

Final Report

Leading Financial Indicators in Egypt

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Preface

This report is based on a study conducted by the Development Economic Policy Reform Analysis (DEPRA) Project, under contract to the United States Agency for International Development (USAID/Egypt) Contract No.263-C-00-96-00001-00.

The DEPRA project is intended to encourage and support economic reform in Egypt through the provision of technical assistance and services to the Government of Egypt with particular focus on international trade and investment liberalization, deregulation, and financial sector strengthening.

This study was compiled by Thomas P. Enger, Ph. D. of Nathan Associates Inc., Arlington, VA, USA. The Egyptian staff member on this project was Mrs. Rawia Atef Mokhtar, M. A., under contract to DEPRA, who provided valuable assistance in the construction of the database, made econometric estimates, and who rendered much assistance in making arrangements and obtaining statistical information.

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The opinions expressed in this report and the conclusions and recommendations are those of the author and do not necessarily reflect the opinions of policies or either the Government of Egypt or the U. S. Agency for International Development.

Executive Summary

The purpose of this study was to develop and interpret a set of leading financial indicators (LFI) for the Egyptian economy and to develop an institutional capability within the Ministry of Economy and Foreign Trade (MEFT) for maintaining the LFI and continuing the analysis regularly. For this purpose, two databases were constructed and presented to MEFT. The *International Financial Statistics* monthly CD-ROM was used to calculate the LFI over the 1990–1999 period. The most recent data in the IFS database is for March 1999. The second database was built from the Central Bank of Egypt's *Monthly Statistical Bulletin* that provides data for the period from February 1996 to June 1999. A few categories of data were collected from the Bank for International Settlements on capital outflows and external debt, and they were added to both databases.

After the introduction, this report presents, in the second chapter, a survey of the professional literature that describes financial and currency crises and the main theoretical interpretations of their origins. The third chapter is an analytical description of the Egyptian economy in terms of the LFI over the last decade. It provides the longer term background for appraising the latest developments in the financial sector that are shown in the analysis of the LFI in Egypt in 1996-1999, which is presented in the fourth chapter. The analytical graphs and data tables are essential components of these latter two chapters. The fifth chapter is a sample quarterly report, which is presented as a suggestion and guide for the preparation of future quarterly reports by MEFT.

There are several points to stress in the review of the literature. First, currency and banking crises are not new phenomena. There have been numerous ones since the late 19th century. Between 1975 and 1997 there were 158 currency crises and 54 banking crises. Currency crises were more prevalent than banking crises during the 1975-1986 period. Banking crises were more prevalent during 1987-1997, related to increased financial liberalization. Second, the incidence of currency and banking crises in emerging market countries is at least double that of industrial countries. Third, countries might have both types of crises at about the same time, chiefly because of common origins or one crisis might induce the other one. Since 1975 there have been twelve contemporaneous crises. Fourth, banking crises have preceded currency crises by one to two years. When currency crises have led banking crises, the lead-time was also one to two years.

The authors of the professional literature focus on two main currents in their interpretations of the causes and origins of both currency and banking crises. In general, the literature suggests that the main causes of banking and financial crises have been unsustainable macroeconomic policies, weakness in financial structure, global financial

conditions, exchange rate misalignments, and political instability.¹ The main causes of currency crises have been macroeconomic imbalances; major economic shifts in industrial countries; and, contagion or “spillovers”.² There are two key papers in the literature that provide the theoretical basis for analysis of banking and currency crises. P. Krugman prepared the initial paper while M. Obstfeld wrote the most recent paper. The approaches differ significantly. The Krugman model assumes a fixed or pegged exchange rate. The model shows how a balance of payments crisis would arise from inflationary finance of a fiscal deficit. As international reserves are depleted, the currency becomes vulnerable to speculative attack. Speculative attack on the currency takes place because the public desires to avoid a capital loss imposed by inflation on their holdings of domestic money. Ultimately, the pressures on the currency foster a sudden collapse and a subsequent devaluation. The second key paper, written by M. Obstfeld emphasizes that financial and currency stresses arise from abrupt changes in capital flows linked to the assessments of investors in financial markets. The thesis of Obstfeld is that crises could occur when market sentiment about an exchange rate generates expectations that a devaluation is impending. Typically, this literature emphasizes the consequences of financial weakness in the context of globalization of financial markets.

The literature also has two key or valuable cross section studies. The papers by Kaminsky present empirical results pertaining to both banking and currency crises while those by Demurguc-Kunt and Detragiache are on financial fragility. This empirical research uses basically the same LFI to interpret the crises. Therefore, the LFI calculated for Egypt are based upon those that have been proven to be statistically significant in the main empirical studies.

The analysis of LFI in Egypt in 1990 - 1999 portrays an economy that achieved major gains in economic stabilization. The dramatic reduction of inflation in Egypt stands as a major accomplishment. The exchange rate anchor to the U. S. dollar functioned well in this environment. In addition, the international debt relief early in the decade not only allowed the build-up of international reserves but also helped to strengthen the current account performance. Economic growth revived and the expansion of liquidity was curbed. Consequently, nominal and real interest rates decreased significantly. The stock market that went into operation was given impetus by the policy of privatization. There were no failures in the banking system, but it remained dominated by state controlled banks. However, after the middle of the decade there were some notable changes in the behavior of the LFI.

After the middle of the decade, the LFI present a mixed picture in the 1997 – 1999 period. LFI pertaining to the general economy do not present evidence of rising risks.

¹ Banking crises are defined as situations where banks become insolvent and require injections of funds or reorganization.

² Currency crises are defined as a large loss of international reserves or where the par value is changed, say by devaluation.

Money market rates, which have not proven to be statistically significant in the empirical literature, do not give much evidence about the condition of the financial sector in Egypt. The interest rates have been inflexible and resemble administered rates rather than market determined rates. In addition, evidence on the stock market has to be interpreted with reference to the way it operates in Egypt. Although the indices show falling stock prices since early 1998, this has not indicated the onset of recession or sharply falling real GDP that could precipitate financial fragility. Rather the stock market indices show a reduction in the pace of privatization. Nevertheless, five LFI show there are rising risks of currency stress and financial fragility in the financial and external sectors.

The main LFI that implies vulnerability in the financial sector is the high rate of increase of real domestic credit, which fosters growing liquidity. This is supplemented by another LFI, an increase in the domestic credit/GDP ratio. Rapid growth of real domestic credit, if sustained, will lead to the loss of official international reserves under a pegged exchange rate regime.³ Accordingly, it is likely that some of the loss of international reserves in the last two years stems from excessive domestic liquidity growth.

In the external sector three LFI suggest that the risks of financial fragility and currency stress are increasing. In the last two years the LFI demonstrate that Egypt's exports have been declining. Commodity price shocks have been an important factor impacting upon exports. Some of this impact is likely to be partially reversed because of the recovery of crude oil prices. In general, export performance has been poor and it has played an important role in sustaining current account deficits. This contributes to currency vulnerability. The fact that the real effective exchange rate has appreciated over time has probably also been a factor in export weakness, although the most recent evidence on the REER shows the appreciation abating along with that of the US dollar. In addition, the very large currency devaluations in Asia could have had a depressing impact on some exports from Egypt.

Three LFI in the capital account also show there are rising risks for currency stress and financial fragility. The volume of official international reserves has been declining, an indication of rising risks. In addition, the growth rate of official international reserves of the Central Bank of Egypt has been declining since late 1997, an LFI that also shows rising risks. There are two factors behind the decline in reserves. The sustained current account deficit related to unremarkable export performance and high growth in liquidity have been the key elements in the decline in official international reserves. The ratio of M2 to international reserves, an indicator of vulnerability to speculative attack, has been rising since the late fall of 1997. This ratio was 2.8 in June 1998 and registered 3.8 in June 1999, an increase of 35% in a year.

³ The Mundel-Flemming model demonstrates this result.

The purpose of the quarterly report – the fifth chapter of this report -is to serve as a “model” for developing a regular report to senior level officials. The quarterly report on the LFI in the second quarter of 1999 reviews and analyzes the most recent developments in the LFI. The main conclusion is that the performance of the five leading financial indicators imply that the risks of vulnerability to financial fragility and currency stress are continuing to increase. As in the last two years, the major factors that are contributing to greater near term vulnerability in the second quarter are rising growth in real domestic credit, poor export performance, and declining official international reserves.

Among economic policies that might be considered to reduce or moderate the growing risks, in finance and the external sector, monetary policy could be modified to reduce the growth of domestic credit, especially if recent developments in the LFI in the financial and the external sectors are sustained. The slower growth of money and credit would bring liquidity growth closer in line with the demand for money. Regarding the implications for export competitiveness of the appreciation of the real effective exchange rate, recent US dollar REER depreciation might have moderated the appreciation of Egypt’s REER in the second quarter. Nevertheless, it might be necessary to introduce more exchange rate flexibility in the near term.

Leading Financial Indicators in Egypt

1. Introduction

The executive summary of this report on the leading financial indicators (LFI) in Egypt, offers a brief overview of the study. A very brief explanation of the analytical picture of the Egyptian economy as shown by the LFI is given in the summary, which includes a short explanation of the database and the sources of data for the LFI that are mentioned in Chapters 3 and 4. Also, mention is made in the summary of the suggested format for a continuation of the application of the LFI and analytical method by the Ministry of Economy and Foreign Trade (MEFT) in quarterly reports for policy decision support.

Chapter 2 contains a survey of professional literature in economics and international finance on the leading financial indicators. The survey examines both the literature on financial fragility and currency crises. It includes a bibliography of important resource papers and certain data sources.

Chapter 3 is a long-term view of the leading indicators since 1990. A perspective view of trends in the indicators is useful not only as a background for interpreting recent indicators, but it also highlights important changes in the economy and economic policies.

The short-term view of the leading financial indicators is the subject of Chapter 4. It offers an analysis of the developments in the indicators from 1997 to 1999. Economic and financial events, which are reflected in the leading indicators in this period, would have their impact upon events in 1999 – 2000.

The value of the leading indicators is to serve as a continuous means to alert the policy maker to vulnerability to currency stress or financial fragility. The system should be maintained continuously both statistically and analytically. Chapter 5 presents a sample quarterly report that the staff of the Ministry of Economy and Foreign Trade might use as a model for making quarterly assessments of the leading indicators.

2. Survey of the Studies of Recent Financial and Currency Crises

2.1 . Introduction

The framework of LFI described in this report is based upon recent research in the relationship between economic indicators and the recent financial crises, especially in Asia and Latin America. The studies include macroeconomic and financial indicators of stability and risk in the sectors of banking and finance, and also the degree of systemic fragility in the macroeconomy. This chapter is a survey of the studies that provide relevant analyses and useful indicators, and provide the basis for the LFI adopted for recommended use in the analysis of the banking and financial sectors of Egypt.

2.2. Survey of Recent Economic Literature

Financial crises, which include currency and banking crises, are not new phenomena. Numerous ones have occurred since the late 19th century. From 1975 to 1997 there were 158 currency crises and 54 banking crises. Currency crises outnumbered banking crises during the 1975-1986 period.¹ Banking crises were more prevalent during 1987-1997, perhaps brought on by increased financial liberalization. Industrial countries had far fewer crises than did emerging market countries. Often countries have had both types of crises at about the same time, chiefly because of common origins, or one crisis inducing the other. Since 1975 there have been twelve contemporaneous crises. In general, banking crises have preceded currency crises by one to two years. When currency crises have occurred first, the lead-time was also one to two years.

The economic cost of banking and currency crises is relatively high according to the International Monetary Fund.² The costs of currency and banking crises, measured in percentage loss of output (GDP) per crisis, has been in the range of 15%. Recovery time has been in the range of two to three years. Banking crises have been more costly and prolonged than currency crises.

Typically, the traditional stock and flow data on macroeconomic conditions assembled by governments and various international organizations has not given sufficient warning of currency and financial crises to investors, economic policy makers, or international economic organizations. Moreover, the CAMEL rating system, supported by capital adequacy and liquidity ratios, has not proven to be a reliable source of information about

¹ Currency crises were numerous in the middle 1970s (large external shocks) and in the first half of the 1980s (Latin American debt crises).

² IMF, World Economic Outlook, May 1998.

impending banking and financial crises. Therefore, many critics note the failure of the traditional approaches and suggest the development of alternative indicators that would provide timely information to policy makers.

The crises in Mexico and East Asia stimulated a lot of empirical research on the topic of causation. The intent is not only to learn from experience of these countries but also to develop a group of presumptive indicators that will signal impending financial and/or currency crises so that preventive measures can be taken.

The recent economic literature, which is surveyed below, provides a general understanding of how financial, banking, or currency crisis originate. The professional literature suggests that the main causes of banking and financial crises are unsustainable macroeconomic policies; weakness in financial structure; global financial conditions; exchange rate misalignments; and, political instability.³ The main causes of **currency crises** are macroeconomic imbalances; major economic shifts in industrial countries; and, contagion or “spillovers”.⁴

There are two key papers in the literature that provide the theoretical basis for analysis of banking and currency crises. P. Krugman [1979] prepared the initial paper while M. Obstfeld [1995] wrote the second paper. The approaches differ significantly. The Krugman model assumes a fixed or pegged exchange rate. The model shows how a balance of payments crisis arises from inflationary finance of a fiscal deficit.⁵ As international reserves are depleted, the currency becomes vulnerable to a speculative attack, which occurs because the public desires to avoid a capital loss imposed by inflation on their holdings of domestic money. Ultimately, the pressures on the currency foster a sudden collapse and a subsequent devaluation. Although the timing might be elusive, Krugman notes that a currency crisis is the predictable outcome of an economic policy inconsistency. Accordingly, once the loss of international reserves starts, the exchange rate peg is likely to be abandoned if such an assessment were to be made by policy makers. Subsequently, several authors [see Agenor, Bhandari and Flood 1992], after examining the European Monetary System collapses in 1992-1993, modify the Krugman assumption of fixed exchange rates and substitute the notion that authorities might decide to abandon the peg for reasons other than loss of international reserves. For example, monetary authorities could be concerned that high interest rates required to sustain the exchange rate would have adverse domestic macroeconomic consequences such as low investment and economic growth. This modification highlights a policy conflict in a pegged exchange rate environment where price stability is achieved at the cost of loss of competitiveness and rising unemployment.

³ Banking crises are defined as situations where banks become insolvent and require injections of funds or reorganization.

⁴ Currency crises are defined as a large loss of international reserves or where the par value is changed, say be devaluation.

⁵ Increasing credit to government resulting in monetary growth in excess of demand for money.

Research on banking crises in Latin America in the 1980s, in Scandinavia in 1992, and in Mexico in 1994 connect financial problems and balance of payments crises [Diaz-Aljandro 1985 and Velasco 1987]. The principal thesis of this addition to the traditional approach is that if the central bank finances the bailout of insolvent banks with inflationary finance (printing money or increasing base money), thereby causing a currency devaluation with the creation of excessive domestic money balances.

In summary, the chief conclusion from the traditional approach is that weakened economic fundamentals, mainly monetary and fiscal policies, cause a balance of payments problem that result in a currency crisis. Various macroeconomic policy conflicts and the linkage of banking crises to balance of payments crises focus upon alternative ways that could generate currency crises.

The second basis of the literature on financial and currency crises stems from the work of M. Obstfeld that emphasizes financial and currency stress that arises from abrupt changes in capital flows linked to the assessments of investors in financial markets. The thesis of Obstfeld is that crises could occur when market sentiment about an exchange rate generates expectations that devaluation is impending. Typically, this literature emphasizes the consequences of financial weakness in the context of globalization of financial markets.⁶ Market sentiment is driven by investors' views about the domestic stock markets and foreign investors' assessments regarding portfolio investments. If domestic investors judge the economic situation to be untenable, they will sell their shares while foreign investors would attempt to liquidate their portfolio investment. The attack on the currency subjects the central bank to a large loss of international reserves to maintain the currency peg and it is abandoned when the loss becomes unsustainable. According to Obstfeld, "devaluation of the currency validates the market." This theory provides the foundation for much of the research done by those studying the Mexican and Asian crises.

The financial crisis in Mexico (1994) and the recent crises in Asia (1997) resulted in applications and innovations in the traditional and modern research on currency, banking, and financial crises. Calvo [1995], analyzing at the Mexican experience, highlights the importance of a high ratio of short-term foreign currency denominated debt. He notes that when short maturities exist, the vulnerability to speculative attack rises, especially from institutional investors who are sensitive to changes in expected returns. Speculation could stimulate bondholders to refuse to roll over debt and a crisis would follow.

⁶ Domestic and international investors might consider vulnerabilities as currencies defended by persistent official intervention, large share of short-term maturities on debt, a weak domestic banking system, and a large share of foreign currency denominated debt.

The existence of weak bank asset portfolios can be an important triggering mechanism. Depositors are likely to withdraw funds and bank deposits would decline. In the run-up to the crisis, the central bank might be tempted to increase credit to bailout weak banks. However, it stabilizes the monetary aggregates at the cost of losing international reserves. Perceived weakness in domestic financial organizations might be sufficient to stimulate a run on the currency according to Calvo.⁷ Calvo notes that a country can be vulnerable to a financial crisis independent of internal and external balance.

The contribution by Rojas-Suarez [1998], stemming from the Mexican crisis, is that bank supervision and examination did not deter financial crises nor did supervisory indicators prove to be a useful leading indicator of the Mexican banking crises in 1994/95. The CAMEL approach to commercial bank stability, with the two pillars of capital adequacy and liquidity ratios, is unable to predict a financial collapse. Her conclusion is that the CAMEL approach, while workable in some industrial countries, is constrained in many developing countries by poor quality data and the lack of efficient financial markets to price bank equities.⁸ In line with the Rojas-Suarez theory, the Bank for International Settlements (BIS) has recently reviewed the capital adequacy approach to supervision and determined it has serious limitations. It is likely that the BIS will recommend greater reliance upon the reports of rating agencies (Fitch IBCA, Moodys, etc.) in its forthcoming report.

The Asian crisis has stimulated a substantial amount of research including several key papers that either validate previous work or provide new insights. The work of Sachs and Radelet [1998] provides an analysis of the importance of investor behavior and its relation to capital flows.⁹ In addition, they examine reasons why the crisis happened in some Asian countries and not others (e.g., China). The conclusions are that the crisis happened in countries that had weak financial, exchange rate, and industrial policies, and/or had excessive investment.

Corsetti, Pesenti, and Roubini, [1998] emphasize the moral hazard argument in their model that analyzes the Asian crisis. Others extend the analysis. Moral hazard has been defined as excessive risk taking by bankers who operate in an environment of deposit insurance. However, the Asian crisis demonstrated that moral hazard could have more than one dimension. In Asia, there were corporate, financial and international dimensions of the moral hazard problem. The political pressure to maintain high rates of economic growth impacted the corporate level. This resulted in public guarantees, subsidies, and directed bank credit to firms or even industries. Government was apparently willing to intervene when trouble arose. Therefore, given a history of government intervention, corporate planners and decision-makers underestimated the risks of projects. The

⁷ He states “solvency, like honesty, is never fully certified; proofs are slow to materialize.”

⁸ Other factors cited are high concentration of asset ownership and the lack of liquid capital markets, which hinder the use of supervisory ratios in an emerging market.

business network was characterized by favoritism on a personal and political basis. Interestingly, the evidence from the middle 1990s show that new investment projects had low profitability, especially in Korea. Despite the mounting evidence of lowered profitability preceding the Asian crisis, capital inflows continued. Moral hazard in finance was present in the form of excessive foreign borrowing by business firms in southeast Asia. This borrowing was to finance the excessive business investments and marginal projects. There were lots of structural distortions--bank supervision was lax; the level of expertise in the sector was low; corruption was present; and, credit was allocated by non market means. This process was also accompanied by liberalization of the capital accounts and broad deregulation in finance.¹⁰

The international view of the moral hazard problem is related to the behavior of the international banks that made large loans to Asian banks with the apparent neglect of risk assessment. Perhaps the international banks believed that a guarantee existed somewhere. Maybe they believed that Asian governments would continue their past behavior in lowering risks. Or, they might have thought that the International Monetary Fund would do the job indirectly through some kind of support program. Most of the liabilities were short term, unhedged, and denominated in foreign currency.

The implication of the moral hazard argument is that a shock to profitability of portfolios does not lead financial intermediaries to follow strategies that are less risky. Rather, the opposite takes place. More risk is taken, perhaps with the anticipation of a future bailout. Before the Asian crises, there were a lot of shocks- falling global demand, especially the demand for semiconductors, a stagnating Japanese economy, and the U. S. dollar appreciating against the yen. In addition, there were rising competitive pressures from China. Real exchange rates in the crisis counties appreciated for a while, further reducing their export competitiveness. Real estate and stock markets fell, exchange rates depreciated, and there were widespread defaults in the corporate and financial sectors. External shocks revealed the riskiness of the investments and currency and financial crisis resulted. In summary, the Asian countries were vulnerable to financial crisis stemming from deteriorating confidence and economic fundamentals.

There were externalities or “spillovers” in the Asian crisis that have also stimulated much research work. Several authors [Posen; IMF; Lopez; Alba] note that contagion was taking place within Asia and spread to other areas such as Latin America and the Former Soviet Union. The thesis of these papers is that contagion can be the result of many factors. Among the causes identified as contributing to contagion are common shocks in commodity or financial markets; spillovers in international trade of goods; financial linkages; and, shifts in investor sentiment. Many authors include “herd behavior”, defined to be investors following the behavior of others without regarding rational

¹⁰ Capital account liberalization was aimed at providing low cost funds for banks and corporations. Exchange rate policies reduced the fluctuation against the dollar, lowering the risk on dollar debts.

considerations. The theoretical interpretation is that following the herd is a method used by investors to avoid the cost of obtaining information.

It is also important to recognize that the literature indicates that banking crises have been commonly preceded by recessions [Calomiris and Gorton 1991] that follow long periods of growth in domestic credit and GDP. Typically, depositors try to assess the new risks, and when the crisis starts, they withdraw funds from the banking system. The result is a liquidity crisis. A different view [Stocker 1995] is that currency crises can precipitate a banking crisis. This happens when the foreign rate of interest rises and there is a loss of reserves under a fixed exchange rate peg. If the central bank fails to sterilize the credit loss, a credit crunch ensues leading to more bankruptcies and a crisis.

In summary, recent economic literature shows banking and currency crises arise in settings where there are multiple economic problems. The “story” of crises that emerges from the recent economic and financial research incorporates one or more of the following elements:

- A **recession or macroeconomic slowdown** was a common ingredient in many banking crises in the 1980s and 1990s. A recession would impact the loan portfolio of the banking system, reducing its quality and earnings. This would induce bankers to take even greater risks in search of profits.
- **Structural characteristics** have a significant impact. Vulnerability to sudden capital outflow can increase the risk of financial sector weakness. The severity is greater when a large share of credit goes to the private sector.
- **Moral hazard (excessive risk taking by bankers)** plays a role in banking crises. Despite deposit insurance, banking crises occur because prudential regulation and supervision is not effective. Financial liberalization is also an aggravating factor.
- **Information deteriorates in a crisis.** So investors and lenders are likely to make mistakes. “Herd behavior” intensifies the losses when investors try to liquidate their asset holdings.
- **Composition of capital inflows matters.** Short-term foreign currency denominated inflows increase the vulnerability of the banking system.
- **External shocks** have a major role in crises. For example, a move to tight monetary policies in the industrial countries precipitates a sharp rise in **real interest rates**. Often this is accompanied by **deteriorating terms of trade** and sharply **reduced export receipts** when global commodity prices fall dramatically.
- **Real exchange rates can become misaligned.** A sharp appreciation in the real exchange rate can lead to a surge in imports and a decline in exports.
- **Outflows and rising real interest rates set** the stage for a surge in non-performing loans, collapsing asset prices (equity shares and real estate prices). Dollarization adds to problems of bank foreign exchange exposure.
- **Currency collapse** fosters the deterioration of bank balance sheets, and the resulting insolvency in the banking system generates a credit crunch

The economic literature on banking and currency crises provides many suggestions of economic and financial variables that might help to predict crises. There are two key papers that contain the main contributions on the development of leading indicators. They are: (1) The work of Kaminsky and associates [1998], who studied both banking and currency crises; and (2) A. Demirguc-Kunt and E. Detragiache [1998 and 1999], who studied financial crises. These papers present econometric tests of models of numerous crises (multiple crises in 20 countries for Kaminsky and 28 crises for Demirguc-Kunt and Detragiache). Both cross-section and times series analyses are used in these studies. Accordingly, the empirical evidence is extensive.

The econometric analyses of **currency and banking crises** by the Kaminsky group identify the following as statistically significant financial and economic indicators: real exchange rate, real interest rate, real interest differential, M2 multiplier, capital flight, M2/reserves, exports, economic growth, stock prices, and lending/deposit ratio.¹¹ The statistically significant determinants of **banking crises** according to the work of Demirguc-Kunt and Detragiache are changes in the following: GDP growth, domestic real interest rate, domestic inflation rate, domestic credit growth, and the ratio of M2/international reserves.¹² Interestingly, the best leading indicators found in both papers are similar. This reflects the occurrence of simultaneous crises discussed in the theoretical literature. Finally, an important empirical finding is that leading indicators have signaled the onset of crises in an 18 to 24 month period before they occurred.

The use of leading indicators to find signals of potential economic problems merits some consideration according to both of the key researchers. First, the review of statistical results show that a given indicator might give a false signal on occasion. Reasons cited for this behavior range from autonomous disturbances to statistical anomalies. Second, persistent signaling by a leading indicator should be viewed as important and merits investigation about what is happening. Third, the signaling by several leading indicators should be viewed with concern. The research shows that when several indicators are signaling, the likelihood of potential economic difficulties increase. Finally, monitoring of economic information should be done continually with the intent of discovering additional leading indicators. This is especially important for economies that are experiencing structural change from liberalization.

¹¹ Judged by the lowest noise to signal ratios.

¹² Used conventional tests of coefficients at 1%, 5%, and 10% levels.

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3. Egypt's Leading Financial Indicators: The Long Term View

3.1 Introduction

The leading financial indicators (LFI) have a monthly periodicity and are basically designed for the near term analysis (18 to 24 months) of financial and currency market conditions.¹ However, the database also provides information about the long-term economic trends since 1990.² Knowledge about long-term trends in LFI is helpful in the interpretation of short-term behavior.

Specifically, a review of the main long-term trends in the leading financial indicators is useful for three reasons. First, the review establishes the historical background of more recent conditions in financial and currency behavior. Second, it allows for observation of any divergences from the long-term trends. Third, it can highlight the effects of some past and recent economic policies.

The following sections discuss the emergent long-term trends in the leading financial indicators in the real sector, financial sector, and external sector.³ All economic indicators are presented graphically in the appendix.

3.2. General Economy Trends

Financial indicators are not only derived from the financial sector of the economy but also from other sectors. Macroeconomic activity, including economic growth, inflation, interest rates, and real asset prices have an important bearing upon the performance of the financial sector. Typically, macroeconomic conditions have been reflected in financial behavior. Noting the importance of economic stabilization, the OECD has stated that macroeconomic factors have played an important role in bank insolvencies [OECD].

GDP Growth

Economic analysts note that banking crises are commonly preceded by a significant contraction in real Gross Domestic Product (GDP) that follow long periods of stable or growing GDP [Calomaris and Gorton].⁴ Therefore, the course of GDP is of interest and the indicator is the growth rate of real GDP.

¹ This is similar to leading, lagging, and current indicators that are used in the analysis of business conditions.

² Two databases containing monthly observations of the leading financial indicators are available. One based upon IFS has a range from 1990 to present while the second database, with data from the Central Bank of Egypt *Monthly Statistical Bulletin*, has a range from February 1996 to present.

³ Data for long-term LFI are from the *International Financial Statistics CD-ROM* of July 1999.

⁴ The notion is that depositors would assess the risks of an economic decline, and when the crisis starts, they withdraw funds from the banking system.

Initially, the deflationary effect of Egypt's macroeconomic stabilization program was a sharp decline in rate of growth of real GDP [Graph 3.1]. The real growth rate of GDP declined from about 5% per year in December 1990 to a level of about -2% per year in the first quarter of 1992.⁵ Subsequently, there were two episodes of sharp acceleration and contraction (1992-1993 and 1994-1995). The contraction in 1994-95 was greater than observed in 1990-92. However, the economic growth rate moved up to the 5% in early 1996 and has been relatively stable in the range of 5% to 6% per year. Historically, deflationary episodes have contributed to financial fragility and banking crises. Generally weak macroeconomic performance fosters slow growth in bank deposits, deterioration in the lending portfolio, and falling bank earnings. In Egypt during the first stage of the stabilization program when GDP declined, bank deposits also contracted.

Inflation rate

The rate of inflation has been an important leading indicator of financial fragility and possible currency stress. In theory, inflation that is fostered by monetized budget deficits [Krugman 1979] is a major cause of banking and currency problems, while another idea is that expansionary monetary policy is the major source of the inflationary impetus [Obstfeld].

Inflation in Egypt averaged about 20% per year in the immediate years before 1990/91. It was above 25% in 1991, when there were large fiscal imbalances [Graph 3.2], but declined to the 14% range by 1993/94, and then dropped to around 4% range after 1997. In the first two months of 1999, inflation averaged 3.0% per year.

A major goal of the economic stabilization program was to deflate the economy significantly in order to restore internal and external balance. Elimination of high budget deficits and the nominal exchange rate anchor were key policy elements. The success of the stabilization program is shown in the very dramatic decline in the inflation rate in 1992 and its ultimate moderation to about 3.5% in 1999.

The pursuit of anti-inflationary fiscal policies was an important factor that not only contributed to the stability of the banking system and but also assisted in the stabilization of the exchange rate in the 1990 – 1999 period.

⁵ All rates are annual rates of changes, computed monthly.

3.3. Financial Sector Trends

Real interest rate

The real rate of interest is defined as the nominal rate of interest deflated by the consumer price index. High real rates of interest discourage investment and therefore constrain economic growth. In addition, high real interest rates impact bank balance sheets adversely because lending rates are “sticky” and earnings on the loan portfolios are difficult to maintain. A sustained rise in the real rate of interest would signal not only an impending liquidity problem in the financial system that would portend deterioration in commercial bank loan portfolios but also a slowdown in the rate of economic growth or even a recession.

There are several ways the real interest rate could be influenced by economic and financial policies. Monetary policies target the short-term domestic interest rates, while fiscal policies can produce inflation if the deficits are monetized, otherwise the impact is on the composition of aggregate demand. However, the impact of monetary policy is limited with a pegged exchange rate. Under a pegged exchange rate, nominal interest rates are influenced by global money market conditions. The reason for this is that domestic monetary policy is limited in its effect on interest rates because of offsetting capital flows.

While Egypt’s real interest rate was in excess of 20% in 1990 [Graph 3.3], it has steadily declined throughout the 1990 – 1999 period. There were two factors behind this trend. First, as noted above, there has been a dramatic reduction in the domestic inflation rate over time, a result of the macroeconomic stabilization program. Second, the world real interest rate, measured by the United States’ real short-term deposit interest rate, trended downward from 8.5% in January 1990 to below 3% in July 1993 [Graph 3.4].

The influence of the domestic nominal interest rate and the U. S. nominal interest rate on the domestic real interest rate is estimated with a regression equation. The estimate shows that current U. S. interest rates have positive effect and that lagged (one month) U. S. interest rates have a negative effect on changes in the Egyptian real interest rate. Although nominal interest rates were under downward pressure from the global money market during the 1990 – 1994 period, the rate of inflation in Egypt declined faster than nominal interest rates. Despite rising global interest rates in 1994-95 exerting upward pressure on nominal rates, the real interest rate continued to decrease. The real rate of interest averaged 8.0% in 1998 and 7.7% in the first 2 months in 1999.

Equity Share Prices

In the past deflation in an economy was often accompanied by a large fall in asset prices, particularly the prices of equity shares and real estate. Because share prices are widely available, stockmarket share prices are a classic indicator of a depression

in the national economy [Kindleberger]. More recently, events in emerging markets and in East Asia illustrate that a large decline in share prices signaled loss of investor confidence. For example, share prices collapsed in Russia, Brazil, and the countries of East Asia before the onset of financial and currency crises.

The stock market in Egypt, reorganized under new regulations, began operations in 1994. The CMA Index is a measure of the average price of all listed stocks [3. 5]. This index has been relatively stable and has had only one period of decline falling 17.5% from March 1997 to August 1997.⁶ Subsequently, the index recovered and remained in the 350 to 400 range until December 1998 when it moved upward to the 450 range.

An alternative measure of share prices, the EFG-Hermes Index, measures the 50 most actively traded shares in the market. The CMA Index and the EFG-Hermes Index present slightly different pictures of share prices [Graph 3.6]. Both show a decreasing trend in changes of stock prices. In late 1998, however, the growth rate of the CMA Index turned positive, while the EFG Hermes Index remained negative and portrays a stagnating stock market .

Bank deposits

The rate of growth of real bank deposits is an important leading indicator of financial fragility. Historically, large or even massive withdrawals of funds by depositors have signaled severe financial disintermediation preceding both banking and currency crises. There are two rationales behind “bank runs” that cause commercial banks to become insolvent and fail. One is that depositors attempt to recover cash balances during a liquidity shortage caused by an unexpected decline in money stock. Another rationale for large withdrawals of deposits suggested in the literature is that the loss of confidence in financial institutions by a few results in wide spread “herd” behavior of the general public. A reduction in the rate of growth of deposits is the leading financial indicator that signals potential difficulties in commercial banking, and fosters fragility.

It is important to note that bank failures in Egypt are unlikely to occur. Weak or potentially insolvent commercial banks would be assisted by other banks and the Central Bank of Egypt.⁷ Although real bank deposits have had an upward trend from 1990 – 1999, there were several episodes of reduction in the growth rate of real deposits [Graph 3.7]. The first decline in the growth rate of real commercial bank deposits started in November 1991, and was a result of the initiation of the stabilization program that aimed to deflate the national economy. There were contractions in the growth of real GDP and real domestic credit. The contractionary fiscal policies and decreasing credit were the main factors in this drop in deposits.

⁶ This was probably investor reaction to the Asian financial and currency crises, a contagion effect.

⁷ This is a moral hazard issue. Such guarantees foster excessive risk taking by banks attempting to increase their earnings.

The second slowdown in the growth of real bank deposits was in 1993, and preceded reductions in the growth rate of GDP and domestic credit. A third, and more dramatic reduction in the growth of bank deposits began in July 1994; the growth rate of deposits did not recover until mid-1996. This reduction in the growth of deposits was associated with low growth in GDP and domestic credit. Subsequently, smaller reductions in bank deposits reflected credit market conditions. However, the reduction in 1997 -1998 was more consistent with shocks to the export and service receipts, and the deterioration in the current account balance.

Domestic Credit Growth and the Ratio of Domestic Credit to GDP

An increase in the growth rate of domestic credit might promote financial fragility and currency stress because excess credit would contribute to a lending boom, fuel inflationary pressures, and portend loss of international reserves in a pegged exchange rate regime.

Two important trends emerge from the data on annual growth of real domestic credit in Egypt [Graph 3.8]. The first trend is the dramatic decline in the growth rate of domestic credit, falling from 20% annual growth to a 20% rate of decline, when the stabilization measures were implemented in the early 1990s. In fact, the growth rate in domestic credit was negative until January 1994. The containment of growth in domestic credit from 1991 to 1995 was an important pillar in the eradication of high inflation from Egypt's economy. The second trend is the sustained increase in domestic credit growth from zero in late 1995 to the 15% range in 1999.

The average growth rate in real domestic credit from September 1995 to February 1999 was 9.3 % per year and the average growth of M2 was 10.2% per year. This compares with the average growth of 3.4% per year of real GDP. The IMF estimated the demand for nominal money balances (M2) in 1997.⁸ The estimated elasticity of the nominal demand for broad money (M2) relative to real GDP was about 1.7. Therefore, the growth in the demand for money was 5.8% per year during the interval. The conclusion is that growth in money balances was faster than the growth in money demand in the interval.

The ratio of real domestic credit to real GDP tracks the use of credit per unit of GDP. As a leading financial indicator it has been used to determine if a large surge in domestic credit followed the implementation of financial liberalization measures [Kaminsky, Lizondo, Rhinehart].⁹ Typically, financial liberalization has removed lending ceilings at banks and abolished government directed credit allocation. Therefore, commercial banks would increase their lending dramatically to improve earnings. The ratio has functioned well as a leading indicator in several cross section studies of developing countries [Berg and Portillo].

⁸ IMF estimate in the December 1997 RED

⁹ This ratio functioned well as a leading financial indicator in the E. Asian crises that started in 1997.

The ratio of real domestic credit to real GDP in Egypt shows only one episode of uneven growth, in 1990-1991, when the ratio increased from 0.85 to 0.99 [Graph 3.9]. Despite stable domestic credit in 1990-1991, the fall in GDP caused the rates of credit to GDP to rise sharply. Thereafter, the ratio declined to about 0.70 in September 1993. It then started to rise slowly in July 1996 and reached 0.87 at the end of 1998. The rise at the end of 1998 was mainly from high growth in domestic credit.

The ratio of real domestic credit to GDP, outside of the 1990-91 period, did not signal any surge in domestic credit following the implementation of liberalization measures in money and banking. However, the recent rise in the trend beginning in May 1997 merits attention in the next months.

Money Multiplier

An upward trend in the money multiplier is an indicator of expansionary monetary and credit conditions that could precipitate currency weakness. Historically, an appreciable rise in the money multiplier has marked a surge in the domestic inflation rate that signaled the beginning of macroeconomic problems. The literature on leading financial indicators shows empirical support for linking an increase in the M2 multiplier with both banking fragility and currency stress.

The money multiplier in Egypt, which is measured by the ratio of M2 to commercial reserves at the Central Bank of Egypt, has been variable in the period being analyzed [Graph 3.10]. After declining from 3.1 to 2.87 at the beginning of the stabilization program, the money multiplier peaked at 3.43 in February 1993. Although the inflation rate accelerated in 1991, it declined appreciably when the M2 multiplier fell back to 3.0 in 1992. From 1992 to 1999 there were a few spikes in the money multiplier to 3.35. It moderated and in early 1999 was in the range of 3.0, below the long-term trend value of about 3.2.

Econometric models were estimated to determine if interest rates had an effect on the variation of the multiplier. The first regression equation used the domestic deposit rate as the independent variable along with the lagged value of the multiplier. Although the coefficient of deposit rate was negative and significant, the equation did not explain much variation in the multiplier. A second test was done using the lending rate as an independent variable. This test had similar statistical results.

Ratio of Lending Rate to Deposit Rate

The ratio of the commercial bank lending rate to the commercial bank deposit rate is a leading financial indicator that attempts to measure indirectly the quality of the loan portfolio. A sustained rise in the ratio would indicate deterioration in the quality of the commercial bank loan portfolio that might reduce investment and lead to a slowdown in the rate of economic growth [Kaminsky, *et al*]. However, money market variables

such as interest rates have not functioned well as leading financial indicators in cross section studies [Kaminsky Oct.1998].

In Egypt, the ratio of lending-deposit rates increased from 1.6 to 1.8 in November 1991, then decreased from that value to its low value of 1.3 in September of 1994. The ratio increased again to 1.6 in May 1995 and subsequently shifted down to fluctuate a round 1.4 [Graph 3.11]. In assessing the ratio, the behavior of short-term interest rates is important. First, the deposit rate has been stable over time with little change [Graph 3.12]. The deposit rate has the appearance of an administered price not a money market rate. Second, the lending rate has had more variability.

3.4. Current Account Trends

Export and Import Trade

Research on the leading financial indicators has demonstrated that shocks to the external sector have been a primary source of currency weakness and financial fragility. This would be true for any economy, including the Egyptian economy. A large decline in commodity prices, perhaps caused by a shift in external demand, has the potential to cause significant problems in the balance of payments that could pressure the currency. In addition, a shock to exports might disrupt domestic finance because it could reduce the ability of exporters to service their debts and therefore weaken the earnings of commercial banks. Alternatively, a shock to exports it might lead to a downturn in government revenues if government relies on receipts from commodity exports such as crude oil. A short-term reduction in government revenue would widen the budget deficit and would either require domestic borrowing (and upward pressure on interest rates), or external borrowing. A marked downturn in the indicator, the monthly growth rate of exports, would signal the onset of an external shock to exports. Recently, there has been a lot of research on the role of external shocks in the Asian crisis [Whitt].¹⁰

The monthly growth data of Egyptian exports in the IFS database (January 1990 through December 1998) are from the Central Bank of Egypt, and therefore represent payments for exports, not customs data. Typically, such data are subject not only to economic factors but also random disturbances (ranging from transport schedules to non-economic events), and show a high degree of variability. The monthly data on Egyptian exports have a lot of variation [Graph 3.13]. Nevertheless, the data show some periods that would indicate external shocks to exports. The periods were: (1) August 1992 to September 1993; (2) July 1995 to November 1995; (3) January 1998 to April 1998; and, (4) June 1998 to November 1998. These have been periods characterized by relatively low crude oil prices. This type of shock to Egyptian

¹⁰ Whitt cites the following shocks impacting Asia: recession in Japan; devaluation of the Chinese renminbi in 1994; and, the “swings in the value of the U.S. dollar.”

exports was especially noticeable in the most recent period when crude oil prices were very low.

Regarding import trade, a surge in imports might indicate exchange rate problems or difficulties associated with domestic macroeconomic imbalance. However, the empirical research on leading financial indicators has shown that imports are not a statistically significant variable. The growth rate of imports in Egypt from 1990 to 1999 has been variable [Graph 3.14]. In contrast to the growth rate of exports, there are very few negative monthly growth rates for imports.

Real Exchange Rate

Appreciation of the real exchange rate is an important factor in the precipitating both financial fragility and currency stress [Demurguc-Kunt and Detragiache; Kaminsky; Berg and Portillo]. The real exchange rate has been one of the best leading financial indicators in the sense of having a low noise to signal ratio in cross section empirical studies. The basic notion is that appreciation in the real exchange rate fosters a loss of competitiveness in traded goods. Significant appreciation in the real exchange rate would lead to poor export performance and would likely be accompanied by an acceleration of imports. Accordingly, the current account would deteriorate and stimulate deflation and put pressure on the exchange rate [see S. Edwards, 1989 and 1994]. In countries that have implemented economic stabilization programs, anti-inflationary fiscal policy and a rising real interest rate are likely to stimulate capital inflows. Typically, such capital inflows would cause the real exchange rate to appreciate.

The real effective exchange rate (REER) in Egypt has appreciated since 1991. However, the source of the appreciation in the early period was mainly the result of the economic stabilization measures taken in 1990 – 1991. This has been the experience of several developing countries undergoing stabilization.¹¹ The IMF estimates reference the IMF study of the long-run determinants of the REER from February 1987 to end 1996 identify the following significant variables:

- terms of trade
- government consumption as share of GDP
- lagged capital account balance
- technological progress
- the Middle East Crisis in 1990-91
- debt service ratio

In the early part of the period, as expected from the stabilization effort, there are indications of misalignment. In 1989-1991, the estimated overvaluation of the REER

¹¹ This appreciation happened in Chile, Argentina, Mexico, and Malaysia during economic stabilization.

was 20% compared to the estimated equilibrium real exchange rate [ERER].¹² From 1991 to 1996 the estimated overvaluation averaged about 10% as the ERER itself appreciated during this period. Much of the appreciation in the ERER has been attributed to the reduction in the debt overhang after 1991. In general, the IMF study indicates that the REER broadly converged to the ERER in 1991-96.

Since 1996 the REER has continued to appreciate [Graph 3.15]. In this connection, the impact of the U.S. dollar REER has been important short-run factor. The REER of Egypt has tracked the US REER closely. The U.S. dollar REER has appreciated since 1997 because of improved fundamentals (fiscal balance, inflation). The dollar has also had several episodes of nominal appreciation associated with economic crises in Asia, Eastern Europe, and Latin America.

Berg and Portillo found that upward deviations of REER from its trend would be an important reason for concern about potential vulnerability to financial and currency problems.¹³ Egypt's REER, following the dollar, fell in the first half of 1999 below the 1996-99 trend line, indicating that the pace of appreciation of REER has recently abated.

3.5. Capital Account Trends

International reserves

Official international reserves are a key leading financial indicator related to the capital account. International reserves are found to be a significant variable in all studies on the leading financial indicators [Interim Report, July 1999]. Typically, the monthly growth rate has been used as the relevant measure of the indicator. Declining international reserves signify pressure on the currency, either from current account problems, a liquidity crunch, or even speculation.

The growth rate in international reserves in Egypt, after rising to a peak value, fell dramatically in 1991 when the stabilization program began [Graph 3.16]. However, by 1992 the growth rate of reserves, benefiting not only from the stabilization efforts but also from international debt relief operations, reached a peak in September 1992 then declined sharply to the 10% range. Thereafter, it stabilized at about 20% then fell sharply in 1996, ultimately declining to -3% by February 1999. Several factors help to explain the decline in the rate of growth of international reserves. First, the merchandise trade balance has been widening because of strong import growth and unremarkable export performance.¹⁴ Secondly, the growth of domestic credit has been

¹² The ERER is defined as the REER that is consistent with internal and external equilibrium, and it is conditioned by the assumptions in Edwards' model. For example, benefits of a dynamic export sector are absent from the model. Empirically, the ERER is difficult to derive because some variables are not.

¹³ A. Berg and C. Portillo, June 1999.

¹⁴ Recently, there were external shocks to oil and cotton exports and a shock to tourist receipts.

very high in recent months and likely exceeded the demand for money. Under a pegged exchange rate, this would imply a reduction in international reserves as predicted by the Mundell-Flemming model.

M2/International Reserves Ratio

Ratio of broad money to official international reserves is an important leading financial indicator because it measures the vulnerability of the currency to speculative attack [Obstfeld 1994; Krugman 1979 and 1998; Kaminsky *et al*]. The Asian financial and currency crisis illustrated the importance of speculation and attack on the exchange rate. An upward movement in the ratio would signify increased vulnerability and has proven to be a statistically significant leading indicator.

In Egypt the first major trend of the M2/interational reserves ratio is the very dramatic decline from the range of 42.6 in April 1990 [Graph 3.17] to 10.3 in September 1990. This trend continued and the ratio moderated to its minimum of 2.7 in May 1995. The second trend is when the ratio increased to 3.7 in February 1999, an appreciable rise from the previous stability in 3.0 range. The main financial factor behind the recent rise in the M2/International reserves ratio is rising domestic liquidity driven by domestic credit, which has contributed to a decline in official international reserves.

World Real Interest Rate and Differential

The world real interest rate could be a leading indicator of currency stress because an increase in the world interest rate might lead to a large capital outflow. This indicator attempts to measure an external shock to the domestic economy of rising global interest rates. However, interest rates and differentials, like other market-based rates, have not been a statistically significant leading financial indicator in cross section studies [Kaminsky Oct.1998]¹⁵.

The world interest rate, measured by the real interest rate of the U. S. dollar loans trended downward from 8.4% in 1990 to 3.0% range in 1992 then it increased to 5% in 1994 [Graph 3.18]. In March 1999 the US real interest rate was about 4.5% and is expected to average above 5.0% in 1999 because of monetary policy actions by the Federal Reserve System.

The real interest rate differential, measured as the Egyptian Pound rate minus the U.S. rate, declines over time from the range of 16% in 1990 to 3.2% in February 1999 [Graph 3.19]. With the exception of the rise in the U. S. real interest rate in 1994, there has been no change indicative of an external shock from global money market rates to the domestic financial system.

¹⁵ A reason might be that rates in emerging market economies are distorted by non-market elements including regulation and poor risk perception.

Capital Flows

Capital outflows were a major problem in the recent financial and currency crises in Mexico, Russia, and Asia. Capital outflows helped to create the significant pressure on both the exchange rates and the financial systems. Some of the outflows resulted from investors attempting to liquidate their holdings while other outflows were speculative attacks on currencies. Mismatches in currency exposures and maturities were very important factors [Dornbusch].¹⁶ Maturity mismatches occurred when capital inflows to finance projects were offset by short term external financing. Currency mismatch was especially important because national currencies were pegged to the U. S. dollars while trade and investment flows were denominated in other currencies. However, unexpected U. S. dollar appreciation reduced competitiveness. Unfortunately, the quality of information on international capital flows needs to be improved, despite the efforts of the Bank for International Settlements (BIS) in gathering data. Efforts are currently being made to improve the transparency of capital movements and to provide better quality information.

Data reported by the BIS has been used in cross section studies on the leading financial indicators. Three capital outflow measures have been used: (1) Change in short term debt in BIS reporting banks; (2) Short term capital outflows in the BIS data were measured as deposits of residents in BIS reporting banks; and, (3) ratio of short term liabilities to total liabilities. If there is a large capital flight, it raises concerns of debt sustainability. Debt concentrated in short-term maturities raises the vulnerability of a country to external shocks. An increase in either short-term capital outflows or in the ratio of short-term liabilities to total liabilities would indicate rising risks of fragility or currency stress. Cross section studies show a threshold range of a 26% for risks of currency and banking problems. The chief problem with the BIS data is its frequency. It is available semi-annually, but there are no monthly statistics.¹⁷ These indicators have not proven to be statistically significant, despite the key role that capital flows have played in financial fragility and currency stress [Kaminsky, Lizondo, Rhinehart].

Regarding the build-up of short-term debt of Egyptian residents in BIS banks, the data show volatile behavior of the growth rates along a declining trend starting in 1993. There were several large positive spikes in the growth rate, some of which exceeded threshold in cross section studies, followed by negative growth rates [Graph 3.20]. However, the ratio of short-term debt of Egyptian residents to their total debt in BIS reporting banks has increased [Graph 3.21]. Concerning short-term capital outflows, there has been a downward trend reported in the deposits of residents at BIS banks [Graph 3.22]. This trend would indicate no problem from rising short-run capital outflows.

¹⁶ There appears to have been little effort in hedging of use of futures market

¹⁷ The BIS has recently combined its efforts with the IMF and the World Bank. The intent is to improve the accuracy of the data, frequency, and availability. BIS has opened an Internet web site.

3.5. Conclusions

The leading financial indicators developed here are intended to alert policy makers about impending currency and banking problems. The development of the indicators has been grounded in cross section studies of developing and developed countries. Accordingly, there is relevance to the economy of Egypt.

This report describes the leading financial indicators for Egypt and reviewed key long-term trends in the evolution of the indicators from 1990 to 1999. The purpose of the review is to provide the background for the short-term analysis of the indicators.

The leading financial indicators for Egypt are calculated as growth rates of monthly observations (except interest rate variables) of the economic and financial variables. The specific leading financial indicators reviewed for the Egyptian economy the following:

1. GDP growth rate
2. Domestic real interest rate
3. Equity share prices
4. Inflation rate
5. Real domestic credit/GDP
6. M2 multiplier
7. Real bank deposits
8. Lending rate /deposit rate
9. Exports and imports
10. Real exchange rate index
11. International reserves
12. M2/ International Reserves
13. World real interest rate
14. Real interest rate differential
15. Capital outflow and debt

One useful leading financial indicator, the terms of trade, is not available in Egypt. Because this indicator has proven to be a significant one in several studies of financial fragility, it is recommended that a time series on the terms of trade be developed.

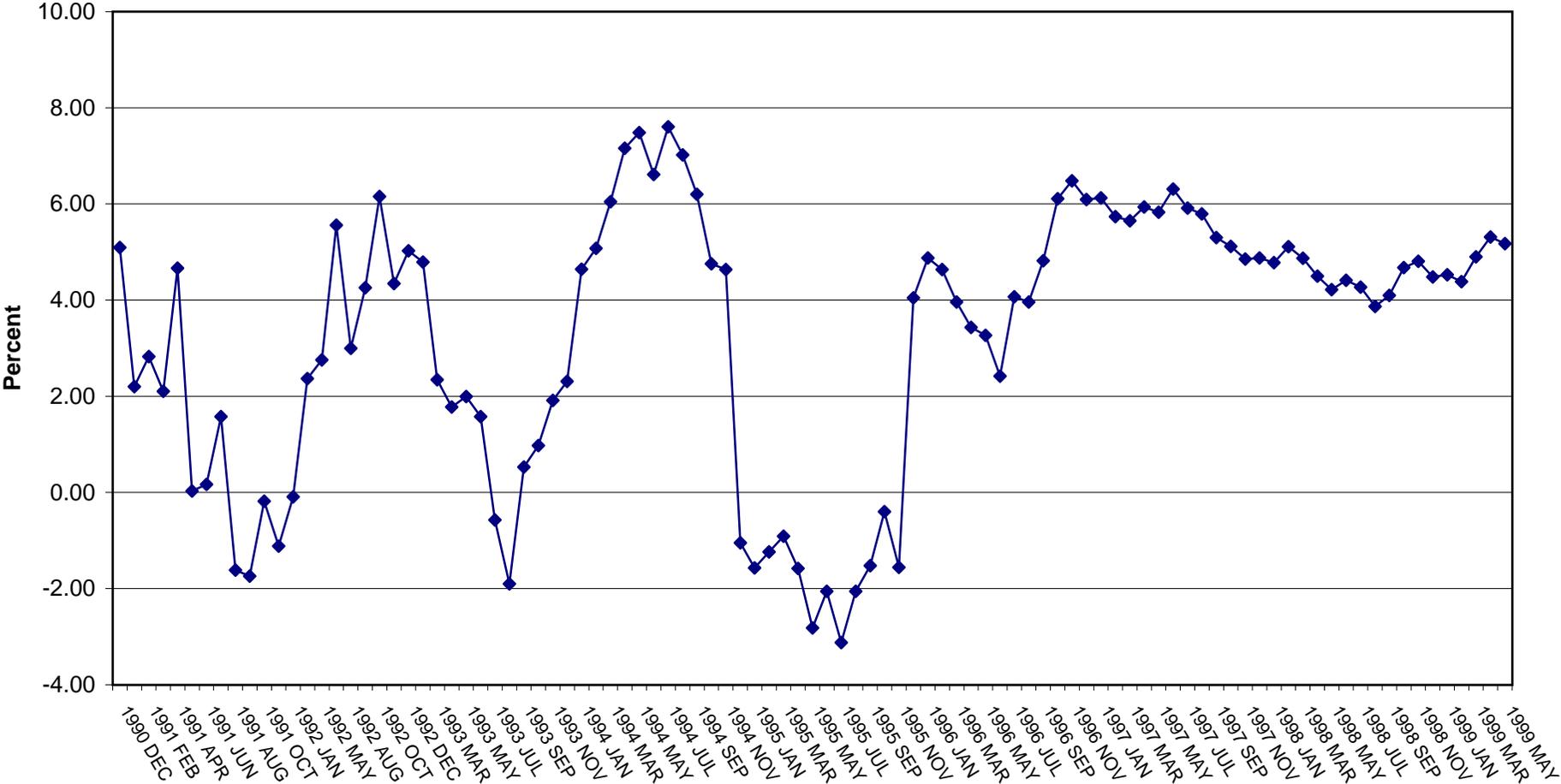
In a developing economy that is experiencing dynamic economic and structural change, knowledge of the leading financial indicators can provide valuable information and insight for policy makers. Therefore, it is recommended that the authorities maintain the database of the leading financial indicators and monitor their performance quarterly.

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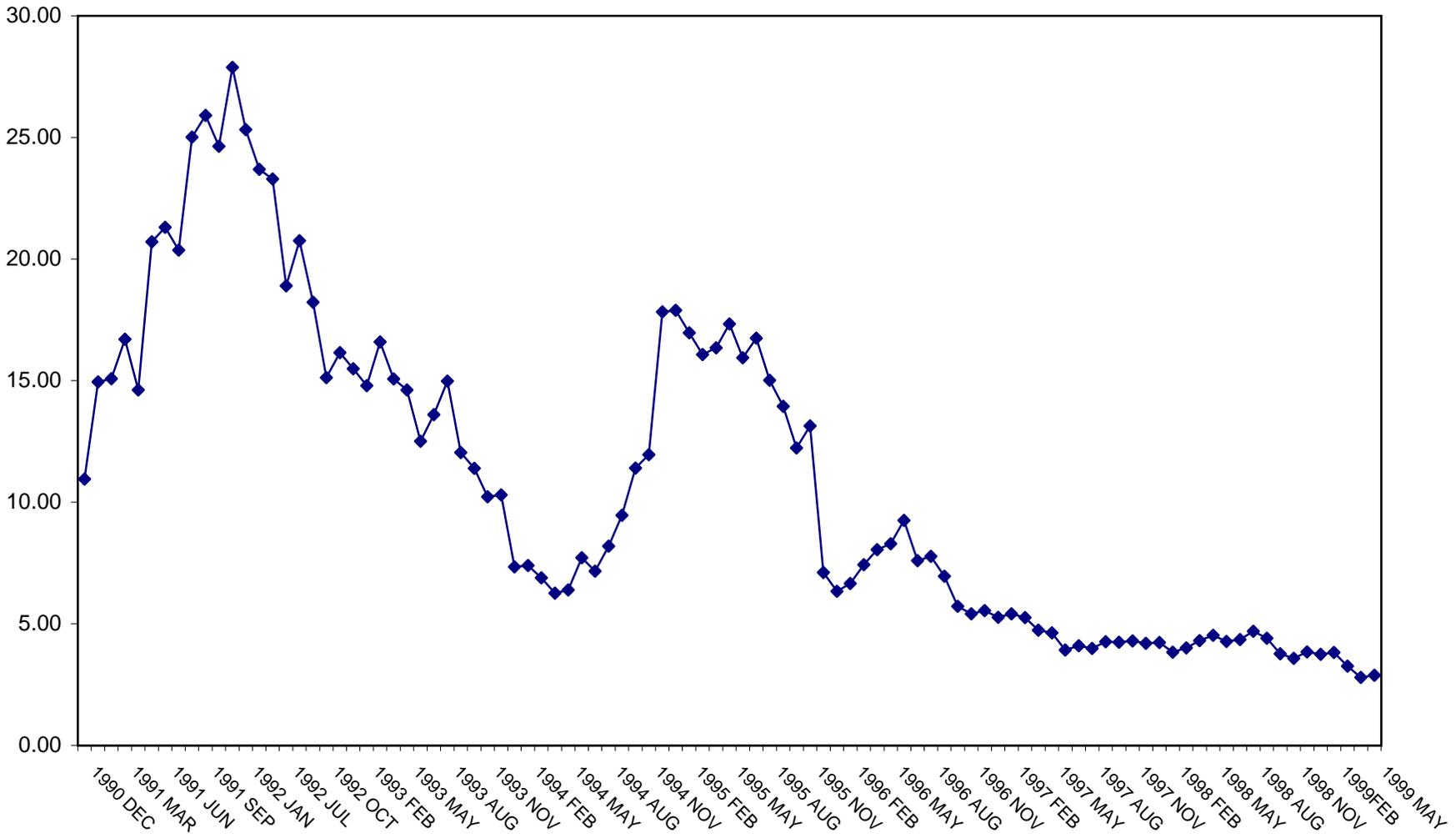
¹⁸ See also the bibliographic references in chapter 2.

Graph 3.1: Annual Growth Rate of Real GDP



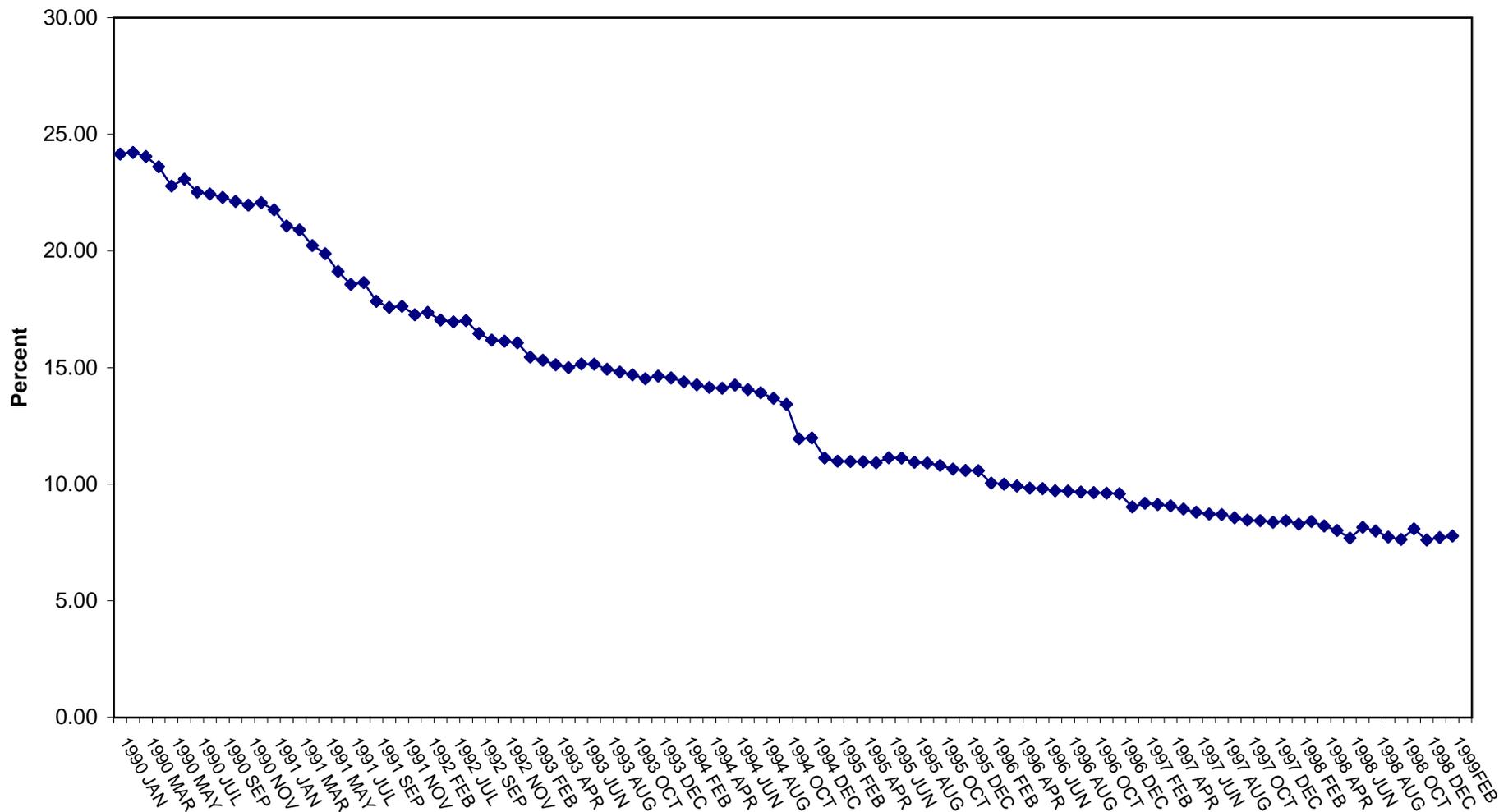
Source of Data: IMF, IFS Database, September 1999.

Graph 3.2: Annual Inflation Rate



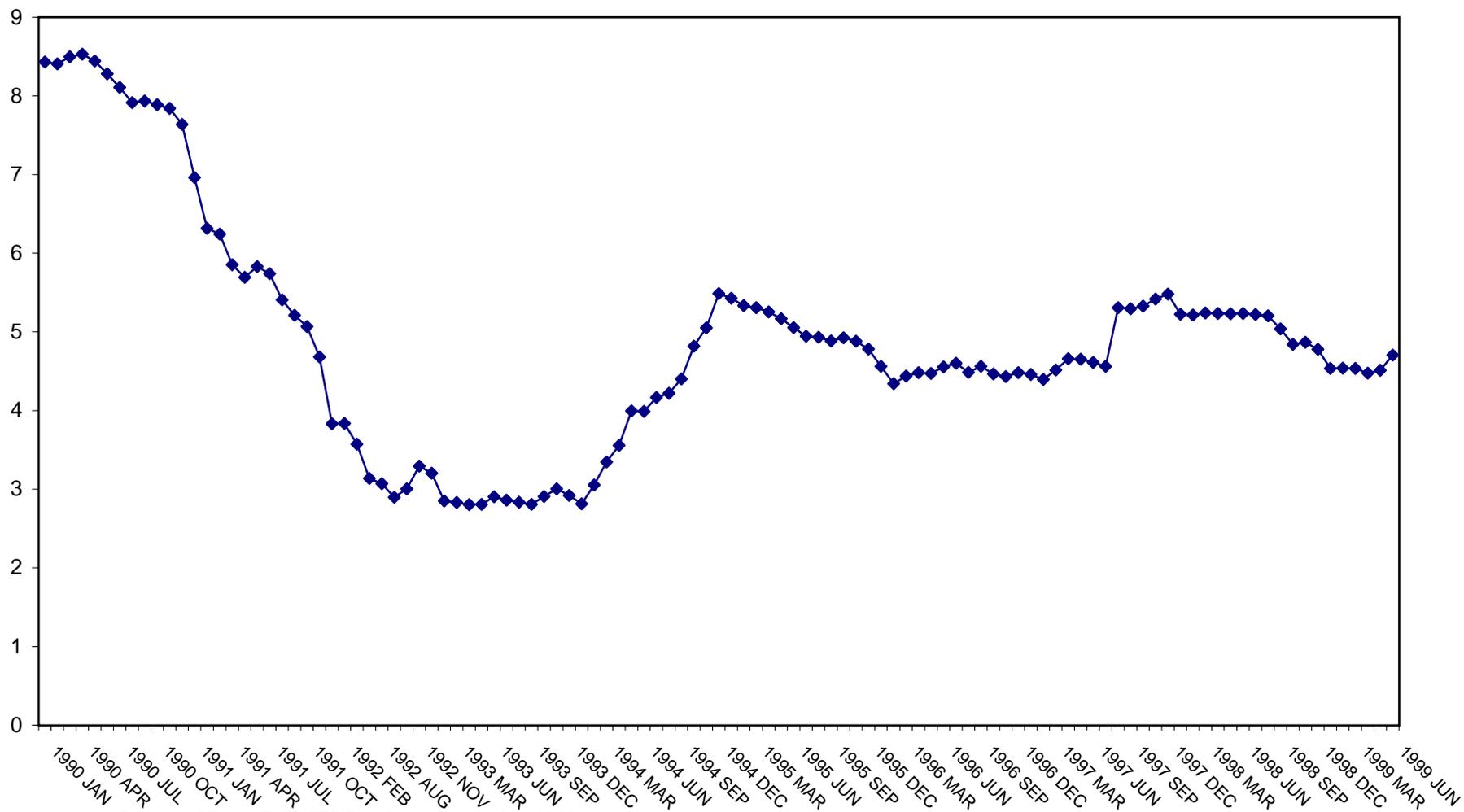
Source of Data: IMF, IFS Database, September 1999.

Graph 3.3: Real Interest Rate



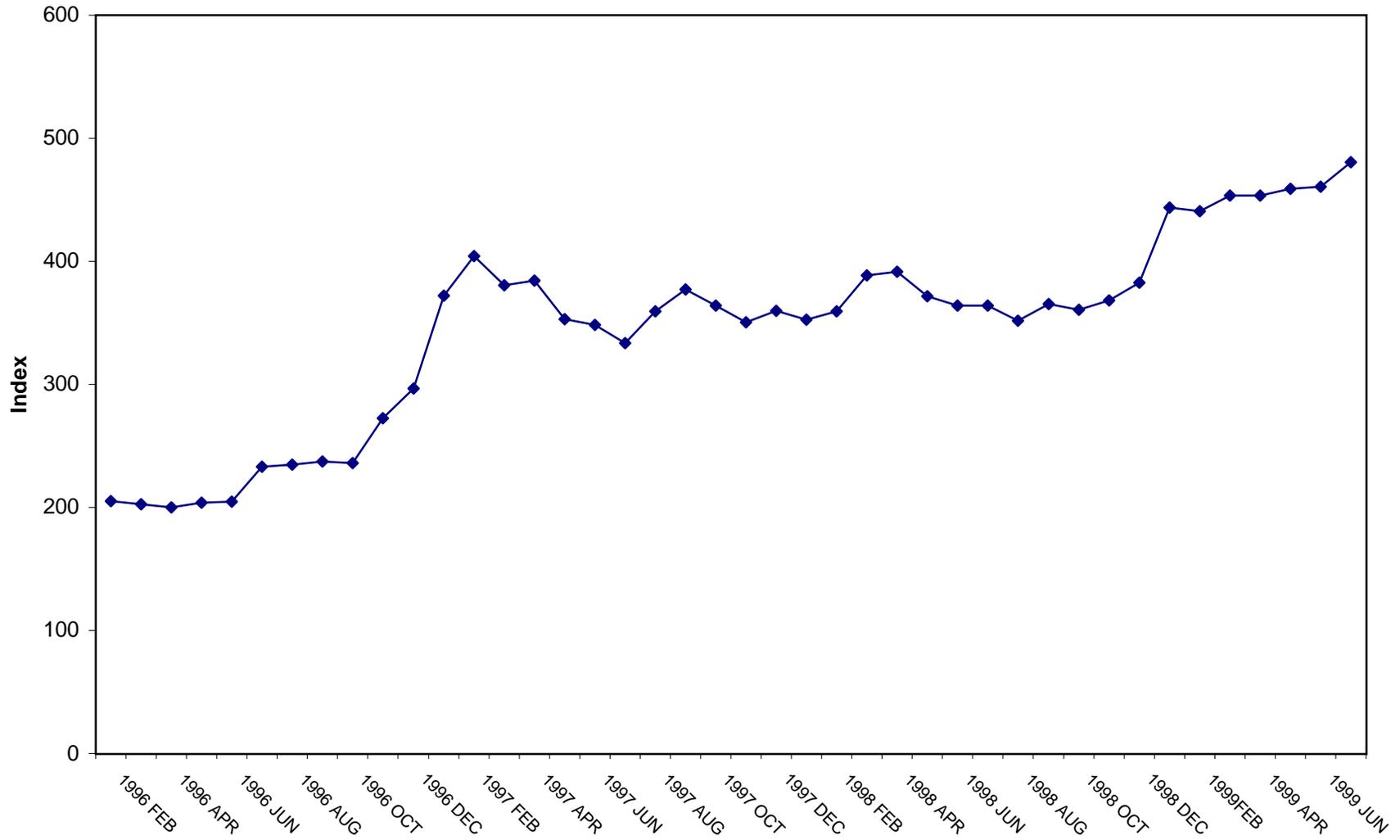
Source of Data: IMF, IFS Database, September 1999.

Chart 3.4: World Real Interest Rate (US real short-term deposit interest rate)



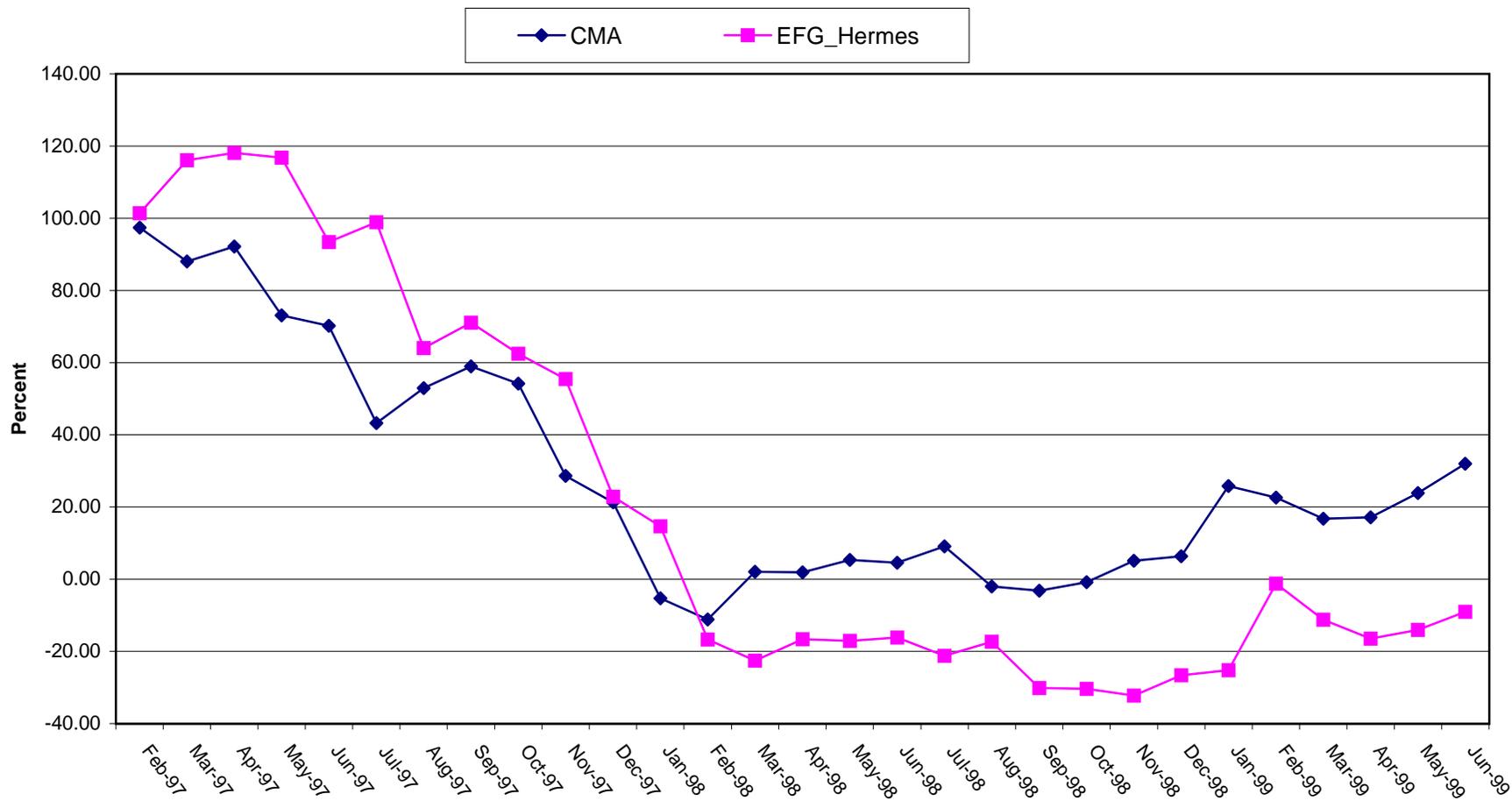
Source of Data: IMF, IFS Database, September 1999.

Graph 3.5: CMA Index of Stock Share Prices



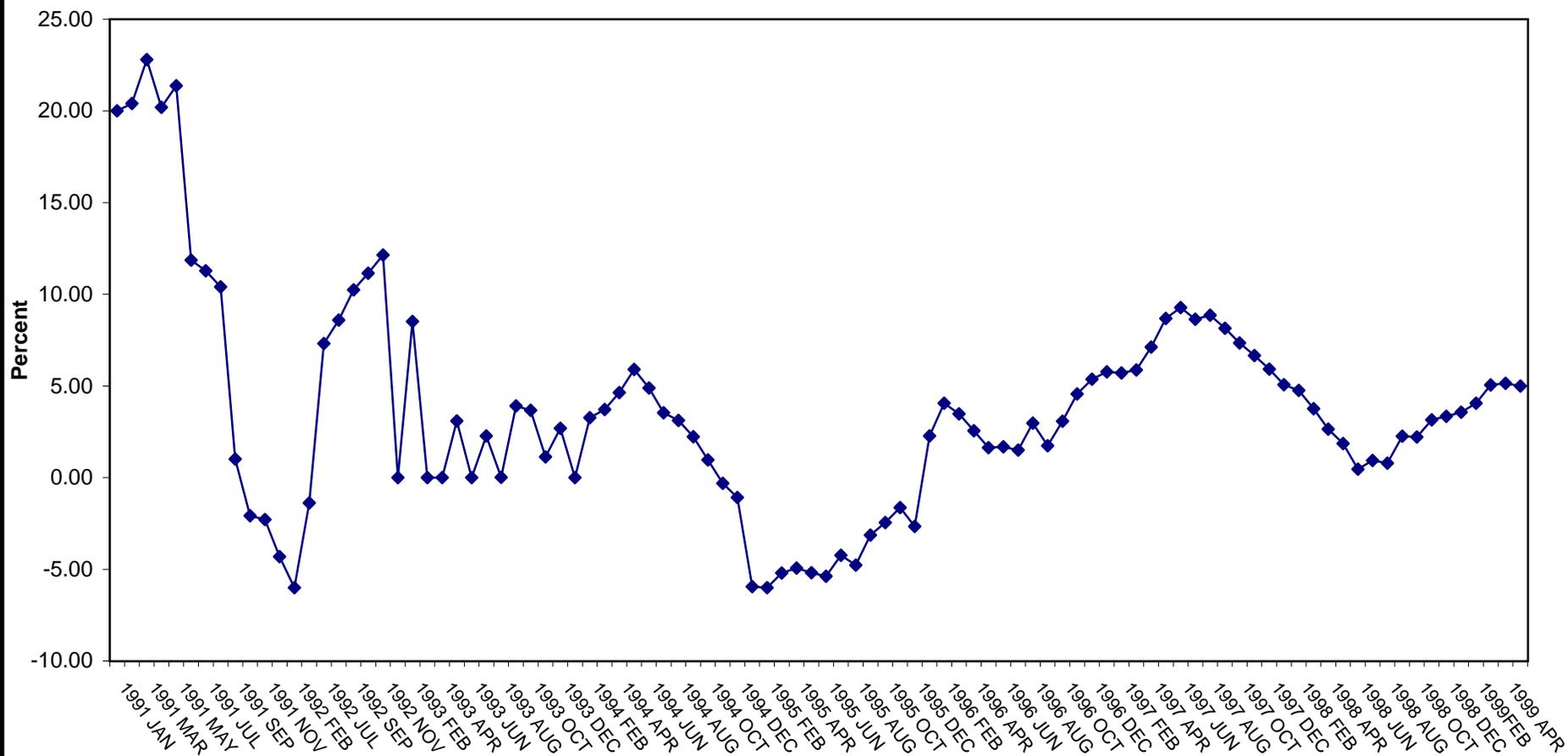
Source of Data: Central Bank of Egypt, Monthly Statistical Bulletin, various issues.

Graph 3.6: Annual Rate of Change in the Major Indexes of Stock Prices



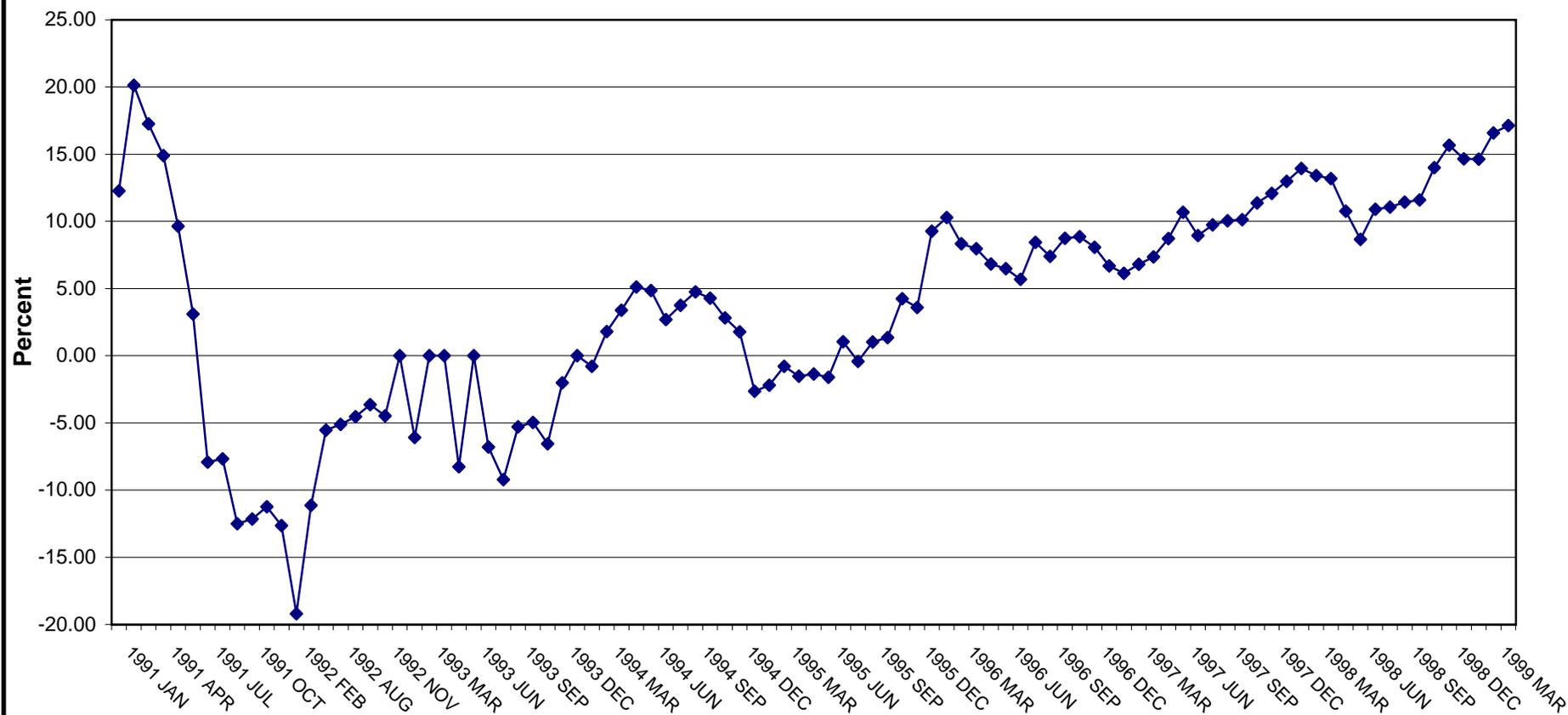
Source of Data: EFG-Hermes, Egypt.

Chart 3.7: Annual Growth Rate of Real Total Bank Deposits



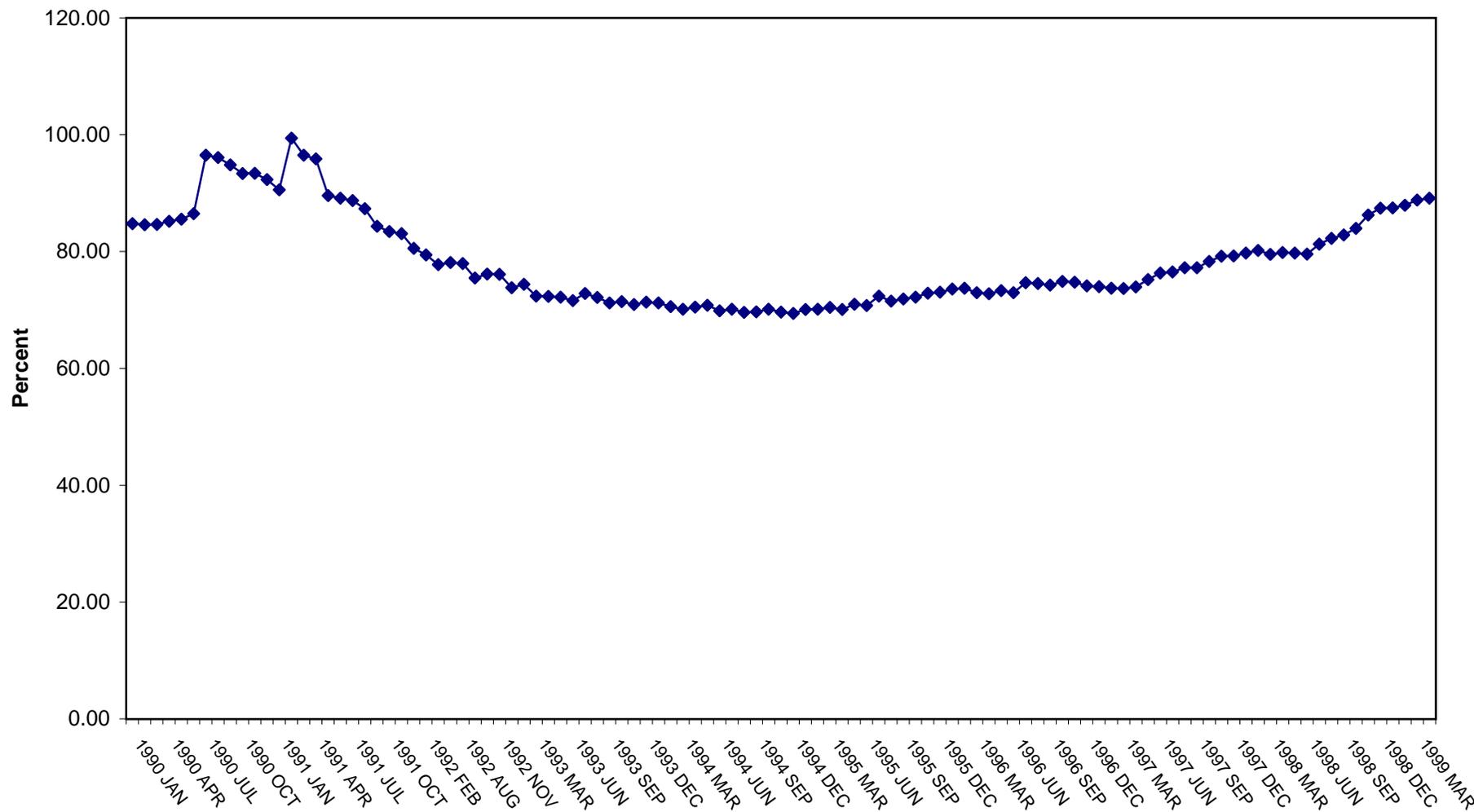
Source of Data: IMF, IFS Database, September 1999.

Graph 3.8: Annual Growth Rate of Real Domestic Credit



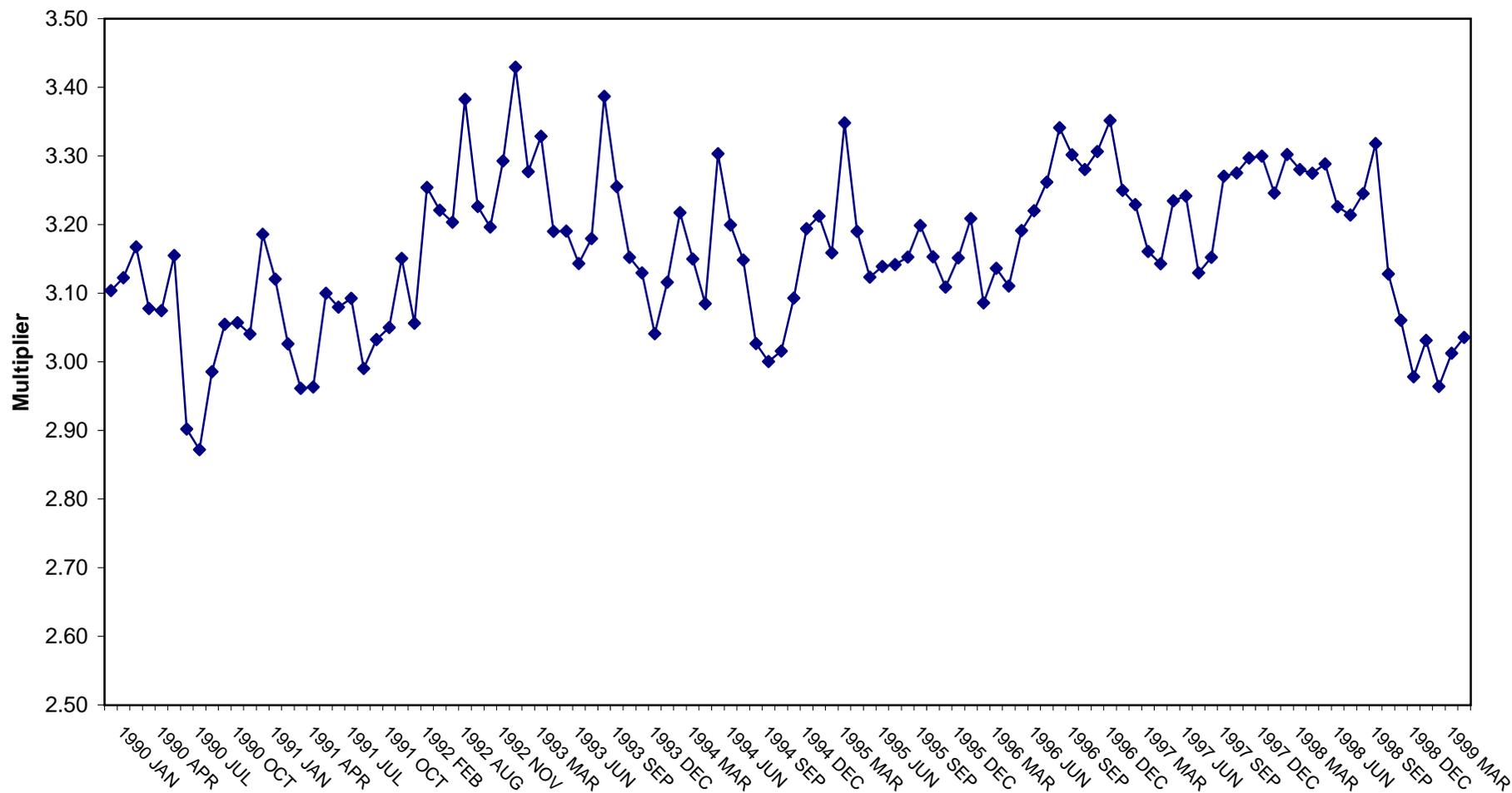
Source of Data: IMF, IFS Database, September 1999.

Graph 3.9: Ratio of Real Domestic Credit to Real GDP



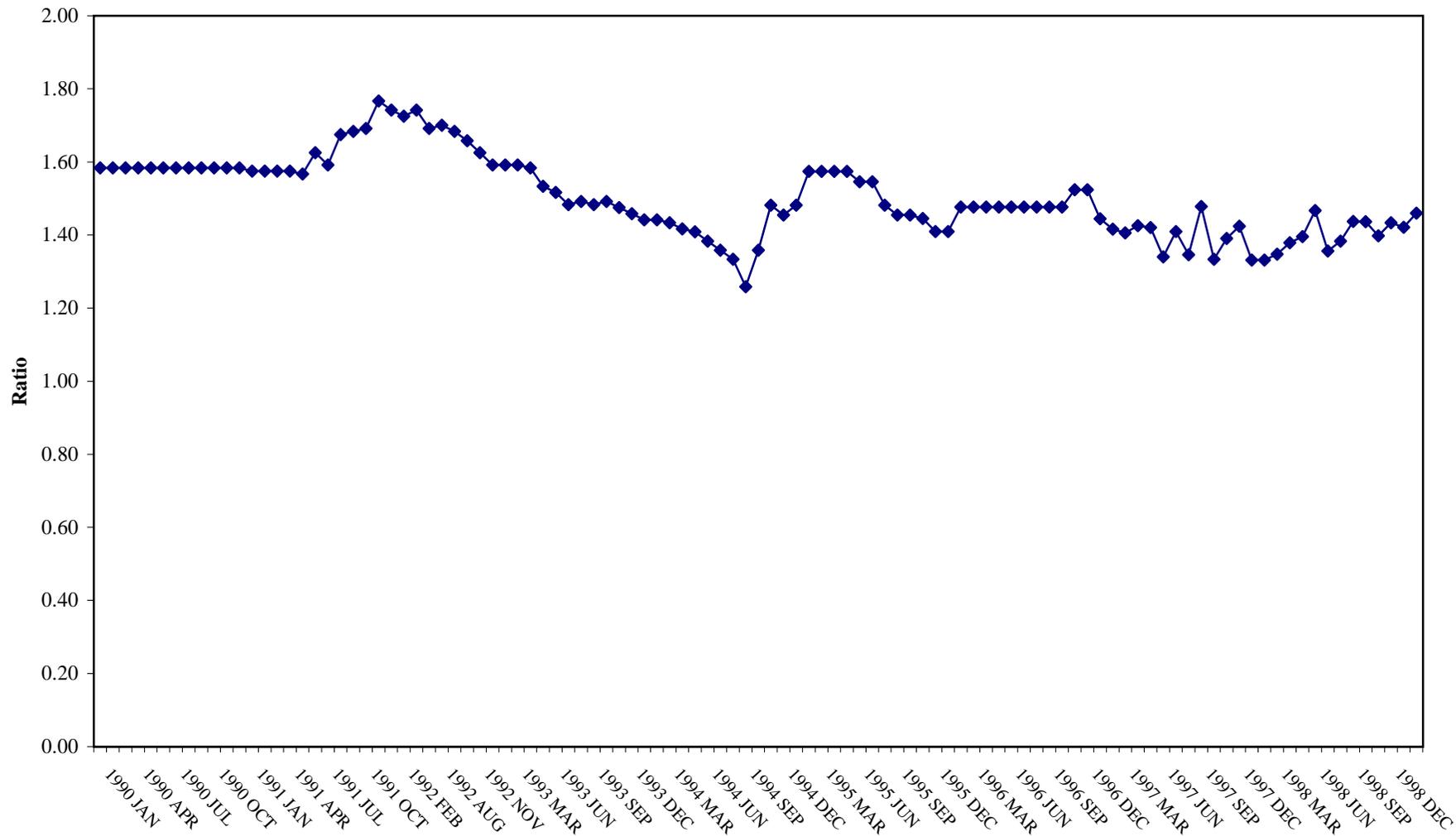
Source of Data: IMF, IFS Database, September 1999.

Graph 3.10: M2 Multiplier



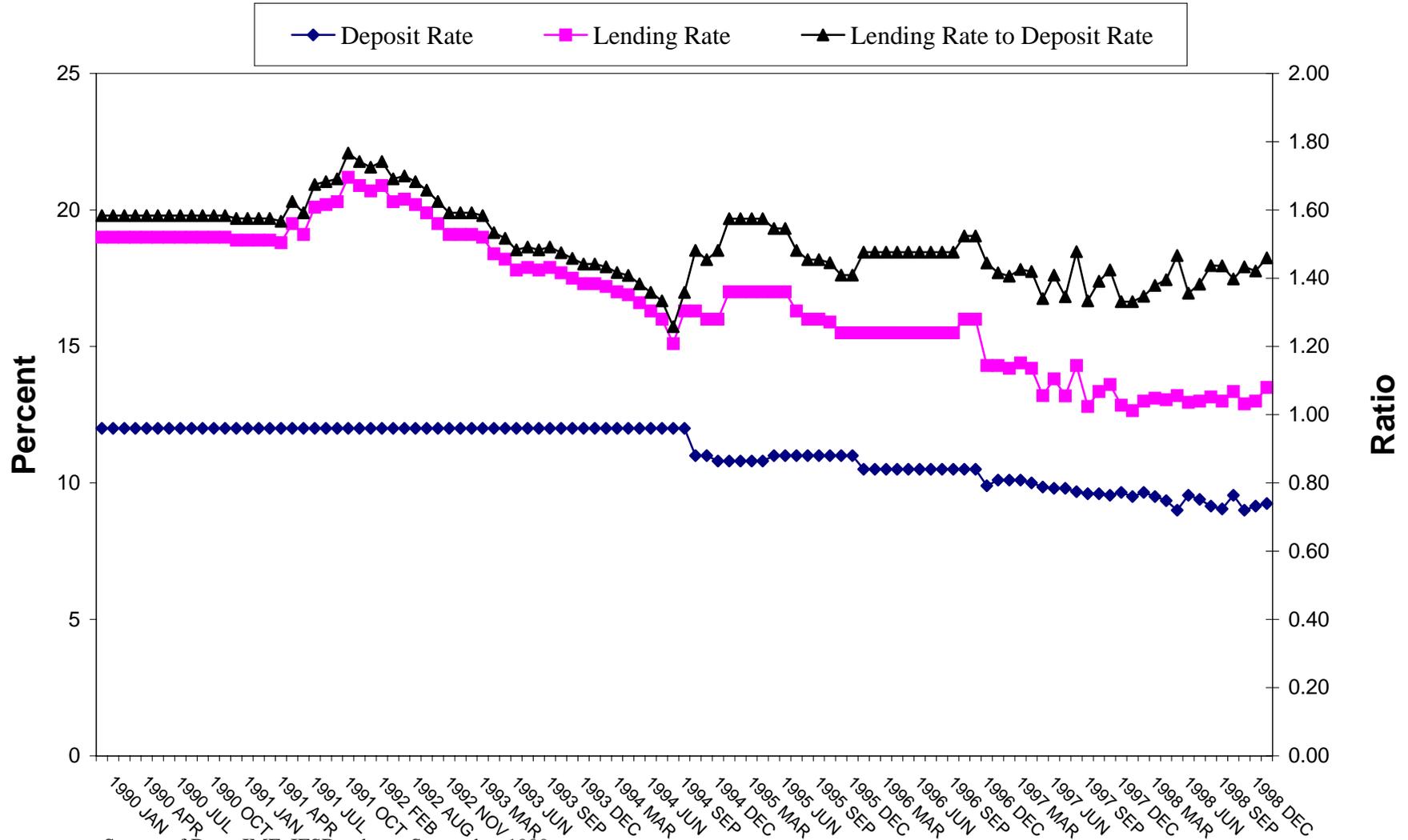
Source of Data: IMF, IFS Database , September 1999.

Graph 3.11: Ratio of Lending Rate to Deposit Rate



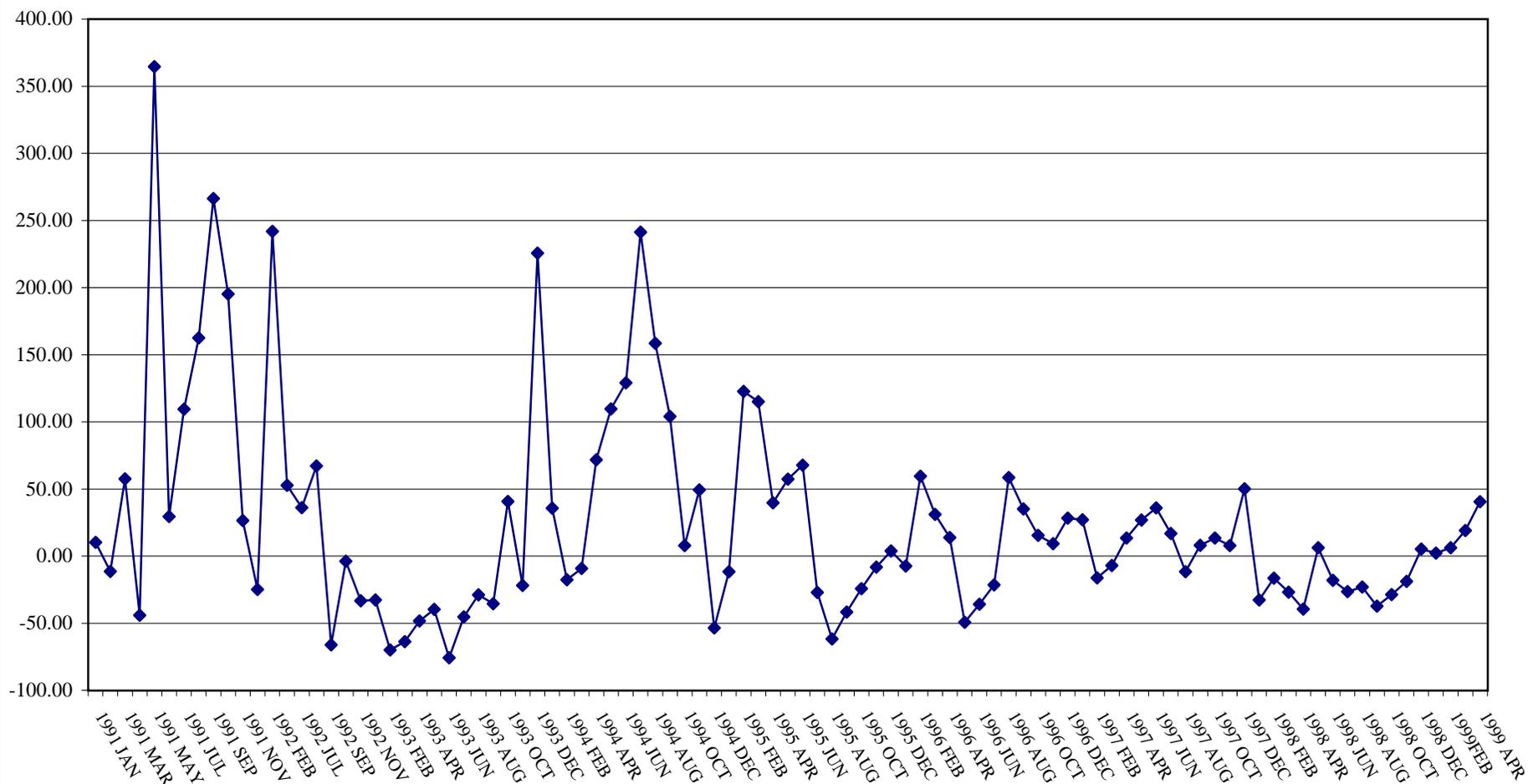
Source of Data: IMF, IFS Database, September 1999.

Graph 3.12: Lending and Deposit Interest Rates and their Ratio



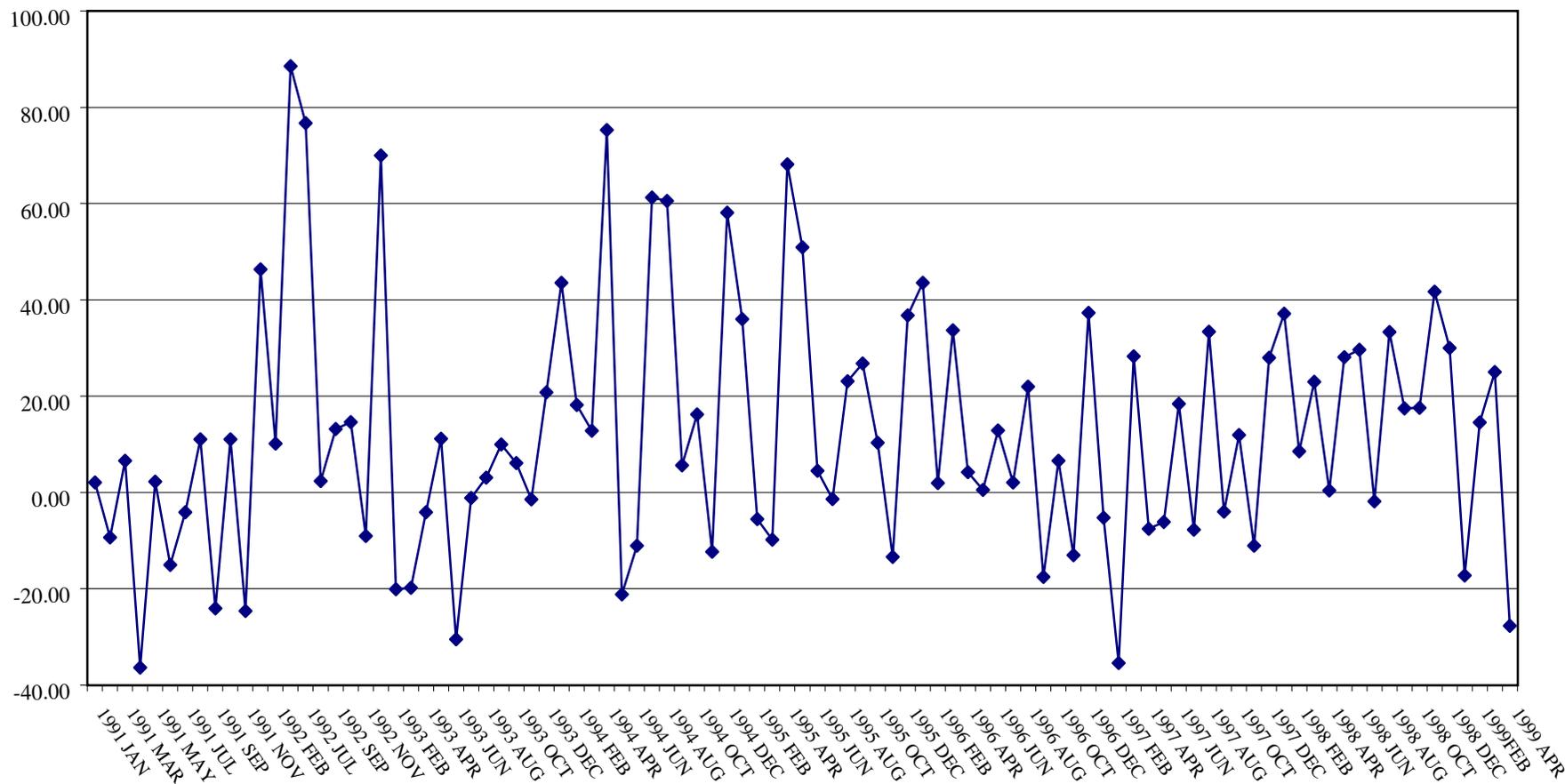
Source of Data: IMF, IFS Database, September 1999.
 Source of Data: IMF, IFS Database, September 1999.

Graph 3.13: Annual Growth Rate of Exports



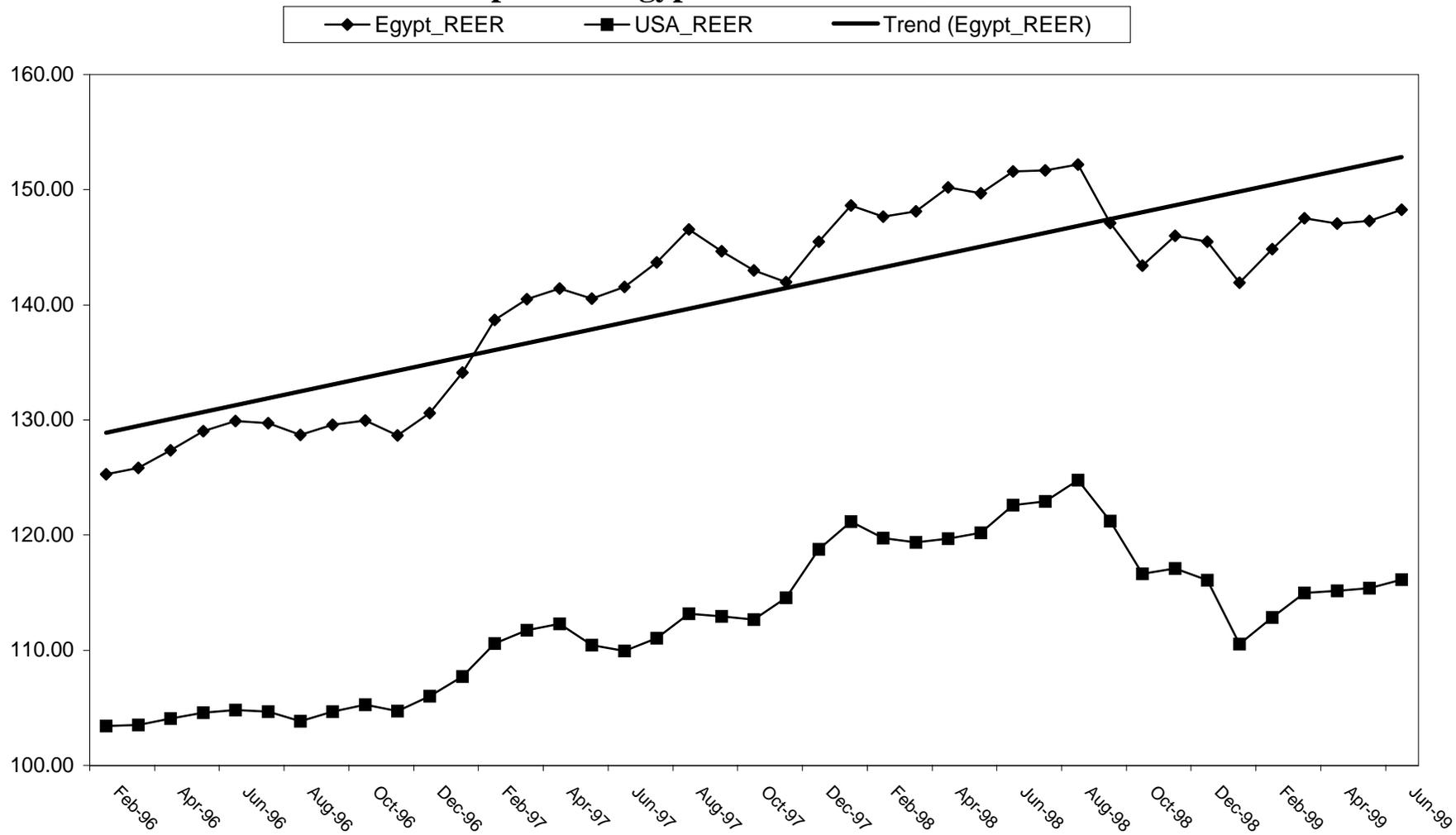
Source of Data: IMF, IFS Database, September 1999.

Graph 3.14: Annual Growth of Imports



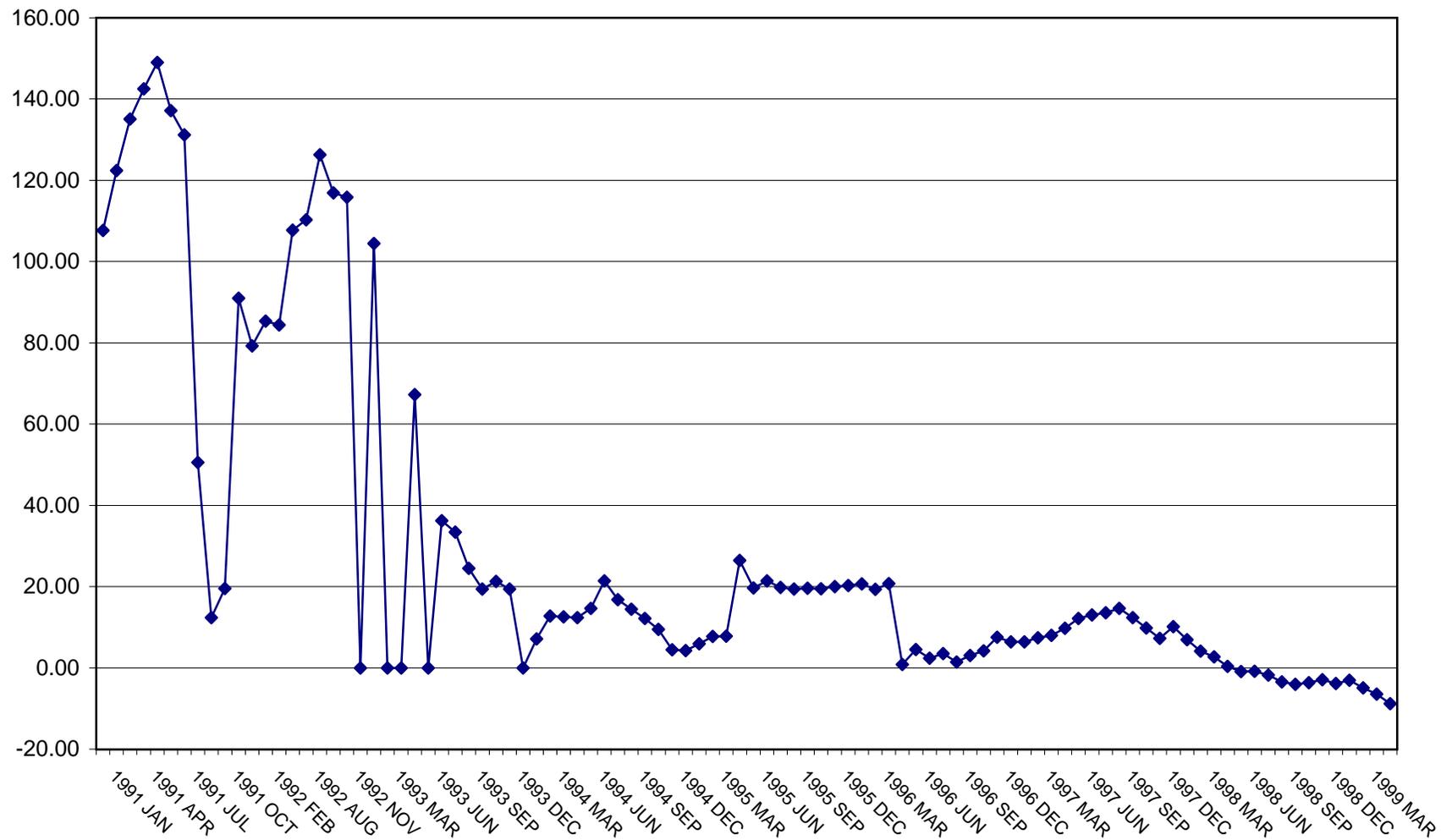
Source of Data: IMF, IFS Database, September 1999.

Graph 3.15: Egypt REER vs. USA_REER



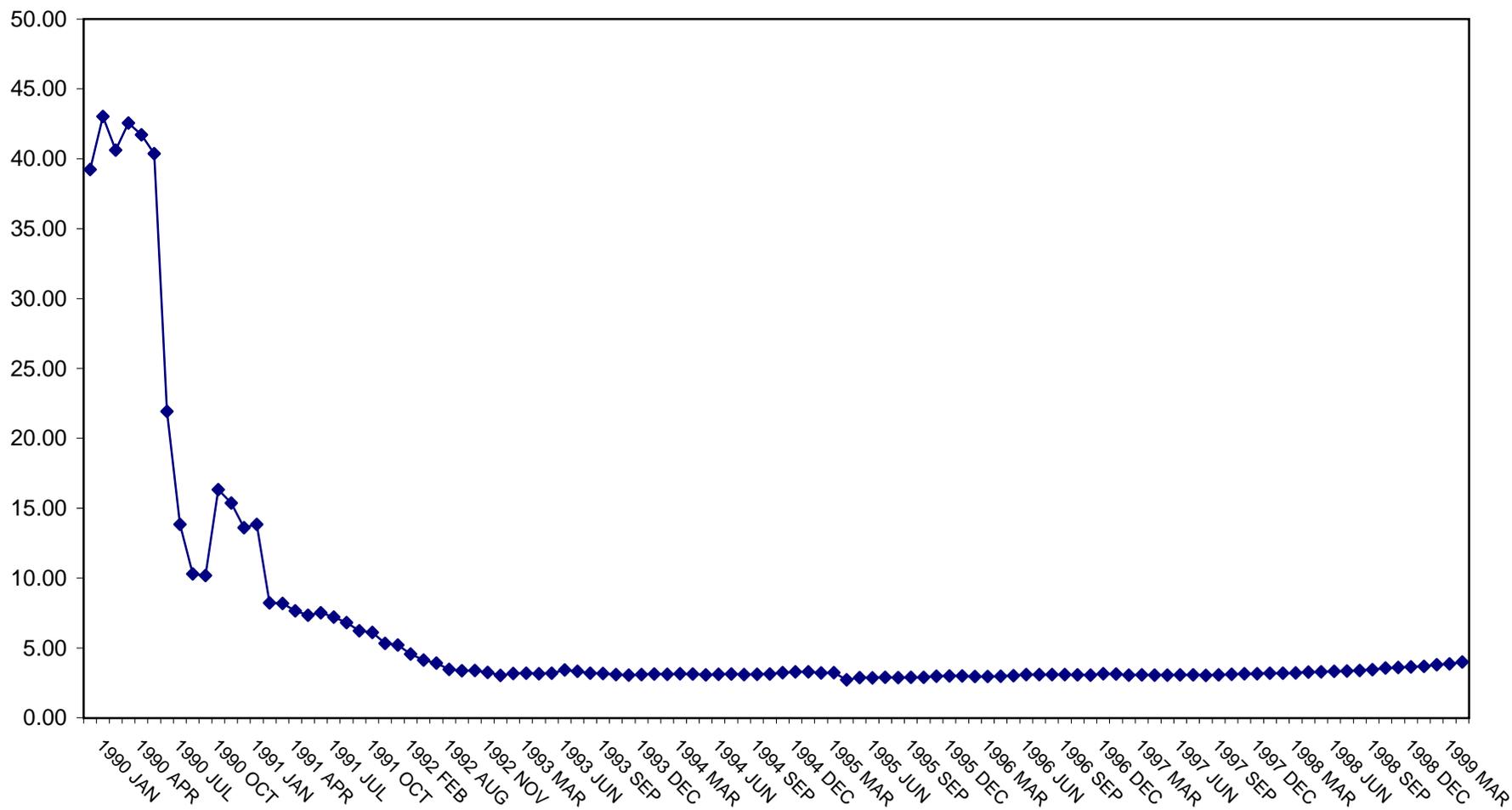
Source: IMF, IFS Database, September 1999.

Graph 3.16: Annual Growth Rate of International Reserves



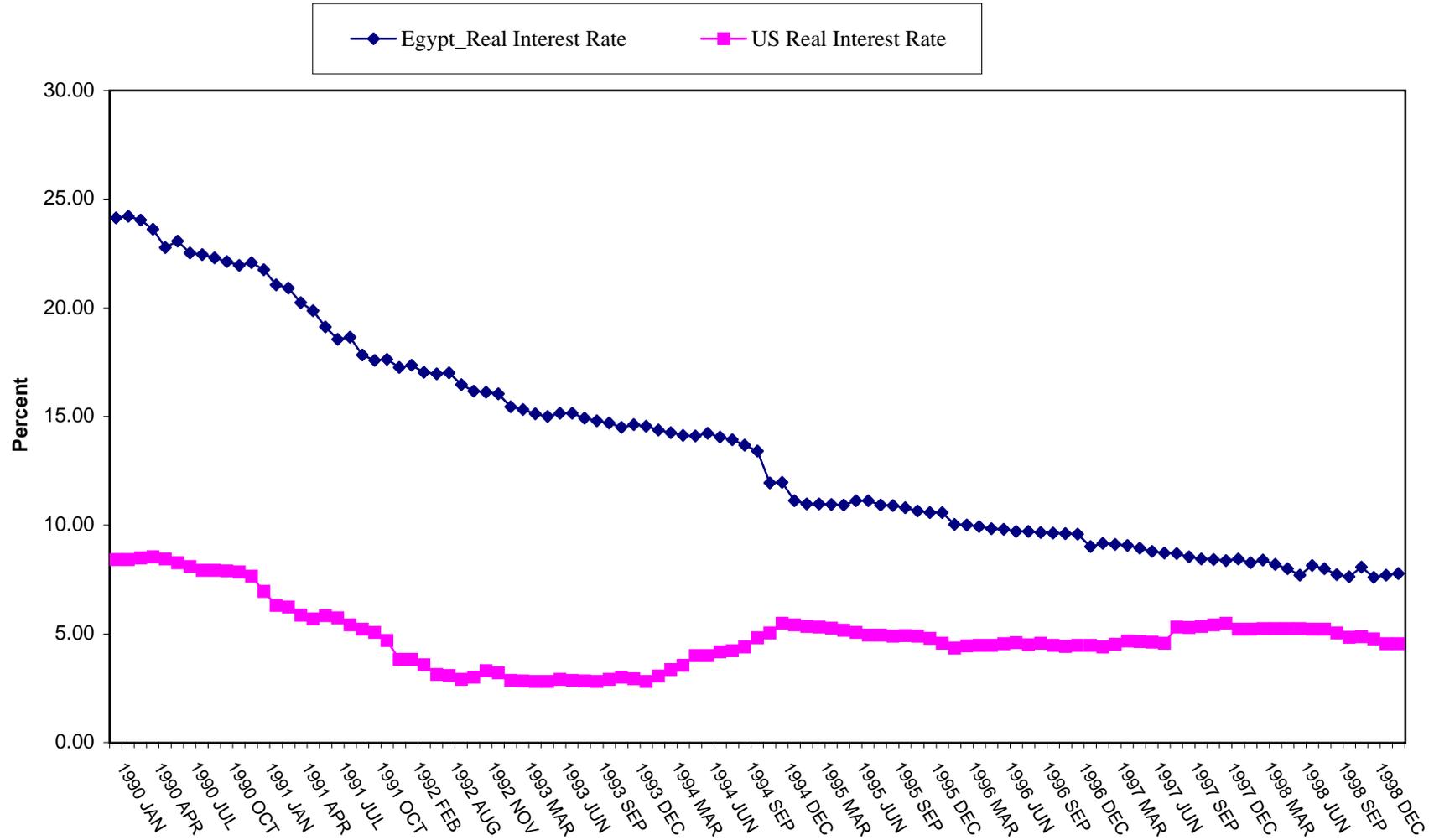
Source of Data: IMF, IFS Database, September 1999.

Graph 3.17 : Ratio of M2 to International Reserves



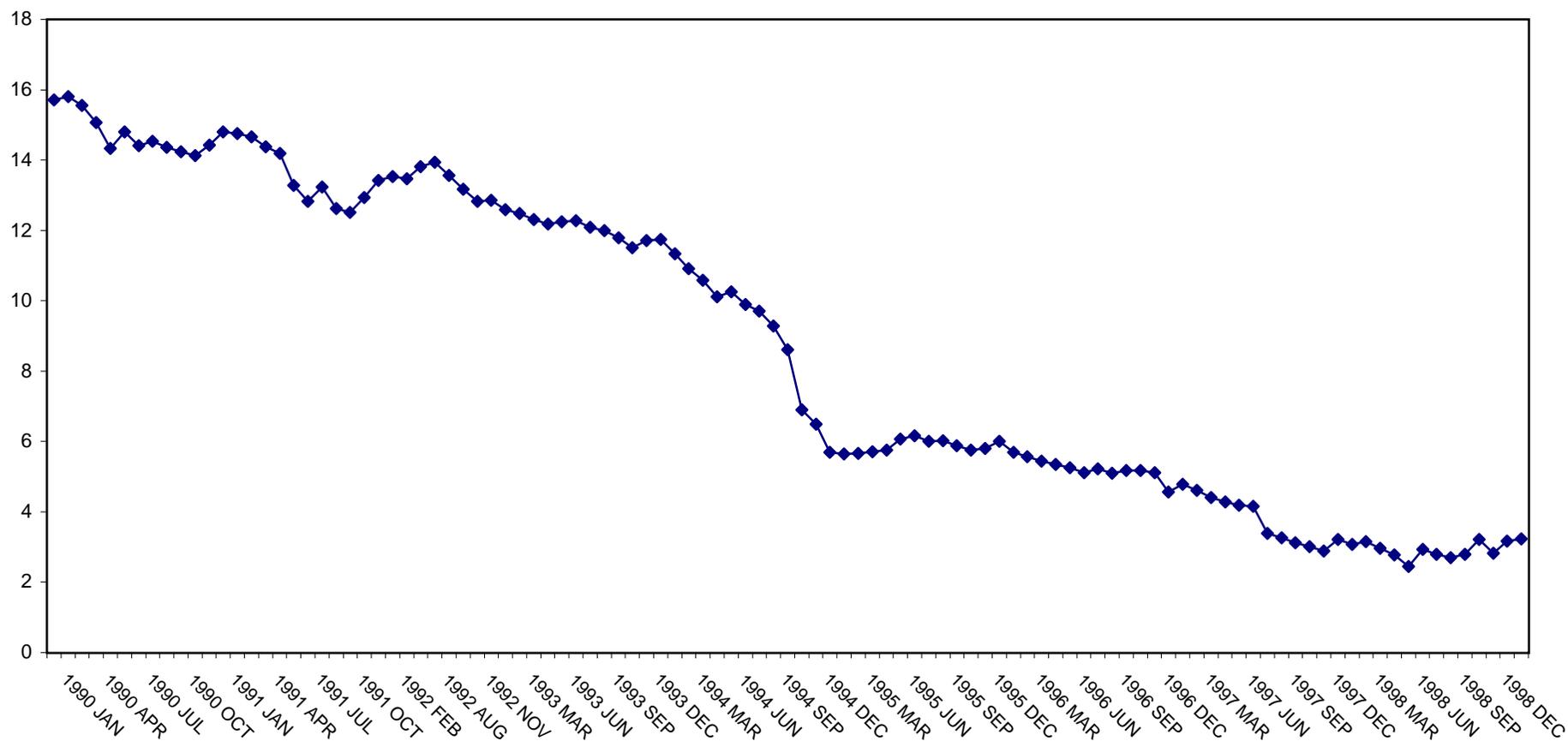
Source of Data: IMF, IFS Database, September 1999.

Graph 3.18: Egypt and World Real Interest Rates



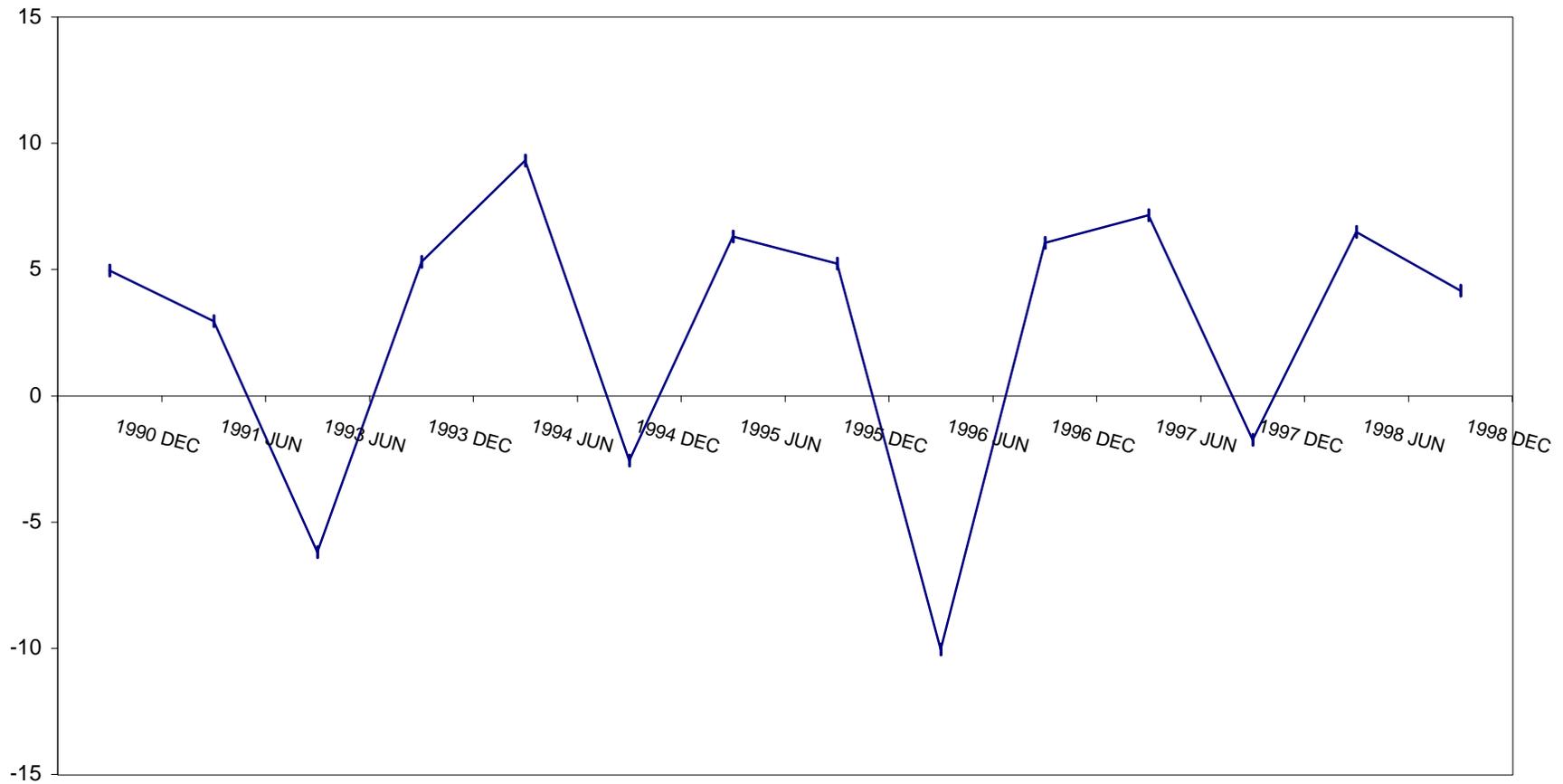
Source of Data: IMF. IFS Database, September 1999.

Graph 3.19: Real Interest Rate Differential (Egypt - US Real Interest Rates)



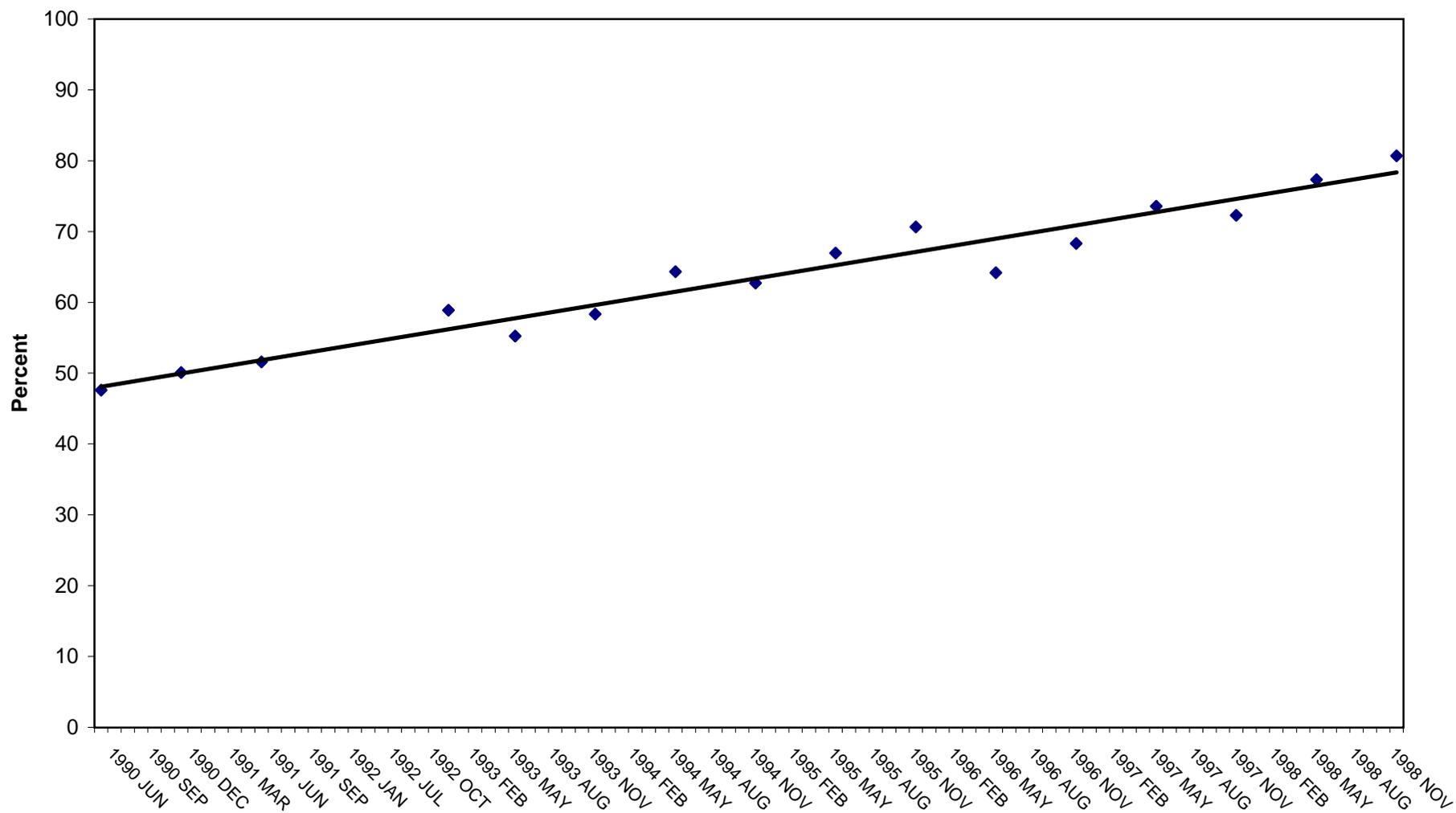
Source of DATA: IMF, IFS Database, September 1999.

Graph 3.20: Semi-annual Growth Rate of External Short Term Debt



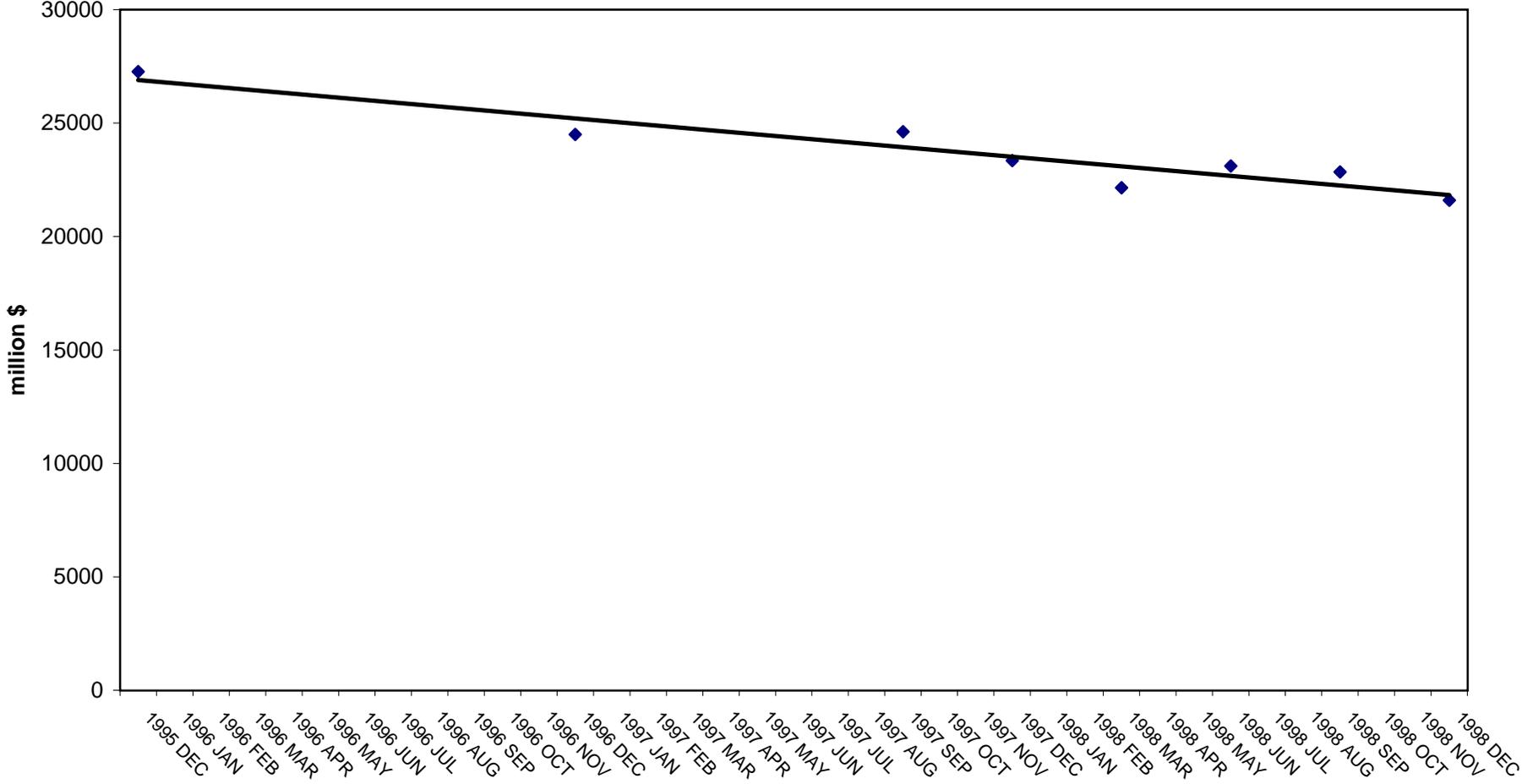
Source of Data: BIS Banks.

Graph 3.21: Ratio of Short Term Debt to Total Debt



Source of Data: BIS Banks.

Graph 3.22: Short-term Capital Outflow



Source of Data: BIS Banks

4. The Leading Financial Indicators in Egypt, 1997 – 1999

4.1. Introduction

The leading financial indicators (LFI) that have been developed for Egypt that are based upon the professional literature in economics and finance. The values of the LFI are computed from two sets of data. Some LFI are computed from the long-term data set in the IFS CD-ROM. The most recent IFS statistical data in the September 1999 CD-ROM is for February 1999. This database permits the analysis of both long term-trends and short-term behavior. A second database is obtained from the Central Bank of Egypt *Monthly Bulletin of Statistics*,¹ and used to calculate the most recent LFI. This data has a range from February 1996 to June 1999 most recent. Accordingly, the data from the Central Bank of Egypt is the most recent statistical information.

The subject of this report is the analysis and interpretation of the LFI focused over the 1997 – 1999 period. This two-year period is important to analyze because it includes the approximate 12 to 24 month “window” in which the LFI have the capability to indicate potential fragility in the domestic financial sector and/or currency stress. In other words, events that happened in 1997 and 1998 might have an impact in 1999 – 2000. In addition, a secondary reason is the LFI also can offer some perspectives about recent economic and financial conditions.

Regarding the methodology of interpreting the LFI, Egypt presents a particular case because there has been no financial or currency crisis, and its economic structure has been changing, since 1991. Therefore, finding “periods of tranquility” in economic variables before a crisis (the method used in much of the literature) is not possible. Accordingly, two alternative methodologies are available to the investigator. One is to impose constraints found in the cross section studies (CSS) in the literature. Although threshold values in the LFI developed in the CSS might be limited because the currency and banking system in Egypt is probably different from other countries, it may be useful for comparisons. A second alternative is to refer to deviations from trend behavior in certain LFI and supplement that with other relevant information about the economy. Finally, it is important to note that the direction of change in the Egyptian LFI would still have significance in terms of pointing out the risks of vulnerability in the near term. The analysis in this report uses both methodological techniques to offer an assessment of vulnerability to economic difficulties.

It is also important to note something about signaling of the indicators. The indicators are computed from monthly economic and financial data that can be subject to error, also it is possible that a given indicator can give a false signal of impending financial or currency problems, even when there is no measurement error. However, there are empirical grounds showing that persistence of a signal in a given indicator and signals from several indicators

¹ Stock market data from EFG-Hermes and IMF real exchange rate data are also included in this database.

are grounds for concern about vulnerability to financial fragility or currency stress. Typically, the empirical evidence is that signals of vulnerability in the LFI have indicated the onset of economic difficulties about 12 to 24 months before events occurred.

4.2. The General Economy

GDP growth

Real GDP growth has averaged 4.9% per year from 1997 to 1999. Growth in the early part of the period was about 1% higher than at the end. Economic growth in 1998-1999 has not declined very much despite weaker oil and commodity prices that account for a large portion of Egypt's exports [Graph 4.1]. The projected rate of economic growth in Egypt is currently 5% for 1999.²

According to the cross section studies (CSS) in literature, the key behavior of GDP growth rate would be a reduction of 9% to 11% in the GDP growth rate occurring about 16 months before a problem might occur. The rate of economic growth has moderated since 1996 from the 5.5% per year range to the 5% per year range [Graph 4.1]. Therefore, the evidence shows fairly stable economic growth in Egypt in 1997-1999. Since Egypt's GDP growth has not shown a sharp downturn in the last two years, there is no evidence that suggests rising risks of vulnerability to financial or currency problems stemming from a recession or marked slowdown in the pace of economic growth.

Inflation

The inflation rate, measured with the consumer price index in Egypt, is an important component of the LFI because it is used to deflate nominal economic and financial magnitudes. Surges or spikes in the inflation rate reflect imbalances in the domestic economy. Accordingly, the short-term trend in the rate of inflation is used in the calculation of the LFI.

The inflation rate has trended downward from 5.4% in March 1991 to 2.8% in March 1999 [Graph 4.2]. Although the inflation rate fell over the interval under analysis, above trend inflation was observed during May 1998 to October 1998 when the rate moved up from 4.0% to 4.4% , a gain of 10%, before moving back to the downward trend. There was no large monthly "spike" and the deviation from the trend was not great.

4.3. Financial Sector

Asset prices

Indices of stock prices, which are used to measure asset prices, are a significant LFI. The CSS evidence shows that a decline in stock prices in the range of 5% to 11% signals financial

² All rates are annual percentage rates of change. Computed monthly.

fragility or currency stress. Typically, a decline in the stock market indices would happen about 14 months ahead of currency and financial problems.

Two indices are reviewed for Egypt, the CMA Index and the EFG-Hermes Index. The evidence in Egypt from the CMA index is interesting.³ First, although the trend of CMA index is upward for the whole interval of analysis, the growth rate of the index declines from February 1997 to March 1998 [Graph 4.3]. Second, the most noticeable reduction was the decline in the index from 404.4 in February 1997 to 333.6 in July 1997, or a decrease of 17.5%. Third, there were other smaller declines that took place, including a 7.1% decline between September and November 1977, and a 10.2% decline from April to August 1998. The monthly declines were not sufficiently large to cross the CSS threshold into the critical region.

The EFG-Hermes Index, measuring the most actively traded shares, presents a slightly different view of the stock market. This index shows a decline in 1997 similar to the CMA index. However, the EFG-Hermes Index has had persistently negative growth rates from February 1998 to August 1999 [Graph 4.3]. The growth rate of the EFG-Hermes Index was marginally positive in the first part of September 1999. The two indices are calculated differently. The EFG-Hermes Index is preferred because it shows actively traded shares. In general, the growth rates of the share price indices in Egypt portray a sluggish stock market (and weak asset prices) that is in need of a new stimulus. In this regard, there are three factors that help to explain the recent weak growth rate of the indices. One is the weakening momentum in the stock market as the pace of privatization slackened after 1997. A second factor is the shock of the Luxor incident. Another is the effect of the crises in Asia and Latin America, which removed some risk-averse international investors from the stock markets in developing countries. Investors sought opportunities that could be liquidated quickly and bought shares in markets where the volume was large. A revitalized privatization initiative would be important element in the improvement in activity in the stock market in Egypt.

Real interest rate

A rise in the domestic real interest rate is an LFI that would portend a slowdown in domestic economic growth and a recession in the economy. This has the potential to foster fragility of the banking system. CSS have shown the threshold values for a rise in the real interest rate would be about 12% for a currency crises, and about 20% for fragility in domestic banking. The lead-time of the indicators is estimated at 17 months. However, interest rates have not proven to be statistically significant LFI in most studies.

There are several instances of upward movements in the real interest rate in Egypt, although only two would fall in the ranges noted in the CSS. They are:

- An increase in February 1997 to July 1997 by about 6%;
- An increase by 45 basis points from October 1998 to November 1998, or by 5.5%;
- Two small increases in late 1998 and early 1999 by about 2% each.

³ This CMA index covers all shares while the EFG-Hermes covers the 50 most active shares traded.

The evidence in 1998 suggests the increases in the real rate of interest have been relatively small and therefore not likely to signal an impending slowdown in the national economy in the next months.

Bank deposits

Bank runs and panics have been prominent causes of financial sector fragility and currency instability not only in the distant past and but also in recent times in Mexico, Russia, and Asia. Evidence shows that external shocks put the Mexican banking system at risk and shortened the survival time of fragile banks [Gonzalez-Hermosillo, Pazarbasioglu, Billings]. The evidence of CSS is that a 10% reduction in the rate of growth of bank deposits would signal a currency crisis while a 16% reduction in the LFI would signal difficulties in the financial sector. The lead-time of this indicator is about 15 months before a crisis happens.

The growth rate of real bank deposits in Egypt fell sharply from 9.4% in May 1997 to 3.1% in April 1998, or by 67% [Graph 4.4]. Then after a one month recovery to 3.3%, the deposit growth rate fell again to 2.8% in August 1998, a drop of 16%. The bank deposit growth rate recovered in September 1998 and peaked at 7.7% in March 1999, then it fell to 6.9% in May 1999, or by 11%. Although deposit growth rates have been variable, they have been fairly close to the trend line since late 1998.

The declines in commercial bank deposits in 1998 and 1999 exceed the CSS range for financial fragility and approach the range for currency stress. Accordingly, there are some grounds for concern about this LFI. However, despite the swings in the growth rates, real bank deposits were near the trend in late 1998 and 1999. It is likely that the decline in the deposit growth rate in 1998 and 1999 likely reflected, either directly or indirectly, the shocks to commodity exports and tourist receipts. There may also have been some effect of the lingering Asian and Brazilian crises.

Domestic Credit

The ratio of domestic credit to GDP is an important LFI in all CSS. This indicator is used to measure credit conditions and has proved to be significant in developed and developing economies that are experiencing structural and policy reforms. The CSS show that a rise in the ratio of domestic credit to GDP by 10% or more is a critical region for currency stress while a rise in the LFI by 5% indicates banking problems. The rise in this indicator to the threshold value has preceded the onset of crises by about 12 months.

The growth in real domestic credit in Egypt has been high and at times well above the trend growth from February 1996 to May 1999 [Graph 4.5]. The first period of high growth relative to the trend was from September 1997 to February 1998, when domestic credit growth rate surged by 22%. The second period of above trend growth in domestic credit was a rise in the growth rate of 14% in January 1999 to May 1999. This increase gives grounds for concern because of the recent high growth in domestic credit has likely exceeded the trend value of the demand for money.

In Egypt there has been an upward drift in the ratio of real domestic credit to real GDP from 1996 onward [Graph 4.6). The domestic credit/GDP ratio increased from 0.72 in June 1998 to 0.78 in May 1999, or a rise of 12.8%. Although the indicator has risen, there has been no sharp monthly rise in its growth rate. High growth in domestic credit has been the chief factor in the rise of the ratio of domestic credit to GDP because the GDP growth rate has been relatively stable in the last two years. The main concern is about the growth in real domestic credit.

M2 multiplier

The M2 multiplier is an important LFI because it is a measure of money and credit conditions. This LFI has been especially important in economies that are liberalizing their financial sectors and market forces prevail. In a liberalized financial system the money multiplier reflects the amount of money that can be created by the volume of reserves in the interbank market. It is likely to vary with incentives for risk management in the banks, the lower the guarantees available from government, the higher the multiplier. To the extent that government control exists over the money supply process, the M2 multiplier is determined by credit ceilings and reserve requirements on deposits. A high multiplier could also indicate vulnerability to shocks or shifts in market expectations and precede episodes of speculation as happened in Mexico [Calvo and Mendoza]. High growth in the M2 multiplier was found in Asian countries that had financial and currency crises in 1996 -97 [Moreno].⁴ The CSS done by Kaminsky have shown that a rise in the multiplier in the range to 10% to 14% has generally preceded currency and financial difficulties by about 16 months.

In Egypt the M2 multiplier has risen over time, but very slowly. For example, the M2 multiplier was 3.64 in June 1996 and it increased to 3.83 by May 1999, or by 5.2% [Graph 4.7]. This rise is not large and the growth of the multiplier has been uneven around the trend. From another perspective, the percentage deviation from the 1996-1997 trend has been small, from 1% to 2%. The recent behavior of the M2 multiplier does not offer any support for the notion of financial fragility or currency stress in the near term. The relative stability of the multiplier likely indicates that government controls on banking activities are prevalent.

Lending rate/Deposit rate ratio

The lending deposit ratio indicator is used to develop an indirect view of the quality of commercial bank portfolios. A rise in the ratio can indicate deterioration in lending portfolios and a slowdown in the national economy. The evidence in the CSS studies is that a rise in the ratio in the range of 13% (banking fragility) to 20% (currency problem) takes place about 13 months before the onset of difficulties. As noted above, the use of market rates as LFI has not yielded statistically significant results in most empirical studies.

⁴ This was not consistent among all countries. The M2 multiplier in Singapore was similar to those of Indonesia, Korea, and Malaysia, but there was no crisis in Singapore. In Thailand the M2 multiplier declined before the crisis of 1997

The ratio of the lending rate to the deposit rate in Egypt in the 1996 – 1999 interval is not very stable [Graph 4.8]. Because the deposit rate has been practically constant over the interval, the variation in the ratio basically tracks the movements in the lending rate. Therefore, the lending-deposit rate ratio does not offer the relevant information for a LFI. However, it does highlight the fact that commercial banks have not used deposit rates as incentives to attract funds from the public.

4.4. The Current Account

Exports

Although exports present information about the current account balance, exports also provide information, directly or indirectly, about other sectors in the economy. External shocks to exports have been significant variables that have caused currency problems and financial fragility in many economies. Typically, shocks originating in falling commodity prices, changes in competitiveness, and changes in global macroeconomic conditions (growth slowdowns, recessions) have impacted the export trade of many developing countries. Recently, falling export volumes and declining export receipts were a major feature of the Asian crisis. Among the factors cited in the export shocks to Asian economies were: (1) large increases in the global supply of electronic goods; (2) devaluation of the Chinese renminbi and Chinese export expansion; and, (3) prolonged recession in Japan and depreciation of the yen [Corbett and Vines]. In addition, CSS studies have consistently had the growth rate of exports as a statistically significant LFI. Empirically, the Kaminsky study has noted that a decline of 10% in the growth of exports had played an important role in currency crises and also financial disturbances. A downturn in exports preceded currency stress and financial fragility by about 15 months.

Egypt's monthly export trade, measured with the Central Bank of Egypt data, has had considerable variability over the interval. The trend has been downward from 1996 – 1999. In addition, there have been large percentage divergences from the trend since 1997. For example, export performance below trend (divergence below trend as much as 38%) in 1998 clearly indicates the shock to Egypt's crude oil export receipts from the collapse in oil prices. Regarding the growth rate of exports, growth rates have been persistently negative for much recent experience [Graph 4.9]. In general, the growth rate of export trade in the last two years indicates rising risks of vulnerability in the near term. However, the recent sharp increase in crude oil prices in 1999 improves the prospects for Egypt's export receipts in the next months and also improves the balance of trade and current account balance. An uncertainty for Egypt and other developing countries in the near term would be the effect of increased competitiveness in Asian countries that have had large currency devaluation in 1998 and 1999. Accordingly the deflationary impact of the current account on the national economy could moderate in 1999-2000.

Real exchange rate

The appreciation of the real exchange rate (REER) is the most important variable in all studies of the LFI and future banking and currency problems. Typically, the appreciation of the REER is not only statistically significant as a LFI but it also has the least error in terms of a low noise to signal ratio. The recent studies of the REER in the Asian economies show several impacts and explain their development. A major factor cited was the mismatch of denominations. Asian countries borrowed in dollars or yen to fund payoffs in local currencies and were exposed when overvalued currencies depreciated. Several ASEAN countries either pegged their currencies to the US dollar or had “currency baskets” that were dominated by heavy US dollar weights. Low inflation in the US coupled with nominal and real dollar appreciation resulted in an overvaluation of REERs in the Asian countries against the currencies of other industrial countries [Kwai]. Sustained overvaluation of the REER contributed to sluggish export performance, surging imports, and unsustainable current account deficits. The CSS done by Kaminsky have shown that a 10% appreciation in the REER could lead to both currency and banking problems. Appreciation of the REER has a lead-time of 17 months before the onset of a crisis. Alternative estimates demonstrate that relatively upward divergences (appreciation) in the REER from the trend have been a factor in currency stress and financial fragility [Berg and Portillo].

Egypt’s REER appreciated in the interval being analyzed [Graph 4.10]. The REER rose from 125.3 in February 1996 to 148.6 in June 1999. Although there are fundamental long run factors in this appreciation, short run influences are also important.⁵ In this connection, the impact of the U. S. dollar REER is important because the REER of Egypt has tracked the US REER over time [Graph 4.10]. The U. S. dollar REER appreciated since 1997 because of improved fundamentals (fiscal balance, low inflation) and the dollar had also several episodes of nominal appreciation associated with economic crises in Asia, Eastern Europe, and Latin America. Regarding a signal from the REER of vulnerability to financial and currency problems, Berg and Portillo found that deviations from the trend would be an important source of increasing risks of vulnerability.⁶ In Egypt the deviations from the trend, which have been relatively small since January 1997, have fallen below the trend line in late 1998 and early 1999, indicating some moderation in the appreciation. The appreciation of the REER in Egypt is a matter of concern; however, recent dollar weakness might dampen the appreciation of the US dollar REER and therefore moderate the upward drift in the Egyptian REER. The LFI literature notes that appreciation not only has an impact upon competitiveness, but also effects on the banking system. Accordingly, the LFI analysis of appreciation merits concern in the near term.

⁵ IMF noted the short-run variables influencing the REER in Egypt were the lagged capital account balance, nominal appreciation (depreciation), share of government consumption in GDP, estimated terms of trade, ratio of budget deficit to money base, and estimated technical innovation.

⁶ Op. Cit.

4.5. The Capital Account

International reserves

The volume of official international reserves is an important financial resource to cope with short-term external vulnerability. The traditional analysis of the capital account has relied upon the reserves available to the central bank being able to finance several months of imports as a definition of adequacy. However, economic theory shows that criterion is not sufficient to protect the currency from a speculative attack [Obstfeld; Krugman]. The recent experience in Asia validated the theory and has offered concrete examples when vast amounts of reserves were used to stabilize exchange rates. For example, when the Asian crises started in 1997 in Thailand, there was an attempt by the central bank to defend the bhat. Over \$29 billion in international reserves were used in an unsuccessful effort to stabilize the bhat exchange rate before the currency was set free to float. CSS suggest that a reduction in the growth rate of international reserves by 10% precedes currency crises while a reduction of 28% precedes banking crises. The lead-time is estimated at about 15 months.

The growth rate of Egypt's net official international reserves, which peaked at 12.2% in September 1997, has declined since October 1997 [Graph 4.11]. In May 1998 the growth rate of international reserves became negative and has remained so since, with the May 1999 rate at -9.6% per year. External shocks and high growth in domestic credit are the factors behind this decline.

M2/International reserves

The financial crises in Asia and Mexico illustrated the importance of speculative attack on a currency and the adequacy of international reserves. The ratio of M2/international reserves is a measure of maximum vulnerability that shows the volume of domestically money that asset holders might try to convert into foreign exchange in an attack on the pegged exchange rate. The experience in Asia, Latin America, and Mexico has been that international reserves are rapidly depleted and have been insufficient to prevent currency devaluation. All CSS show the M2/international reserves ratio to be statistically significant. A percentage rise in the ratio in the range of 10% to 14% is found about 13 months before the onset of currency and financial stress.

In Egypt the M2/international reserves ratio rose from 2.64 in February 1996 to 3.72 in May 1999 [Graph 4.12]. The growth in this ratio began in September 1997, and after moderating below 10% in September to November 1998, resumed in December 1998 to March 1999 [Graph 4.13]. The upward movement in this LFI shows some increased risk in vulnerability in the recent period. There are two forces at work in the rise of the ratio. First, the loss of official international reserves (the denominator) has given the ratio an upward impetus. Second, the rise in domestic credit, discussed above, has contributed to the upward momentum of the M2 numerator. In the pegged exchange rate environment, monetary policy to reduce the growth of domestic credit (and increase interest rates) would address the rising vulnerability of the currency.

World real interest rate and differential

The magnitude of the real interest rate differential between the Egyptian economy and the global money market is posited as a measure of the potential for short-term capital outflows that might be destabilizing. In theory, if the global money market rates increase and thereby widen the differential, domestic asset holders are given an incentive to move funds into the global money market. Kaminsky noted, however, that a 10% rise in the real interest rate differential could lead to episodes of currency stress while a 19% rise in the differential would signal financial fragility. The estimated lead-time of this LFI is estimated to be 14 months. The real interest differential has proven to be a relatively poor LFI in the CSS. Although short-term capital outflows were observed in the recent currency and financial crises in Asia and Latin America, interest rate differentials were a secondary factor relative to asset holders' risk assessments about the currency, the exchange rate, and domestic economic prospects.

The change in the real interest differential in Egypt trended downward from February 1996 until June 1998 [Graph 4.14]. The main elements in this falling trend have been decreasing inflation in Egypt and falling inflation and interest rates in the United States. However, the real interest rate differential increased in April and moved higher in May 1999. In Egypt, inflexible lending and deposit rates coupled with a falling domestic inflation rate has contributed to upward pressure on the domestic real rate while falling nominal interest rates in the U. S. have been important. Accordingly, the differential between the Egyptian Pound and the U. S. dollar has widened. Increased flexibility of interest rates in Egypt would likely reduce the differential .

Capital Flows

Capital outflows were a major problem in the recent financial and currency crises in Mexico, Russia, and Asia. Some of the outflows resulted from investors attempting to liquidate their holdings while other outflows were speculative attacks on currencies. These outflows added to the pressure on the currencies and played an important role in the crises. Mismatches in currency exposures and maturities were very important factors [Dornbusch].⁷ Maturity mismatches occurred when capital inflows to finance projects were offset by short term external financing. For example, external short term financing was used to finance business investment projects and real estate developments. In addition, borrowing abroad was primarily done in either yen or dollars against projects that had their payoffs denominated in domestic currencies. There was no hedging activity to "buy insurance" against possible devaluations. When local currencies were devalued by considerable amounts, the borrowers were exposed to large, unexpected increases in liabilities. Currency mismatch was especially important because national currencies were pegged to the U. S. dollars. An unexpected depreciation in the Japanese yen severely impaired the competitiveness of exporters in these countries.

⁷ There appears to have been little effort in hedging of use of futures market.

Data reported by the Bank for International Settlements (BIS) has been used in cross section studies on the leading financial indicators. BIS data has been used to measure the rise in short-term debt, the change in the short-term capital outflows, and the maturity of the short-term outflows. The measures have been used are: (1) Short term capital outflows are measured as deposits of residents in BIS reporting banks; (2) the rise in debt is measured with short-term liabilities to BIS reporting banks; and, (3) the ratio of short term liabilities to total liabilities gives information on maturity of debt. An increase in short-term capital outflows, an increasing short-term debt, and arising or in the ratio of short-term liabilities to total liabilities would indicate rising risks of fragility or currency stress. Cross section studies show a threshold range of a 26% for risks of currency and banking problems. The chief problem with the BIS data is its frequency. The data on debt is available semi-annually while the short-term outflow data is available quarterly. There are no monthly statistics.⁸ Also, these indicators have not proven to be statistically significant in the CSS, despite the key role that capital flows have played in financial fragility and currency stress [Kaminsky, Lizondo, Rhinehart].

In Egypt there has been a downward trend in capital flight measured by the short-term capital outflows [Graph 4.15]. The trend in short-term capital outflows indicates no problem from capital outflows. However, the ratio of short-term debt of Egyptian residents to their total debt in BIS reporting banks has increased, but the deviations from the trend in the ratio have been very small [Graph 4.16]. The BIS capital flow data on Egypt does not indicate that risks in the capital account have been rising with regard to capital flight or sustainability of debt.

4.6. Conclusions

The review of the LFI in 1997 - 1999 presents a mixed picture of the status of the vulnerability of the national economy to pressure on the currency and financial fragility in the near term. Some LFI show stable trend behavior or even provide evidence of improving economic conditions. Clearly, there has been no large monthly change in the LFI that would indicate an impending crisis. Nevertheless, some changes in LFI are fairly large and in the direction pointing to an increased risks of vulnerability.

In the real sector, the recent performance has been impressive and reflects the persistence of economic stabilization policy. The domestic inflation rate has been in decline for some time and there is no recent evidence of its acceleration. In addition, the rate of economic growth has been stable in the 5% per year range, and although projected to be stable in the near term, might rise moderately. The evidence presented by asset prices is mixed, partly because of the nature of the stock market. The market has been sluggish in 1998 -1999. Clearly, external shocks have dampened Egypt's share market. However, it is likely this impact would moderate in the near term as investors return to stock markets in developing countries. In this regard, Egypt's favorable international ranking in several indices (IFC, etc.) would be important. The other factor in the share market has been the waning privatization initiative,

⁸ The BIS has recently combined its efforts with the IMF and the World Bank. The intent is to improve the accuracy of the data, frequency, and availability. BIS has opened an Internet web site.

which if momentum were restored, would give an impetus to market performance. Finally, the evidence presented by the domestic real interest rate does not signal a slowdown in economic growth or impending financial or currency stress in the near term. In general, the LFI in the real sector do not present notable evidence of vulnerability in the next 18 to 24 months.

In the financial sector the LFI present some mixed indications for concern, but do not imply an impending crisis. Not all the LFI in the financial sector show similar evidence. Two financial sector LFI have growth rates in the direction of rising risks. First, the growth rate of real bank deposits declined in 1998, probably reflecting mainly current account shocks, but also a slower pace in financial market activity. Second, there has been a rise in the ratio of real domestic credit to real GDP above its trend values [Graph 4.17). The surging growth in real domestic credit has been the main impetus behind this ratio. Alternatively, two LFI in the financial sector either give no evidence of impending problems of fragility. The M2 multiplier has not increased appreciably, but it might be constrained by non-market factors. The ratio of lending deposit rates is inconclusive because of the relative inflexibility of interest rates.

Although there has been no boom and bust in Egypt's financial sector in 1997-1999, there are questions about its resilience because of the dominance of the state-controlled banks and its relatively unsophisticated structure. While it is unlikely there would be extensive commercial bank privatization in the near future, guarantees, either implicit or explicit, increase moral hazard. In the meantime, the existence of institutional guarantees raises the issue of fostering risky loans. In this connection, the financial sector needs to gain more experience with "risk products" not only for its own benefit but also for bank customers. Education would not only be required for bank staff but also for the clientele.

The two LFI in the current account, export growth rates and REER appreciation, present evidence of problems in the future. Export growth rates signal external shocks in 1998 – 1999. The current account with its reliance upon commodity exports (oil, cotton), workers' remittances, and official transfers would remain vulnerable in the near term. The recent external shocks, partially reversed with the latest crude oil price recovery and a pick-up in tourism, illustrated the powerful depressing effect that the current account has on the economy. In the near term there is further scope for shocks because of changed labor force policies in the Gulf countries that would reduce worker remittances, perhaps significantly. It is also important to stress that official transfers, an important financing item in the balance of payments, are not a reliable source of foreign exchange receipts. Policy changes and random factors could have an impact upon such receipts.

Another current account factor is appreciation of the exchange rate. The REER presents some indications about potential problems stemming from the current account. Despite the difficulties in determining the equilibrium REER, Egypt's REER, which is closely related to the US dollar REER, has appreciated but recently, the appreciation has dampened. The question is how much appreciation is sustainable. This recent appreciation of the Egyptian Pound, especially if it is sustained, merits the attention of the authorities and should be monitored carefully in the next months.

In the capital account two LFI also give signals of rising risks of vulnerability. The growth rates of official international reserves of the Central Bank of Egypt have been declining since late 1997. There are two reasons that would explain the decline in international reserves.

First, the shocks to exports and service receipts have widened the current account deficit. The stocks have also widened the fiscal deficit by reducing oil revenues in the budget.

Second, the fast growth of domestic credit, especially in 1998 and 1999 has likely spilled over into imports. High growth in domestic credit and liquidity, if not curbed, could ultimately pressure the currency by loss of international reserves. Another indicator of increased risk is the recent rise in the ratio of M2 to international reserves that indicates the maximum amount of speculative pressure that could be mounted against the currency. This ratio which was very high in the early 1990s, moderated to about 3.0 but it now stands at 3.7. Again, the high liquidity growth and falling international reserves are important factors behind this development. Monetary policy to curtail the high growth of domestic credit would arrest the trend and perhaps even reverse it because domestic liquidity pressure on international reserves would abate.

The third, capital account indicator, the real interest rate differential with the U.S. dollar, gives no indication of problems. There has been no large widening in the size of the gap. However, the short-run projection is for higher short-term U.S. dollar rates resulting from Federal Reserve System monetary policy action. This action could contribute to narrowing the differential on the Egyptian Pound if relative rates are constant.

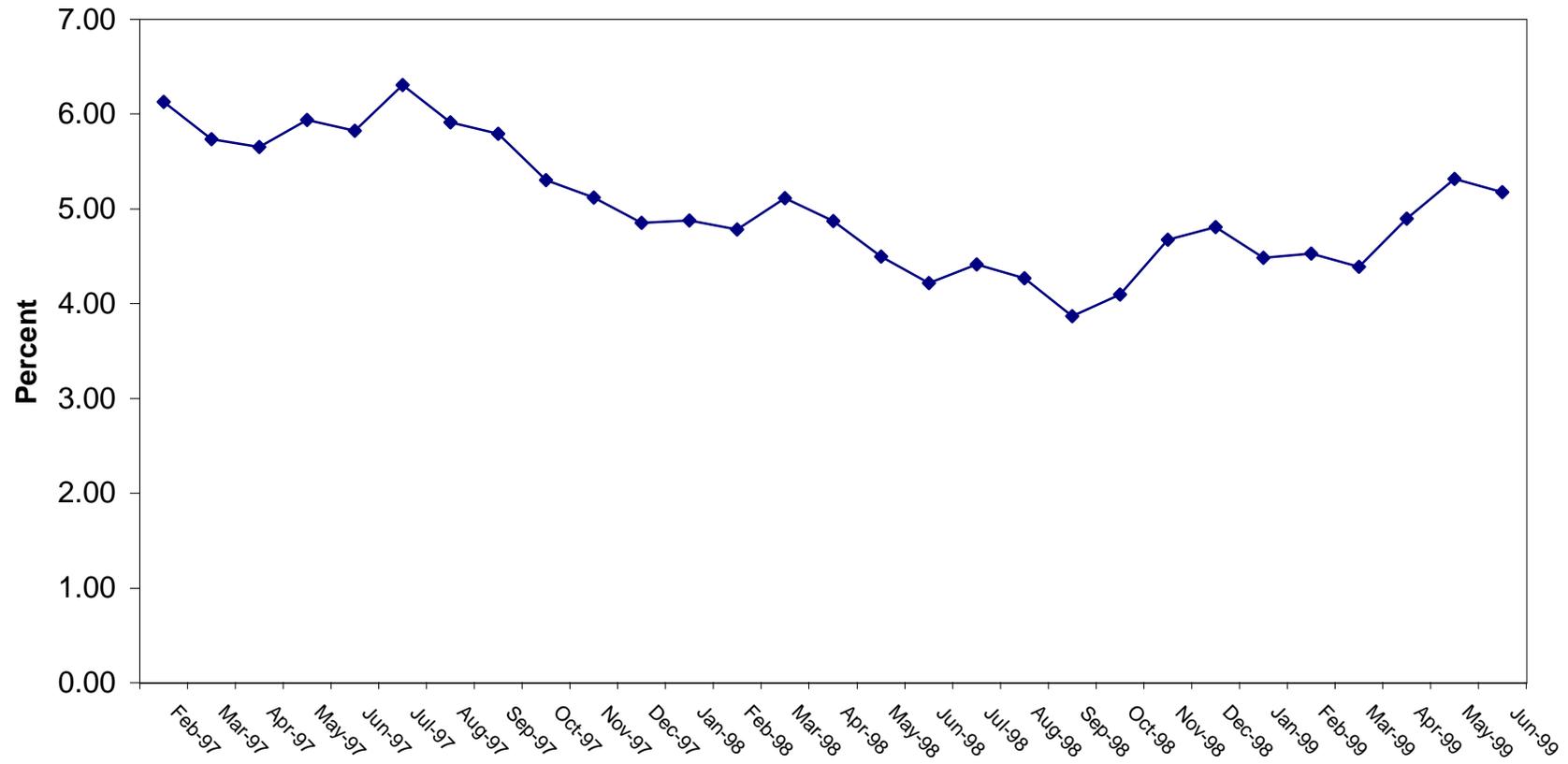
Finally, two capital account LFI on capital outflows and debt do not suggest any impending problems.

In summary, the analysis of the LFI has shown that indicators in the real sector of the economy portray a record of economic stability. Clearly, the record of economic growth and a declining inflation rate has demonstrated that the real sector of the Egyptian economy is robust. There are no appreciable risks of vulnerability in the real sector. In contrast, some, but not all LFI in the financial sector, the current account, and the capital account suggest there could be rising of vulnerability in the near term. Policy action would be important in lowering the risks.

Strengthening economic policies would be strategic in the near term. Much of the vulnerability can be attributed to inadequate (or inconsistent) monetary, financial, and foreign exchange rate policies. Monetary policy, currently allowing high growth in domestic credit and inflexible interest rates, increases the risk of a currency crisis. Monetary policy needs to curb the growth in domestic credit and promote flexible interest rates on deposits and loans. Financial policies that preserve state control in commercial banking with heavy guarantees against insolvency foster a financial system that is inefficient, inadequately developed, and not resilient. Typically, such a system does not assess risks accurately and could lead to financial fragility. More privatization in commercial banking would broadly improve efficiency in finance and, in the process, give a stimulus to the stock market.

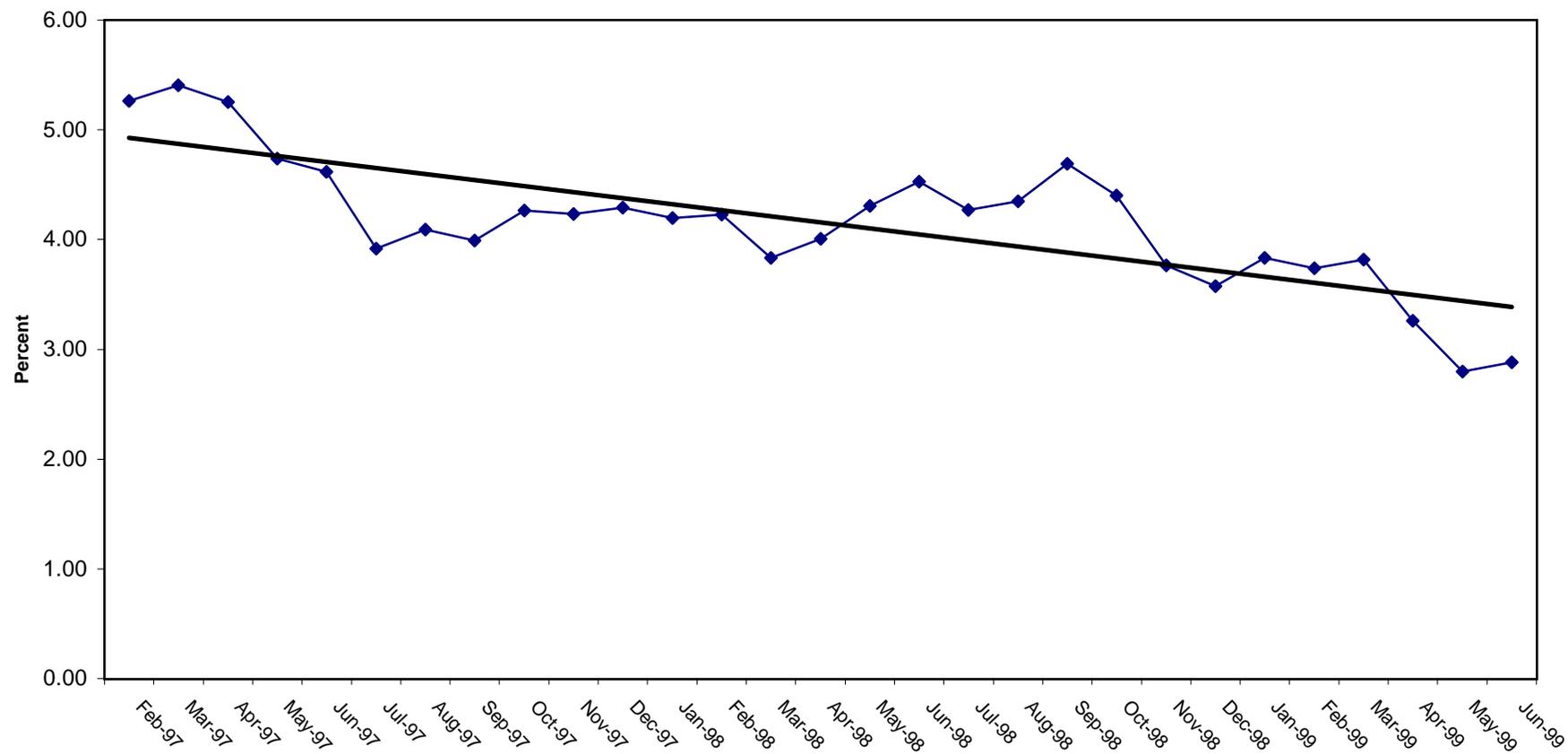
Regarding exchange rate policy, although the peg to the dollar contributed to the past stabilization effort, the ability to withstand severe shocks in the external sector needs to be improved with more flexibility in the dollar exchange rate. In this regards, the currency could be stabilized within the pegged rate system by using a “basket” that reflects Egypt’s international trade and investment linkages. It is important to recognize that the external effects on the exchange rate come not only from the current account but also from the capital account.

Graph 4.1: Annual Growth Rate of Real GDP



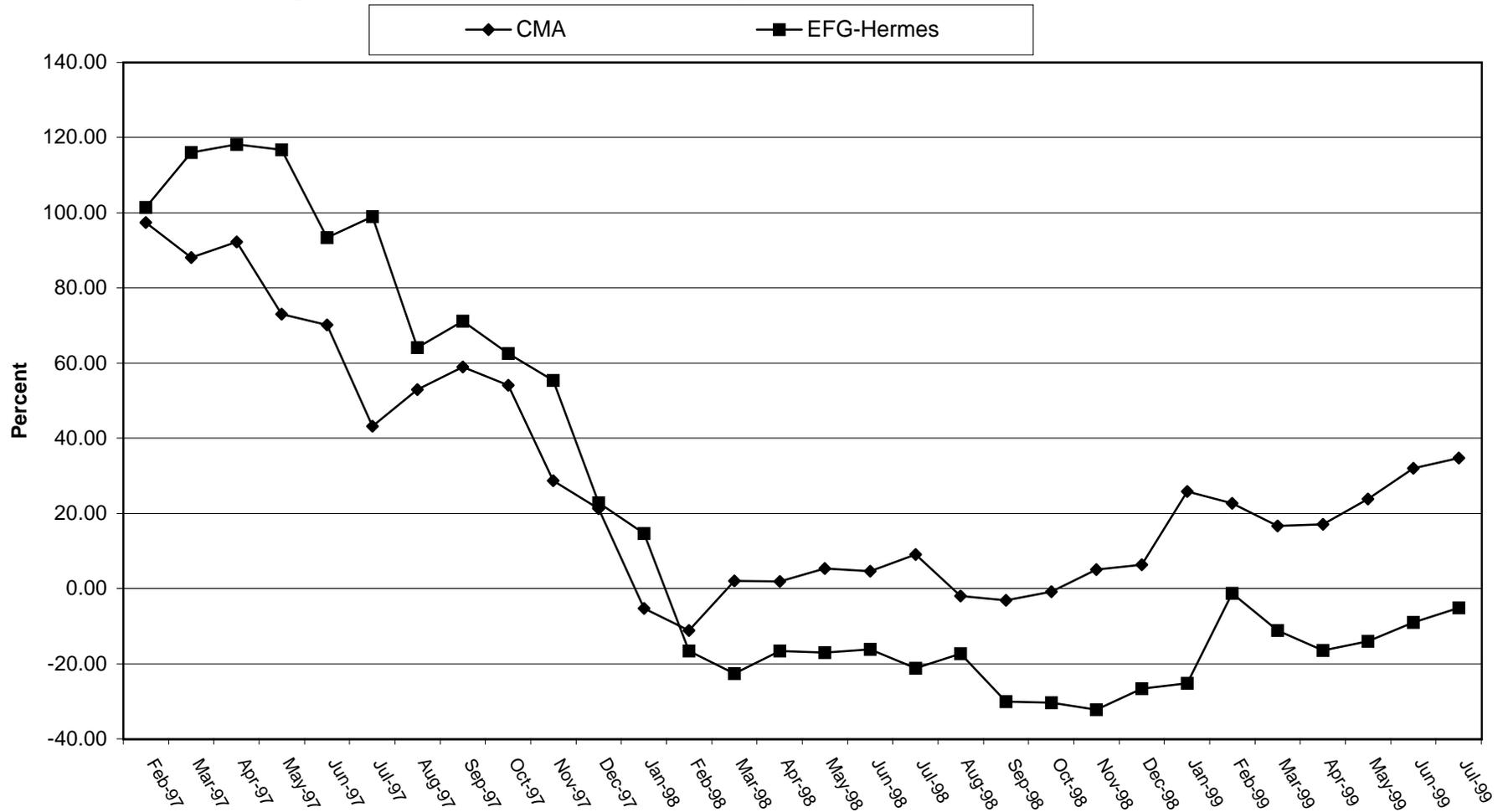
Source of Data: IMF, IFS Database, September 1999.

Graph 4.2: Annual Inflation Rate



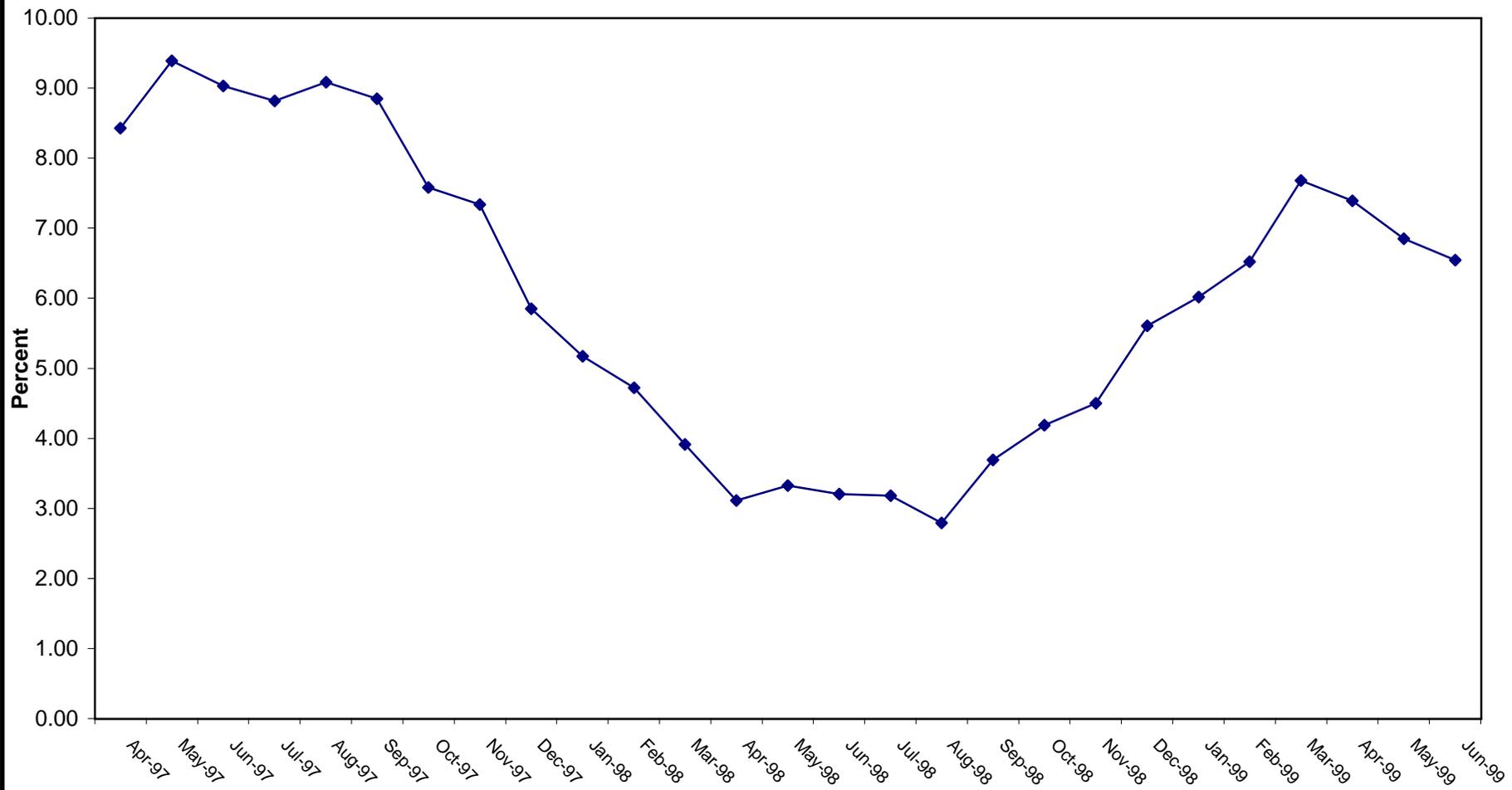
Source of Data: IMF, IFS Database, September 1999.

Graph 4.3: Annual Rate of Change in Major Indexes of Stock Prices



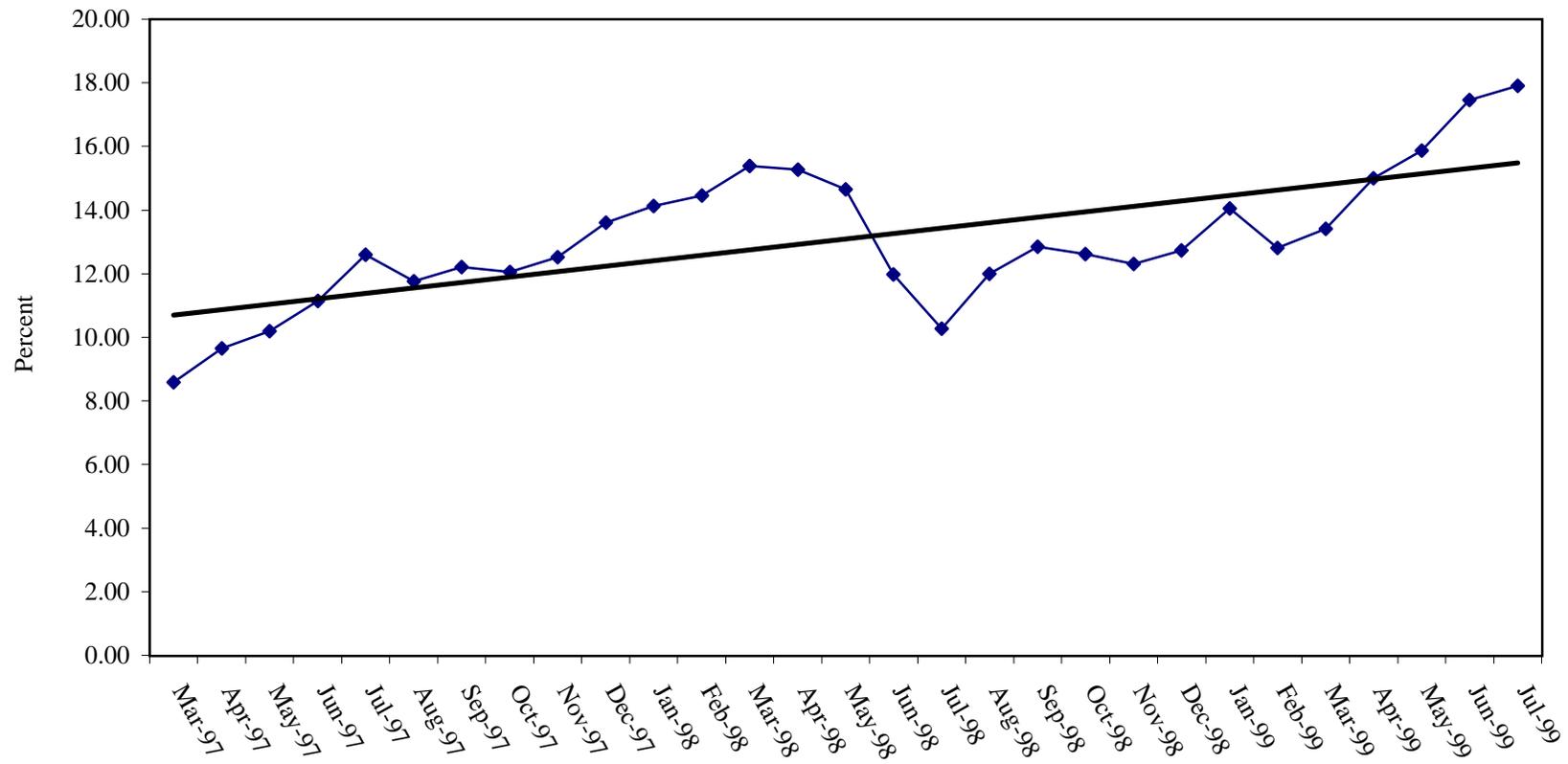
Source of Data: EFG Hermes, Egypt.

Graph 4.4: Annual Growth Rate of Real Total Bank Deposits



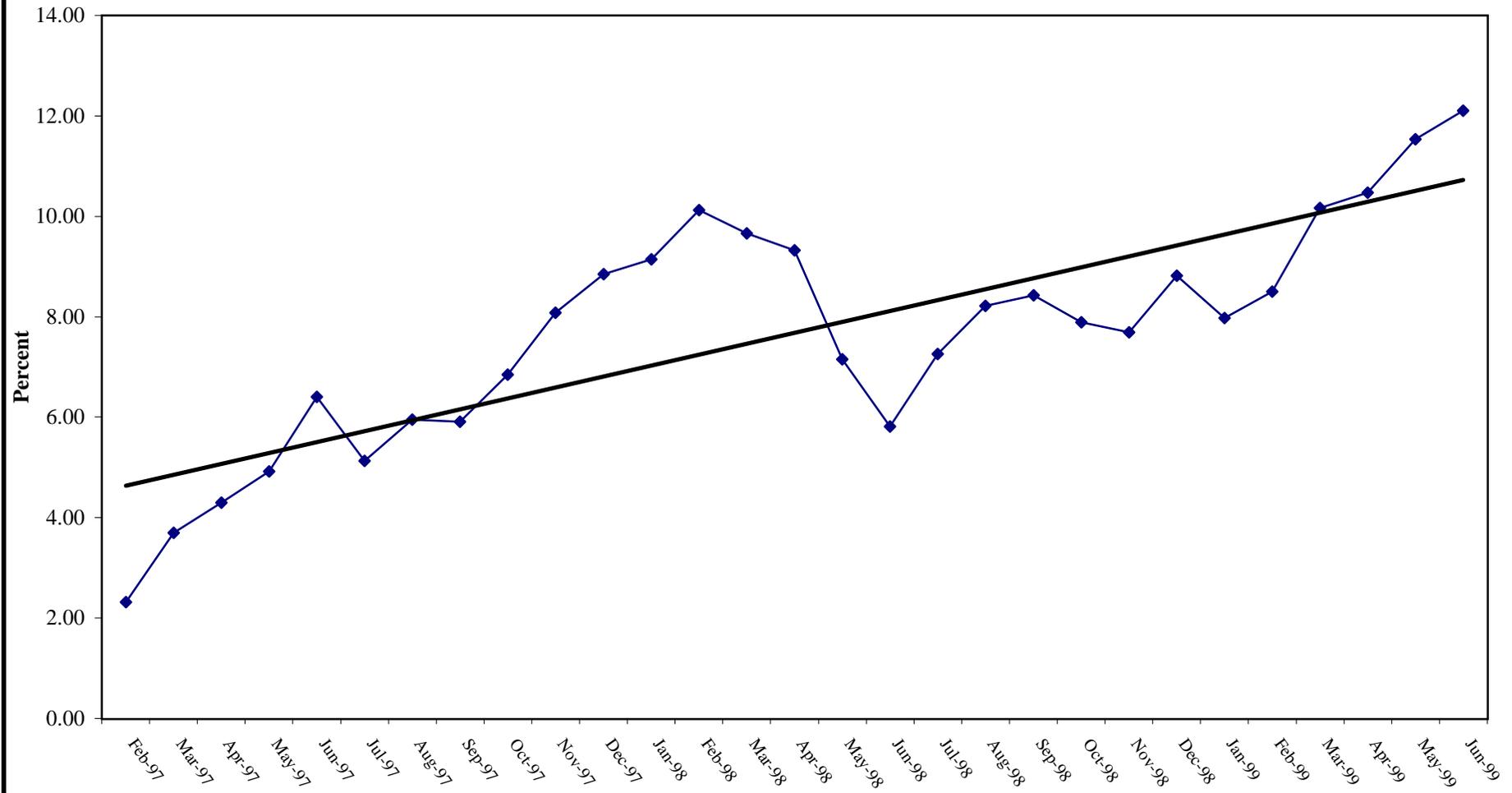
Source of Data: Central Bank of Egypt, Monthly Statistical Bulletin, various issues.

Graph 4.5: Annual Growth Rate of Real Domestic Credit



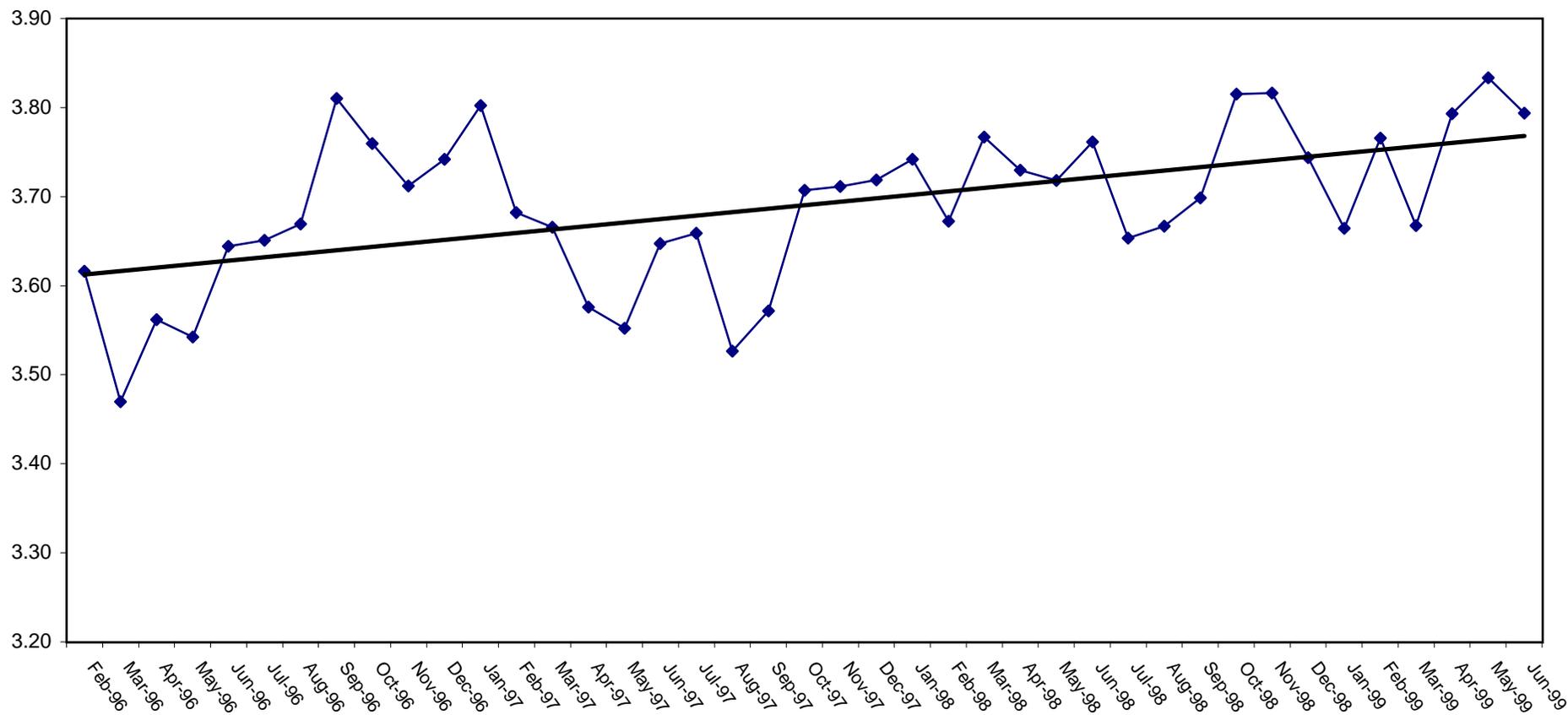
Source of Data :Central Bank of Egypt, Monthly Statistical Bulletin, various issues.

Graph 4.6: Annual Growth Rate in the Ratio of Real Domestic Credit to Real GDP



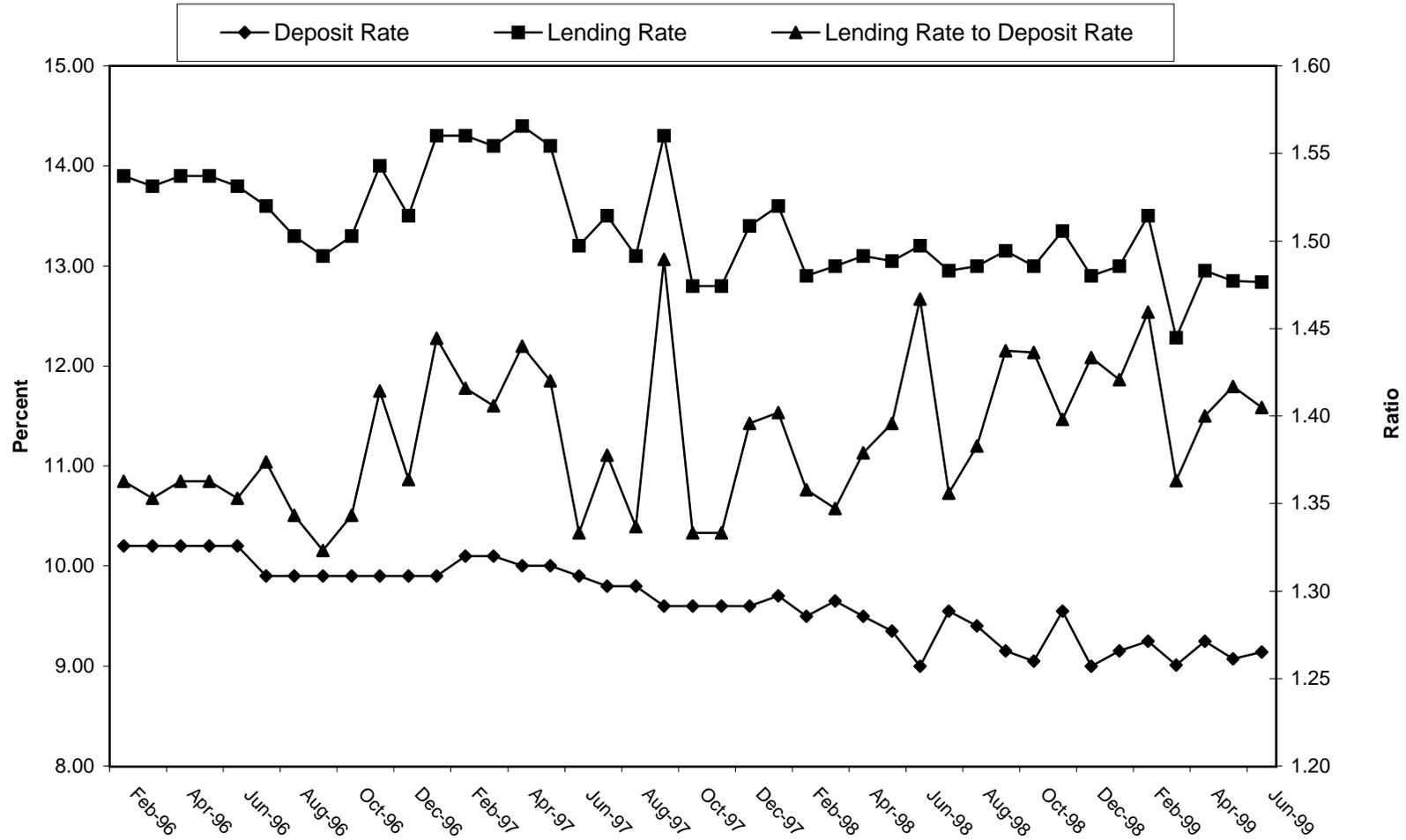
Source of Data: Central Bank of Egypt, Monthly Statistical Bulletin, various issues, IMF, IFS Database, September 1999.

Graph 4.7: M2 Multiplier



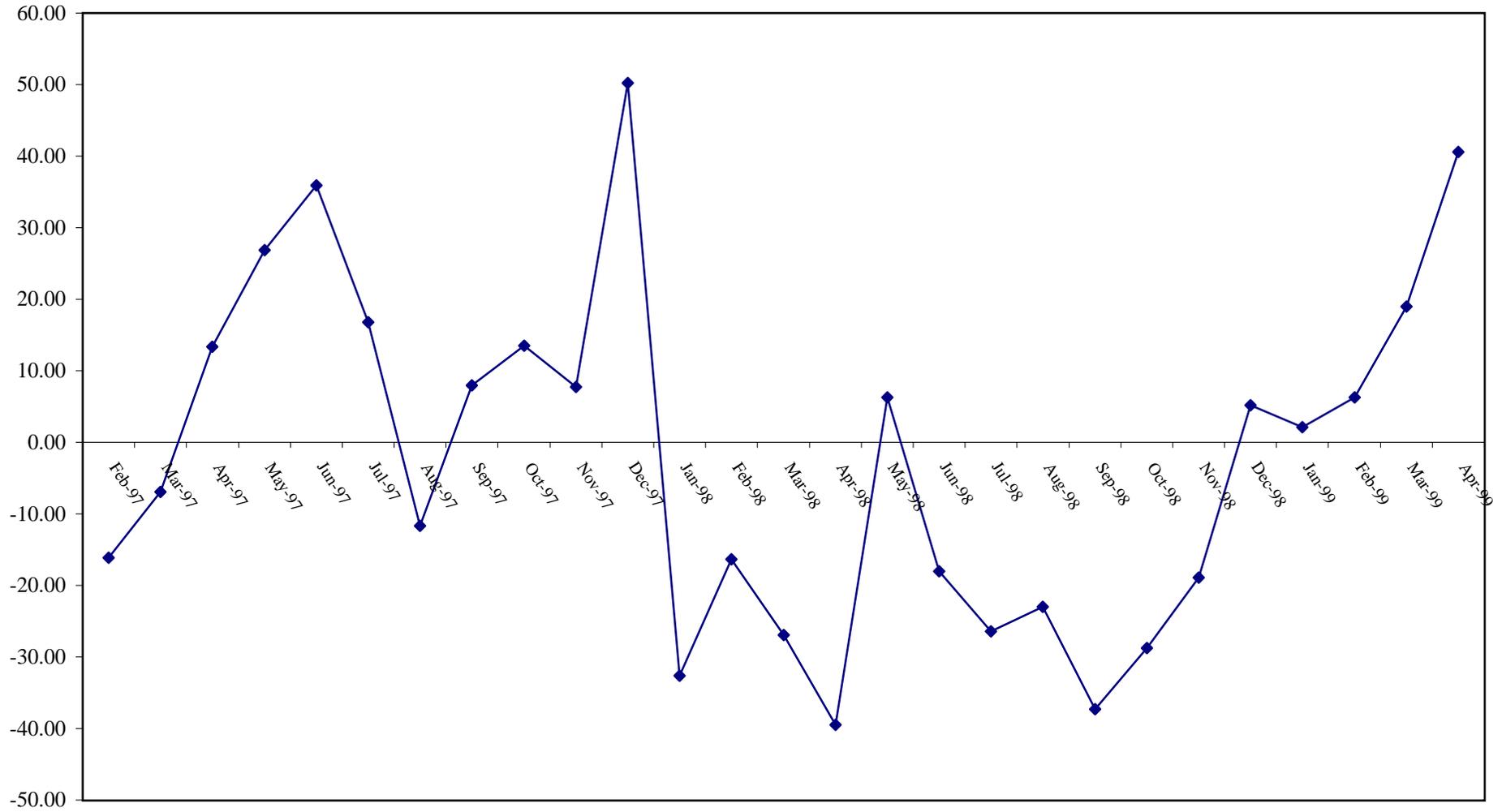
Source of Data: Central Bank of Egypt, Monthly Statistical Bulletin, various issues.

Graph 4.8 : Lending and Deposit Interest Rates and Their Ratio



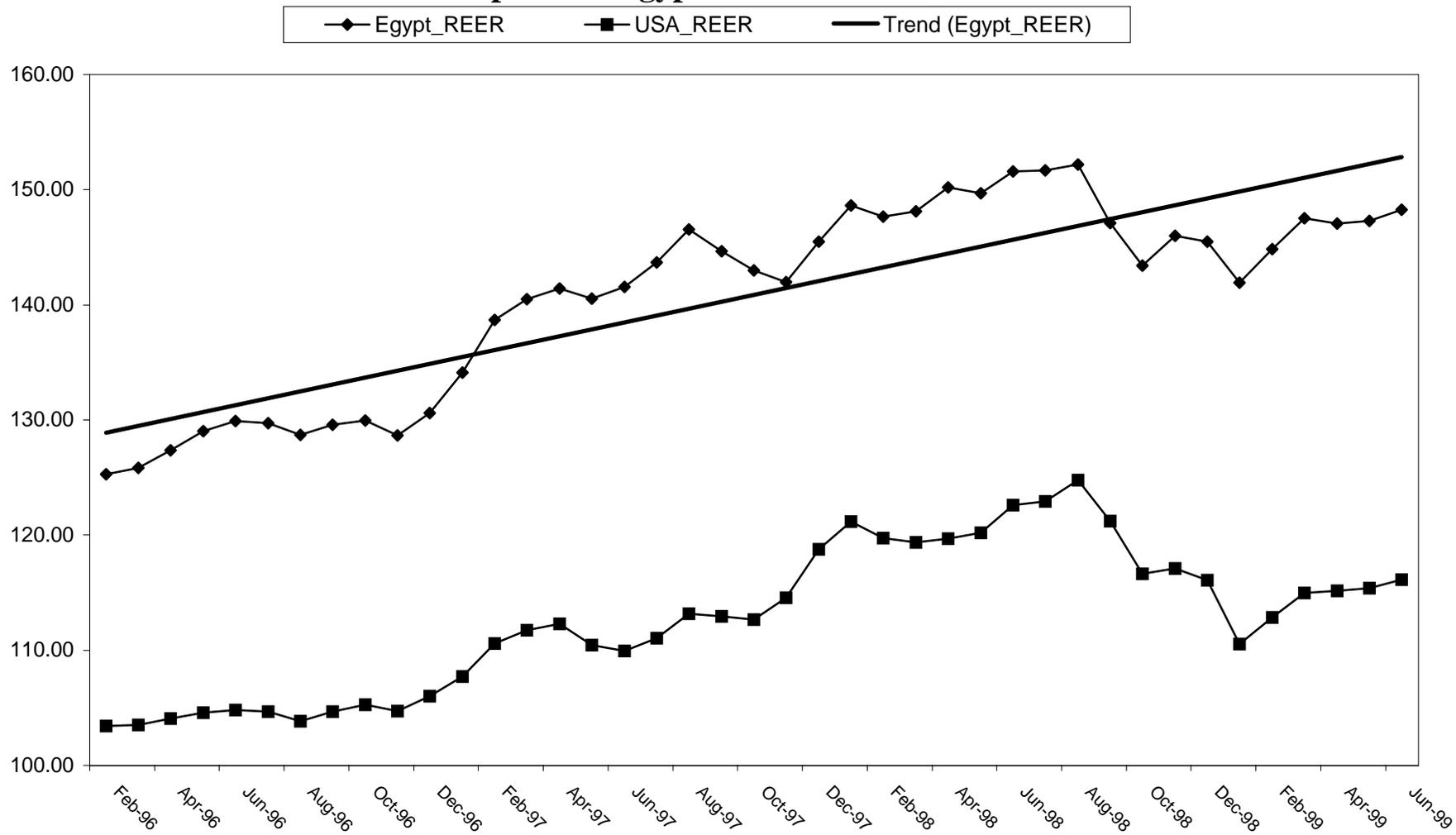
Source of Data: Central Bank of Egypt, Monthly Statistical Bulletin, various issues.

Graph 4.9: Annual Growth Rate of Exports



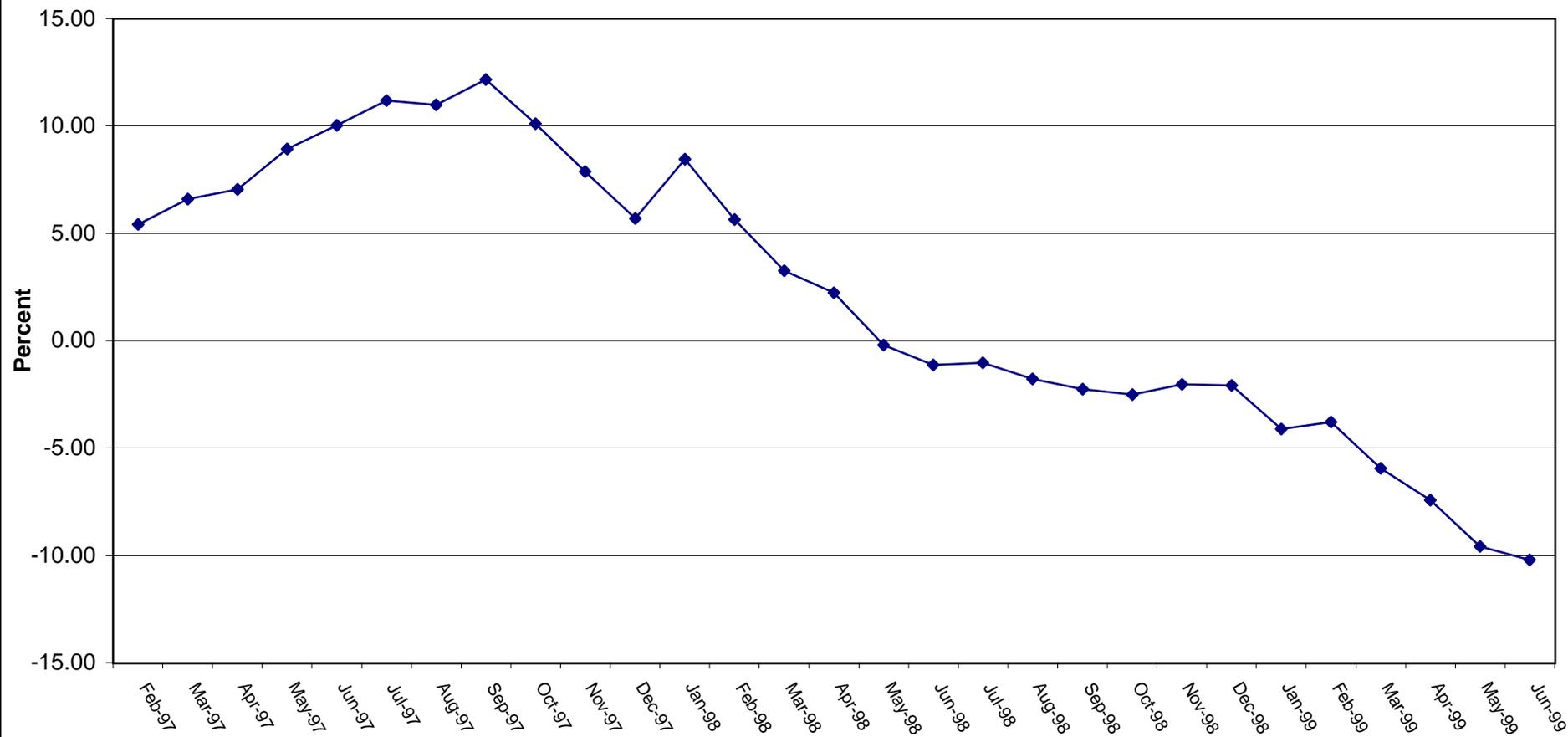
Source of Data: IMF, IFS Database, September 1999.

Graph 4.10: Egypt REER vs. USA_REER



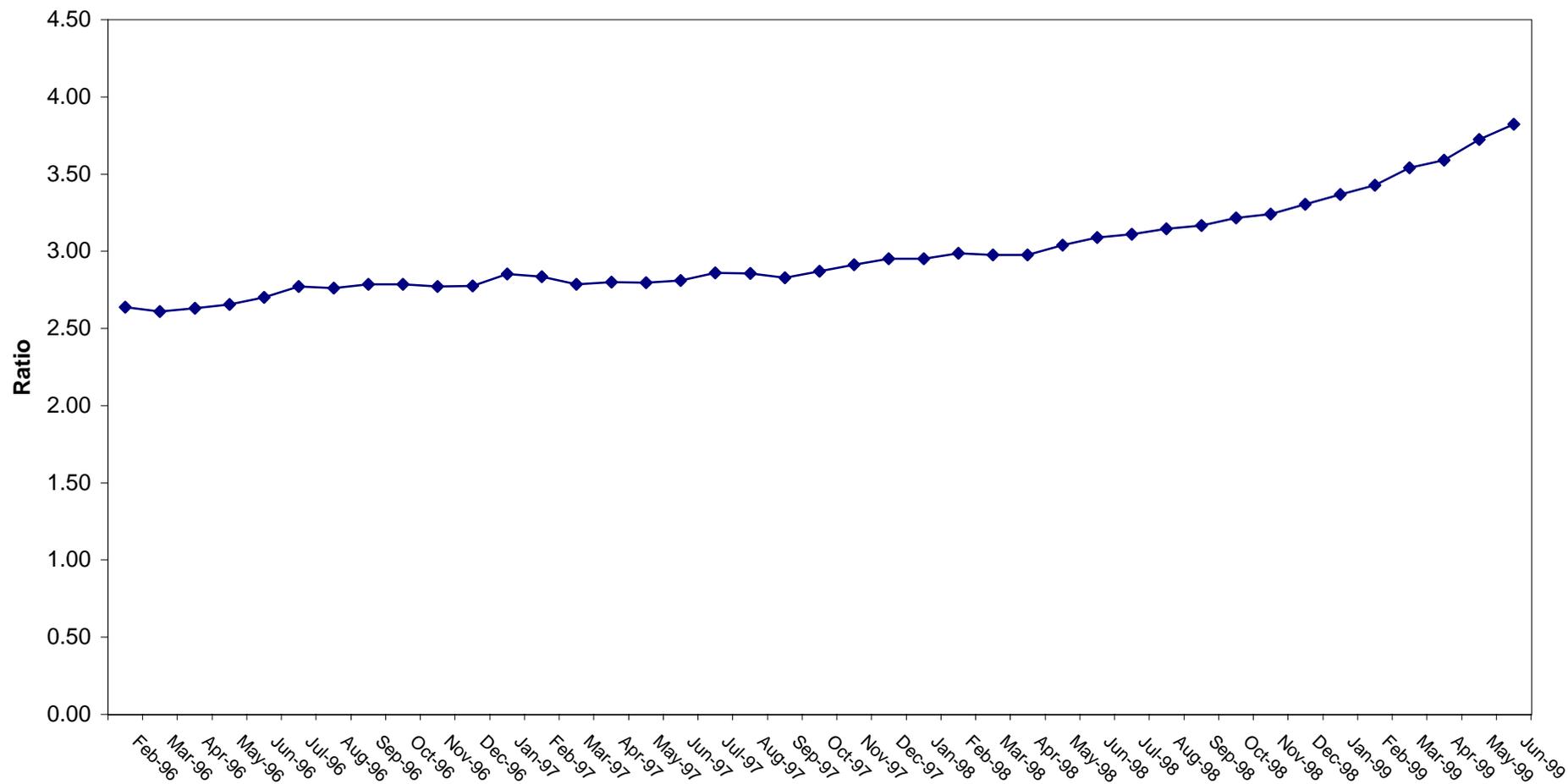
Source: IMF, IFS Database, September 1999.

Graph 4.11: Annual Growth Rate of International Reserves



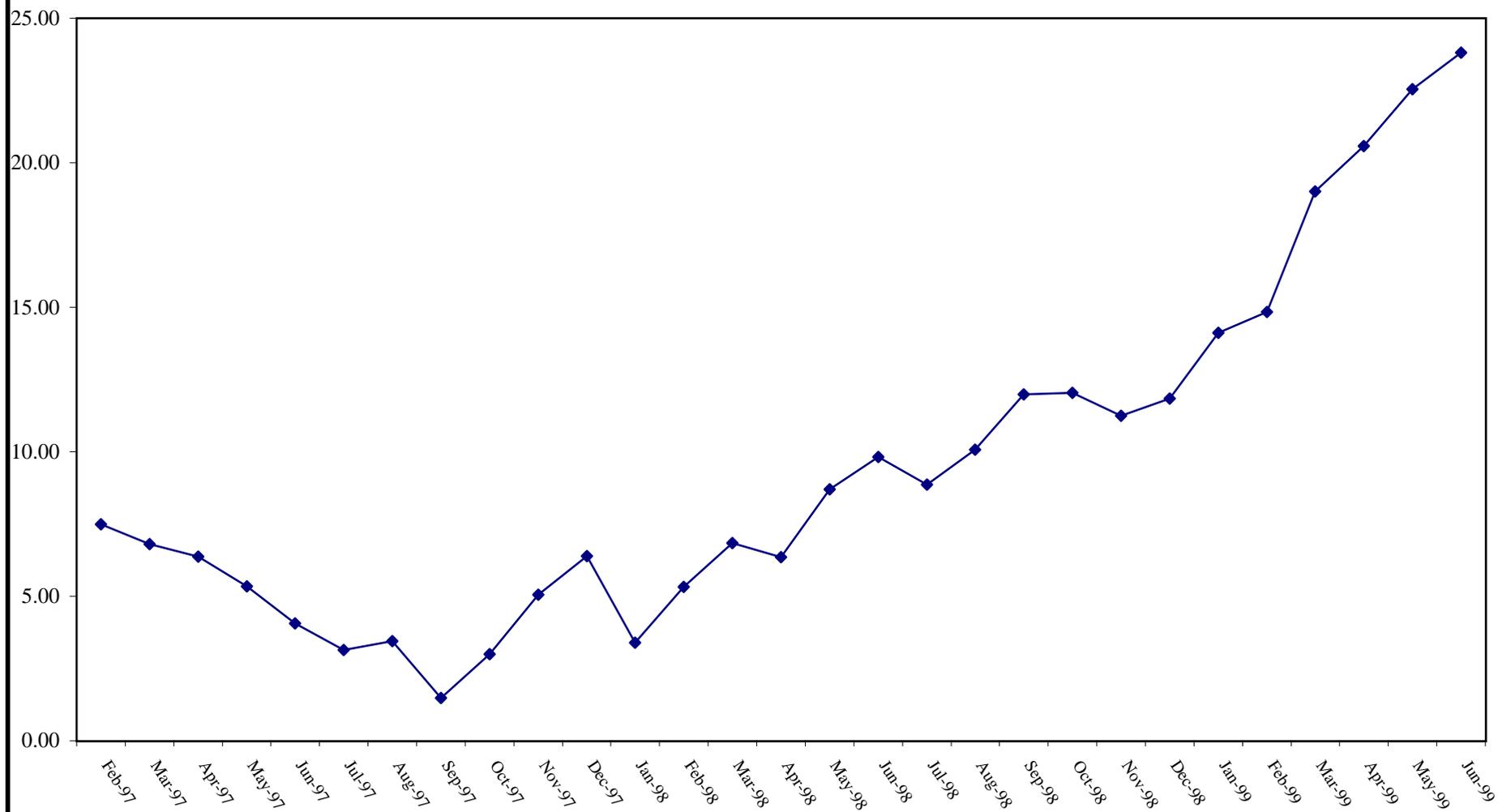
Source of Data: IMF, IFS Database, September 1999.

Graph 4.12: Ratio of M2 to International Reserves



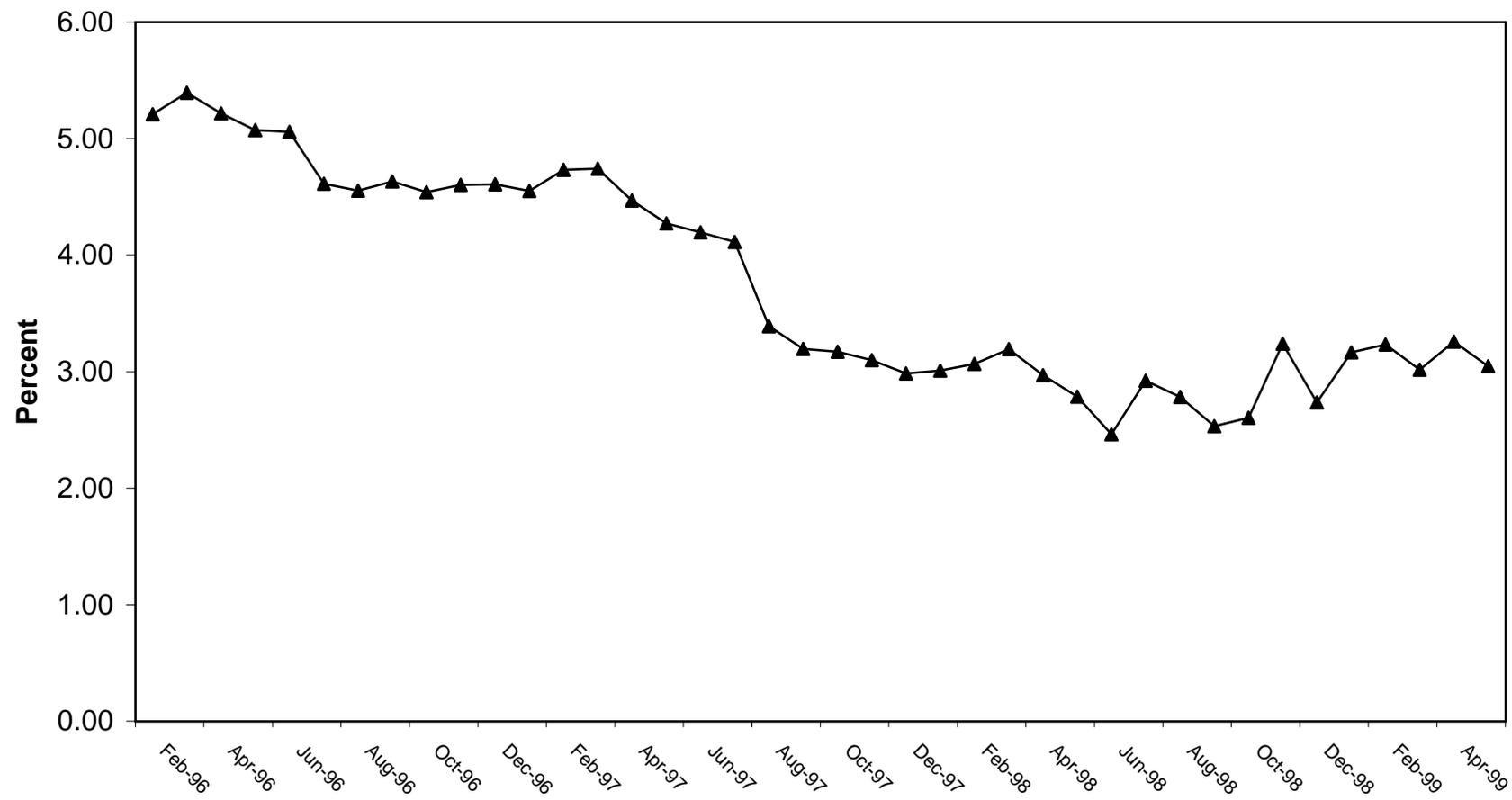
Source of Data: IMF, IFS Database, September 1999.

Graph 4.13: Annual Growth Rate of the Ratio of M2 to International Reserves



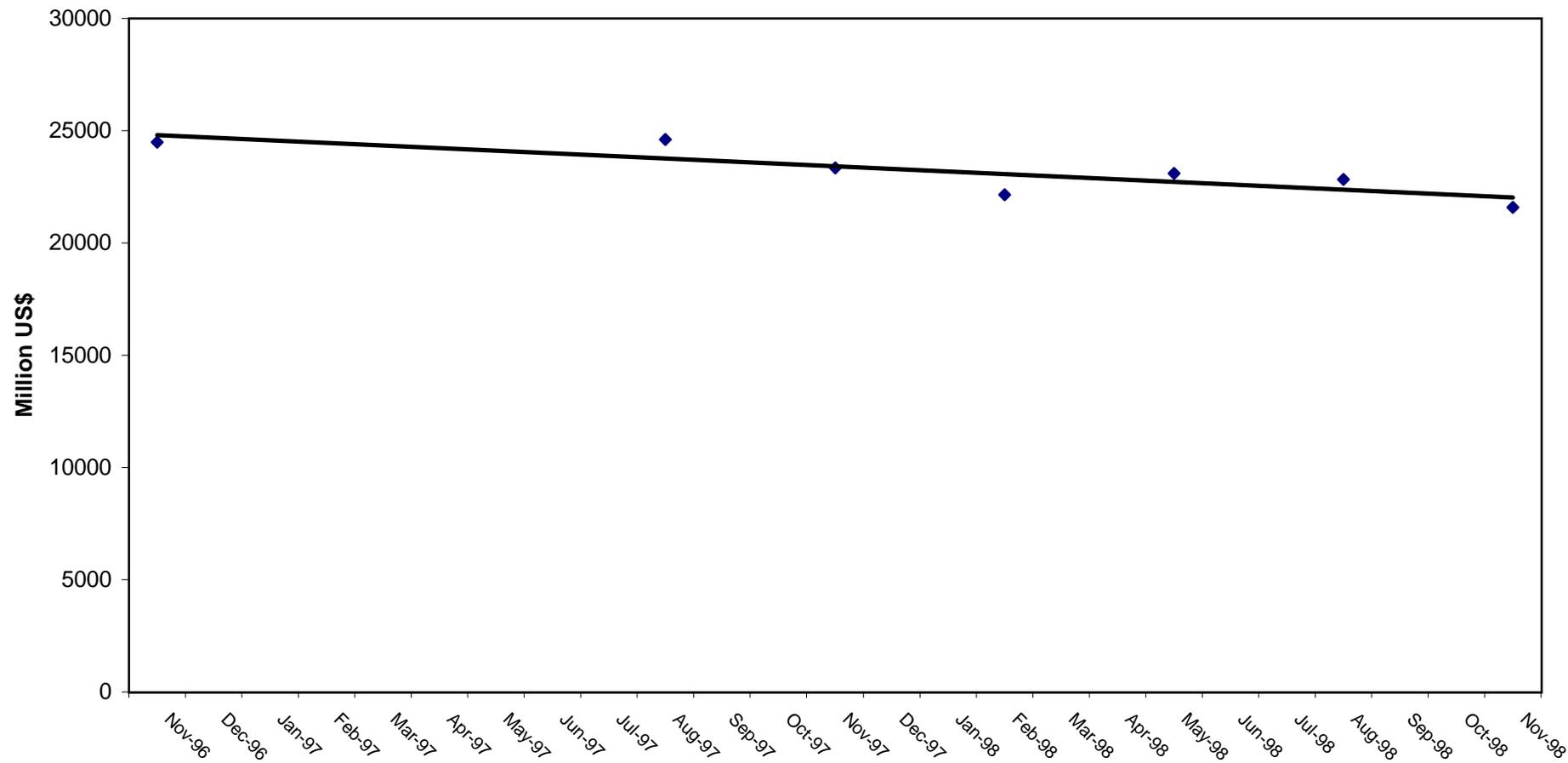
Source of Data: IMF, IFS Database, September 1999.

Graph 4.14: Real Interest Rate Differential (Egypt- US Real Interest Rates)



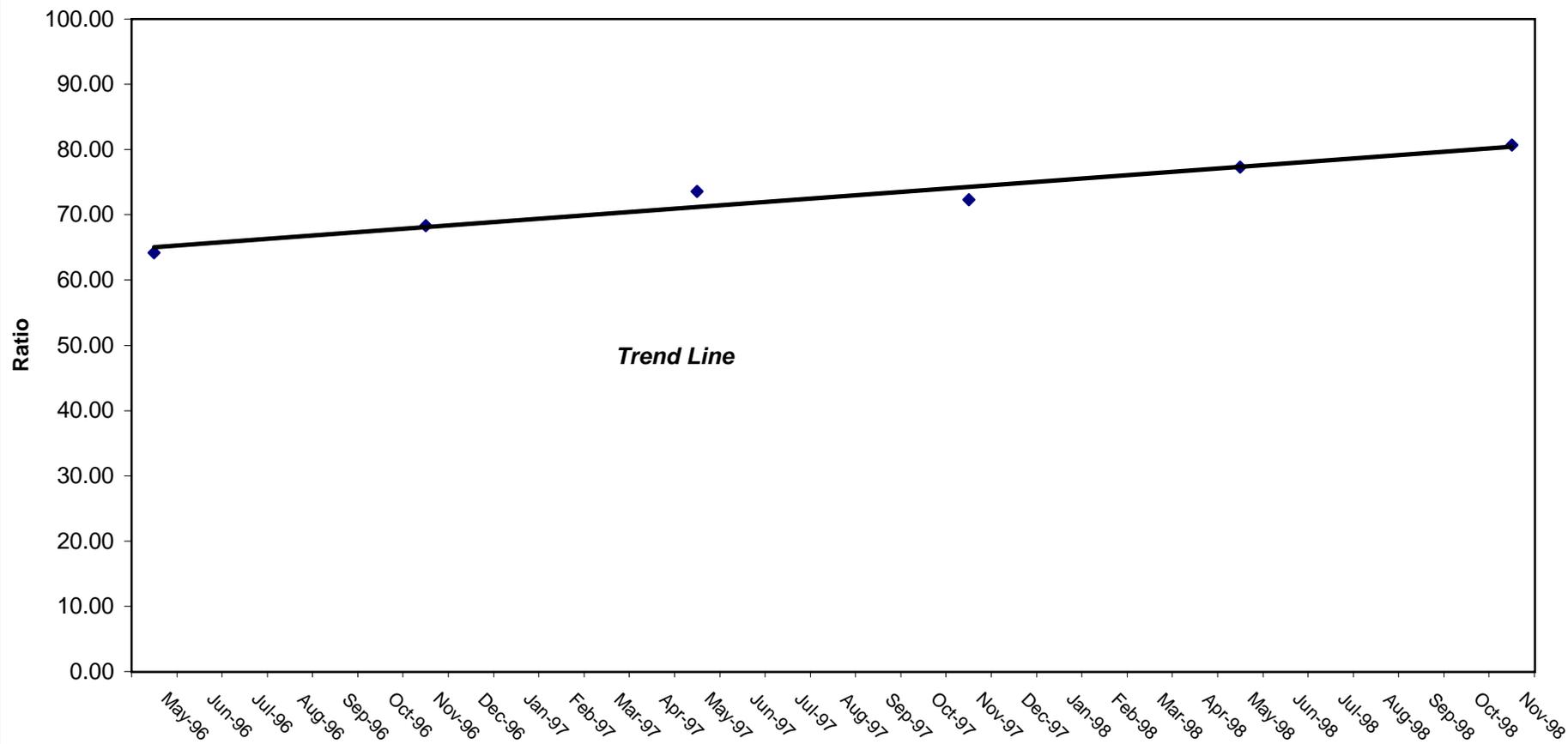
Source of Data: IMF, IFS Database, September 1999.

Graph 4.15: Short Term Capital Outflows



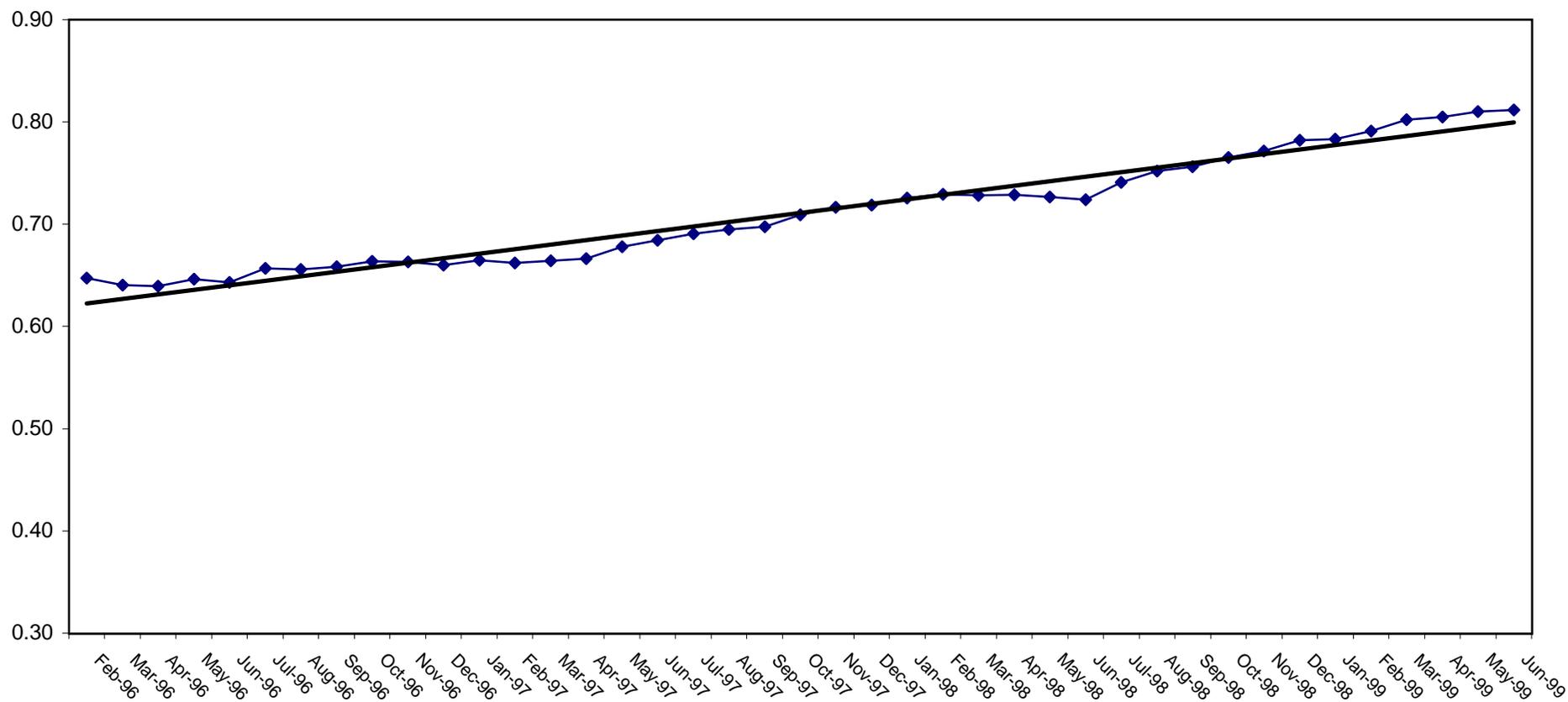
Source of Data: BIS Banks.

Graph 4.16: Ratio of Short Term Debt to Total Debt



Source of Data: IMF, IFS Database, September 1999.

Graph 4.17: Ratio of Real Domestic Credit to Real GDP



Source of Data :Central Bank of Egypt, Monthly Statistical Bulletin, various issues; IMF, IFS Database, CD-Rom

5. Sample Quarterly Report

Ministry of Economy and Foreign Trade Leading Financial Indicators Quarterly Report: April to June 1999

1. The Leading Financial Indicators

This report assesses the current risks to financial fragility or currency stress from the performance of Egypt's leading financial indicators.¹ The leading financial indicators are not predictors of events; they are measures of phenomena in the economy that have proven to be useful in guiding analysis about financial fragility and currency stress. The leading financial indicators (LFI) are discussed by sector of the economy in the following sections and some conclusions and policy inferences are presented at the end of this report. The main conclusion is that five leading financial indicators in the financial and external sectors suggest there are rising risks in the near term.

A. General Economy

The LFI show the real sector of the economy as one where inflation has been declining and the real GDP growth rate has been stable. Both falling inflation and sustained economic growth indicate that risks of financial fragility or currency stress originating in the general economy were very small or even absent in the second quarter of 1999. Financial fragility is defined as rising insolvencies in commercial banking while currency stress is defined as a degree of pressure on the foreign exchange rate to devalue.

The inflation rates in April to June were below rates for the past quarters. Economic growth, which has been estimated at 5% per year in 1999, has changed little from last year. These LFI would indicate that the persistence of the stabilization policy has helped to lower the economy's vulnerability to financial and currency crises.

B. Financial Sector

In the financial sector the key LFI in banking, the money market, and the stock market indicate that the risks of vulnerability are increasing. The upward movement in two credit LFI implies rising risks in the near term. There has been a continuing expansion of real domestic credit, which in turn has contributed to an increase in the ratio of domestic credit to GDP. Real domestic credit, which is the main component of sharply rising liquidity, has been growing fast for many quarters. For example, the

¹They are derived from the Central Bank of Egypt *Monthly Statistical Bulletin* (September 1999) and other information as noted.

annual growth rate of real domestic credit increased from 10.3% in June 1998 to 17.9% in June 1999 [Graph 3].² Since the rise in real domestic credit has been larger than the estimated real GDP growth, the ratio of domestic credit to GDP has risen also and was estimated at 0.81 in June 1999, up from 0.72 in June 1978 [Graph 4]. The concern is that domestic credit has been rising too fast.

Typically, excessive money and credit are associated with loss in international reserves in the pegged exchange rate system according to the Mundel-Flemming model. Regarding the funding of bank assets, the LFI indicator shows that the commercial bank deposit base has been robust, but the annual growth rate of real total bank deposits has decreased slightly from 7.7% in March 1999 to 6.5% in June 1999 [Table 1].

The leading indicators of asset market prices show there has been no collapse in share prices that would be associated with an impending recession and related pressures on commercial banking and finance. The monthly changes in the two LFI have been relatively small in the last quarter. The EFG-Hermes Index, an index measuring actively traded shares, has had negative growth rates since February 1998. The CMA Index, measuring the average price of all listed shares, shows that share prices have risen in the last quarter. In general, the LFI portray a stock market with little momentum.

The LFI pertaining to money market rates do not present any indications of surging rates precipitating either a slow down in investment or instability in the banking system. Real interest rates have been stable. In June 1999 the real interest rate was 7.6%, near rates that have prevailed for a year. This LFI reflects relatively stable inflation and inflexible short-term interest rates. The commercial banks' loan portfolios have probably not deteriorated in quality. The LFI that measures the quality of the banks' loan portfolio is the ratio of the short-term lending to deposit rates. The ratio has been virtually unchanged in the last year.

C. External Sector

The LFIs in the external sector portray a current account that is vulnerable to shocks and possible deterioration in competitiveness while vulnerability in the capital account has risen because of liquidity growth and loss of international reserves. These developments suggest the risks of financial fragility and currency crises are increasing.

Export performance has been unremarkable, partly because of the external shocks to crude oil prices and commodity prices and from appreciation of the real effective exchange rate (REER). The main shock impacting upon Egypt's exports was a dramatic fall in crude oil prices stemming from a decline in global oil demand. The LFI that measures export performance--the annual rate of export growth--clearly shows the external shocks in 1997 extending into 1999 [Graph 13]. Typically,

² A rate last observed in March 1991 when inflation was at 16.7% per year.

negative export growth is an LFI that implies pressure on the currency, and would ultimately have an adverse impact upon the financial system. However, the impact of declining exports could be partially mitigated in the next quarters because of a major recovery in global crude oil prices in mid-1999.

The appreciation of the REER is an important LFI signal of currency stress. Sustained appreciation of the REER in Egypt raises concerns about competitiveness. In this connection, large post-crisis devaluations of Asian currencies have significantly improved Asia's competitiveness and this might impact not only on Egyptian imports but also exports. In general, the appreciation of Egypt's REER has tracked the U. S. dollar REER closely [Graph 16].³

The REER in Egypt has appreciated considerably. For example, it grew by 19% from February 1996 to June 1999, and by 4.7% from January 1999 to June 1999. Some of the past appreciation was driven by fundamentals. The REER depreciated during the last two quarters of 1998, but resumed its upward trend in the first two quarters of 1999 [Graph 16 and Table 5].

The two powerful LFIs in the capital account imply that pressures on the exchange rate and the banking system are rising. The net official reserves of the Central Bank of Egypt declined by 4.5% from \$18,920 million in March 1999 to \$18,065 million in June 1999 [Graph 19]. The rising ratio of M2 to international reserves indicates there was increased vulnerability to a speculative attack on the currency. This ratio was 2.8 in June 1998 and registered 3.8 in June 1999, an increase of 35% [Graph 5].

D. Conclusion and Policy Views

In summary, five leading financial indicators imply there are rising risks of vulnerability to financial fragility and currency stress. The chief factors that are contributing to greater near term vulnerability are rising growth in domestic credit, poor export performance, and declining official international reserves.

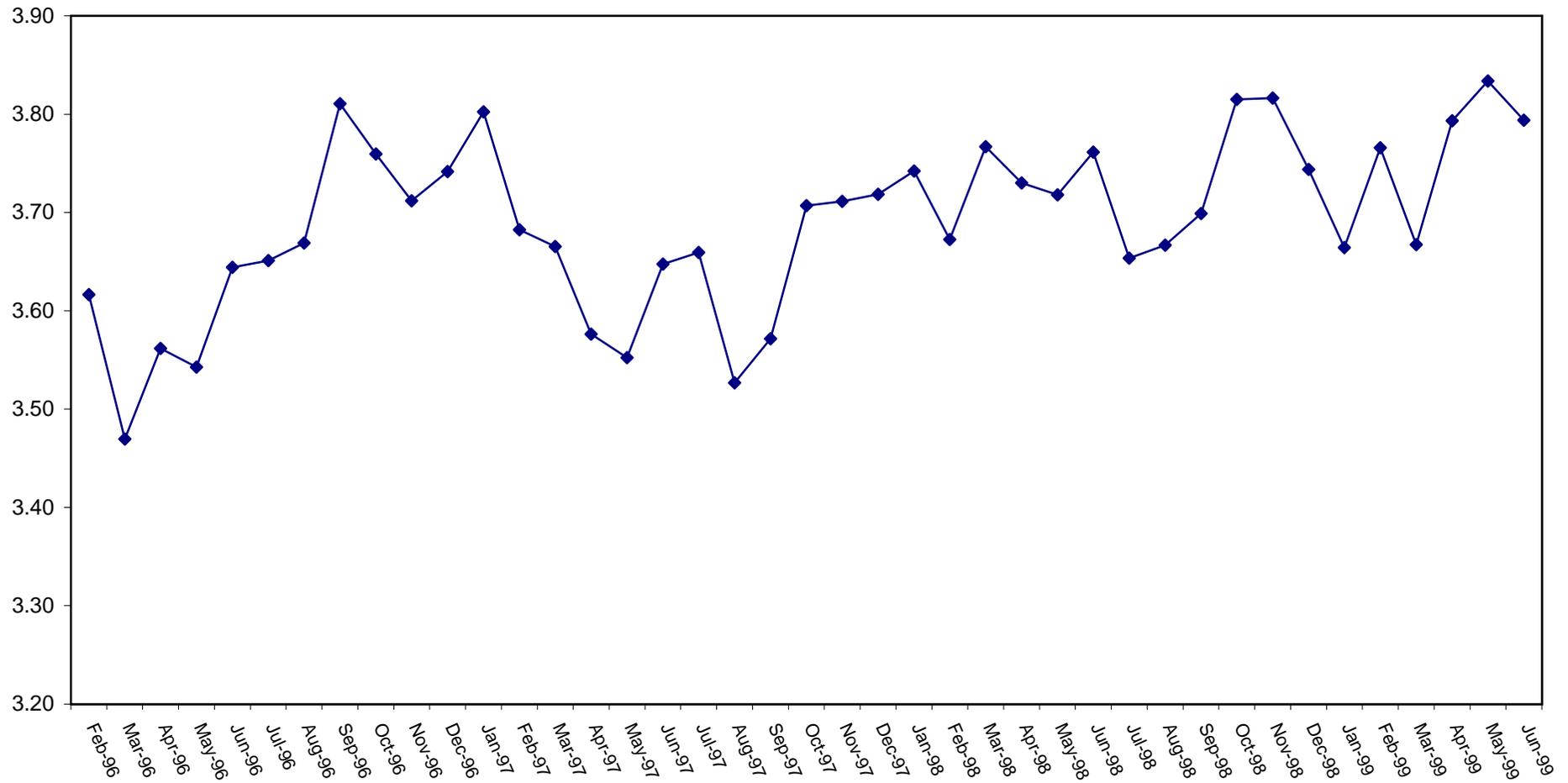
There are two economic policy inferences that might be considered, especially if recent developments in the financial sector and the external sector are sustained. First, the high growth of domestic credit should be reduced. The slower growth of money and credit would bring liquidity growth closer into line with the demand for money. Second, there is a question about appreciation of the real effective exchange rate. Although there are some long term fundamentals supporting it, short-term movements in the US dollar might have moderated the appreciation in the current quarter. Nevertheless, it may be necessary to introduce more exchange rate flexibility in the near future.

³ REER data are from the IFS CD-ROM September 1999.

Table 1: Leading Financial Indicators

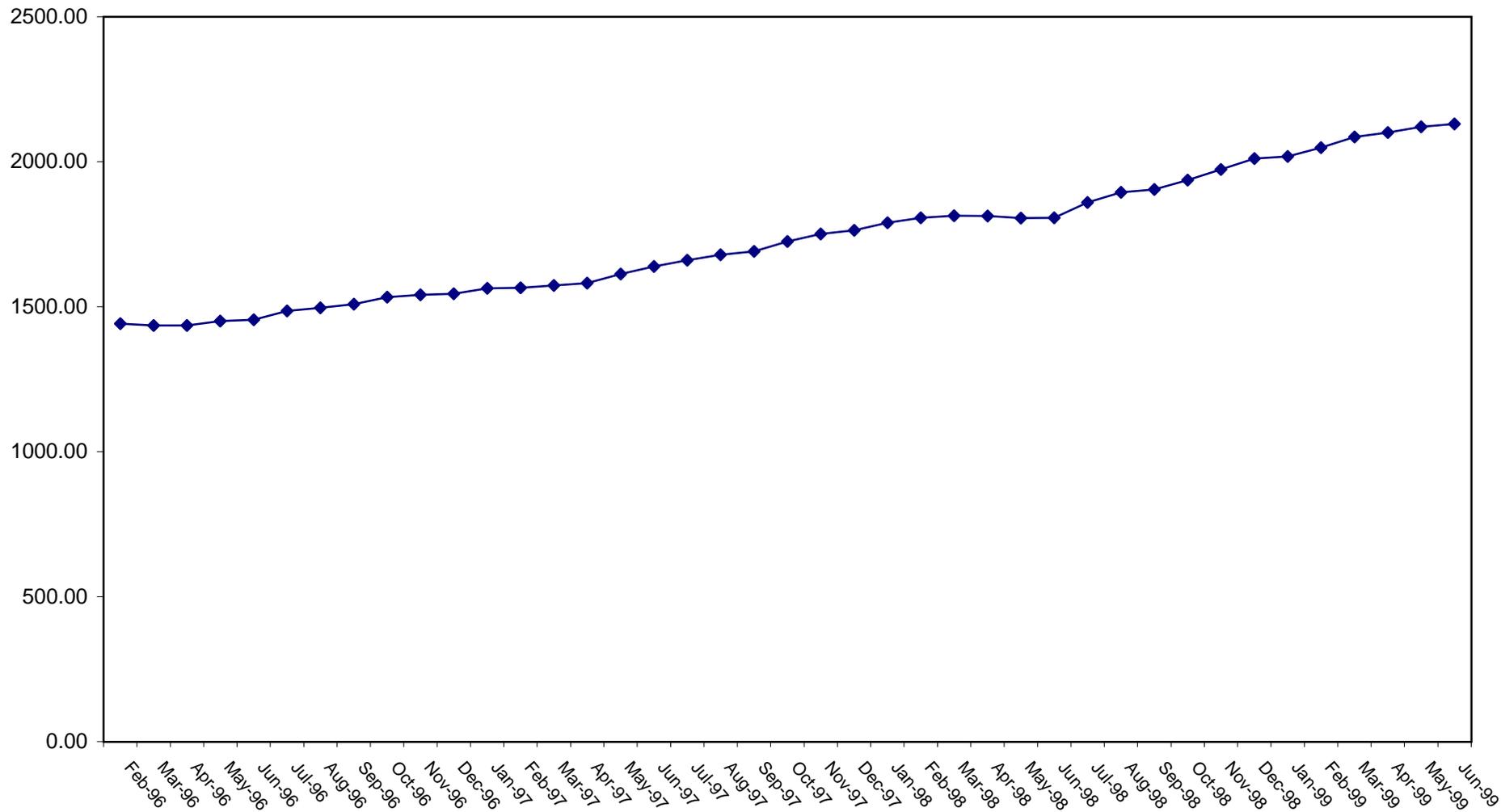
Financial Indicators	End of previous quarter			End of month-		Current quarter	
	Jun-98	Sep-98	Dec-98	Mar-99	Apr-99	May-99	Jun-99
M2 Multiplier (Number)	3.76	3.70	3.74	3.67	3.79	3.83	3.79
Real Domestic Credit (L.E millions)	1806.83	1904.23	2010.98	2085.64	2100.99	2120.86	2130.26
Annual Growth of Real Domestic Credit (%)	10.28	12.62	14.05	15.00	15.88	17.47	17.90
Real Domestic Credit/ Real GDP (Ratio)	0.72	0.76	0.78	0.80	0.81	0.81	0.81
Annual Growth of Real Total Bank Deposit (%)	3.21	3.69	5.61	7.68	7.39	6.85	6.54
Annual Change in CMA Index (%)	4.54	-3.21	6.36	16.71	17.10	23.83	31.99
Annual Change in HFI Index (%)	-20.34	-30.57	-26.42	-8.07	-13.60	-12.14	-6.17
Annual Change in EFG Index (%)	-16.20	-30.12	-26.61	-11.23	-16.48	-14.09	-9.07
CMA Index	363.9	365.2	382.8	453.4	458.7	460.4	480.3
HFI Index	10495.17	9319.9	9046.6	10579.2	10349.3	10272.61	9847.77
EFG Index	4653.63	4015.3	3900.1	4452.2	4373.55	4400.15	4231.55
Drate	9.00	9.15	9.00	9.01	9.25	9.07	9.14
Lrate	13.2	13.15	12.9	12.28	12.95	12.85	12.84
Lending Rate/Deposit Rate (Ratio)	1.47	1.44	1.43	1.36	1.40	1.42	1.40
Annual Growth of Real GDP (%)	4.22	3.87	4.81	4.39	4.90	5.31	5.18
Egypt Real Interest Rate (%)	7.69	7.73	7.61	7.55	7.73	7.56	7.59
Inflation Rate (%)	4.53	4.69	3.57	3.82	3.26	2.80	2.88
Annual Growth of Exports (%)	-18.02	-37.30	5.16	19.01	40.56
Annual Growth of Imports (%)	23.90	27.28	13.86	7.50	4.14
Balance of Trade (L.E. millions)	-4030.9	-3852.3	-3039.6	-3508.2	-2714.4
Egypt_REER (Index)	151.60	147.10	145.50	147.52	147.05	147.27	148.26
USA_REER (Index)	122.62	121.22	116.08	114.98	115.14	115.39	116.14
USA Real Interest Rate (%)	5.23	5.20	4.87	4.53	4.47	4.51	...
Real Interest Rate Differentials (% point)	2.46	2.53	2.74	3.02	3.26	3.05	...
International Reserves (US\$ millions)	20118	20183	19801	18920	18690	18226	18066
M2/International Reserves (Ratio)	3.09	3.17	3.30	3.54	3.59	3.72	3.82
Annual Growth of M2/International Reserves	9.82	11.99	11.84	19.00	20.58	22.54	23.81
Annual Growth of International Reserves (%)	-1.12	-2.25	-2.08	-5.94	-7.42	-9.58	-10.20

Graph 1: M2 Multiplier



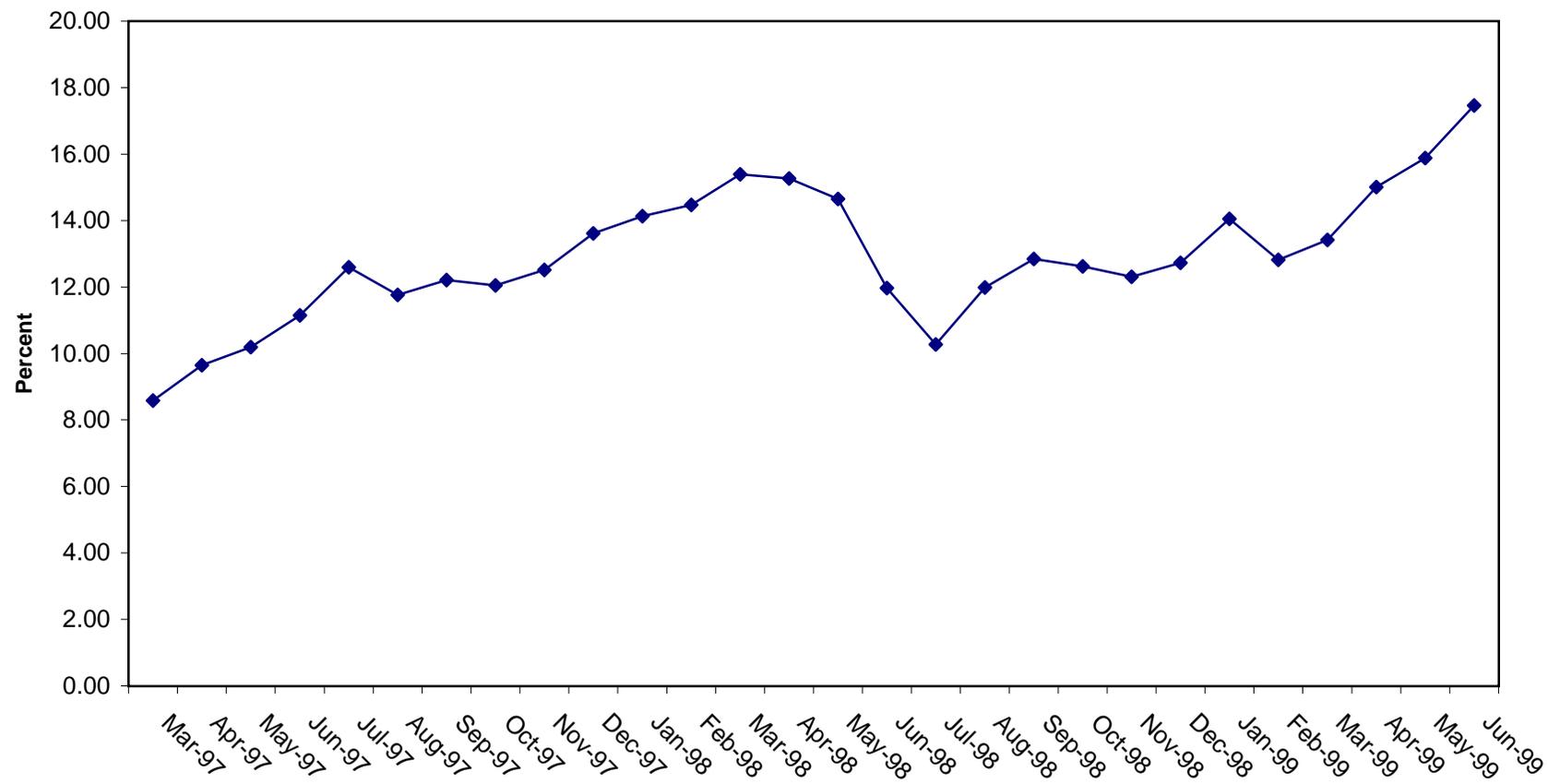
Source of Data: Central Bank of Egypt, Monthly Statistical Bulletin, various issues.

Graph 2: Real Domestic Credit (in L.E. millions)



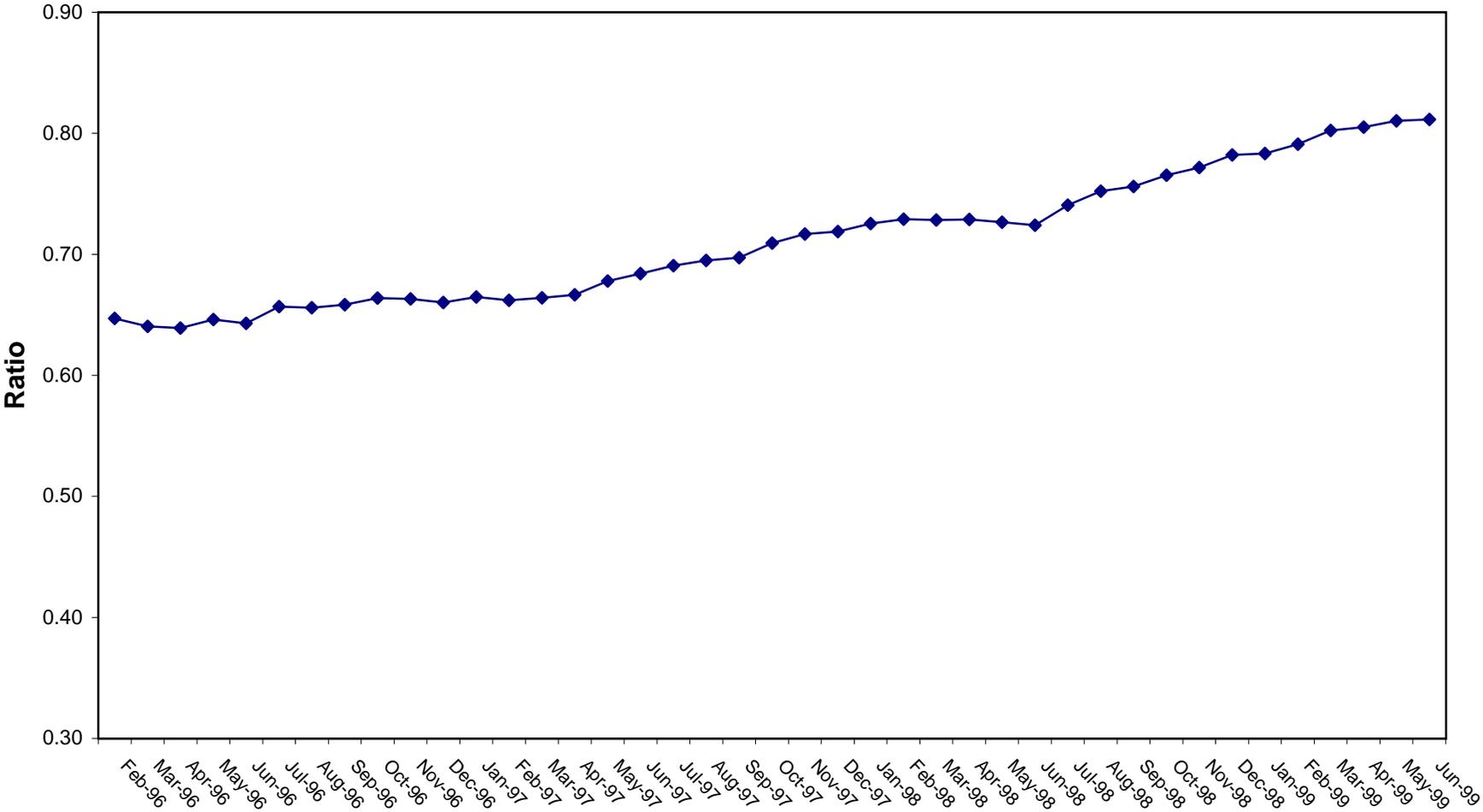
Source of Data: Central Bank of Egypt, Monthly Statistical Bulletin, various issues.

Graph 3: Annual Growth of Real Domestic Credit



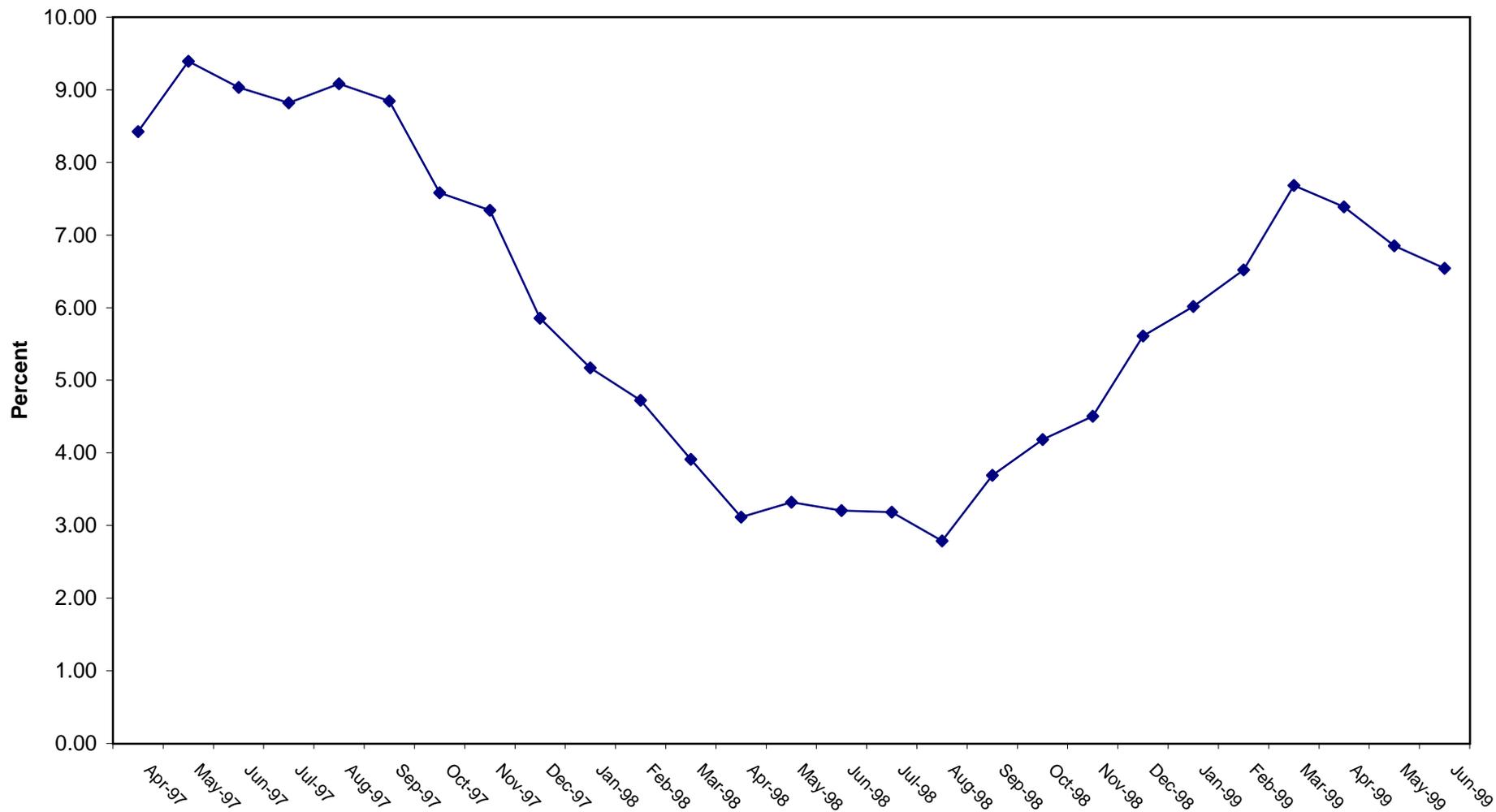
Source of Data: Central Bank of Egypt, Monthly Statistical Bulletin, various issues.

Graph 4: Ratio of Real Domestic Credit to Real GDP



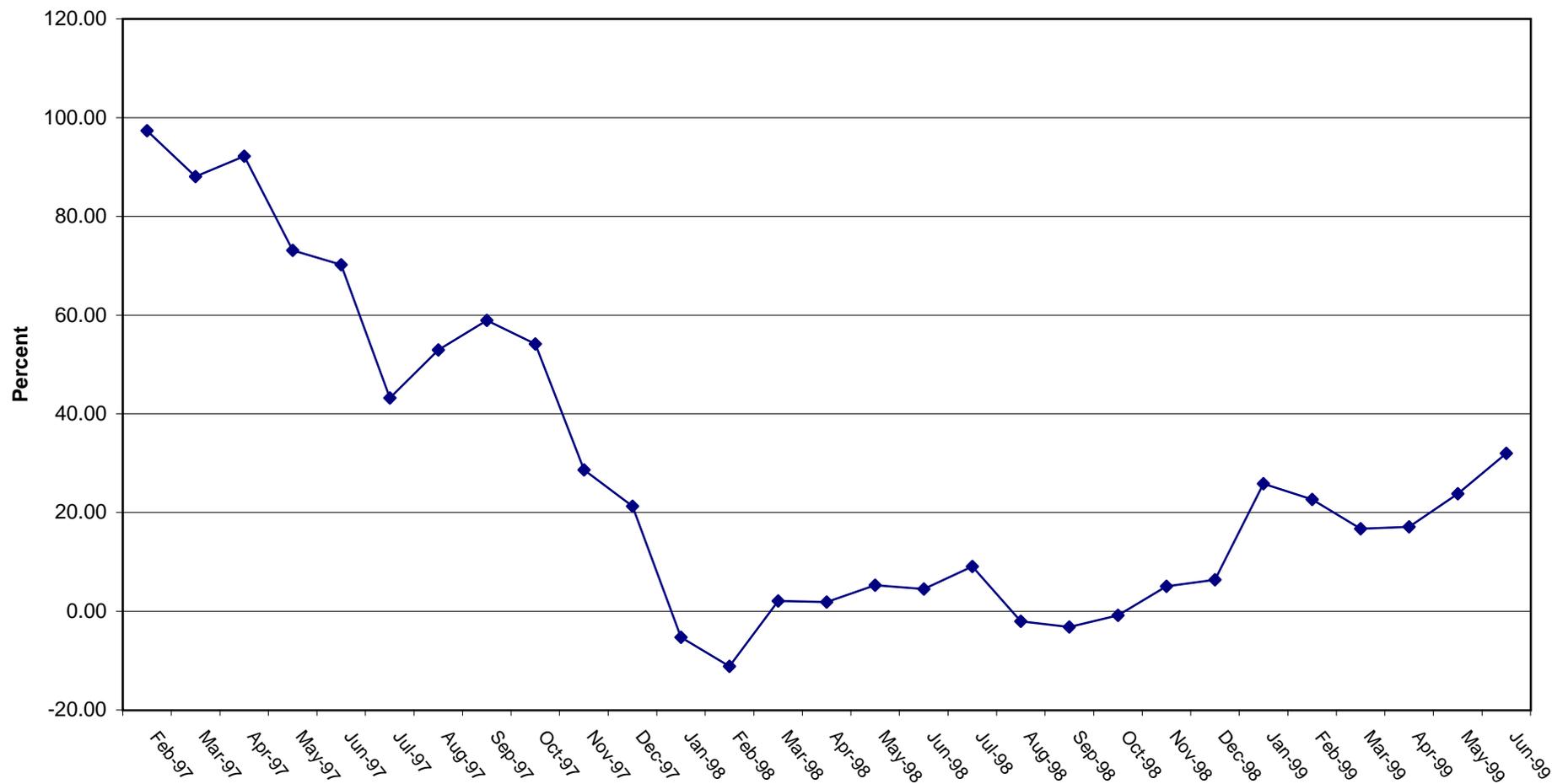
Source of Data: Central Bank of Egypt, Monthly Statistical Bulletin, various issues; IMF, IFS Database, CD-Rom.

Graph 5: Annual Growth of Real Total Bank Deposits



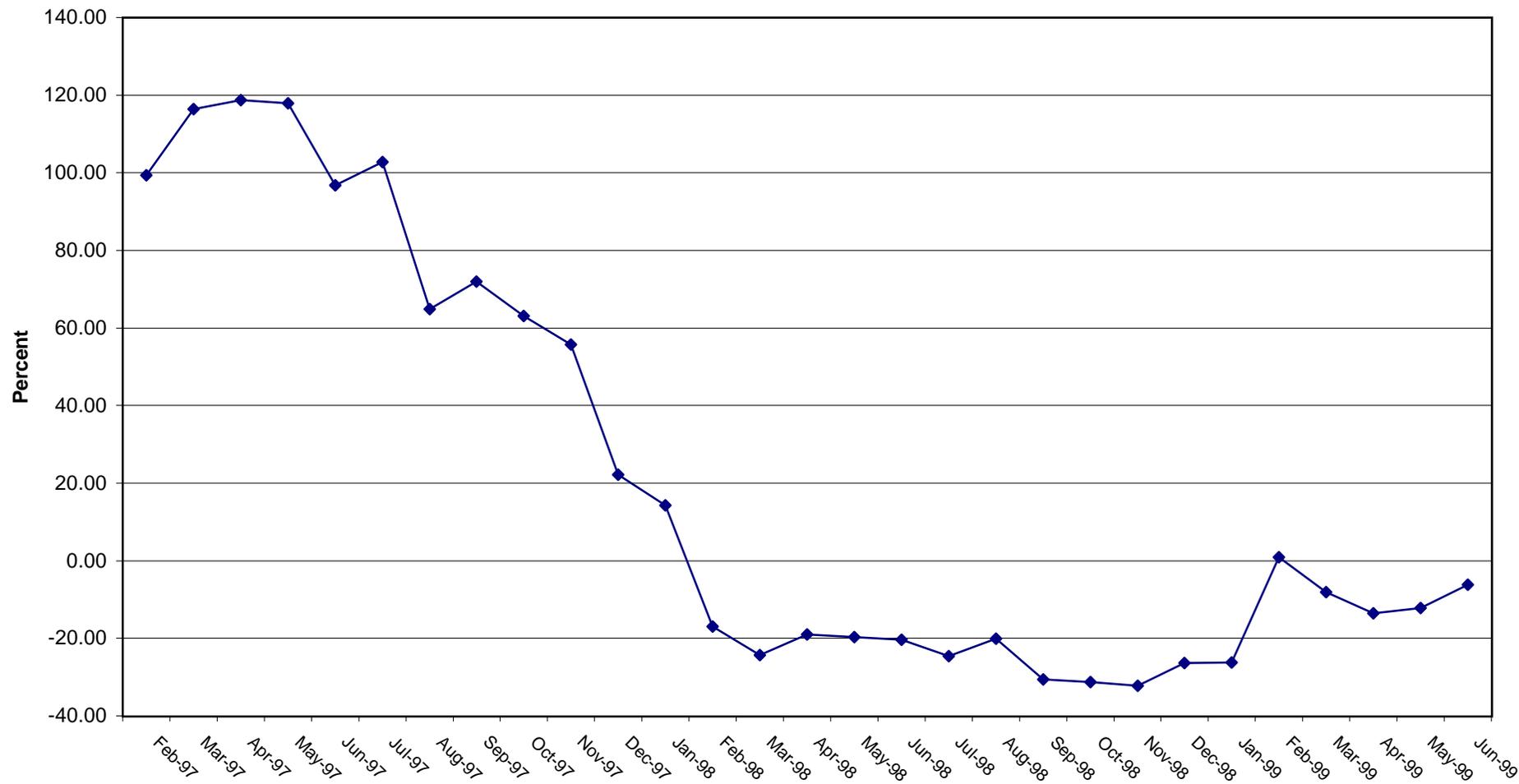
Source of Data: Central BANK Of Egy[pt], Monthly Statistical Issues, various issues.

Graph 6: Annual Change in CMA Index



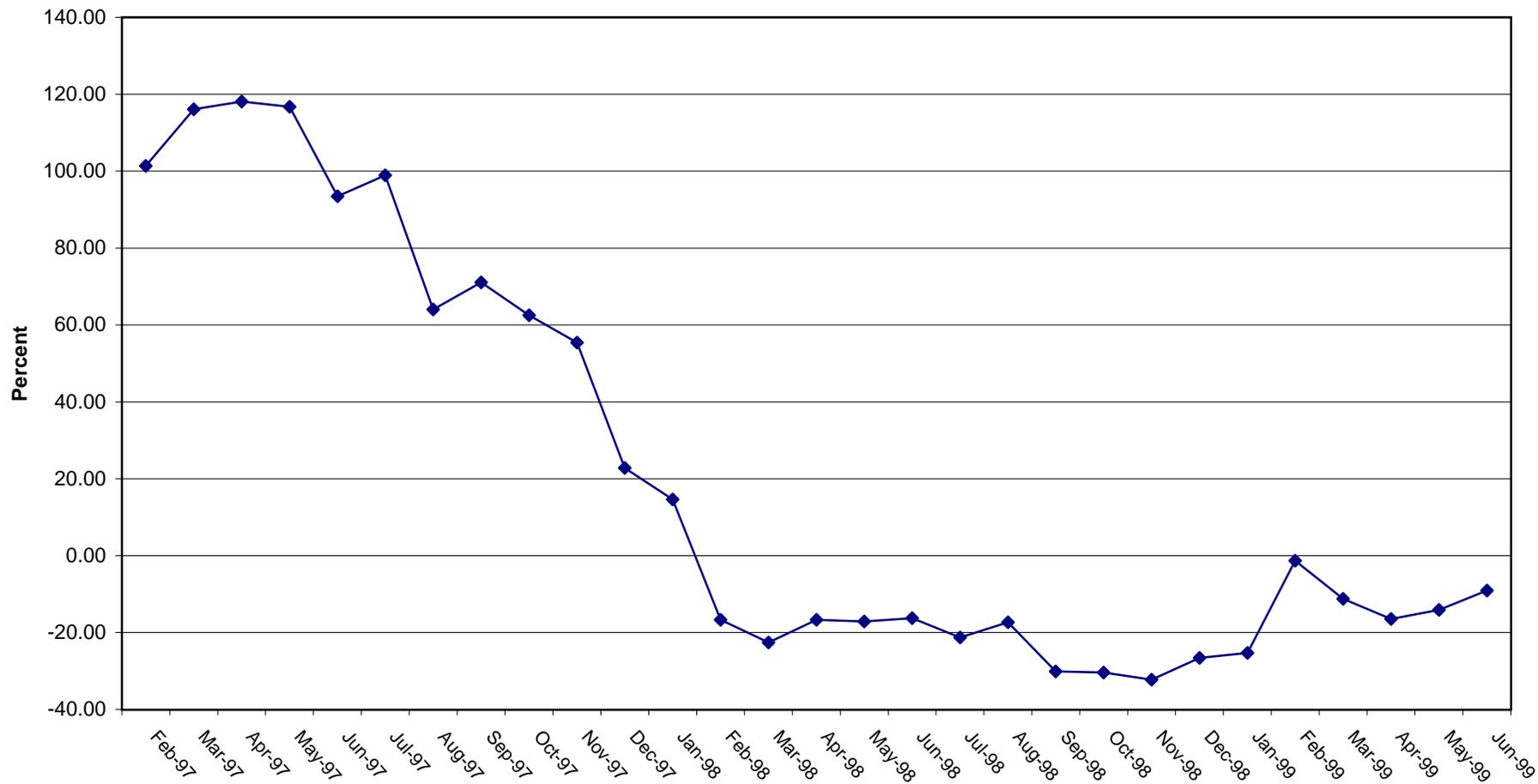
Source of Data: Central Bank of Egypt, Monthly Statistical Bulletin, various issues.

Graph 7: Annual Change in HFI Index



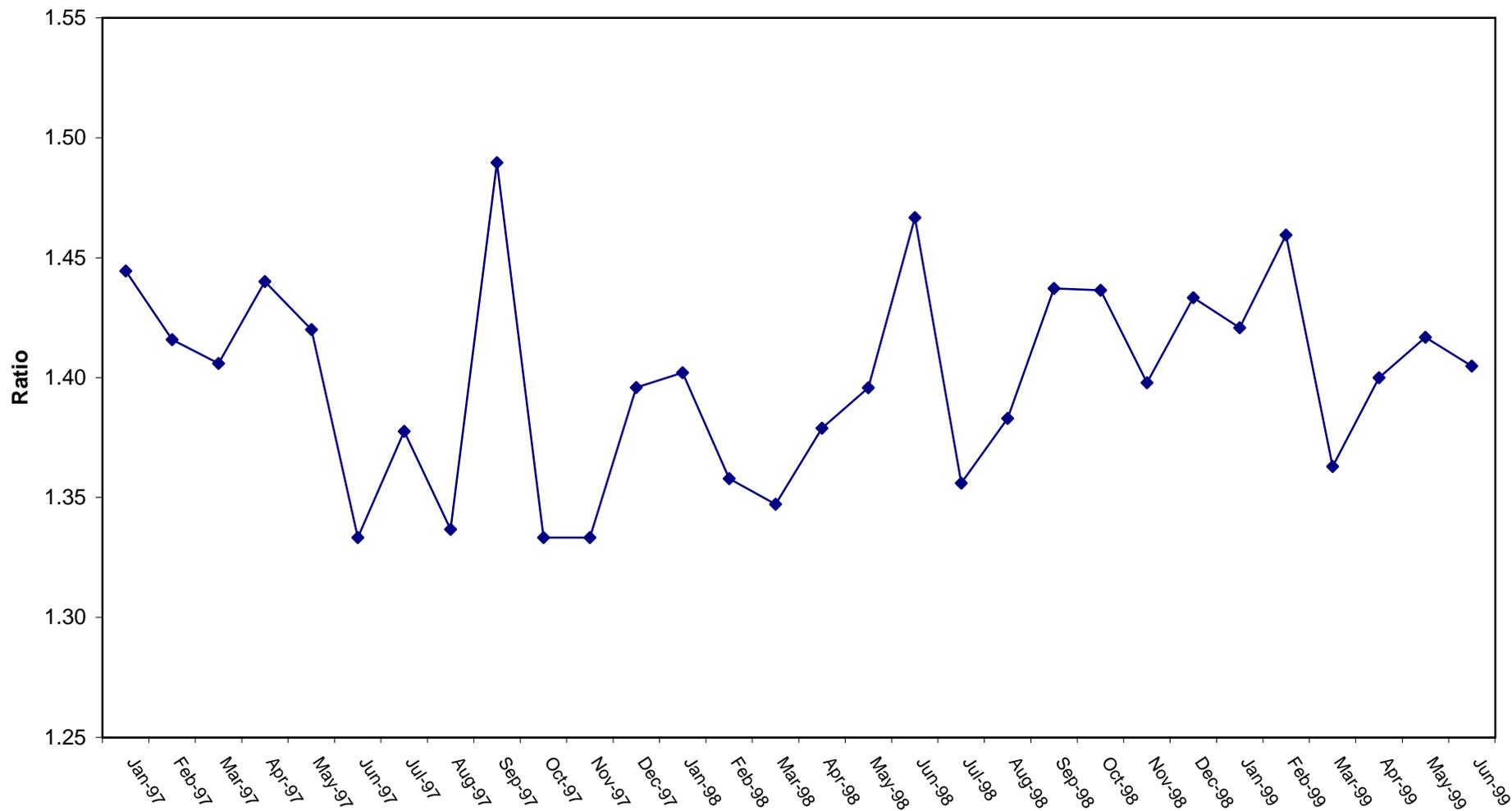
Source of Data: EFG Hermes, Egypt.

Graph 8: Annual Change in EFG Index



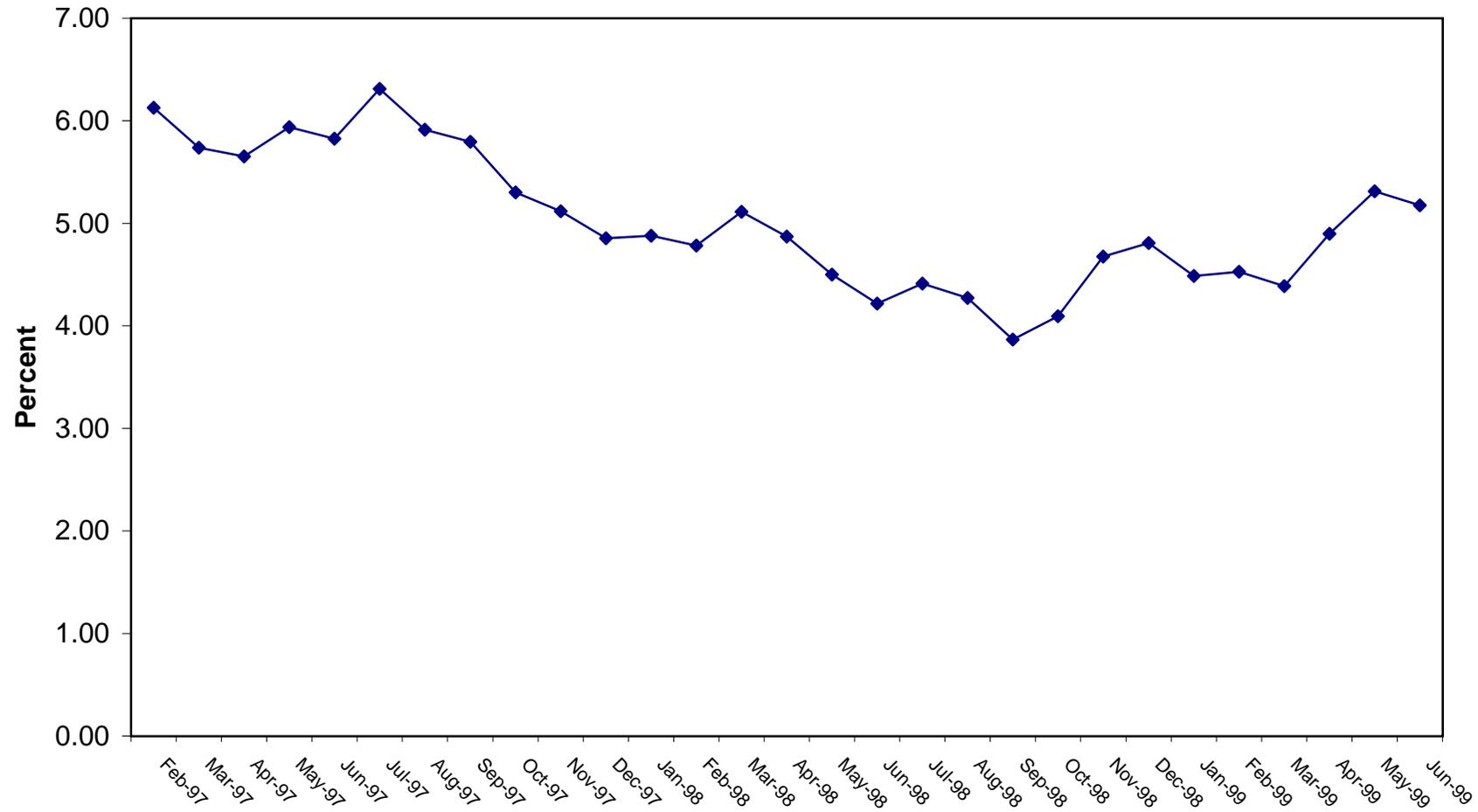
Source of Data: EFG Hermes, Egypt.

Graph 9: Ratio of Lending Rate to Deposit Rate



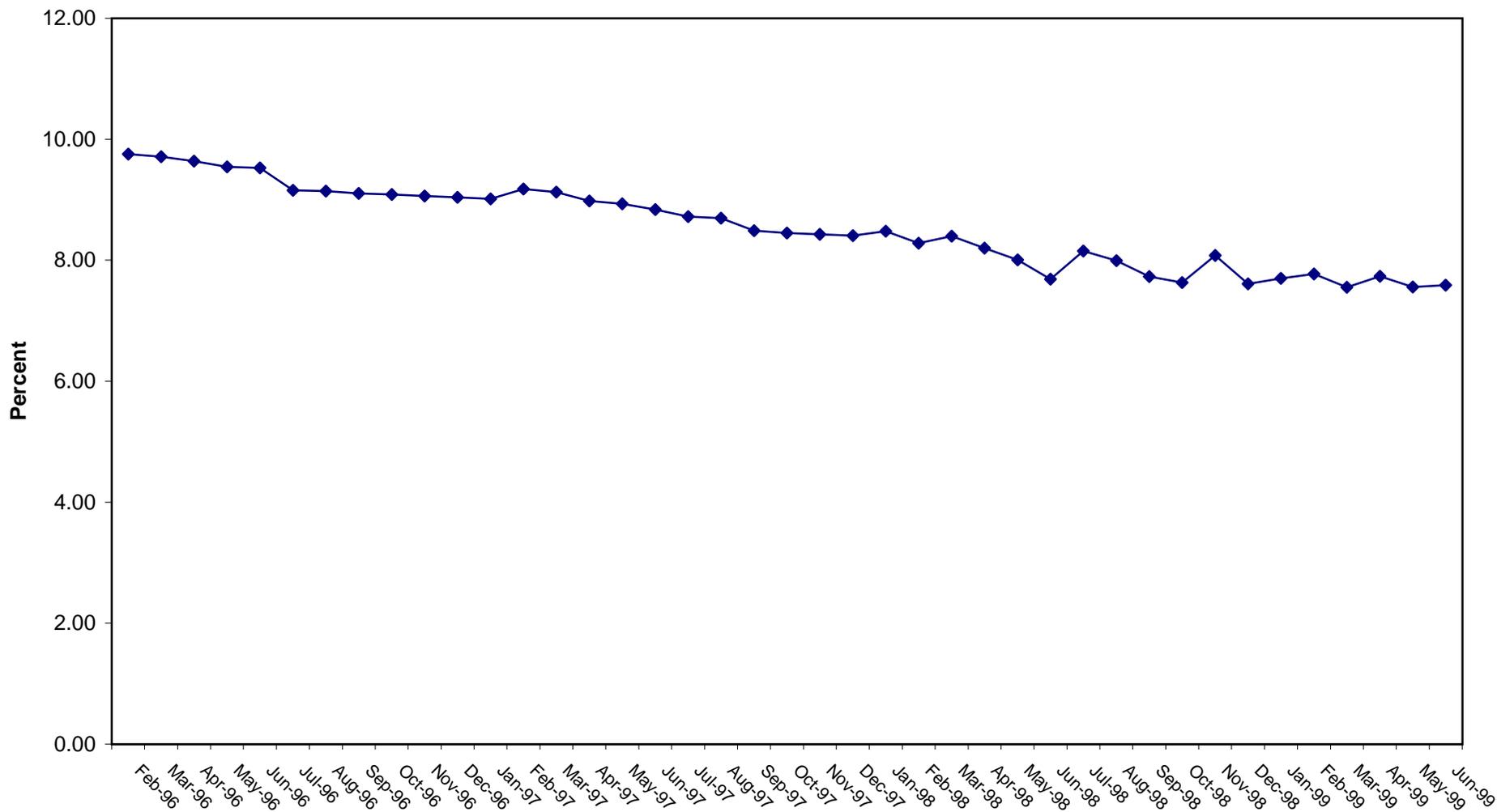
Source of Data: Central Bank of Egypt, Monthly Statistical Bulletin, various issues.

Graph 10: Annual Growth of Real GDP



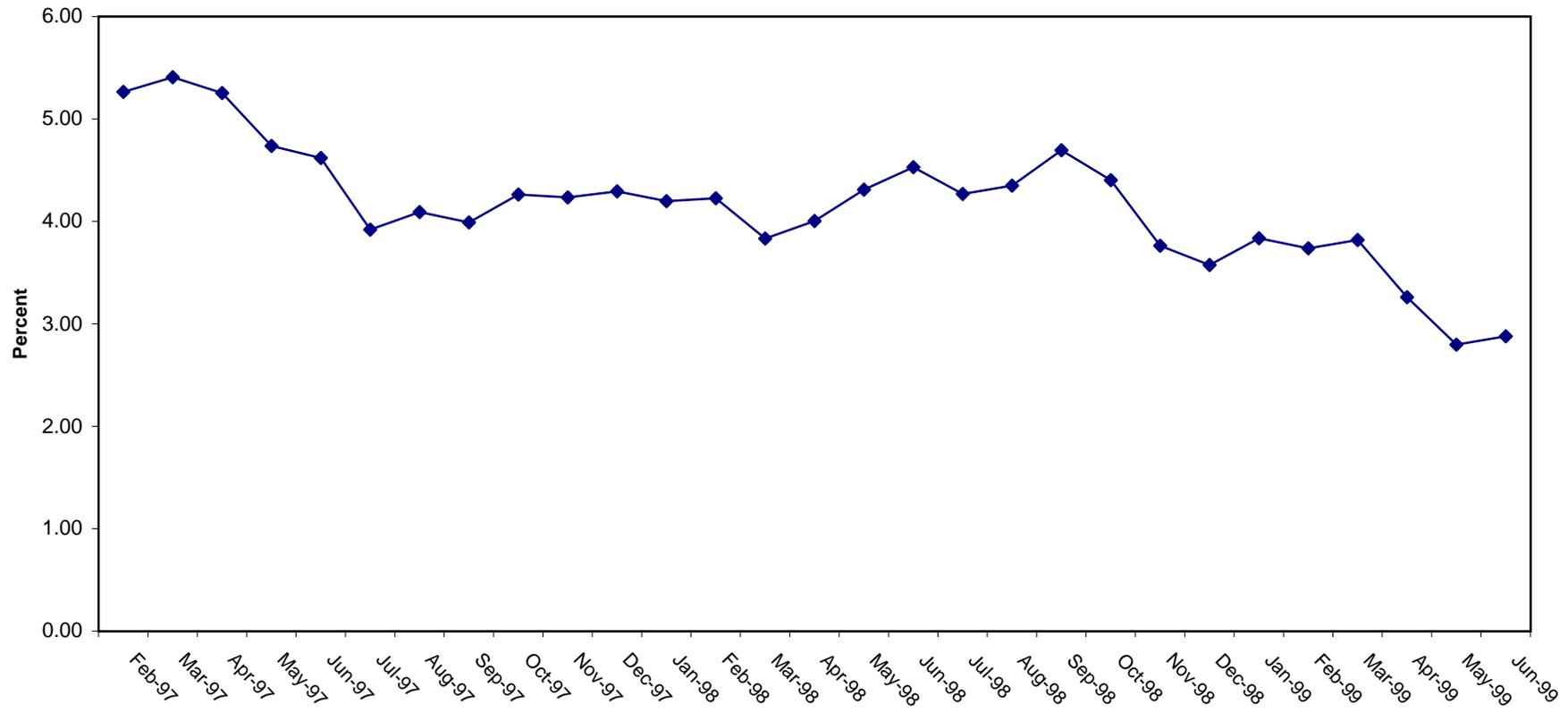
Source of Data: IMF, IFS Database, September 1999.

Graph 11: Egypt Real Interest Rate



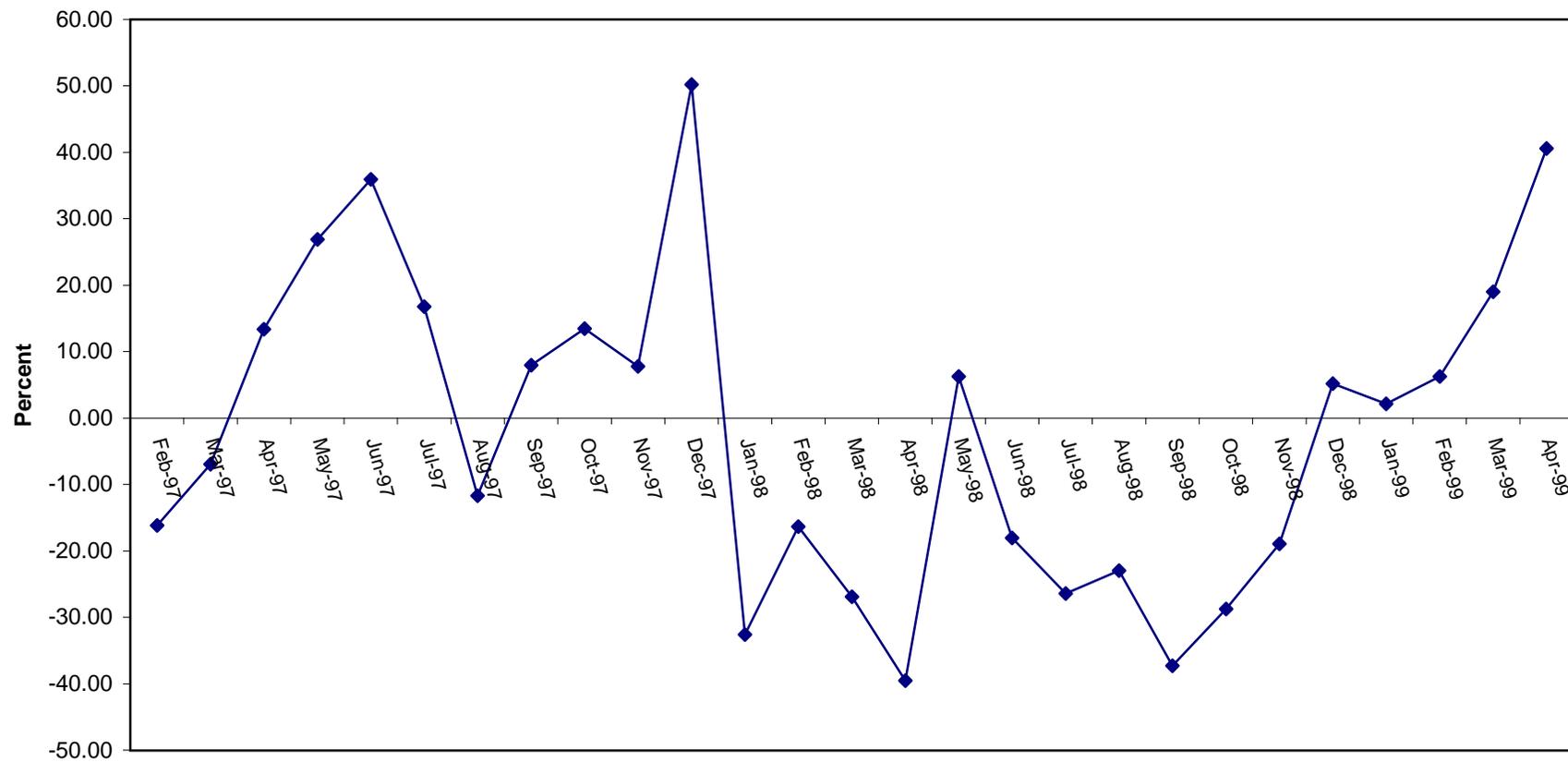
Source of Data: Central Bank of Egypt, Monthly Statistical Bulletin, various issues.

Graph 12: Inflation Rate



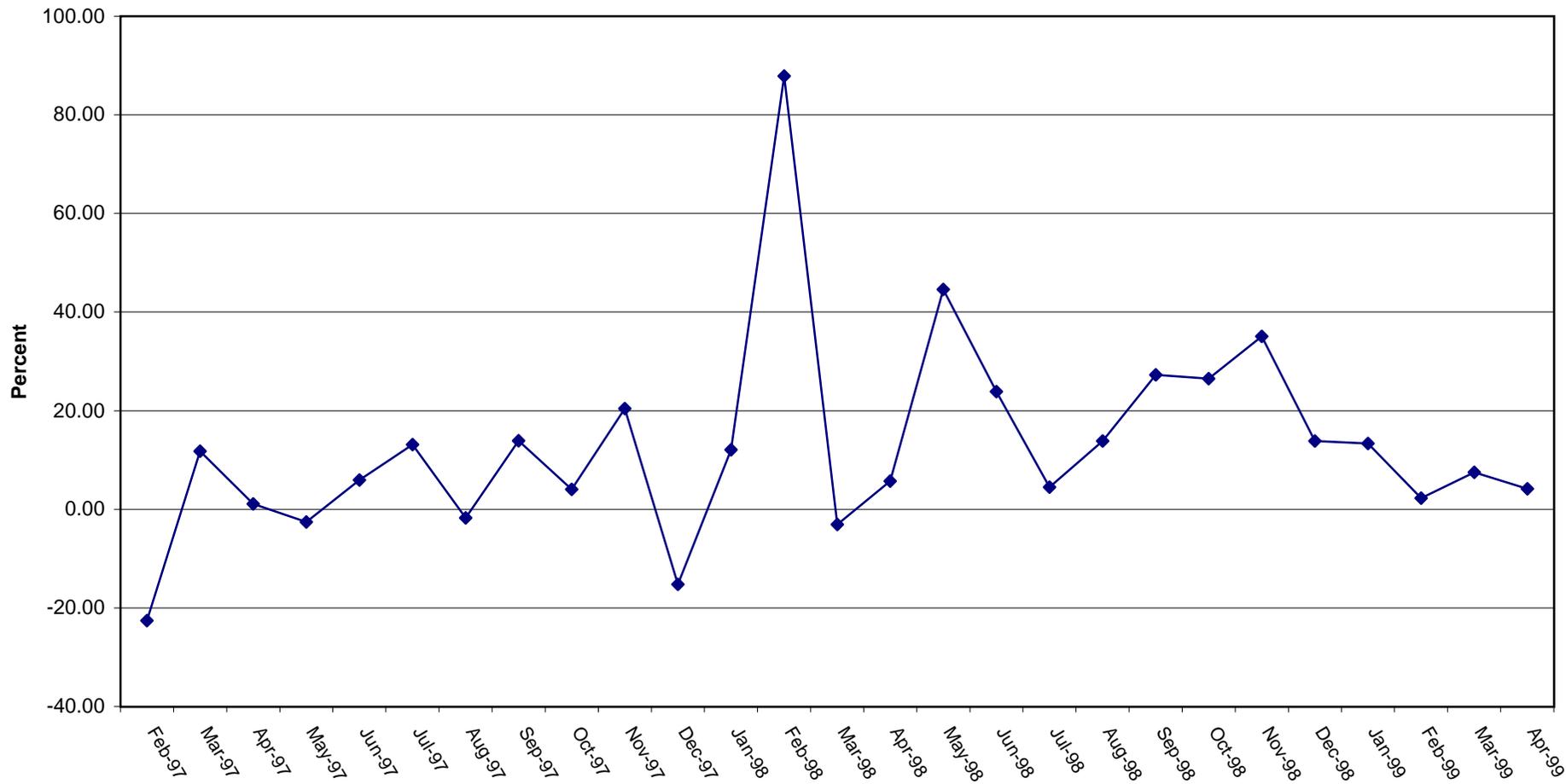
Source of Data: Central Bank of Egypt, Monthly Statistical Bulletin, various issues.

Graph 13: Annual Growth Rate of Exports



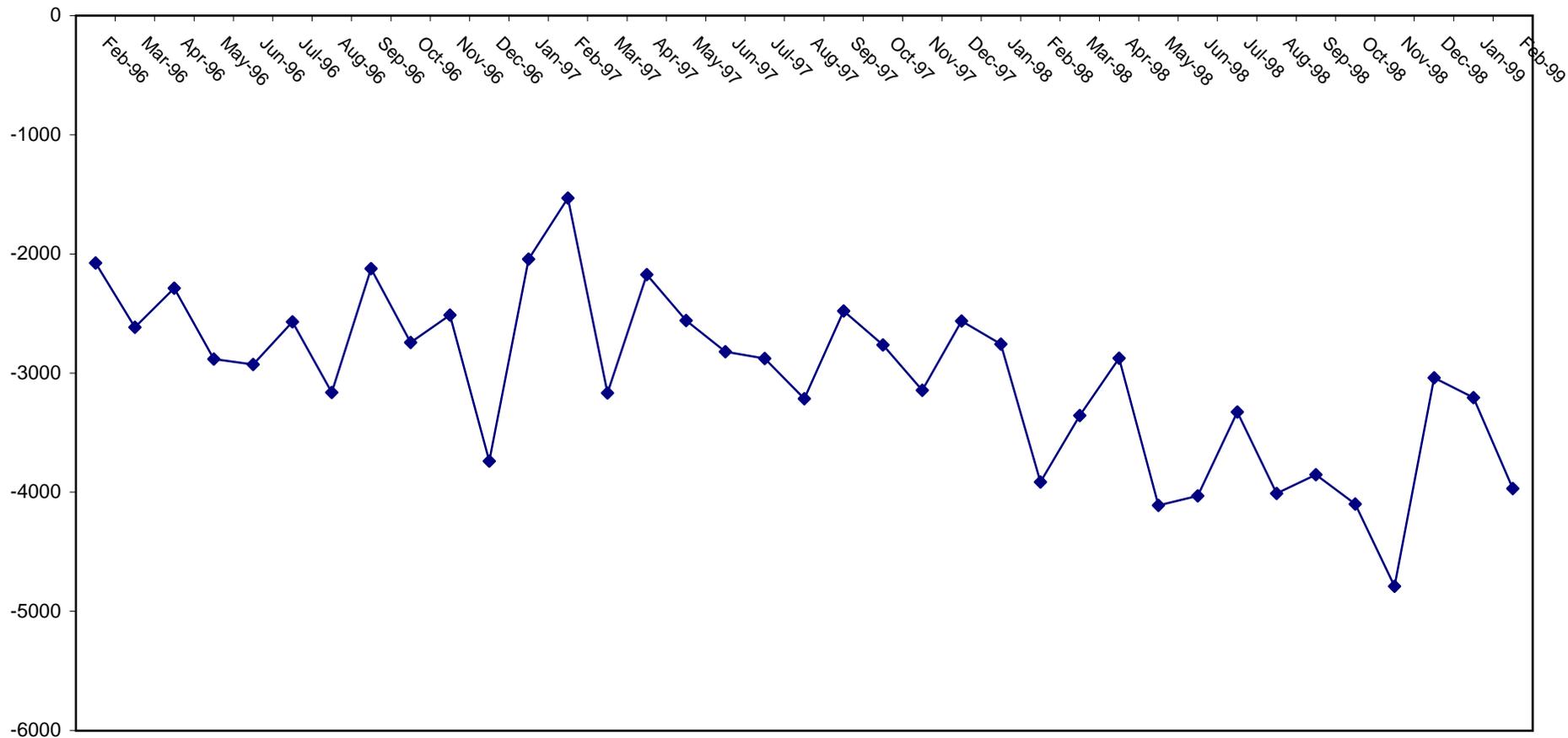
Source of Data: IMF, IFS Database, September 1999.

Graph 14: Annual Growth Rate of Imports



Source of Data: IMF, IFS Database, September 1999.

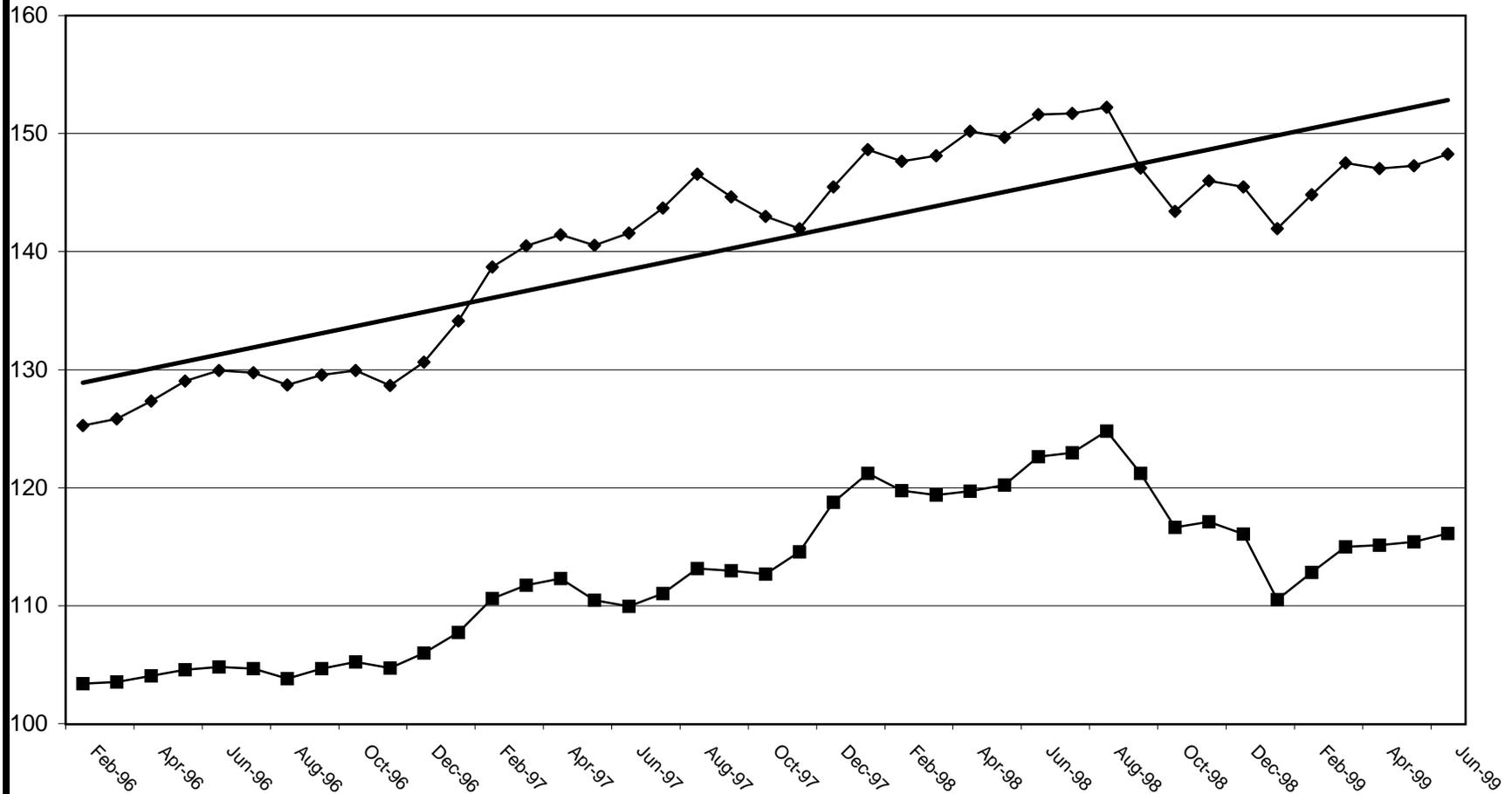
Graph 15: Balance of Trade



Source of Data: Balance of Trade.

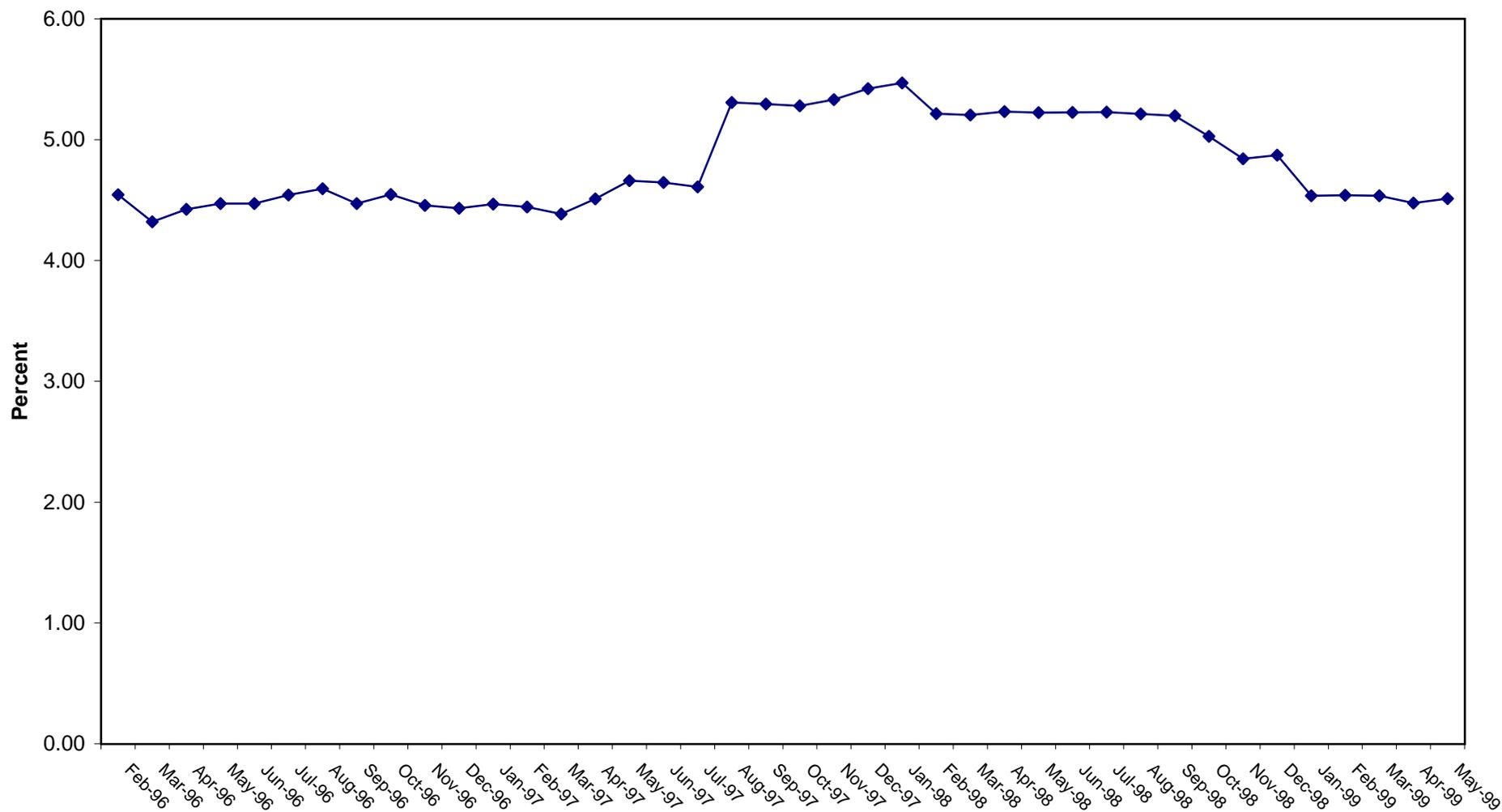
Graph 16: Egypt REER vs. USA_REER

◆ Egypt_REER ■ USA_REER — Linear (Egypt_REER)



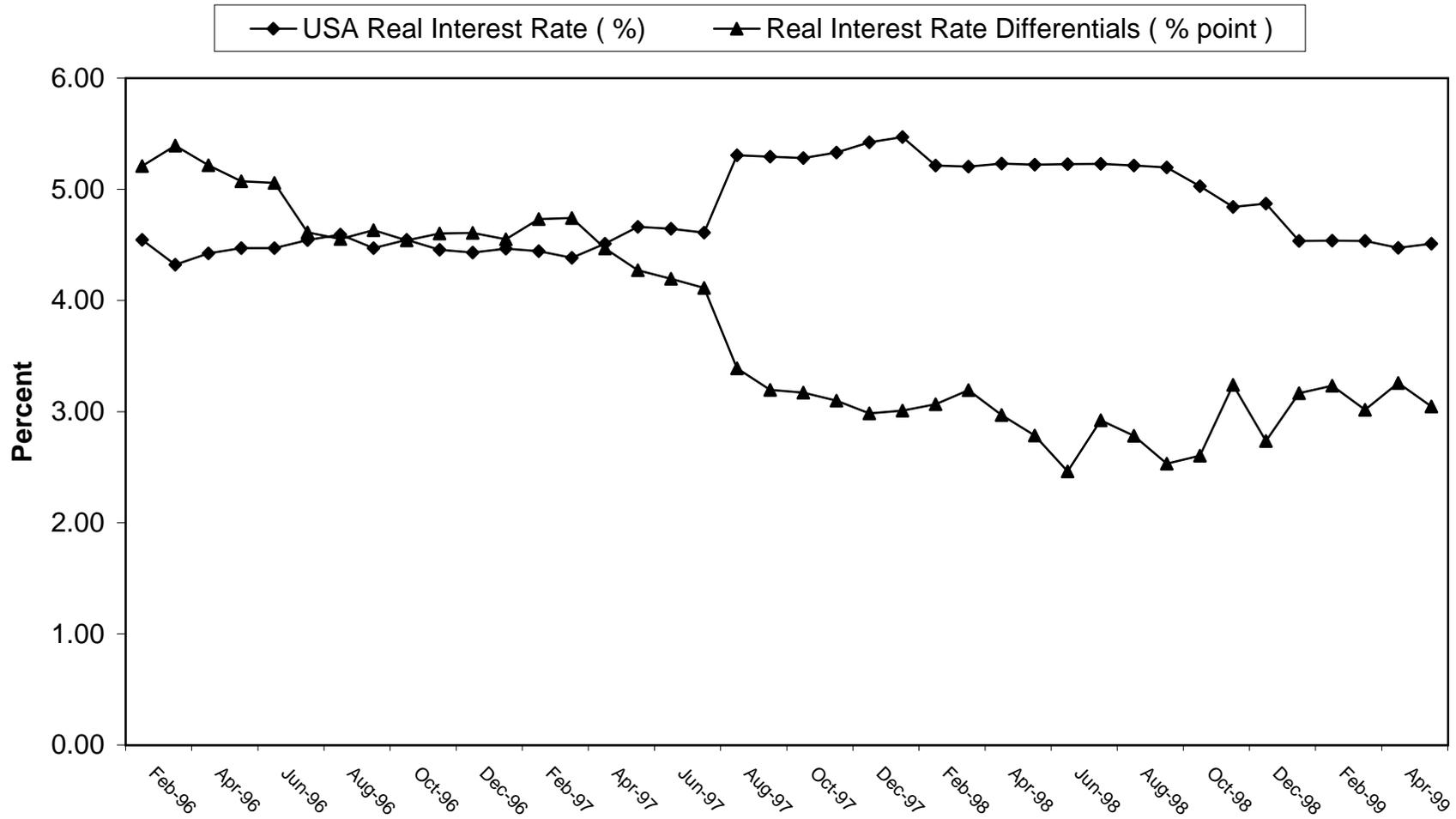
Source of Data: IMF, IFS Database, September 1999.

Graph 17: USA Real Interest Rate



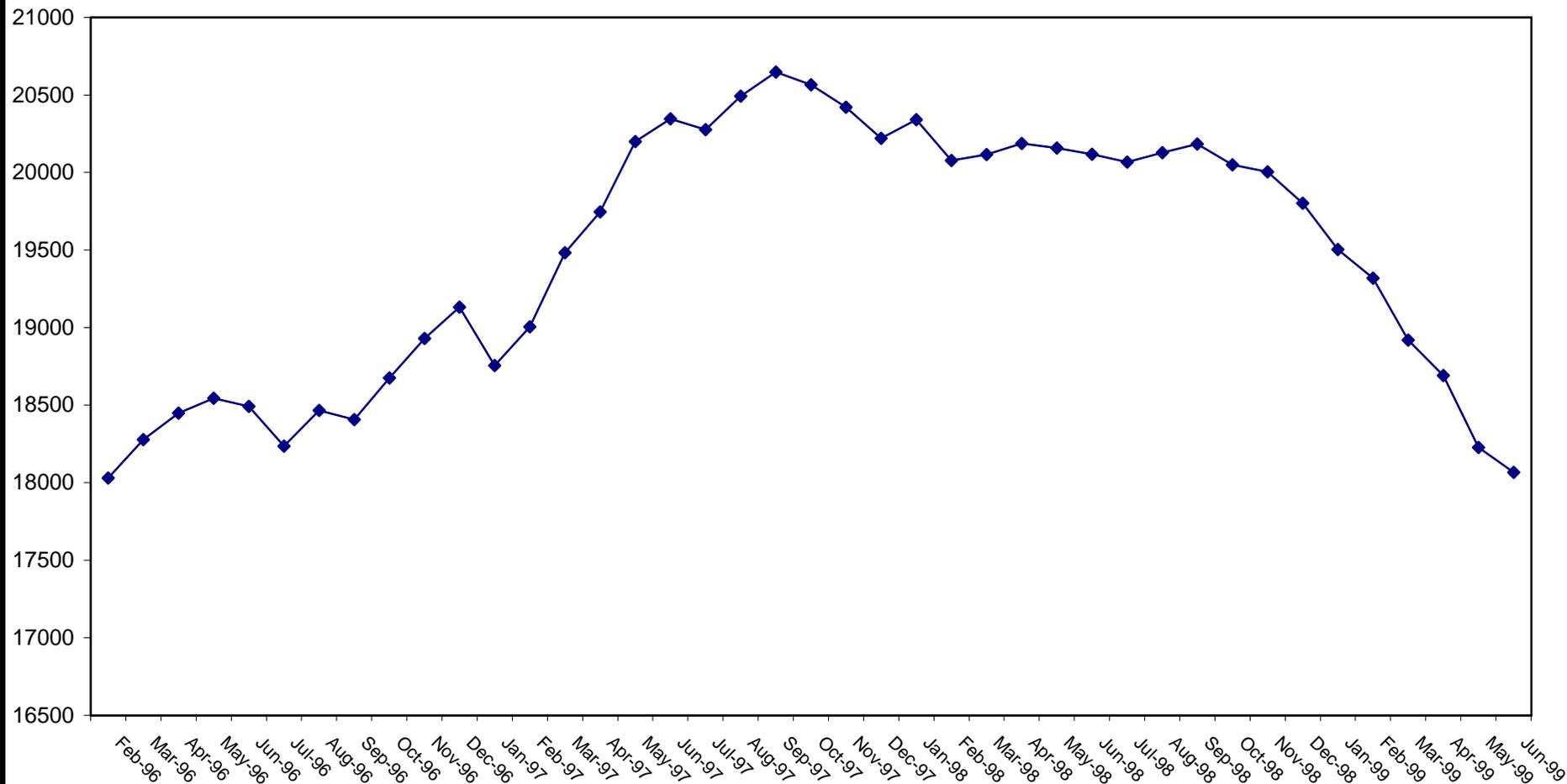
Source:IMF, IFS Database, September 1999.

Graph 18: Real Interest Rate Differentials



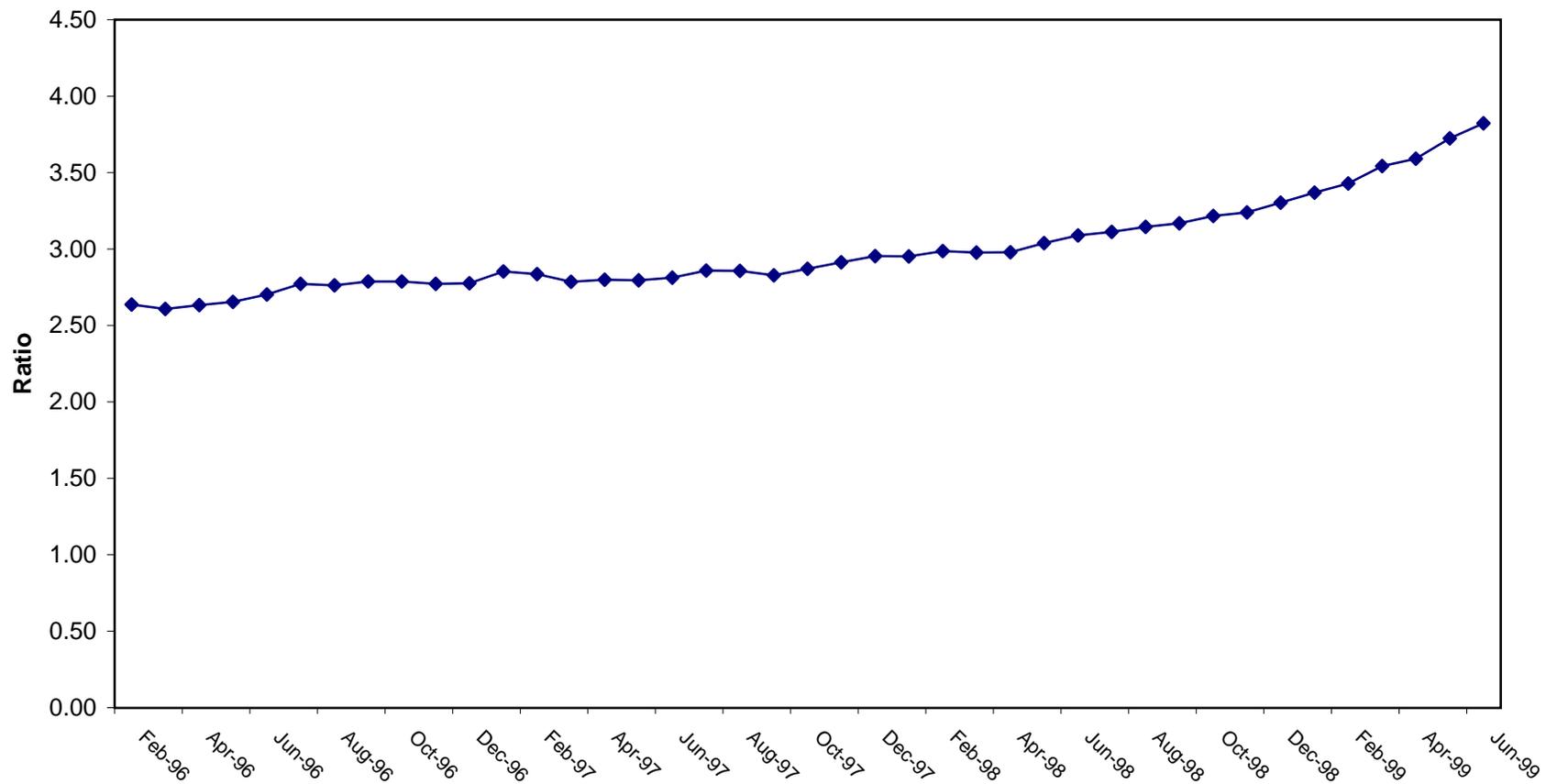
Source of Data: IMF, IFS Database, September 1999.

Graph 19: International Reserves (in US\$ millions)



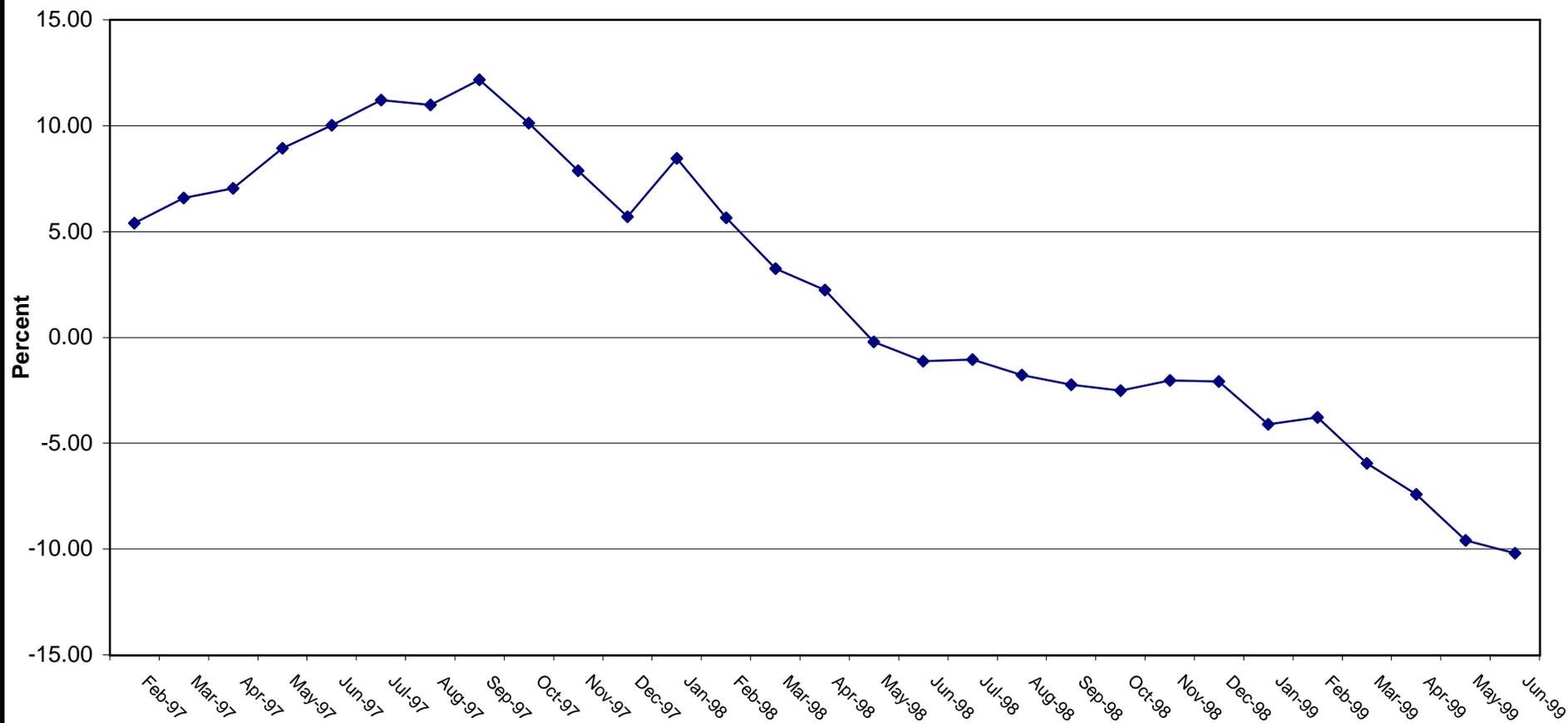
Source of Data: IMF, IFS Database, September 1999.

Graph 20: Ratio of M2 to International Reserves (in US \$)



Source of Data: IMF, IFS Database, September 1999.

Graph 21: Annual Growth Rate of International Reserves



Source of Data: IMF, IFS Database, September 1999.

Table 2: Regression and Summary Statistics- RDomCred

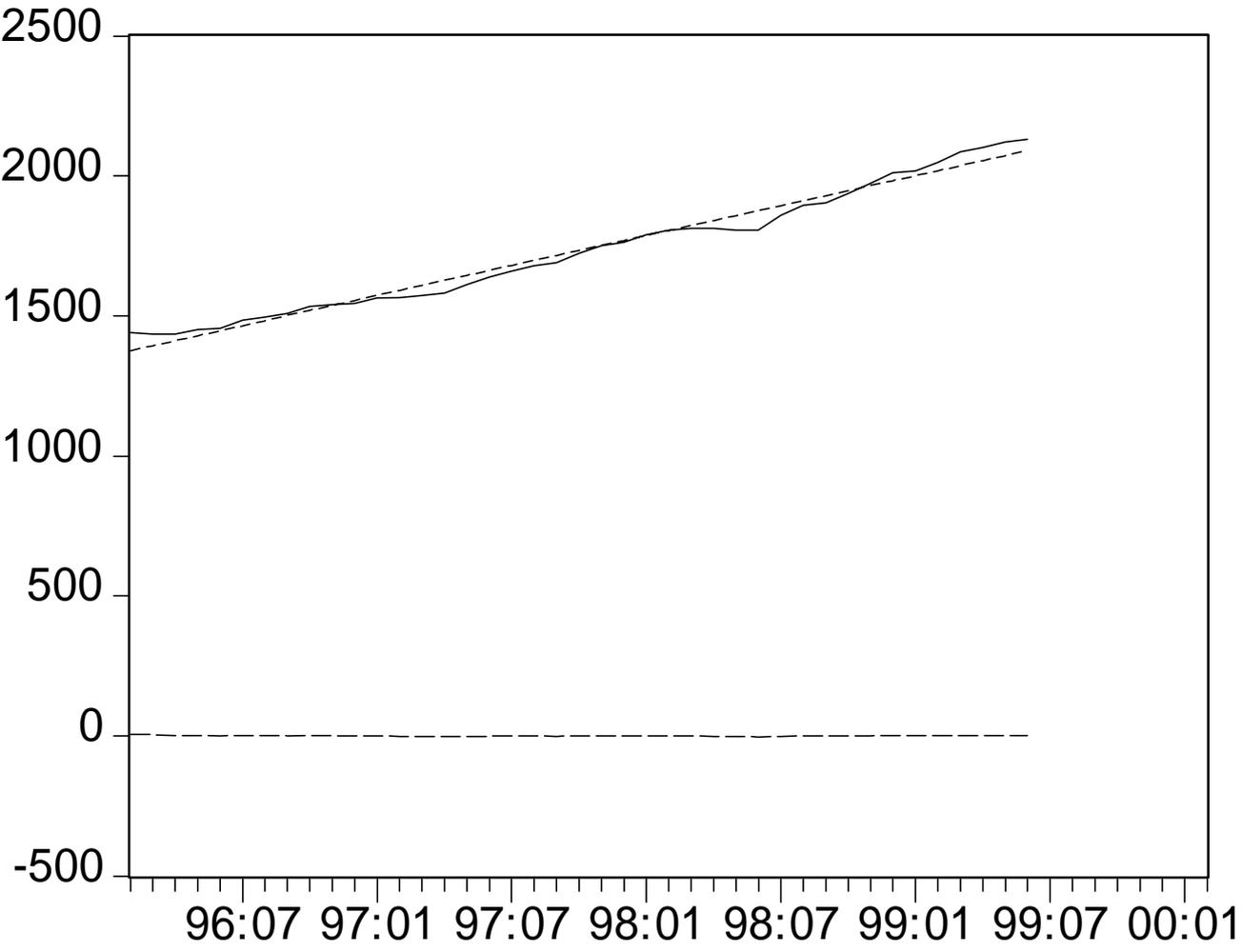
Dependent Variable: RDOMCR
Method: Least Squares
Date: 11/03/99 Time: 12:23
Sample: 1996:02 1999:06
Included observations: 41

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1375.535	9.315589	147.6595	0.0000
@TREND(1996:02)	17.86905	0.400879	44.57465	0.0000
R-squared	0.980749	Mean dependent var		1732.916
Adjusted R-squared	0.980256	S.D. dependent var		216.1465
S.E. of regression	30.37172	Akaike info criterion		9.712451
Sum squared resid	35975.22	Schwarz criterion		9.796040
Log likelihood	-197.1053	F-statistic		1986.899
Durbin-Watson stat	0.206262	Prob(F-statistic)		0.000000

Table 3: Real Domestic Credit, Trend and Perc. Dev.

obs	RDOMCR	TREND2	RDOMCR_PDV
1996:02	1441.590	1375.540	4.581747
1996:03	1434.910	1393.400	2.892864
1996:04	1435.080	1411.270	1.659141
1996:05	1450.720	1429.140	1.487537
1996:06	1455.140	1447.010	0.558709
1996:07	1485.760	1464.880	1.405341
1996:08	1496.250	1482.750	0.902256
1996:09	1509.000	1500.620	0.555335
1996:10	1532.910	1518.490	0.940694
1996:11	1540.820	1536.360	0.289456
1996:12	1544.950	1554.230	-0.600667
1997:01	1563.240	1572.090	-0.566132
1997:02	1565.320	1589.960	-1.574119
1997:03	1573.290	1607.830	-2.195399
1997:04	1581.340	1625.700	-2.805216
1997:05	1612.450	1643.570	-1.929982
1997:06	1638.470	1661.440	-1.401918
1997:07	1660.560	1679.310	-1.129137
1997:08	1678.950	1697.180	-1.085798
1997:09	1690.860	1715.050	-1.430633
1997:10	1724.770	1732.920	-0.472527
1997:11	1750.540	1750.790	-0.014281
1997:12	1763.260	1768.650	-0.305684
1998:01	1789.390	1786.520	0.160390
1998:02	1806.280	1804.390	0.104635
1998:03	1813.520	1822.260	-0.481936
1998:04	1813.050	1840.130	-1.493616
1998:05	1805.500	1858.000	-2.907782
1998:06	1806.830	1875.870	-3.821057
1998:07	1859.620	1893.740	-1.834783
1998:08	1894.550	1911.610	-0.900478
1998:09	1904.230	1929.480	-1.325995
1998:10	1937.090	1947.340	-0.529144
1998:11	1973.290	1965.210	0.409468
1998:12	2010.980	1983.080	1.387383
1999:01	2018.740	2000.950	0.881243
1999:02	2048.570	2018.820	1.452233
1999:03	2085.640	2036.690	2.347001
1999:04	2100.990	2054.560	2.209911
1999:05	2120.860	2072.430	2.283508
1999:06	2130.260	2090.300	1.875827

Graph 22: Percentage Deviation - Real Domestic Credit



— RDOMCR TREND2 - - - - RDOMCR_PDV

Table 4: Regression and Summary Statistics

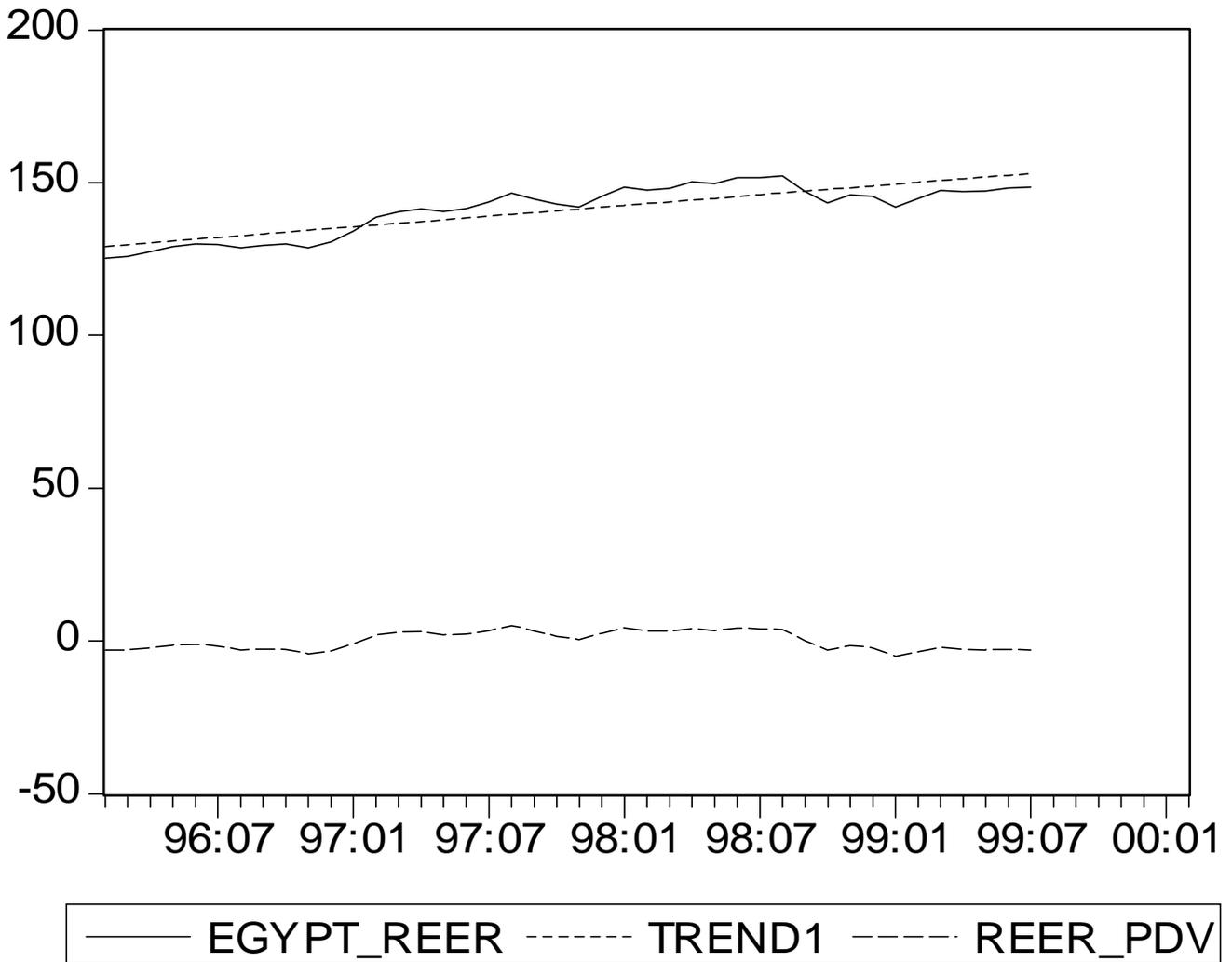
Dependent Variable: EGYPT_REER
Method: Least Squares
Date: 11/03/99 Time: 14:17
Sample: 1996:02 1999:07
Included observations: 42

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	129.1044	1.316207	98.08827	0.0000
@TREND(1996:02)	0.582599	0.055267	10.54146	0.0000
R-squared	0.735314	Mean dependent var		141.0477
Adjusted R-squared	0.728697	S.D. dependent var		8.334919
S.E. of regression	4.341391	Akaike info criterion		5.820714
Sum squared resid	753.9069	Schwarz criterion		5.903461
Log likelihood	-120.2350	F-statistic		111.1224
Durbin-Watson stat	0.223554	Prob(F-statistic)		0.000000

Table 5: Egypt REER, Trend & Percentage Deviation

Obs	EGYPT_REER	TREND1	REER_PDV
1996:02	125.2660	129.1040	-2.972797
1996:03	125.8420	129.6870	-2.964831
1996:04	127.3570	130.2700	-2.236125
1996:05	129.0240	130.8520	-1.396998
1996:06	129.9300	131.4350	-1.145053
1996:07	129.7240	132.0170	-1.736898
1996:08	128.7150	132.6000	-2.929864
1996:09	129.5670	133.1830	-2.715061
1996:10	129.9450	133.7650	-2.855754
1996:11	128.6600	134.3480	-4.233781
1996:12	130.6200	134.9300	-3.194249
1997:01	134.1160	135.5130	-1.030897
1997:02	138.7110	136.0960	1.921438
1997:03	140.4860	136.6780	2.786110
1997:04	141.4350	137.2610	3.040922
1997:05	140.5170	137.8430	1.939888
1997:06	141.5530	138.4260	2.258969
1997:07	143.6840	139.0090	3.363092
1997:08	146.5640	139.5910	4.995308
1997:09	144.6370	140.1740	3.183900
1997:10	142.9710	140.7560	1.573645
1997:11	141.9500	141.3390	0.432294
1997:12	145.4780	141.9220	2.505602
1998:01	148.6460	142.5040	4.310054
1998:02	147.6710	143.0870	3.203645
1998:03	148.1040	143.6690	3.086957
1998:04	150.2000	144.2520	4.123340
1998:05	149.7000	144.8350	3.358995
1998:06	151.6000	145.4170	4.251910
1998:07	151.7000	146.0000	3.904110
1998:08	152.2000	146.5820	3.832667
1998:09	147.1000	147.1650	-0.044168
1998:10	143.4000	147.7480	-2.942849
1998:11	146.0000	148.3300	-1.570822
1998:12	145.5000	148.9130	-2.291942
1999:01	141.9400	149.4950	-5.053681
1999:02	144.8300	150.0780	-3.496848
1999:03	147.5200	150.6610	-2.084813
1999:04	147.0500	151.2430	-2.772360
1999:05	147.2700	151.8260	-3.000804
1999:06	148.2600	152.4080	-2.721642
1999:07	148.5600	152.9910	-2.896249

Graph 23: Percentage Deviation- Egypt_REER



التقرير النهائي

المؤشرات المالية الرائدة في مصر

معد لأجل

وزارة الاقتصاد والتجارة الخارجية

مقدم إلى

الوكالة الأمريكية للتنمية الدولية (USAID)

القاهرة - مصر

مقدم من

مؤسسة ناثان (Nathan Associates Inc.)

عقد رقم

٢٦٣-٠-٠٠-٩٦-٠٠٠٠١-٠٠

أكتوبر ١٩٩٩



ملخص الدراسة

تهدف هذه الدراسة الى تطوير وتفسير مجموعة من المؤشرات المالية الرائدة للاقتصاد المصرى كأساس لتطوير قدرة مؤسسية داخل وزارة الاقتصاد والتجارة الخارجية بحيث تستمر عملية تحليل هذه المؤشرات بشكل منتظم . ولهذا الغرض، تم بناء اثنين من قواعد البيانات تم عرضها على وزارة الاقتصاد والتجارة الخارجية . وقد تم استخدام البيانات الشهرية للإحصاءات المالية الدولية فى حساب المؤشرات المالية المذكورة غير الفترة ١٩٩٠-١٩٩٩ . وأحدث البيانات الموجودة فى مارس عام ١٩٩٩ . وبالنسبة لقاعدة البيانات الثانية، فقد تم بنائها من النشرة الاحصائية الشهرية التى يصدرها البنك المركزى المصرى، والتى تشتمل على بيانات للفترة من فبراير ١٩٩٦ حتى يونيه ١٩٩٩ . كما تم تجميع بعض البيانات من احصاءات بنك التسويات الدولية، وهى تتعلق بالتدفقات الرأسمالية للخارج والدين الخارجى، وقد تمت إضافتهما إلى قواعد البيانات المشار إليها .

وبعد مقدمة الدراسة التى جاءت فى الفصل الأول، ويقدم تقرير الدراسة فى فصله الثانى مسحا للأدبيات التى تصف الأزمات المالية وأزمات العملة، وكذلك التفسيرات النظرية لنشأتها . ويتضمن الفصل الثالث وصفا تحليليا للاقتصاد المصرى بمعيار المؤشرات المالية الرائدة خلال العشر سنوات الأخيرة . وهو يقدم خلفية ذات مدى زمنى أطول لتقييم آخر التطورات فى القطاع المالى، والتى ظهرت فى تحليل المؤشرات المالية الرائدة فى مصر خلال الفترة ١٩٩٦/١٩٩٩ ، وقد تم تناول ذلك فى الفصل الرابع . وتعتبر الاشكال البيانية التحليلية وجداول البيانات الموجودة هى المكونات الرئيسية فى الفصلين السابقين . أما الفصل الخامس فهو عبارة عن عينة لتقرير ربع سنوى، كمقترح وكمرشد لإعداد التقارير ربع سنوية فى المستقبل بواسطة وزارة الاقتصاد والتجارة الخارجية .

وهناك عدة نقاط ينبغى التركيز عليها عند مراجعة الأدبيات وهى:
أولاً: إن أزمات العملة وأزمات البنوك ليست ظواهر جديدة . فقد كان هناك العديد من الأزمات منذ أواخر القرن التاسع عشر . وخلال الفترة ١٩٧٥-١٩٩٧ كانت هناك ١٥٨ أزمة عملات ، ٥٤ أزمة بنوك . وكانت أزمات العملة أكثر شيوعا من أزمات البنوك خلال الفترة ١٩٧٥-١٩٨٦ . وكانت أزمات البنوك هى الأكثر انتشارا خلال الفترة ١٩٨٧-١٩٩٧ ، ويرتبط ذلك بزيادة التحرير المالى .

ثانياً: إن أثر أزمات العملة وأزمات البنوك في الدول ذات الأسواق الناشئة يكون، على الأقل، ضعف نظيره في الدول الصناعية.

ثالثاً: يمكن لبعض الدول أن تشهد كلا النوعين من الازمات في نفس الوقت تقريباً، ويرجع ذلك في الأساس الى الأصول المشتركة لهما، أن ستحت وجود إحدى الازمات إلى نشأة الأخرى. ومنذ عام ١٩٧٥ كانت هناك ١٢ أزمة متزامنة معاً.

رابعاً: من الملاحظ أن أزمات البنوك تسبق أزمات العملة بعام أو بعامين. وعندما يحدث العكس وتشيق أزمات العملة تلك الخاصة بالبنوك، نجد أن الفترة كانت عام أو عامين أيضاً.

وتشير الأدبيات المتعلقة بالموضوع إلى وجود منهجين يستخدمان لتفسير أسباب وجذور كلا من أزمة العملة وأزمات البنوك. وبصفة عامة، نجد أن الأدبيات ترجع الأسباب الرئيسية لأزمات البنوك والأزمات المالية إلى عدم تواصل السياسات الاقتصادية الكلية، وضعف الهيكل المالي، والأحوال المالية الدولية، وسوء تحديد أسعار الصرف، وعدم الاستقرار السياسي.^١

وترجع الأسباب الرئيسية لأزمات العملة إلى الاختلالات الاقتصادية الكلية، والتحويلات الاقتصادية الكبيرة في الدول الصناعية، والعدوى نتيجة الارتباط بين الأسواق.^٢

وتشير الأدبيات الى وجود دراستين رئيسيتين تقدمان الأساس النظري لتحليل أزمات البنوك والعملية. والدراسة الأولى من إعداد الاقتصادي الشهير بول كروجمان P. Krugman، على حين قدم أوبستفيلد M. Obstfeld الدراسة الثانية. ويختلف المنهج المستخدم في الدراستين بشكل كبير. ويفترض نموذج كروجمان وجود نظام سعر الصرف الثابت أو المثبت. ويوضح النموذج كيف تبرز أزمة ميزان المدفوعات نتيجة للتمويل التضخمي للعجز المالي. وعندما تتدفد الاحتياطيات الدولية، تسبح العملة عرة لهجمات المضاربة. وتتسأ هجمة المضاربة يسبب رغبة عامة الناس في تجنب الخسائر الرأسمالية التي يفرضها التضخم على العملة الى الاسراع بالانهيار المفاجيء وما يتولوه من تخفيض لقيمة العملة.

^١ تعرف أزمة البنوك بأنها الحالة التي تصبح فيها البنوك في حالة إعسار بحيث يتطلب الأمر ضخ أموال أو عملية إعادة تنظيم

^٢ تعرف أزمات العملة بأنها فقدان قدر كبير من الاحتياطيات الدولية أو عندما تتغير قيمة العملة، ومثال ذلك تخفيض قيمة العملة

وتركز الدراسة الثانية التي كتبها اوبسيفيلد على أن الضغط المالي وعلى العملة ينبثق عن التغيرات غير المتوقعة في تدفقات رأس المال المرتبطة بتقييم المستثمرين في الأسواق المالية. وفرضية اوبسيفيلد تقوم بأن الأزمات يمكن أن تحدث عندما تكون حساسية السوق بخصوص سعر الصرف تولد توقعات بأن تخفيض قيمة العملة يوشك أن يحدث. ومن الناحية النموذجية، نجد أن هذه الأدبيات تركز على مستتبعات الضعف المالي في سياق عولمة الأسواق المالية.

ويوجد في الأدبيات أيضا اثنين من الدراسات البيانات المقطعية. وتقدم أزمة البنوك وأزمات العملة، على حين تركز دراسات Demurguc-Kunt، Detragiache، على الهشاشة المالية. ويستخدم هذا البحث التطبيقي نفس المؤشرات المالية الرائدة لتفسير الأزمات. لذلك، نجد أن المؤشرات المالية المحسوبة عن الاقتصاد المصري مبنية على الدراسات التطبيقية الرئيسية التي اتسمت نتائجها بالمعنوية الاحصائية.

يوضح تحليل المؤشرات المالية الرائدة للاقتصاد المصري عبر الفترة ١٩٩٠-١٩٩٩ أن الاقتصاد حقق نتائج جيدة في عملية التثبيت الاقتصادي. ويعتبر الانخفاض الكبير في معدل التضخم في مصر من قبيل الانجازات الرئيسية.

وفي ظل هذه البيئة نجد أن ربط سعر صرف الجنيه المصري بالدولار الأمريكي كان يعمل بطريقة جيدة. يضاف الى ذلك، أن تخفيض الديون الخارجية على مصر أوائل التسعينات لم يساعد فقط في بناء الاحتياطيات الدولية لمصر، ولكنه ساعد أيضا في تدعيم أداء الحساب الجاري.

كما تمت استعادة النمو الاقتصادي وكبح السيولة. وكنتيجة لذلك حدث انخفاض كبير في معدلات الفائدة الاسمية والحقيقية. وقد تم إعطاء قوة دافعة لعمليات البورصة من خلال سياسة الخصخصة. ولم تحدث أي حالات فشل في النظام المصري، ولكن استمرت هيمنة البنوك المملوكة للدولة. ومع ذلك، فقد حدثت بعض التغيرات الملحوظة في سلوك المؤشرات المالية الرائدة بدءاً من منتصف التسعينات.

وفي النصف الثاني من عقد التسعينات، قدمت المؤشرات المالية صورة مختلطة للفترة ١٩٩٧-١٩٩٩ . أن المؤشرات المالية المرتبطة بالاقتصاد العام لم تقدم دليلا على وجود أزمات . ومعدلات السوق النقدي، والتي لم تبرهن على وجود معنوية إحصائية في الأدبيات الاقتصادية التطبيقية، لم تقدم من الدلائل عن حالة القطاع المالي في مصر . فقد كانت معدلات الفائده غير مرنة، و هي تشبه معدلات الفائده المدارة اكثر منها معدلات فائده تتحدد من خلال السوق . يضاف إلي ذلك، أن الدلائل المتعلقة بالبورصة ينبغي تفسيرها في ضوء الطريقة التي تعمل بها البورصة في مصر . و بالرغم من اتجاه مؤشرات اسعار الاوراق المالية للهبوط عبر الزمن، فإن ذلك لم يوضح وجود حالة ركود أو إنخفاض حاد في الناتج المحلي الاجمالي الحقيقي بشكل يمكن أن يعجل بحدوث هشاشة مالية. بل يمكن القول بأن مؤشرات البورصة توضح وجود انخفاض في عمليات الخصخصة. و برغم ذلك، فقد أوضحت خمسة من المؤشرات المالية وجود مخاطر متزايدة للضغط علي العملة و الهشاشة المالية في القطاعات المالية و الخارجية.

إن المؤشر المالي الذي يبين وجود الحساسية للتقلبات في القطاع المالي هي زيادة الأتمان المحلي الحقيقي، و التي تقوي من تنامي السيولة. و قد تم استكمال هذا الدليل بمؤشر مالي آخر، و هو الزيادة في الأتمان كنسبة من الناتج المحلي الأجمالي. إن استمرار تنامي الأتمان المحلي الحقيقي سوف يؤدي إلي فقدان الاحتياطات الدولية الرسمية في ظل نظام سعر الصرف المثبت.^٣

و بناءا علي ذلك، من المحتمل أن يكون جزءا من الخسارة في الاحتياطات الدولية خلال العامين الآخرين مرجعه النمو المفرط في السيولة المحلية.

و فيما يتعلق بالقطاع الخارجي، هناك ثلاث مؤشرات مالية توضح تزايد مخاطر الهشاشة المالية و الضغط علي العملة. ففي العامين الأخيرين أوضحت المؤشرات المالية وجود تناقص في صادرات مصر . و كانت صدمات أسعار السلع هي أكثر العوامل تأثيرا علي الصادرات. و قد حدث انعكاس جزئي في بعض الآثار بسبب انتعاش أسعار النفط الخام. و بصفة عامة ، يمكن الرئيسية التي تسهم في الأقتراب من درجة الحساسية للتقلبات في النصف الثاني تتمثل

^٣ يوضح نموذج Mundel -Flemming هذه النتيجة

في النمو المترادف في الأثمان المحلي الحقيقي، ضعف الأداء التصديري، انخفاض الاحتياطات الدولية.

و فيما يتعلق بالسياسة الاقتصادية التي ينبغي أن تؤخذ في الاعتبار حتي يتم تقليل أو تلطيف المخاطر المتنامية في قطاع التمويل و القطاع الخارجي، ينبغي تطوير السياسة النقدية بحيث يتم تخفيض النمو في الأثمان المحلي، خاصة في حالة استمرار التطورات الحالية في المؤشرات المالية في القطاعين المالي و الخارجي. إن إبطاء نمو المعروض النقدي و الائتمان سوف يجعل النمو في السيولة متمشياً مع الطلب علي النقود. و اذا اخذنا في الاعتبار، أثر ارتفاع سعر الصرف الحقيقي الفعال علي تنافسية الصادرات، فان انخفاض سعر الصرف بالنسبة للدولار الأمريكي يمكن أن يلطف من أثر ارتفاع سعر الصرف الحقيقي الفعال للجنيه المصري في الربع الثاني. و برغم ذلك، فقد يكون من الضروري تطبيق نظام سعر صرف اكثر مرونة في المدى القريب.

و توجد أيضا ثلاثة مؤشرات مالية من حساب رأس المال توضح ما إذا كانت هناك مخاطر متزايدة لحدوث ضغط علي العملة و الشائشة المالية. إن حجم الاحتياطات الدولية الرسمية أخذ في النقصان، و هو ما يشير الي تزايد المخاطر. يضاف إلي ذلك، أن معدل نمو الاحتياطات الدولية الرسمية لدي البنك المركزي المصري بدأ في الهبوط منذ نهاية عام ١٩٩٧، و هو مؤشر مالي يوضح، أيضا، تصاعد المخاطر. و هناك اعتقاد بوجود عاملين وراء هبوط الاحتياطات. إن استمرار عجز الحساب الجاري المرتبط بالأداء التصديري الباهت، و النمو الكبير في السيولة يمكن اعتبارهما العناصر الرئيسية المسئولة عن انخفاض إلي الاحتياطات الدولية، و هي M2 الاحتياطات الدولية الرسمية. إن نسبة السيولة المحلية مؤشر للحساسية لهجمات المضارية، أخذت في التصاعد منذ خريف عام ١٩٩٧. فقد كانت هذه النسبة ٢،٨٣ في يونيو عام ١٩٩٨، و سجلت ٣ و ٨٢ في يونيو عام ١٩٩٩، و هو ما يعني حدوث زيادة مقدارها ١٨،٥ % خلال عام واحد.

إن الغرض من التقرير ربع السنوي - و هو ما تناوله الفصل الخامس من هذه الدراسة - هو أن يكون بمثابة نموذج لتطوير تقرير دوري منتظم ليوضع أمام كبار المسؤولين. و يقوم التقرير ربع السنوي للمؤشرات المالية للربع الثاني من عام ١٩٩٩ بمراجعة و تحليل أحدث التطورات التي شهدتها المؤشرات المالية. و قد أظهرت النتيجة الأساسية لعملية مراجعة المؤشرات المالية، أن خمسة من هذه المؤشرات، و التي تمت مناقشتها عالية، تشير إلي

استمرار تزايد مخاطر الحساسية للتقلبات و الهشاشة المالية و الضغط علي العملة، و مثلما هو الحال في العامين الأخيرين، نجد أن العوامل القول بأن اداء الصادرات كان ضعيفا، و قد لعب ذلك دورا هاما في استمرار عجز الحساب الجاري. و يسهم ذلك في حساسية العملة للتقلبات. و حقيقة ارتفاع سعر الصرف الحقيقي الفعال عبر الزمن، من المحتمل أن يكون أحد عوامل ضعف التصدير، بالرغم من أن الدلائل الحالية المتعلقة بسعر الصرف الحقيقي الفعال أوضحت أن ارتفاع قيمة العملة يضعف في حالة الدولار الأمريكي. يضاف إلي ذلك، تلك التخفيضات الكبيرة التي حدثت في عملات دول آسيا، و التي يمكن أن يكون لها أثرا ضاغطا علي بعض الصادرات المصرية.