

# Turkish Financial Crisis of 2001: Did Politics Play Any Role?

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## Abstract

In the last decade, Turkey followed a managed floating exchange rate regime until the late 1990s. In January 2000, Turkey signed a stand-by agreement with the IMF and began following a stabilization program, which involved implementing a crawling peg exchange rate regime. In February 2001, an argument between Prime Minister Bulent Ecevit and President Ahmet Necdet Sezer over how to fight with public-sector corruption triggered a severe financial crisis leading to a sky-high overnight rate as much as 6200% in un compounded terms, and a huge decline in foreign exchange reserves of the Central Bank. Consequently, the exchange rate system collapsed and the Central Bank had no option but allowed the Lira to float freely. This article argues that the political considerations were an important factor behind the crisis of the Turkish Lira in February 2001. To test this hypothesis, a linear probability model based on five conventional macroeconomic indicators, and two political variables spanning the period between 1982 and 2001 is built. Evidence emerges that traditional variables such as domestic credit, money supply, and stock market index, as well as the number of political parties in the government, and the timing of elections are significant in explaining the crisis. Results further suggest that inclusion of political variables in the regression model helped in explaining the crisis better through augmenting the fitness of the regression line.

**Key words:** linear probability model, financial crises, currency crises, emerging markets.

## I. Introduction

In the last decade, Turkey followed a managed floating exchange rate regime until the end of 1999. In January 2000, Turkey signed a stand-by agreement with the IMF and began following a stabilization program, which involved implementing a crawling peg exchange rate regime. The uniqueness of the Turkish crawling peg exchange rate regime was that both the exit strategy and the date of exit were publicly known at the beginning of the program: exchange rate would be allowed to fluctuate in a continuously widening band after eighteen months. However, on February 23, 2001, just four months before the exit day, an argument between Prime Minister Bulent Ecevit and President Ahmet Necdet Sezer over how to fight with public-sector corruption triggered a severe financial crisis leading to a sky-high overnight rate as much as 6200% in un compounded terms, and a huge decline in foreign exchange reserves of the Central Bank. Consequently, the exchange rate system collapsed and the Central Bank had no option but allowed the lira to float freely.

This article argues that the political considerations were an important factor behind the crisis of the Turkish Lira in February 2001. In particular, it suggests that the divided coalitions and frequent elections precluded the Turkish governments from correcting external misalignments and fiscal austerity, which resulted in the abandonment of the fixed exchange rate regime. To verify this hypothesis, a linear probability model is applied by using an exchange rate regime index assuming the value of 0 when the peg is in effect and 1 if otherwise. This hypothesis is tested by using a linear probability regression, which incorporates a set of five conventional macroeconomic indicators in addition to two political factors, namely the number of political parties in the government, and a dummy variable for the timing of elections. This paper is structured as follows. The next section provides an overview of the literature on the subject. Section III gives some background information regarding the Turkish economy prior to the recent financial crisis. Section IV presents the theoretical framework whereas Section V introduces the data and the methodology.

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Section VI presents the findings, and Section VII points out the conclusions that emerge from the study.

## II. Literature Review

Theoretical literature on financial crises is categorized into three mainstream models, namely first-generation models, second-generation models, and third-generation ones. In the "first-generation" models (Krugman 1979; Flood and Garber 1984), a government with persistent money-financed budget deficits is assumed to use a limited stock of reserves to peg its exchange rate and the attempts of investors to anticipate the inevitable collapse generate a speculative attack on the currency when reserves fall to some critical level. In "second-generation" models (Obstfeld, 1994, 1996) policy is less mechanical: a government chooses whether or not to defend a pegged exchange rate by making a tradeoff between short-run macroeconomic flexibility and longer-term credibility. The crisis then arises from the fact that defending parity is more expensive as it requires higher interest rates. Should the market believe that defense will ultimately fail, a speculative attack on a currency develops either as a result of a predicted future deterioration in fundamentals, or purely through self-fulfilling prediction. The need for third generation models became apparent in 1990s with Mexican Tequila crisis of 1994 and the Asian crises of 1997. A number of new approaches have emerged to explain how these crises evolved and how they spread from country to country. Third-generation models (Dooley 1997; Krugman 1996; Radelet and Sachs, 1998) are categorized into three different groups such as herd-behavior, contagion, and moral hazard.

Empirical literature on financial crises includes plenty of both single and multi-country studies. The single-country studies aim at identifying the determinants of financial crisis in a specific country based on the behavior of several macroeconomic indicators. A prominent example in this respect is by Blanco and Garber (1986), who analyze the devaluations of the Mexican peso between 1976 and 1982 and conclude that large exchange rate adjustments in Mexico were preceded by substantial increases in the ex-ante probability of devaluation. Other similar studies have focused on Argentina (Cumby and Van Wijnbergen, 1989), Mexico in the 1980s (Goldberg, 1994), Mexico between 1982 and 1994 (Pazarbasioglu and Otker, 1997), and the experiences of several European countries in the context of the European Monetary System (Otker and Pazarbasioglu, 1997). These works have generally found strong evidence suggesting that domestic macroeconomic indicators such as foreign reserve losses, expansionary fiscal and monetary policies and by high interest rates, play a key role in determining currency crises.

Multi-country studies aim at identifying the determinants of the financial crises using cross-country information. An example of the earlier multi-country studies on currency crises is Edwards (1998), who studies the determinants of devaluation in a sample of 17 developing countries between 1962 and 1982. Using a probit model, he finds evidence that a real exchange rate appreciation and a deterioration of the foreign assets position of the central bank increase the probability of devaluation. Frankel and Rose (1996) use a panel of annual data for 105 developing countries from 1971 through 1992 to analyze the determinants of currency crises. Eichengreen et al. (1996) use graphical analysis and find evidence suggesting that several economic variables behave quite differently in tranquil periods as compared to crises periods. They find that neither the current account deficit nor the fiscal deficit behave significantly different during tranquil and crisis episodes. Sachs, Tornell and Velasco (1996) analyze the spillover effects of the Mexican crisis of 1994-1995 on a group of 20 emerging market economies. They find that low international reserves relative to broad money, real exchange rate appreciation, and a weak banking system account for the financial crises. Kaminsky et al. (1998) study 76 currency crises in 20 countries within the period of 1970-1995. They find that the significant variables are real exchange rate, exports, banking crises dummy, stock prices, and M2/international reserves.

The empirical studies on the determinants of financial crises seldom take into account political factors. In multi country literature Klein and Marion (1997), Eichengreen et al. (1996), Frankel and Rose (1996), and Kaminsky et al. (1998) are the major examples. Nevertheless, these studies are based primarily on conventional macroeconomic indicators and the evidence they put forward is far from being conclusive.

### III. Turkish Economy

Over decades before the crisis in 2001, Turkey had suffered extended periods of economic stagnation and high levels of inflation. In mid-1980s, following the IMF's guidance, Turkey began cutting tariffs on imports, privatizing its state enterprises, and reducing its social service expenditures. It also targeted attracting foreign direct investment through welcoming multinational corporations. Until late 1990s, everything seemed to be running smoothly and the economists were optimistic regarding the country's economic future. Nevertheless, problems began in late 1990s when Turkish policy makers decided to implement a fixed exchange rate policy aiming at stabilizing the ailing economy. Guided by the IMF, policymakers adopted a crawling peg against a US dollar-German mark basket, which allowed the exchange rate to fluctuate within a band. As a consequence of this exchange rate regime, when US dollar became overvalued, the Turkish Lira became overvalued as well, making exports expensive and imports cheap. Hence the country's exports level was inadequate to finance its buoyant import demands, which rendered it dependent on capital inflows (Akyuz, 2002). As a result, policy makers made intensive efforts to balance the public-sector accounts and pursued ambitious programs to privatize their public enterprises. Furthermore, they took steps to strengthen the country's banking systems. When crisis hit the country in 2001, its fiscal consolidation movement was incomplete and the political support for cuts in public spending was highly fragile and fragmented.

The crisis was preceded by a financial turmoil that burst in the second half of November 2000 just at the midst of an exchange rate based stabilization program. The pressure in the market calmed down soon after a new letter of intent was presented to International Monetary Fund. However, as of the end of December 2000, the average interest rates, both the overnight rate and secondary market bond rate, were almost four times higher than their levels at the beginning of November 2000 and more than five times higher than the pre-announced year-end depreciation rate of the lira. This unsustainable situation ended on February 19, 2001, when the prime minister announced that there was a severe political crisis that ignited a crisis in the highly alerted markets due to what had happened at the end of the preceding year (Akyuz, 2002). By this announcement, the dollar rate jumped from a level of 685 thousand liras to 958 thousand liras in a day. At the same time, the overnight rates jumped to unprecedented levels of 6200% in un compounded terms. Three days later, the exchange rate system collapsed and Turkey had to give up its anchored exchange rate policy.

This article argues that political instability was a leading factor in the financial crisis of February 2001. For a long time, Turkey has suffered from political instability and the military intervention in the politics. After the 1995 elections, in particular, there was a period of political instability, during which the main Islamist party participated in Government for the first time. The next general elections in April 1999, on the other hand, led to the formation of an unpredicted three-party coalition comprising the DSP (Social Democrats), ANAP (Center Right) and MHP (right wing nationalist). These coalition parties had considerable differences in terms of their ideologies, which contributed to the political instability in the country. Table 1 presents the changes in government and the political parties in the government in the last decade.

### IV. Theoretical Framework

This study incorporates a model developed by Saqib (2002) in which currency depreciation depends on a vector of economic fundamentals and the consistency of the governments:

$$e_t - \bar{e}_t = w(E_{it} - \bar{E}_i) - \gamma Z_t \quad i = 1, \dots, n, \quad (1)$$

where,  $e_t$  stands for the nominal exchange rate,  $\bar{e}_t$  denotes the equilibrium exchange rate,  $E_{it}$  represents the economic fundamentals,  $\bar{E}_i$  refers to the threshold values for economic fundamentals, and  $Z_t$  denotes the consistency of the authorities in following exchange rate maintenance policies.

Table 1

## Turkish Governments

Period	Political Parties in the Government
December 1983 – December 1987	ANAP (E)
December 1987 – November 1989	ANAP (E)
November 1989 – June 1991	ANAP
June 1991 – November 1991	ANAP
November 1991 – May 1993	DYP+ SHP (E)
May 1993 – June 1993	DYP+ SHP
June 1993 – September 1995	DYP + SHP/DYP*
October 1995 – October 1995	DYP
October 1995 – March 1996	DYP + CHP (E)
March 1996 – June 1996	ANAP + DYP
June 1996 – June 1997	RP + DYP
June 1997 – November 1998	ANAP + DSP + DTP
January 1999 – May 1999	DSP
May 1999 – November 2002	DSP + MHP + ANAP (E)
November 2002 – Present	AKP (E)

Source: Republic of Turkey Ministry of Foreign Affairs Web Page.

AKP: Justice and Development Party; ANAP: Motherland Party; DYP: True Path Party; SHP: Social Democratic Populist Party; CHP: Republican People's Party; RP: Welfare Party; DSP: Democratic Left Party; DTP: Democratic Turkey Party; MHP: Nationalist Movement Party.

\*SHP merged with CHP in February 1995. The new CHP declared the break-up of the coalition on September 20, 1995.

(E) Indicates elections.

The vector of macroeconomic fundamentals consists of traditional indicators of currency crises, deviations of which from their respective threshold values render the situation favorable for speculative attacks. The model assumes that the higher the deviations of economic fundamentals from their threshold values, the higher the likelihood of unexpected exchange rate depreciation is:

$$\partial(e_t - \bar{e}_t) / \partial(E_{it} - \bar{E}_i) = w > 0 \quad i = 1, \dots, n. \quad (2)$$

Consistency means the ability of the authorities to follow policies, consistent with the exchange rate regime. Therefore, higher the consistency less likely is the unexpected exchange rate depreciation:

$$\partial(e_t - \bar{e}_t) / \partial Z_t = -y < 0. \quad (3)$$

The equilibrium of crisis or no-crisis depends upon the ability of the authorities to signal its consistency. In this study, timing of elections and the number of political parties in the government are used as measures of political consistency.

## V. Data and Methodology

A total of seven explanatory variables are used in this study. The first five variables are conventional macroeconomic indicators, whereas the last two are employed to capture the effects of political factors. All the observations are yearly spanning the time period between 1982 and 2002, and are obtained from World Bank World Development Indicators CD-ROM with the ex-

ception of Stock market index, which is obtained from Istanbul Stock Exchange database. Macroeconomic indicators are transformed into natural logarithms to achieve mean-reverting relationships and to make statistical testing procedures valid.

Table 2

## Explanatory Variables and Definitions

Variable	Symbol	Explanation
Stock Market Index	M	Log returns of Turkish monthly stock market index. Used as a real sector indicator showing the reaction of the market prior to the crisis episodes.
Money Supply	M1	Log returns of Turkish monthly money supply M1. Used as an indicator of monetary policy and liquidity.
Domestic Credit	DC	Log returns of monthly Turkish domestic credit as a percentage of the GDP. Used as an indicator of the banking sector as well as a monetary policy indicator.
Government Expenditure	G	Log returns of monthly government expenditure minus government revenue. Used as an indicator of the fiscal imbalances.
Number of Political Parties	NPP	Represents the number of political parties forming a government. It takes the value of zero for dictatorial systems, one for single-party government, two for two-party coalition government, three for three-party coalition government, etc.
Elections	EL	Consists of a dummy variable used to capture the effects of elections on the likelihood of a crisis. It assumes the value of one in the six months preceding the elections, including the election month.
Consumer Price Index	CPI	Log returns of monthly Turkish consumer price index. Used as an indicator of inflation.

The present study aims at finding out whether these variables played a role in the Turkish Financial Crisis of 2001. For this purpose, a linear probability model is built where the dependent variable  $y$  is a dichotomous variable assuming the value of 0 when the peg is in effect and 1 if otherwise.

$$\gamma = \begin{cases} 0 & \text{if the peg is in effect} \\ 1 & \text{otherwise} \end{cases}, \quad (4)$$

The dependent variable is then regressed on the explanatory variables based on the form:

$$\gamma_i = \alpha_i + \beta_i x_i + \varepsilon_i. \quad (5)$$

In this study, one-, two-, and three-month lagged values are initially used in the same regression to identify significant and insignificant variables, and in case of significant variables, to distinguish the most significant lags, i.e. the lags with the highest Z-statistic or lowest  $p$ -value. These variables are then used in the final regression after removing the insignificant ones. This is done by using a backward stepwise regression, which starts with including all variables and their three lags in our model. Next, the insignificant variables are dropped until only significant ones remain. Then, the most significant lag for each variable is identified and used in the final regression. Table 3 shows the expected signs of the coefficients of the variables. For individual variables, a positive coefficient means that an increase in this explanatory variable will cause an increase in dependent variable, that is, dummy dependent variable gets close to 1 signalling the abandonment of the peg. A negative coefficient, on the other hand, would mean that an increase in this variable would cause a decrease in the dummy dependent variable indicating that the peg is in effect.

Table 3

## Expected Signs of the Coefficients

Variable	Sign	Explanation
M1	+	According to Eichengreen et al. (1996) growth of M1 indicates excess liquidity, which may invoke speculative attacks on the currency thus leading to a currency crisis. Besides, Dowling and Zhuang (2000) point out that crises historically have been linked to rapid growth in credit induced by excessive monetary expansion in many countries.
DC	+	Kaminsky et al. (1998) point out that high levels of domestic credit indicate the fragility of a banking system, thus leading to banking and financial crises.
M	-	According to Kaminsky et al. (1998) recessions and a bust in asset price bubbles often precede banking and currency crises.
G	+	According to Saqib (2002) it is expected that higher expenditure net of revenues would have positive effect on the likelihood of crisis.
NPP	+	According to Edwards and Tabellini (1991), the higher the number of political parties is the higher the conflict and the likelihood of crisis are.
EL	+	In accordance with the theoretical assumption, a higher value of this variable would reflect a higher likelihood of crisis (Saqib, 2002).
CPI	+	It is common sense that an increased inflation would make a country more vulnerable to financial crises.

## VI. Findings

This section represents the results of the linear probability regressions. As mentioned in the earlier section, first, one-, two- and three-month lagged values are used in the same regression to identify the significant lags. Then, the insignificant variables are removed and only the most significant lags of the remaining variables are employed in the final regression.

The criteria followed for eliminating insignificant variables is 10%, i.e. variables with p-values higher than 10% are dropped. Equation (1) below shows the variables used in the first pass regression.

$$\begin{aligned}
 CRISIS_t = & b_0 + b_1M1_{t-1} + b_2M1_{t-2} + b_3M1_{t-3} + b_4DC_{t-1} + b_5DC_{t-2} + \\
 & + b_6DC_{t-3} + b_7M_{t-1} + b_8M_{t-2} + b_9M_{t-3} + b_{10}G_{t-1} + b_{11}G_{t-2} + b_{12}G_{t-3} + \quad , \quad (6) \\
 & + b_{13}NPP_{t-1} + b_{14}NPP_{t-2} + b_{15}NPP_{t-3} + b_{13}EL_{t-1} + b_{14}EL_{t-2} + b_{15}EL_{t-3} + \varepsilon
 \end{aligned}$$

where  $\beta$  is the slope parameter in the relationship between the regressand and regressor,  $\alpha$  is a constant term, and  $\varepsilon_t$  is the random error term. Results of this regression are given in Table 4.

Based on this regression, five significant variables are identified as: DC (one-year lag), M (one-year lag), NPP (one-year lag), EL(one-year lag), and M1(two-year lag). At this point, two separate regressions are run. The first regression consists of only the conventional macroeconomic fundamentals. The second regression includes both these variables and the non-economic indicators of NPP and EL. Results of these two separate regressions will enable us to determine whether the inclusion of political factors will improve the regressions or not.

As can be seen in Table 5 and Table 6, the inclusion of political variables improves the fitness of the regression line as evident with a higher R-squared. We find that the significant variables are the consumer price index, domestic credit, money supply, stock market index, number of political parties, and the timing of elections. Positive signs of these variables are in line with our expectations.

Table 4

## First Pass Regression

Variable	Coefficient	Std. Error	T-Statistic
CPI(-1)	1.552175	2.37716	0.652955
DC(-1)	-2.33846	0.55706	-4.197896***
G(-1)	-1.55008	2.27293	-0.681972
M(-1)	0.655709	0.13725	4.777326***
M1(-1)	2.13E-18	5.78E-18	0.368236
NPP(-1)	0.191993	0.09756	1.968037*
EL(-1)	-0.31573	0.16443	-1.920191*
CPI(-2)	-7.03374	5.67154	-1.240181
DC(-2)	-2.6828	1.40049	-1.915618*
G(-2)	6.639269	5.4082	1.22763
M(-2)	-0.07949	0.33416	-0.23788
M1(-2)	4.91E-17	2.47E-17	1.986348*
NPP(-2)	-0.0262	0.20513	-0.127723
EL(-2)	0.062509	0.37149	0.168265
CPI(-3)	-7.69568	7.78143	-0.988981
DC(-3)	-0.65547	1.83997	-0.356238
G(-3)	7.135892	7.37995	0.96693
M(-3)	-0.13563	0.46248	-0.293276
M1(-3)	7.08E-17	5.24E-17	1.349386
NPP(-3)	0.028976	0.2598	0.111532
EL(-3)	0.07302	0.4412	0.165502
C	-222.995	230.272	-0.968402

\*Significant at the 10% level.

\*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

(-1), (-2), (-3) represent one-, two-, and three-year lags respectively.

Table 5

## Second Pass regression

Variable	Coefficient	Std. Error	t-Statistic
CPI(-3)	0.007562	-0.036911	0.013236**
DC(-1)	0.591222	0.192929	5.423121***
M(-1)	3.123231	5.881211	1.613123*
M1(-2)	2,123123	0.01312	1.612311*
C	2.123231	1.771893	2.067855
R-squared:	-0.007562		

\*Significant at the 10% level.

\*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

(-1), (-2), (-3) represent one-, two-, and three-year lags respectively.

Table 6

## Third Pass regression

Variable	Coefficient	Std. Error	t-Statistic
CPI(-3)	0.08092	0.057445	-1.40866
DC(-1)	2.34625	0.537552	-4.36469***
M(-1)	0.627002	0.122487	5.118928***
M1(-2)	1.15E-17	0.002142	1.876251*
NPP(-1)	0.157324	0.083458	1.885079*
EL(-1)	0.34054	0.144013	-2.36465**
C	3.664017	1.531893	3.231231
R-squared:	0.656052		

\*Significant at the 10% level.

\*\* Significant at the 5% level.

\*\*\* Significant at the 1% level.

(-1), (-2), (-3) represent one-, two-, and three-year lags respectively

## VII. Conclusions

This study argues that the political considerations were an important factor behind the crisis of the Turkish Lira in February 2001. In particular, it suggests that the divided coalitions and frequent elections hold back the Turkish government from correcting external misalignments and fiscal austerity, which results in the abandonment of the fixed exchange rate regime. To verify this hypothesis, a linear probability model is built based on five macroeconomic and two political indicators, and an exchange rate regime index assuming the value of 0 when the peg is in effect and 1 if otherwise.

The results indicate that based on this regression, five significant variables are identified as significant ones with expected signs. These are domestic credit, stock market index, number of political parties in the government, timing of elections, and money supply. The fact that political variables turn out to be significant in addition to macroeconomic indicators proves the importance of non-economic factors in determining the determinants of financial crises. Considering the current political instability in many emerging countries, we may expect further financial crises in the years to come, especially in countries with weak macroeconomic fundamentals. In light of this study, we can conclude that a strong macroeconomic environment, a healthy finance sector and political stability are all necessary to decrease the likelihood of future financial crises.

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