"Successor States and Cooperation Theory: A Model for Eastern Europe"*, Westport, Conn. and London: Greenwood, Praeger, 1994, pp.x-173.

Macesich, G., *"World Debt and Stability"*, Westport, Conn. And London: Greenwood, Praeger, 1991, pp.x-109.

"East Asian Economies Survey," The Economist, March 7th-13th 1998, p.5.

Taylor, L., *"Capital Market Crises: Liberalisation, Fixed Exchange Rates and Market-Driven Destabilisation"*, Cambridge Journal of Economics, Special Issue on the Asian Crises, Volume 22, N:6., Nov.1998.

DPT, Rusya Krizi ve Türkiye Üzerine Muhtemel Etkileri, 1998.

GLOBAL CAPITAL MARKETS

The effects of the financial crisis that burst out in South East Asia in mid-1997 continued in the first half of 1999 at a slower pace. In parallel with this development, the global output has also decreased. Developed countries such as Japan and Germany (excluding USA) which accounted for one-third of the world production, have experienced a recession in the beginning of 1999. The growth rates of developed countries have decreased by 2.3% in 1998. Total production of developed countries which had increased by 4% in the past 4 years declined to 1.7% in 1998. The output in the emerging markets grew by 5.7% on average in 1997 and decreased to 1.6% in 1998. United Nations disclosed an estimated growth rate of 3% for 1999 and the world economy is expected to grow between 1-1.5% rate. If the estimated growth rates are realized, in this case, the world would experience the lowest rate of growth since 1980.

As a result of diminishing trust of investors in the emerging markets, private portfolio investments into these countries also decreased by 53.3% in 1998 with respect to the previous year. In the same period, direct investments had decreased by - 5.2% to a level of US$155 billion. (IFC, 1998)

As the effects of the financial crises began to weaken in the first months of 1999, the market capitalization of global capital markets increased by 20% on average, as of the end of April with respect to end-1998. Examining the emerging markets regionally, the increase in market capitalization in Africa, Asia and Latin America was about 20%. Europe was the best performing region in the same period, with a 40% increase. Among Europe, Africa and the Middle East region, Istanbul was the best performing market with an increase of 49,2% in market capitalization and Brussels was the worst with a -26% fall. In North America, the highest increase in market capitalization was observed in Mexico with 27,2% and lowest in Montreal with 8,5%. In parallel with the increase in market capitalization, the daily average trading volume in emerging markets rose by 70 % in the period between April 1999 and end-1998. A regional examination show that increases of 70% in Asia, 60% in Europe, 50% in Africa, 40% in Latin America were realized.

The performances of emerging markets with respect to P/E ratios as of end-May indicated that the highest rates were observed in Greece (40), Taiwan-China (39.9), Argentina (27,6) and lowest rates in Czech Republic

(-36.8), Korea (-9.7) and Indonesia (-8.8), With respect to market-to-book value, Greece was the best performing market with (6.4). This ratio was 4 in Turkey and 3.1 in Hungary. The lowest rates were observed in Brazil (1.0) and the Czech Republic (1.1).

The negative US$ based returns in most of the emerging markets in 1998 turned positive in May 1999. The dollar based returns in May, with respect to end-1998, were 99.8% in Russia, 81.8% in Indonesia, 52.3% in Mexico and 48.3% in Turkey.

Market Capitalization (USD Million, 1986-1998)

	Global	Developed Markets	Emerging Markets	ISE
1986	6.514.199	6.275.582	238.617	938
1987	7.830.778	7.511.072	319.706	3.125
1988	9.728.493	9.245.358	483.135	1.128
1989	11.712.673	10.967.395	745.278	6.756
1990	9.398.391	8.784.770	613.621	18.737
1991	11.342.089	10.434.218	907.871	15.564
1992	10.923.343	9.923.024	1.000.319	9.922
1993	14.016.023	12.327.242	1.688.781	37.824
1994	15.124.051	13.210.778	1.913.273	21.785
1995	17.788.071	15.859.021	1.929.050	20.782
1996	20.412.135	18.139.951	2.272.184	30.797
1997	23.518.520	21.317.929	2.200.591	61.348
1998	27.462.113	25.553.855	1.908.258	33.473

Source: IFC Factbook, 1999.

Comparison of Average Market Capitalization (USD Million, May 1999)
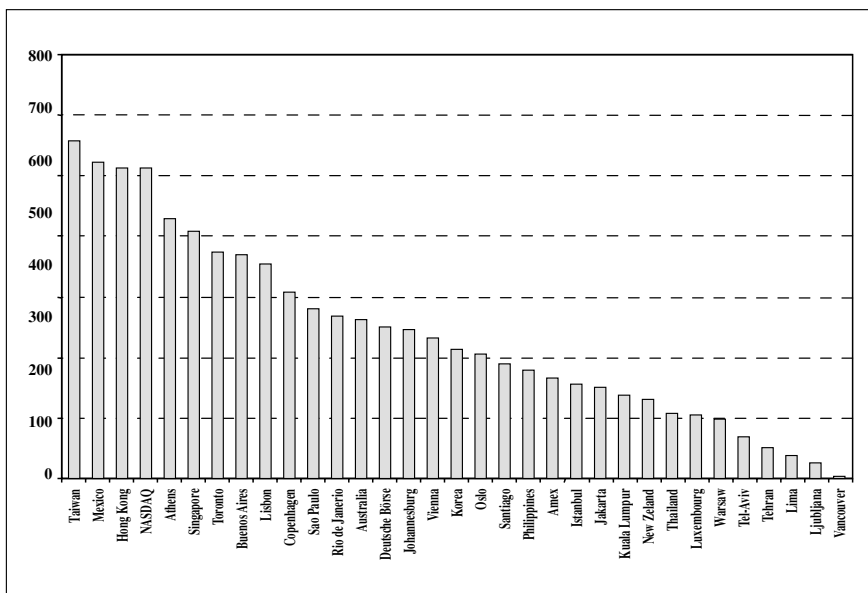
Source: FIBV May, 1999.

Worldwide Share of Emerging Capital Markets (1986-1998)
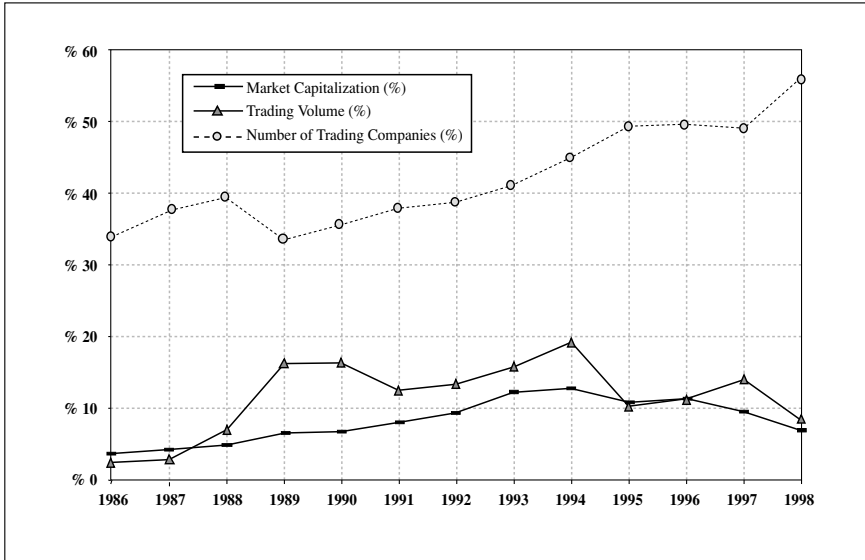
Source: IFC Factbook, 1999.

Share of ISE's Market Capitalization in World Markets (1986-1998)
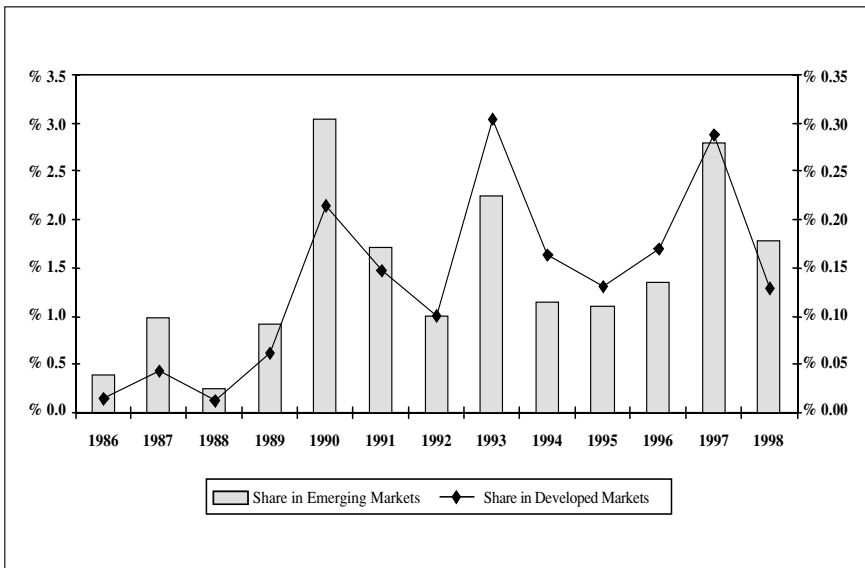
Source: IFC Factbook, 1999.

Main Indicators of Capital Markets (May-1999)

	Market	Turnover Velocity	Market	Value of Share Trading (millions, US$) Up to Year Total	Market	Market Cap. of Share of Domestic Companies (millions US$)
1	Korea	342,1%	NYSE	3.826.906	NYSE	11.364.483
2	NASDAQ	279,5%	NASDAQ	4.016.663	NASDAQ	2.940.772
3	Amex*	238,5%	London	1.521.460	Tokyo	2.764.634
4	Taiwan	320,7%	Paris	286.041	London	2.499.682
5	Paris	63,0%	Deutsche Börse	617.262	Osaka	2.097.585
6	Madrid	181,6%	Taiwan	317.388	Deutsche Börse	1.097.049
7	İstanbul	168,4%	Tokyo	461.148	Paris	987.552
8	Deutsche	106,3%	Switzerland	259.750	Switzerland	615.361
9	Athens	125,1%	Madrid	327.149	Amsterdam	568.568
10	Helsinki	45,1%	Italy	239.417	Italy	524.922
11	Switzerland	76,0%	Amsterdam	182.600	Toronto	605.603
12	Stockholm	66,4%	Toronto	147.238	Montreal	584.126
13	Barcelona	7,3%	Chicago	172.323	Madrid	361.343
14	NYSE	73,6%	Amex	50.046	Hong Kong	411.747
15	Thailand	116,7%	Stockholm	116.529	Bilbao	312.215
16	Italy	100,3%	Barcelona	13.913	Barcelona	332.432
17	Oslo	97,8%	Hong Kong	71.647	Australian	363.632
18	Lisboa	119,9%	Bilbao	84.526	Stockholm	256.203
19	Amsterdam	67,3%	Australian	79.946	Taiwan	304.073
20	Singapore	107,9%	Osaka	68.774	Brussels	183.266
21	Ljubljana	22,3%	Korea	198.587	Johannesburg	190.316
22	Copenhagen	63,5%	Sao Paulo	34.763	Rio de Janerio	161.762
23	Vancouver	71,5%	İstanbul	28.770	Sao Paulo	156.684
24	Sao Paulo	67,1%	Copenhagen	25.659	Helsinki	168.116
25	Toronto	50,0%	Brussels	26.134	Amex	132.000
26	Bilbao	41,1%	Helsinki	37.050	Korea	175.630
27	Australian	54,6%	Singapore	38.459	Copenhagen	87.150
28	Warsaw	36,4%	Johannesburg	26.289	K.Lumpur	117.440
29	Irish	63,4%	Athens	49.024	Singapore	138.480
30	New Zealand	71,9%	Lisbon	18.944	Mexico	116.729
31	Tel-Aviv	49,5%	Oslo	18.823	Athens	117.244
32	B.Aires	28,9%	Montreal	13.730	Irish	60.872
33	London	53,1%	Irish	17.786	Lisbon	52.988
34	Hong Kong	54,9%	Rio de Janerio	1.885	Santiago	61.892
35	Philippine	77,9%	Mexico	15.211	Oslo	54.204
36	Vienna	36,4%	K.Lumpur	10.643	B.Aires	55.004
37	Jakarta	54,6%	B.Aires	5.999	Tel-Aviv	52.234
38	Tokyo	37,6%	Thailand	14.205	Luxembourg	32.224
39	Lima	18,4%	Vienna	6.953	Vienna	32.263
40	Brussels	25,3%	Tel-Aviv	7.218	Philippine	45.636
41	Johannesburg	36,3%	New Zealand	6.593	Thailand	50.021
42	Mexico	38,6%	Jakarta	4.521	İstanbul	50.189
43	Kuala	56,7%	Philippine	6.999	New Zealand	26.214
44	Tehran	6,1%	Warsaw	4.505	Jakarta	46.512
45	Rio de Janerio	2,9%	Santiago	4.401	Warsaw	24.090
46	Osaka	4,3%	Lima	825	Tehran	17.421
47	Montreal	4,8%	Vancouver	1.556	Lima	10.820
48	Santiago	41,8%	Luxembourg	686	Vancouver	5.174
49	Luxembourg	3,7%	Tehran	969	Ljubljana	2.804

Source: FIBV, Focus, May, 1999.

Trading Volume (USD millions, 1986-1998)

	Global	Developed	Emerging	ISE	Emerging/ Global (%)	ISE/ Emerging (%)
1986	3.573.570	3.490.718	82.852	13	2,32	0,02
1987	5.846.864	5.682.143	164.721	118	2,82	0,07
1988	5.997.321	5.588.694	408.627	115	6,81	0,03
1989	7.467.997	6.298.778	1.169.219	773	15,66	0,07
1990	5.514.706	4.614.786	899.920	5.854	16,32	0,65
1991	5.019.596	4.403.631	615.965	8.502	12,27	1,38
1992	4.782.850	4.151.662	631.188	8.567	13,20	1,36
1993	7.194.675	6.090.929	1.103.746	21.770	15,34	1,97
1994	8.821.845	7.156.704	1.665.141	23.203	18,88	1,39
1995	10.218.748	9.176.451	1.042.297	52.357	10,20	5,02
1996	13.616.070	12.105.541	1.510.529	37.737	11,09	2,50
1997	19.484.814	16.818.167	2.666.647	58.104	13,69	2,18
1998	22.874.320	20.917.462	1.956.858	70.396	8,55	3,60

Source: IFC Factbook 1999.

Number of Trading Companies (1986-1998)

	Global	Developed Markets	Emerging Markets	ISE	Emerging /Global (%)	ISE/ Emerging (%)
1986	28.173	18.555	9.618	80	34,14	0,83
1987	29.278	18.265	11.013	82	37,62	0,74
1988	29.270	17.805	11.465	79	39,17	0,69
1989	25.925	17.216	8.709	76	33,59	0,87
1990	25.424	16.323	9.101	110	35,80	1,21
1991	26.093	16.239	9.854	134	37,76	1,36
1992	27.706	16.976	10.730	145	38,73	1,35
1993	28.895	17.012	11.883	160	41,12	1,35
1994	33.473	18.505	14.968	176	44,72	1,18
1995	36.602	18.648	17.954	205	49,05	1,14
1996	40.191	20.242	19.949	228	49,64	1,14
1997	40.880	20.805	20.075	258	49,11	1,29
1998	47.465	21.111	26.354	277	55,52	1,05

Source: IFC Factbook 1999.

Comparison of P/E Ratios Performances (1998/5-1999/5)
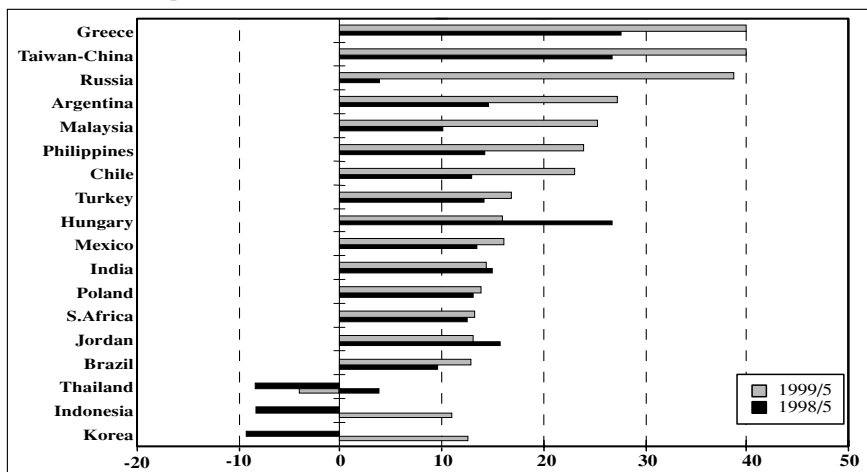
Source: IFC Factbook 1999, IFC, Monthly Review, May, 1999.

Price-Earnings Ratios in Emerging Markets (1993-1999/5)

	1993	1994	1995	1996	1997	1998	1999/5
Greece	10,2	10,4	10,5	10,5	13,1	33,7	40,0
Taiwan, China	34,7	36,8	21,4	28,2	32,4	21,7	39,9
Argentina	41,9	17,7	15,0	38,2	17,1	13,4	27,6
Malaysia	43,5	29,0	25,1	27,1	13,5	21,1	25,6
Philippines	38,8	30,8	19,0	20,0	12,5	15,0	24,2
Chile	20,0	21,4	17,1	27,8	15,9	15,1	23,2
Turkey	36,3	31,0	8,4	10,7	18,9	7,8	16,9
Mexico	19,4	17,1	28,4	16,8	22,2	23,9	16,2
Hungary	52,4	-55,3	12,0	17,5	25,2	17,0	16,2
India	39,7	26,7	14,2	12,3	16,8	13,5	14,6
Poland	31,5	12,9	7,0	14,3	10,3	10,7	14,0
S.Africa	17,3	21,3	18,8	16,3	12,1	10,1	13,2
Jordan	17,9	20,8	18,2	16,9	12,8	15,9	13,0
Brazil	12,6	13,1	36,3	14,5	15,4	7,0	12,7
Thailand	27,5	21,2	21,7	13,1	4,8	-3,7	-8,7
Indonesia	28,9	20,2	19,8	21,6	11,2	-106,2	-8,8
Korea	25,1	34,5	19,8	11,7	11,6	-47,1	-9,7
Czech Rep.	18,8	16,3	11,2	17,6	8,8	-11,3	-36,8

Source: IFC Factbook, 1999; IFC, Monthly Review, May, 1999.
Note: Figures are taken from IFC Global Index Profile.

Comparison of Market Returns in USD (1998-1999/5)

Country	Value
Russia	99,8
Indonesia	81,8
S.Korea	52,3
Mexico	48,4
Turkey	48,3
Singapore	42
Thailand	41
Israel	38,8
Malaysia	35,1
Hong Kong	30,7
Greece	29,8
India	29,6
China	27
Philippines	25
Taiwan	25
S. Africa	24,5
Chile	23,1
Argentina	20,4
Brazil	17,3
Poland	15,5
Venezuela	10,6
Egypt	9,5
Czech Rep.	5,9
Hungary	-6,8
Colombia	-19,2
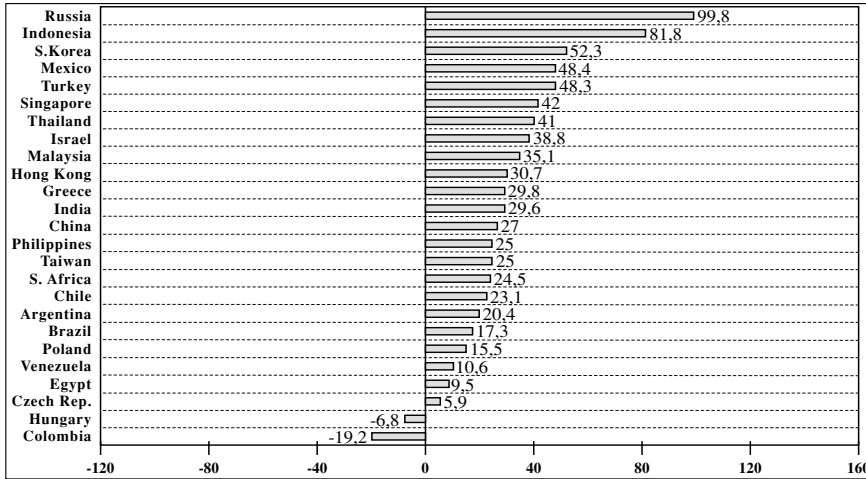
Source: The Economist, June, 19-25.

Market Value/Book Value Ratios (1993-May 1999)

	1993	1994	1995	1996	1997	1998	1999/5
Greece	1,9	1,9	1,8	2,0	2,9	4,9	6,4
Turkey	7,2	6,3	2,7	4,0	9,2	2,7	4,0
Hungary	1,6	1,7	1,2	2,0	3,7	3,2	3,1
Taiwan, China	3,9	4,4	2,7	3,3	3,8	2,6	2,6
Indonesia	3,1	2,4	2,3	2,7	1,5	1,6	2,5
India	4,9	4,2	2,3	2,1	2,7	1,9	2,2
S.Africa	1,8	2,6	2,5	2,3	1,9	1,5	2,1
Thailand	4,7	3,7	3,3	1,8	0,8	1,2	2,0
Mexico	2,6	2,2	1,7	1,7	2,5	1,4	1,8
Poland	5,7	2,3	1,3	2,6	1,6	1,5	1,7
Malaysia	5,4	3,8	3,3	3,8	1,8	1,3	1,7
Philippines	5,2	4,5	3,2	3,1	1,7	1,3	1,7
Argentina	1,9	1,4	1,3	1,6	1,8	1,3	1,6
Jordan	2,0	1,7	1,9	1,7	1,6	1,8	1,5
Chile	2,1	2,5	2,1	1,6	1,6	1,1	1,5
Korea	1,4	1,6	1,3	0,8	0,6	0,9	1,3
Czech Rep.	1,3	1,0	0,9	0,9	0,8	0,7	1,1
Brazil	0,5	0,6	0,5	0,7	1,1	0,6	1,0

Source: : IFC Factbook, 1996-1999; IFC Monthly Review, May, 1999.

Market Value of Bonds (Million USD, Jan.-May 1999)

City	Value
Paris	7.844.117,7
Copenhagen	872.252,4
Deutsche B.	778.497,3
Stockholm	659.845,0
London	606.843,4
Johannesburg	546.241,4
Korea	136.308,5
Amsterdam	122.371,2
Italy	75.444,1
Oslo	67.896,2
Irish	56.617,0
Switzerland	49.147,5
Barcelona	34.040,4
Istanbul	28.862,3
Santiago	27.645,8
Tokyo	21.969,1
Bilbao	19.142,3
Buenos Aires	14120,0
Amex	9.531,3
Tel-Aviv	5.700,4
Osaka	1.876,0
Lisbon	1.797,2
Singapore	1.663,6
NYSE	1.419,0
Madrid	1.255,6
Luxembourg	641,3
Taiwan	633,5
Lima	536,6
Brussels	259,1
Warsaw	228,8
Vienna	172,1
Mexico	139,7
New Zeland	118,2
Australian	114,3
K.Lumpur	102,9
Ljubljana	72,0
Montreal	38,0
Helsinki	15,2
NASDAQ	12,9
Athens	1,6

Source: FIBV, Focus, Monthly Statistics, May, 1999.

**Foreign Investments as a Percentage of Market Capitalization in Turkey
(1986-1999/3)**
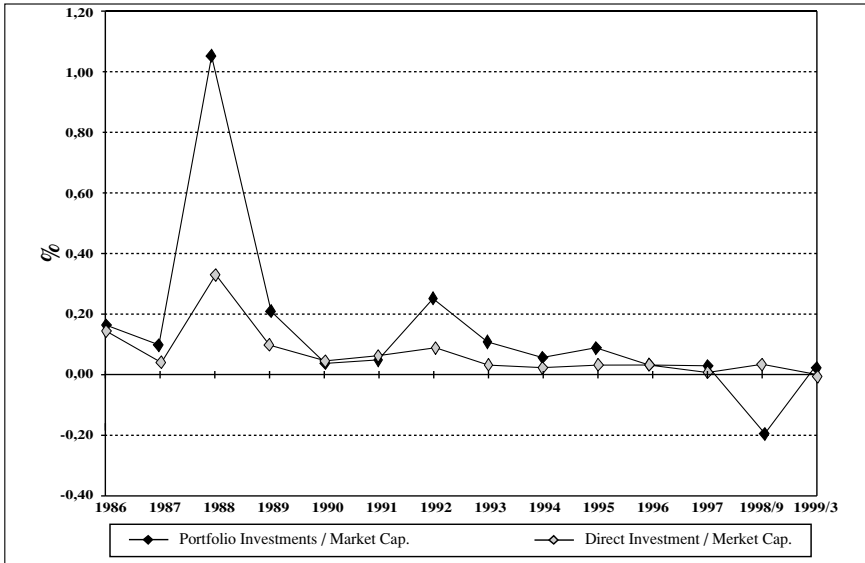
Source: ISE Data, CBTR Databank.

Foreigners' Share in the Trading Volume of the ISE (Jan. 95-May 99)
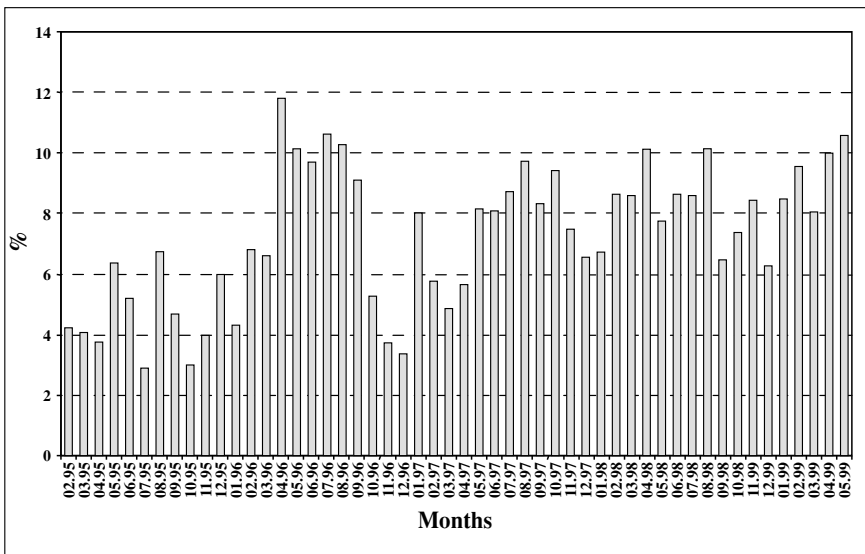
Source: ISE Data.

Price Correlations of the ISE (1994/5-1999/5)
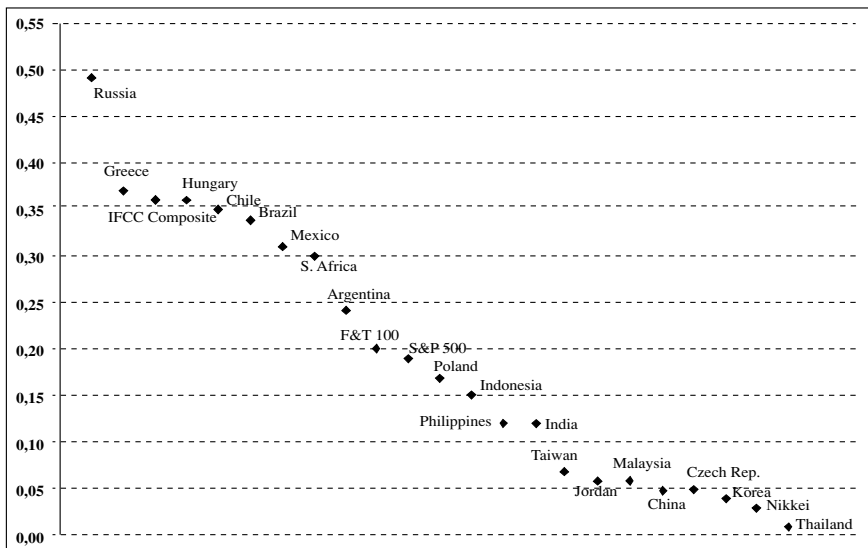
Notes: The correlation coefficient is between -1 and +1. If it is zero, for the given period, it is implied that there is no relation between two serious of returns. For monthly return index correlations (IFCI) see. IFC, Monthly Review, May, 1999.

Comparison of Market Indices (Jan 97=100)

Source: Reuters.
Note: Comparisons are in USD.

ISE
Market Indicators

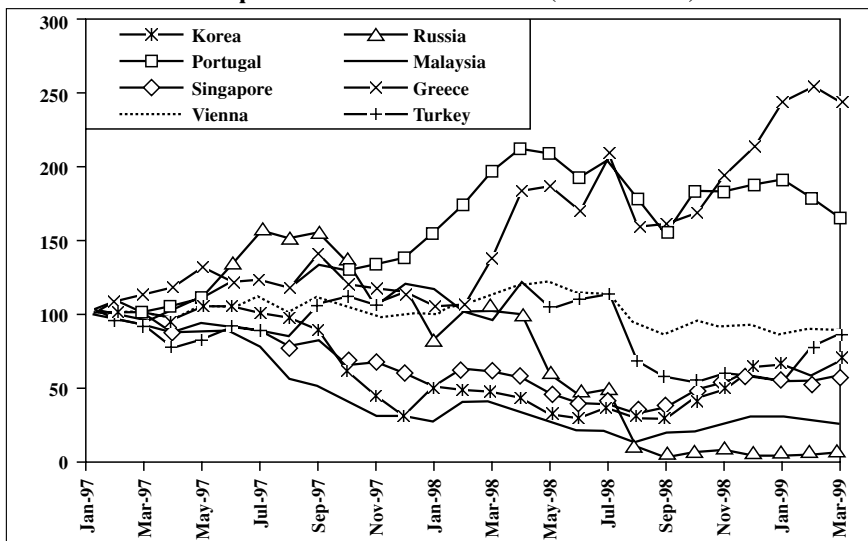|		STOCK MARKET									
		Total Value				Market Value		Dividend Yield	P/E Ratios		
	Number of Companies	Total		Daily Average							
		(TL Billion)	(US$ Million)	(TL Billion)	(US$ Million)	(TL Billion)	(US$ Million)	(%)	TL(1)	TL(2)	US $
1986	80	9	13	—	—	709	938	9,15	5,07	—	—
1987	82	105	118	—	—	3.182	3.125	2,82	15,86	—	—
1988	79	149	115	1	—	2.048	1.128	10,48	4,97	—	—
1989	76	1.736	773	7	3	15.553	6.756	3,44	15,74	—	—
1990	110	15.313	5.854	62	24	55.238	18.737	2,62	23,97	—	—
1991	134	35.487	8.502	144	34	78.907	15.564	3,95	15,88	—	—
1992	145	56.339	8.567	224	34	84.809	9.922	6,43	11,39	—	—
1993	160	255.222	21.770	1.037	89	546.316	37.824	1,65	25,75	20,72	14,86
1994	176	650.864	23.203	2.573	92	836.118	21.785	2,78	24,83	16,70	10,97
1995	205	2.374.055	52.357	9.458	209	1.264.998	20.782	3,56	9,23	7,67	5,48
1996	228	3.031.185	37.737	12.272	153	3.275.038	30.797	2,87	12,15	10,86	7,72
1997	258	9.048.721	58.104	35.908	231	12.654.308	61.879	1,56	24,39	19,45	13,28
1998	277	18.029.967	70.396	72.701	284	10.611.820	33.975	3,37	8,84	8,11	6,36
1999	280	12.996.467	34.948	112.039	301	19.818.579	47.425	2,20	14,70	13,84	9,98
1999/Q1	278	5.183.056	15.059	94.237	274	18.347.576	50.223	2,42	13,76	13,81	10,26
1999/Q2	280	7.813.412	19.890	128.089	326	19.818.579	47.425	2,20	14,70	13,84	9,98

Q: Quarter

Note: Between 1986-1992, the price earnings ratios were calculated on the basis of the companies' previous year-end
net profits. As from 1993, TL(1)= Total Market Capitalization / Sum of the last two six-month profits;
TL(2)= Total Market Capitalization / sum of last four three-month profits.
US$= US$ based Total Market Capitalization / Sum of the last four US$ based three-month profits.

Closing Values of the ISE Price Indices

	TL Based			
	NATIONAL-100 (Jan. 1986=1)	NATIONAL-INDUSTRIALS (Dec. 31, 90=33)	NATIONAL-SERVICES (Dec. 27, 96=1046)	NATIONAL-FINANCIALS (Dec. 31, 90=33)
1986	1,71	—-	—-	—-
1987	6,73	—-	—-	—-
1988	3,74	—-	—-	—-
1989	22,18	—-	—-	—-
1990	32,56	32,56	—-	32,56
1991	43,69	49,63	—-	33,55
1992	40,04	49,15	—-	24,34
1993	206,83	222,88	—-	191,90
1994	272,57	304,74	—-	229,64
1995	400,25	462,47	—-	300,04
1996	975,89	1.045,91	1.045,91	914,47
1997	3.451,26	2.660,—	3.593,—	4.522,—
1998	2.597,91	1.943,67	3.697,10	3.269,58
1999	4.950,21	3.208,09	5.564,37	6.781,44
1999/Q1	4.554,07	3.059,33	5.718,38	6.073,84
1999/Q2	4.950,21	3.208,09	5.564,37	6.781,44

	US $ Based				EURO Based
	NATIONAL-100 (Jan. 1986=100)	NATIONAL-INDUSTRIALS (Dec. 31, 90=643)	NATIONAL-SERVICES (Dec. 27, 96=572)	NATIONAL-FINANCIALS (Dec. 31, 90=643)	NATIONAL-100 (Dec. 31, 98=484)
1986	131,53	—-	—-	—-	
1987	384,57	—-	—-	—-	
1988	119,82	—-	—-	—-	
1989	560,57	—-	—-	—-	
1990	642,63	642,63	—-	642,63	
1991	501,50	569,63	—-	385,14	
1992	272,61	334,59	—-	165,68	
1993	833,28	897,96	—-	773,13	
1994	413,27	462,03	—-	348,18	
1995	382,62	442,11	—-	286,83	
1996	534,01	572,33	572,00	500,40	
1997	982,—	757,—	1.022,—	1.287,—	
1998	484,01	362,12	688,79	609,14	484,01
1999	689,30	446,72	774,82	944,30	778,79
1999/Q1	725,40	487,31	910,86	967,48	779,07
1999/Q2	689,30	446,72	774,82	944,30	778,79

Q : Quarter

BONDS AND BILLS MARKET

Traded Value

Outright Purchases and Sales Market

	Total		Daily Average	
	(TL Billion)	(US$ Million)	(TL Billion)	(US$ Million)
1991	1.476	312	11	2
1992	17.977	2.406	72	10
1993	122.858	10.728	499	44
1994	269.992	8.832	1.067	35
1995	739.942	16.509	2.936	66
1996	2.710.973	32.737	10.758	130
1997	5.503.632	35.472	21.840	141
1998	17.995.993	68.399	71.984	274
1999	13.479.696	36.643	112.331	305
1999/Q1	6.397.011	18.758	112.228	329
1999/Q2	7.082.684	17.885	112.424	284

Repo-Reverse Repo Market

	Total		Daily Average	
	(TL Billion)	(US$ Million)	(TL Billion)	(US$ Million)
1993	59.009	4.794	276	22
1994	756.683	23.704	2.991	94
1995	5.781.776	123.254	22.944	489
1996	18.340.459	221.405	72.780	879
1997	58.192.071	374.384	230.921	1.486
1998	97.278.476	372.201	389.114	1.489
1999	100.602.389	269.026	838.353	2.242
1999/Q1	37.784.689	110.178	662.889	1.933
1999/Q2	62.817.700	158.848	997.106	2.521

Q : Quarter

ISE Price Indices (December 25-29, 1995=100)

	TL Based			
	30 Days	**91 Days**	**182 Days**	**General**
1996	103,41	110,73	121,71	110,52
1997	102,68	108,76	118,48	110,77
1998	103,57	110,54	119,64	110,26
1999	104,59	113,83	126,44	115,82
1999/Q1	104,68	114,73	129,98	115,44
1999/Q2	104,59	113,83	126,44	115,82

ISE GDS Performance Indices (December 25-29, 1995=100)

	TL Based		
	30 Days	**91 Days**	**182 Days**
1996	222,52	240,92	262,20
1997	441,25	474,75	525,17
1998	812,81	897,19	983,16
1999	1.079,76	1.211,21	1.412,93
1999/Q1	948,76	1.051,40	1.226,50
1999/Q2	1.079,76	1.211,21	1.412,93
	US $ Based		
1996	122.84	132.99	144.74
1997	127.67	137.36	151.95
1998	153.97	169.96	186.24
1999/Q1	153.66	170.28	198.64
1999/Q2	152.88	171.49	200.05

Q : Quarter

Book Reviews

Financial Crisis Management In Regional Blocs; Scheherazade S.
REHMAN (ed), Kluwer Academic Publishers, 1998, xiii + 355

This book presents the key characteristics of regional financial crisis; the
prevention methods and the policies that national governments, central
bankers and the International Monetary Fund have formed.

In Part one, Dr. Howard Curtis Reed, Special Counsel for Finance &
Investment Policy to the United States Trade Representative during 1993-
1996 explores the history and the combination of factors that caused the
financial crisis in his article: "Managing Financial Crisis: Who Is In
Charge ?"

Part two, "European Union and Other Regional Exchange Rate
Arrangements" addresses the relationship between regional financial cri-
sis, the national economies and global financial markets in six articles.

In the first article, Sir Alan Walters, ex-chief economic advisor to
Prime Minister between 1980-1984, discusses the economic and political
issues involved in the creation of the Economic and Monetary Union
(EMU) of the European Union.

In the second article, Prof. Dr. Hans Tietmeyer, President of
Bundesbank of the Federal Republic of Germany, concludes that the
Exchange Rate Mechanism (ERM) crisis involving most European Union
currencies, had occurred because the participating nations did not always
observe the three basic ERM principles (primacy of domestic price sta-
bility, central rate re-alignments and the need for flexibility.)

In the third article, Dr. Roberto Rinaldi, Head of the Monetary
Analysis Office in the Monetary and Financial Sector at the Bank of Italy
and Dr. Carlo Santini, Central Manager for Economic Research at the
Bank of Italy, explore the crises in Italian lira (1992-1995) in their report:
"Italy: Two Foreign Exchange Crisis". It is argued that, the globalization
and liberalization of financial markets limit national sovereignty in setting
and implementing economic policies.

Mr. André de Lattre, former Deputy Governor of the Bank of France
explained that through the creation of the European single currency, the
Euro, the quest for European and global financial stability may at last be
rewarded. The effects of the new currency in Europe and the rest of the

world, are also discussed in the fourth article: "The Single Currency as a Stabilizing Factor in International Relations."

In the fifth article, the Minister of Finance of Switzerland, Kaspar Villiger, explores the four potential EMU (Economic Monetary Union) scenarios, involving the Euro and the Swiss Franc. He analyzes that, the Swiss currency and financial markets would be affected in different ways.

In the concluding article of this part, "Exchange Rate and Economic Policy in Three Regional Blocks: The EU, the GCC and the CFA", Dr. Franco Modigliani, Institute Professor Emeritus at the Massachusetts Institute of Technology and winner of the 1985 Nobel Price in Economics, and Dr. Hossein Askari, Global Management Research Professor and Director of the Institute of Global Management Research at The George Washington University D.C, take a historical look at the economic and financial performance of a group of countries with different fixed parity exchange rate systems.

In Part three, "The Mexican Crises and the Tequila Effect" contains two articles. In the first article: "The Mexican Financial Crisis of 1994-1995: An Asymmetric Information Analysis", Dr. Frederic S. Mishkin, the former Executive vice-president and Director of Research at the Federal Reserve Bank of New York, uses his Asymmetric Information Analysis Theory to explain why the Mexican financial crisis had occurred and why it had devastating effects on the economy. Dr. Mishkin analyzed The Tequila Effect (after shock) in the global financial markets, especially in the South American region.

In the second article: "The Argentine Banking Panic After the Tequila Shock: Did Convertibility Help or Hurt ?", Dr. Roque Fernandez, Minister of Finance and former President of the Central Bank of Argentina together-er with Dr. Liliana Schumacher, former Principal Economist in the Research Department of the Central Bank of Argentine and currently Assistant Professor of International Finance and Banking at the George Washington University D.C, explained that the Mexican events did not create a crisis in the Argentine banking sector but they only effected it. They also pointed out that the 1991 Argentine Convertibility Plan restrained the forces generating budget deficits and inflation. Specific policies were used to prevent panic in the banking sector.

In Part four, "The Transforming Economies" shifts the focus of analy-sis from developed or developing market economies to nations undergo-ing a transformation from centrally planned to competitive market economies such as Russia, the Czech Republic and Hungary. The report

"The Consolidation of Russian Banking" is focused on the policies which shook up the Russian banking industry (1994-1996) and prevented a major financial crisis from occurring.

Dr. Josef Tosovsky, Governor of the Czech National Bank, analyzes the 1990-1993 financial crises in the then still Czechoslovak Republic. The first crisis was caused by the introduction of the systemic transformation and macro-economic stabilization policies and the resulting currency speculation. The 1993 crisis resulted from the splitting of the country into the Czech and Slovak Republics. With the assistance of the IMF, the Czech National Bank took the necessary steps to prevent financial crisis from occurring.

Dr. Lajos Bokros, former Hungarian Minister of Finance, discusses the necessary economic conditions to prevent a major internal and external financial disequilibrium in his country. In the article: "Stabilization Without Recession: The success of a long Awaited Financial Adjustment in Hungary" he describes the process of how Hungary came to the brink of financial disaster.

Part five titled Special Topics: "Public Debt and War" consists of two articles. The first article addresses the potential for financial crises caused by high domestic debt. Dr. Daniel Gros, Senior Research Fellow and Director, Economic Policy Programme, Centre for European Policy Studies (Brussels) and professor at the University of Frankfurt, analyses the implications and the effects of high public debt in a theoretical framework. In the Two Model Consistent Equilibria, under the first equilibrium, the government has strong anti-inflationary credentials, thus, interest rates and the debt service burden remain low. The other represents a "debt trap".

In the second article, "The Impact of the Iraqi Invasion on the Kuwaiti Banking and Financial System: Lessons Learned from a Financial Crisis", Sheikh Salem Abdul Aziz Al-Sabah, the Governor of the Central Bank of Kuwait, discusses the policies implemented by his government and institution to prevent a major financial crisis that could have been generated by the 1990 Iraqi invasion and temporary occupation of Kuwait.

Part six focuses on the role of the IMF in managing financial crisis. "The Role of the IMF" presents two reports. In the first report, "Financial Crisis Management and the Role of the IMF, 1970-1995", Prof. Dr. Age F. P. Bakker, Deputy Director of the Central Bank of Netherlands, and Dr. Arend j. Kapteyn, economist at the Monetary and Economic Policy Department of the Central Bank of The Netherlands, provide an overview

of past IMF actions. After the breakdown of the Bretton Woods system in the early 1970s, they analyze global economic and financial events as well as the changing role of the IMF. Dr. Bakker and Dr. Kapteyn discuss the 1970s energy, the external debt crisis of the 1980s, the economic transformation in 1990s and the Mexican events in 1994.

In the last article of the book, "The Role of the International Monetary Fund in Promoting Stability in the Global Economy", Phillippe Maystadt, Vice-Prime Minister and Minister of Finance and Foreign Trade of Belgium and Chairman of the Interim Committee of the IMF, outlines the new programs and policy measures that the IMF has developed to prevent future financial crisis wherever they may occur.

Part seven, "Summary and Conclusions", Dr. Scheherazade S. Rehman explores the arguments of the various contributors of the different types of actual or potential regional financial crises and their implications. This book is a detailed source of analyzing the background and the effects of the financial crisis in order to prevent them from happening in the future.

Executive Compensation and Shareholder Value; Theory And Evidence, Eds. Jennifer CARPENTER, David YERMACK, The New York University Salomon Center Series on Financial Markets and Institutions, 1999, pp. ix+159

This book is about research on issues related to executive compensation. The pay of top American executives have increased significantly in comparison with the past, with top executives in other countries or with wages and salaries of employees. The extraordinary levels of executive compensation have been achieved at a time when US public companies have realized substantial gains in stock market value. While many argues that US executive compensation works well and that rewarding managers who make difficult decisions that lead to higher shareholder value, others point that executives have received overly generous streams of wealth that sometimes bear little relation to company performance and should rightly belong to shareholders. Many also critisized that the compensation process has become widespread with conflicts of interest between executives, directors and consultants.

Part One investigates the relation between executive compensation and

gains in shareholder wealth, with perspectives on both American and international companies. The critics of managerial compensation argue that there is minute or even non-existent link between compensation and performance.

In Steven Kaplan's report "Top Executive Incentives in Germany, Japan and the USA: A Comparison", it is argued that the compensation is related to company stock price performance in Germany, Japan and USA and the effects of these are similar in magnitude. Martin J.Conyon and Joachim Schwalbach, provide information about the variety of managerial incentives, with the data taken from 10 different European countries.

Brian Hall's paper investigates the compensation of American CEOs. Hall argues that the growing use of stock options has resulted in substantial improvements in managerial incentives over the last two decades.

Second part contains management compensations determined by US companies. In Kevin Hallok's "Dual Agency: Corporate Boards with Reciprocally Interlocking Relationships" report, the concequences and pervasiveness of conflicts interest in the process of setting managerial pay. The results show that about 20 % of all large companies have board of directors' members who are also at anothers' boards.

Executive Stock options considered as the fastest growing element of executive compensation are discussed in Part three. Steven Huddart's paper, "Patterns of Stock Option Execrcises in the United States", examines the structure, valuation, and taxation of employee stock options and discusses the importance of employees'decisions about when to exercise their options both for option valuation and incentive properties. Brian Main explains how the stock options are treated differently by the UK and US companies. Main documents the growing use of stock options in the UK which has started in 1984 followed by rein- trenchment about a decade later. This change represented a contrast to the American experience that involved an uncontrolled increase in the use of options in the same period. Main also emphasized that accounting-based performance bonuses have replaced stock-based rewards as a source of UK managers incentives.

ISE PUBLICATIONS		
I- PERIODICALS	ISSN/ISBN	DATE
Weekly Bulletin	ISSN 1300-9311	
Monthly Bulletin (Turkish)	ISSN 1300-9303	
Monthly Bulletin (English)	ISSN 1300-9834	
Annual Factbook 1998*	ISSN 1300-9281 and ISBN 975-8027-57-3	1999
Newly Trading Stocks at the ISE 1998	ISSN 1301-2584 ISBN 975-8027-54-9	1998
Yearbook of Companies 1998 (General Information and Financial Statements)*	ISSN 1301-1057 and ISBN 975-8027-48-4 (Vol.1.No: ISBN 975-8027-49-2) (Vol. 2. No: ISBN 975-8027-50-6)	1998
ISE Companies-Capital Increases Dividends and Monthly Price Data (1986-1998)*	ISSN1300-929X	
II- RESEARCH PUBLICATIONS		
Taxation of Capital Market Instruments in Turkey - Sibel Kumbasar Bayraktar		1994
International Portfolio Investment Analysis and Pricing Model - Oral Erdoğan		1994
Portfolio Investments in International Capital Movements and Turkey - Research Department		1994
Linkage with International Markets (ADR-GDR) and Alternative Solutions to the Turkish Capital Market-Kudret Vurgun		1994
Modern Developments in Investment Theory and Some Evaluations and Observations at ISE - Dr. Berna Ç. Kocaman		1995
International Capital Movements and their Macroeconomic Effects on the Third World Countries and Turkey - Dr. Sadi Uzunoğlu - Dr. Kerem Alkin - Dr. Can Fuat Gürlesel		1995
Institutional Investors in The Developing Stock Exchanges: Turkish Example, Problems and Proposed Solutions - Dr. Targan Ünal		1995
The Integration of European Union Capital Markets and Istanbul Stock Exchange-Dr. Meral Varış Tezcanlı-Dr. Oral Erdoğan	ISBN 975-8027-05-0	1996
Personnel Administration- Şebnem Ergül	ISBN 975-8027-07-7	1996
The Integration of European Capital Markets and Turkish Capital Market - Dr. Sadi Uzunoğlu - Dr. Kerem Alkin - Dr. Can Fuat Gürlesel	ISBN 975-8027-24-7	1997
European Union and Turkey- Prof. Dr. Rıdvan Karluk	ISBN 975-8027-04-2	1996
Insider Trading and Market Manipulations - Dr. Meral Varış Tezcanlı	ISBN 975-8027-17-4 and ISBN 975-8027-18-2	1996
Strategic Entrepreneurship: Basic Techniques for Growth and Access to Foreign		

ISE PUBLICATIONS		
Markets for Turkish Companies-Ömer Esener	ISBN 975-8027-28-X	1997
Research Studies on Capital Markets and ISE Regulations Related to Capital Market Operations- Vural Günal	ISBN 975-7869-04-X ISBN 975-8027-34-4	1996 1997
Resolution of Small and Medium Size Enterprises' Financial Needs Through Capital Markets - R. Ali Küçükçolak	ISBN 975-8027-39-5	1998
Equity Options and Trading on the ISE - Dr. Mustafa Kemal Yılmaz	ISBN 975-8027-45-X	1998
Private Pension Funds : Chilean Example - Çağatay Ergenekon	ISBN 975-8027-43-3	1998
Analysis of Return Volatility In the Context of Macroeconomic Conjuncture - Prof. Dr. Hurşit Güneş- Dr. Burak Saltoğlu	ISBN 975-8027-32-8	1998
What Type of Monetary System? Monetary Discipline and Alternative Resolutions for Monetary Stability - Prof. Dr. Coşkun Can Aktan - Dr. Utku Utkulu-Dr. Selahattin Togay	ISBN 975-8027-47-6	1998
Institutional Investors in the Capital Markets (Dr. Oral Erdoğan-Levent Özer)	ISBN 975-8027-51-4	1998
Repo and reverse Repo Transactions - Dr. Nuran Cömert Doyrangöl	ISBN 975-8027-12-3	1996
South Asian Crisis: The Effects on Turkish Economy and the ISE - Research Department	ISBN 975-8027-44-1	1998
RESEARCH ON DERIVATIVES MARKET		
Some Basic Strategies on Securities Market derived from Future Transactions and Options (Mustafa Kemal Yılmaz)		1996
SECTORAL RESEARCH		
Automotive Sector- Sibel Kumbasar Bayraktar		1995
Textile Sector (Cotton)- Efser Uytun		1995
Food Sector - Ebru Tan		1995
Glass Sector- Özlem Özdemir		1995
Insurance Sector- Çağatay Ergenekon		1995
Tourism Sector- Oral Erdoğan		1995
Manifactural Paper and Paper Product Sector- Çağatay Ergenekon	ISBN 975-8027-09-3	1996
Textile Sector (Artificial-synthetic, Woolen, Manufactured Clothing, Leather and Leather Goods)- Efser Uytun	ISBN 975-8027-10-7	1996
Food Sector (Vegetable Oil, Meat, Fruit, Dairy Products, Sugar, Flavor Products, Animal Feed) Research Department	ISBN 975-8027-19-0	1997
EDUCATION		
Basic Information Guide on Capital Markets and Stock Exchange (May 1998)	ISBN 975-8027-41-7	1998
III- BOOKLETS		
Questions-Answers: ISE and Capital Markets	ISBN 975-8027-31-X	1997
Guide on Stock Market Transactions	ISBN 975-8027-35-2	1997
Investors Counselling Center		
(*) Publications marked by (*) are in Turkish and English.		
For further inquiries please contact :		
Training and Publications Department		
Tel : 90 (0212) 298 24 24		
Fax : 90 (0212) 298 25 00		