INFLATION PERSISTANCE AND CREDIBILITY
IN TURKEY DURING THE NINETIES

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ABSTRACT

This study assesses the credibility of disinflation programs in Turkey during the nineties, where several programs of reform took place. We investigate the credibility of these policies building on a previous research made by Agenor and Taylor (1993). The model is based on two assumptions: (i) inflation is a serially correlated process; (ii) the definition of a proxy that is able to measure the degree of credibility of a programme. The empirical results show that there was a sharp loss of credibility at the end of the 1991 and at the beginning of the 1994 and during the Asian crisis. The Program that the Central Bank implemented after the crisis was able to increase the level of credibility of the CBRT policies. Loss of credibility is registered during the end of the 1995, while various political events took place and during the 1997 following the world economic conditions and the outflow of capitals.

JEL Classification: E65, E59

Introduction

"Although Turkey is one of the world's largest emerging market with a young and growing population of around 65 million, high and prolonged inflation over the past 25 years made Turkish financial markets more vulnerable than other emerging market economies. [...] Chronically high inflation and budget deficits are two key problems preventing the country from realising its full potential"[1]. That is the way Gazi Ercel described the economic situation of his country. Inflation, among others of course, is one of the most important problems that monetary and political authorities had to face since the seventies. Many attempts had been made within the past two decades but we focus our analysis on the effectiveness of the disinflation programmes applied in the nineties

The first and maybe most severe crisis that Turkey had to face until then was in 1978-1979. The stabilisation package that was put into effect in 1980 aimed at liberalising this crisis-prone economy. This can be viewed as the first programme that tried to re-organise the Turkish economic structure. Fourteen years later another severe crisis hit Turkey, in 1994. This crisis came, as we show later, after a period of gaining credibility of the economic system as a whole. The basic idea of this programs, applied in most of the western countries in the eighties, was to re-establish control over prices minimising any negative consequences of anti-inflationary policies on output and employment. These programs were seen as a new monetary experiment, in as much as the essential aspect was based on the announcement of these policies. The idea behind this program was that economic policies are more effective if they are credible to the private agents. Giavazzi and Pagano (1988) define credibility as a measure of the degree to which policy-makers tie their hands on future policies by issuing policy announcements.

This study attempts to assess credibility of disinflation programs in Turkey during the nineties. Particular emphasis is on the Stabilisation Program following the 1994 crisis. We investigate the credibility of these policies following a previous research made by Agenor and Taylor (1993).

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[1] Gazi Ercel Governor of the Central Bank of the Republic of Turkey (CBRT), speech in Prague, September 26, 2000.

The study is organised as follows: the first part gives some relevant ideas on credibility. The second one is devoted to the analysis of the empirical results of 'credibility' and presents the econometric methodologies from other studies. Finally, the last part is devoted to the analysis of the model, the hypotheses tested, the methodologies used and the empirical results.

1. Credibility

Credibility is defined as "the extent to which beliefs concerning a policy conform to official announcements about this policy. [...] Credibility may thus also be viewed as a measure of the degree to which policy-makers tie their hands on future policies by issuing policy announcements"[2]. Credibility is an attribute that all the policy makers would like to have. This gives to the policymakers a 'crucial advantage' in reducing inflation with acceptable costs in terms of unemployment and output.

Public authorities have different ways to show they are determinated in pursuing an anti-inflationary policy. One is to prove that, even in cases of a very deep recession, the announced monetary policies will not change. However, following this theory, it could be possible to generate a conflict between monetary authority and the government since the costs in political terms of an anti inflationary policy may be too large for the government. Another possibility is that the monetary authorities can seek to influence expectations with some institutional reform, such as change in the exchange rate. According to Schelling (1982), "the most a government can commit is an input, not an output; a program, not a result. A government can attempt to commit itself on variables it controls; but the promised results are only as credible as the commitment and the theory that generates the results. This is a weakness of any effort to control inflation through expectations"[3].

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[2] Weber (1991, p.62).
[3] Schelling, (1982).

Finally, there are two general principles that should be emphasised in a study of the macroeconomic credibility problem. First, it should be assumed that if policymakers want to build up a very credible policy, a single announcement is not enough. Rational individuals need more to go on than mere announcement. They would pay more attention to the "policymakers' reputation" and to the costs of a new policy. Second, "[...] although reasonably clear evidence that a new policy rule will work better is a necessary condition for its credibility, this is not a sufficient condition"[4]. The problem of time inconsistency adds additional obstacle to credibility.

2. Econometric methodologies and empirical results from other studies

The first problem in analysing credibility from the econometric point of view is related to the identification of proxy variable for credibility. The theoretical literature indicates that credibility is likely to be time-dependent, having both impact and subsequent effects. If credibility evolves over time, there is a real problem of ensuring an adequate data set that is capable of picking up the effects. These observations are related to the distinction made by Buiter and Miller (1983) between announcement effects and results effects. With these considerations in mind, we summarise below the formal econometric investigations that have been conducted from empirical studies.

The most commonly used technique in testing for credibility effects is the 'prediction error method'. This consists of estimating a model of the inflationary process over the pre-reform period and predicting over the post-reform period. Christensen (1987) affirms that "[...] all of these investigations suffer from the same general problem associated with the prediction error method, namely that it hinges on a rather tenuous comparison between two distinct policy regimes. One aspect of this is that the test is only as good as one's confidence in the equation estimated to the data for the earlier regime. Another is that any observed errors may explain almost anything not modelled explicitly within the regression model. Only in the case where the systematic behaviour of these errors is due solely to the missing

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[4] Taylor (1982).

'credibility variable' will this method be suitable for testing credibility"[5]. In light of that, it is important that different indirect tests are developed that are less susceptible of interpretation problems. The second approach, more articulate than the other, was made by Baxter [1985]. This study was used to explain some contemporary hyperinflations in Latin American countries, more precisely, Chile and Argentina. These two countries were facing, in the late 1970's, a very severe inflation as a consequence of large fiscal deficits that was financed by monetization. In both cases, a program of reform was announced that consisted of monetary and fiscal tightening and also, a crawling peg exchange rate that implied successive decreasing rates of devaluation of the exchange rate. To examine the credibility of these programs, Baxter used an explicit Bayesian approach and argued that " this paper develops and implements a method for measuring the credibility of an announced policy reform. Agents in the economy learn about the government's policy rules and calculate, using Bayesian techniques, the probabilities that these rules belong to a set of 'reform' rules"[6]. In this case, by definition, credibility was considered the subjective probability, specified by agents in the economy, that a program of reform had taken place. According to Baxter, "this definition of credibility is sufficiently general as to be applicable to any economic policy, as will be the method for actual calculation of a measure of credibility"[7].

The results of the analysis are summarised in the following points. The policy reform in Chile was a partial success while that in Argentina was a substantial failure. These different results can be explained by the facts that in Argentina there was a series of unscheduled devaluations, which was not evident in Chile. Furthermore, there was the monetary-fiscal mix in Argentina which implied an "explosive path for the real value of interest-bearing government debt unless the government resorted the monetization"[8] (Christensen, 1987). These two considerations can give an idea of why Argentinean citizens would have had little confidence in their government's commitment to the policy reform. Weber (1991) in his study about reputation and credibility in the EMS, used Bayesian univariate time series analysis to evaluate credibility effects. He affirms that " the adopted (bayesian) procedure consists in finding out how inflation could be forecasted over each sub period under various

[5] Christensen (1987 p. 38)
[6] Baxter (1985).
[7] Baxter (1985 p. 344).

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alternative assumptions about the degree to which inflation shocks are allowed by the central bank to become permanent. The relative success of each of these forecasts is then evaluated over time"[9]. Agenor and Taylor (1993) criticise this approach, because they find it "[...] difficult to distinguish between changes in the goodness of fit of the time series model generating expectations and changes in the credibility of policy, because potentially relevant variables are excluded from the model"[10]. Clearly, if policy announcements are correlated with some of the omitted variables, this can be considered a serious problem, especially if these correlations change during the sample period. Finally, time-varying parameter and switching regression techniques have also been used to test for credibility. The time-varying parameter models, allows the coefficient of the short-run equation to change gradually over time, rather than moving instantaneously from the old to the new value as in the switching regression model. Mankiw, Miron, and Weil (1987) in their study about the founding of the Federal Reserve System in 1914, and the subsequent change in the nominal interest rates used switching-regression techniques. They estimated that the most likely date for the change in the stochastic process of the short rate was between 1914 and 1915. This estimate coincides almost exactly with the date in which the Federal Reserve began operating. Despite the positive results of these techniques in some applied studies, "in general, difficulty with switching-regression approaches is that, with a single switch point, it is only useful for examining regime shifts which are both credible and permanent within the data sample period, [...] extending the analysis to allow for two or more switch points would be technically cumbersome"[11].

3. The model

The model will be presented in its analytical form and the basic assumptions. This model was applied by Agenor and Taylor (1993) to study the credibility effect of the Cruzado Plan implemented in Brazil in 1986, that consisted of a general freeze of prices, the tariffs for public services, and exchange rate. Moreover, the government intervention removed wages

[8]Christensen (1987 p. 38)
[9]Weber (1991, p. 67).
[10]Agenor and Taylor, (1993).
[11]Agenor and Taylor (1993, p.330).

indexation. The procedure followed by the authors was based on the existence, in Brazil, of the official foreign exchange rate and the black market or parallel exchange rate market. Considering that differences between the Brazilian economic situation and the Turkish economic situation existed, the model had to be modified in order to capture the dynamic of the economy under investigation.

It has been verified in many studies that the imbalances of the fiscal sector are one of the major causes of the high level of inflation in Turkey. More precisely, it is the existence of structural weaknesses in the public sector finances that has generated in the last 15 years a so high inflation level. This being said, we built our model on two assumptions:

1. The first assumption is that inflation is a serially correlated process. The reason for this rests essentially on the effect of the inertial forces in the economy. Ercel argues that "the enduring memory of inflation, as well as negative external developments, have prevented a decrease in inflationary expectations. These expectations play a key role in breaking down inflationary inertia"[12]. Moreover, "the degree of inflation persistent is assumed to be inversely related to the degree of policy credibility".[13] This is a central point of the analysis. Assuming that inflation has a memory (i.e. it is modelled as an AR(*d*) process) implies that Central Bank policies are ineffective. The only actions that can effectively reduced inflationary pressure are those bringing credibility to the monetary authorities.

2. The second assumption is related with the definition of an appropriate proxy that is able to measure the degree of credibility of a programme, or generally an economic policy that can stabilise the level of inflation. This proxy is given by that part of the parallel market premium, which is orthogonal to movements in the 'market fundamentals'. The Agenor and Taylor considerations were based on the exchange rate markets. They consider that if a disinflationary programme loses credibility, agents anticipate the acceleration in the inflation rate. "Thus, to avoid the inflation tax on real domestic monetary balances, they (agents) switch to foreign currency denominated assets. For given supply, the parallel market exchange rate depreciates, and the premium rises, other

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[12] Gazi Ercel (2000)
[13] Agenor and Taylor (1993, p.330).

things equal".[14] In the model that we apply in this work we propose a different approach. In fact, the idea is to consider how the spread given by the change in the two interest rates reacts to an announced disinflationary programme[15]. Hence, we assume that the FX interest rate is highly sensitive to the change in credibility. The market premium, that is the difference between interest rate in domestic currency deposits and interest rate on FX deposits, is an endogenous variable. This means that its level will also reflect the behaviour of market fundamentals, such as domestic debt position, past domestic inflation, foreign prices etc.. The idea of this parallel market premium defined as difference of interest rates is based on the assumption it is highly sensitive to market expectations regarding current and future government policies, and therefore, is considered a good variable for examining credibility effects. Furthermore, the idea is that "if movements in the parallel premium cannot be explained by movements in the market fundamentals, then the remaining variation must be due to variation in the perceived degree of policy credibility".[16] In other words, all the variations in that part of the parallel market, include past movements in inflation too, will be strongly influenced by the level of reputation and credibility gained by the authorities, and that part can be used as an index of credibility.

The model itself can be divided into two parts. The first part consists of decomposing the parallel market premium P_t into two components: the 'fundamental component' and 'non fundamental component' which will be the basis for a measures of credibility. The general form of the model is as follows:

$$\boldsymbol{a}(L)P_t = \boldsymbol{b}(L)Z_t + \boldsymbol{e}_t \qquad\qquad [3.1]$$

Where $\boldsymbol{b}(L)$ and $\boldsymbol{a}(L)$ are, respectively:

$$\boldsymbol{a}(L) = \boldsymbol{a}_1 L + \boldsymbol{a}_2 L^2 + ... + \boldsymbol{a}_k L^k \qquad\qquad [3.2]$$

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[14] Agenor and Taylor (1993, p.330).

[15] It could be objected that capital mobility is subject to some sort of restriction, which could influence the interest rates on FX deposits however, following previous works by Altinkemer (1992, 1995) Turkish financial system is fully open since the early nineties.

[16] Agenor and Taylor (1993, p. 331).

$$\boldsymbol{b}(L) = \boldsymbol{b}_1 L + \boldsymbol{b}_2 L^2 + ... + \boldsymbol{b}_k L^k \qquad\qquad\qquad [3.3]$$

the "$\boldsymbol{a}_i$" represent a scalar coefficient, the $\boldsymbol{b}_i$ denote conformable coefficient vectors, L is the lag operator, and ε_t the residual process.

Rearranging we get:

$$P_t = \boldsymbol{a}_1 P_{t-1} + ... + \boldsymbol{a}_k P_{t-k} + \boldsymbol{b}_1 Z_{t-1} + ... + \boldsymbol{b}_k Z_{t-k} \qquad\qquad [3.4]$$

Equation [3.4] can be interpreted as the first equation in a vector autoregressive system for P_t and Z_t. According to the basis assumption of the model, the residuals from equation [3.4] have zero mean over the estimation period. From the [3.4] we derive our credibility variable (c_t). It is assumed to be the complement of the error term ε_t:

$$c_t = -\boldsymbol{e}_t. \qquad\qquad\qquad\qquad\qquad\qquad\qquad [3.5]$$

The second part of the model consists to estimate, using a Kalman filter approach, a 'backward-looking' process for inflation with parameters varying with non-fundamental component of the parallel market premium. Harvey (1989) discussing about the state space form argues that "the key to handling structural time series models is the state space form, with the state of the system representing the various unobserved components such as trends and seasonals. Once in the state space form (SSF), the Kalman filter provides the means of updating the state as new observations become available"[17]. The Kalman filter is then, a recursive procedure of computing the optimal estimator of the state vector at time t, based on the information available at time t. One of the reasons for the central role of the Kalman filter is that "[...] when the disturbances and the initial state vector are normally distributed, it enables the likelihood function to be calculated via what is known as the prediction error decomposition. This opens the way for estimation of any unknown parameters in the

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[17] Harvey (1989, p. 10).

model"[18]. Assuming that inflation, p_t, is driven by a AR(1) process, we can represent the state space form as[19]

$$p_t = a_t p_{t-1} + e_t \qquad\qquad\qquad [3.6]$$

where

$$a_t = a_{t-1} + gc_t + e^*_t \qquad\qquad\qquad [3.7]$$

Where [3.6] is the measurement equation with p_t and e_t are *[nx1]* vectors and [3.7] is the transition equation. a_t and e^*_t are *[mx1]* vectors and c_t is a *[mxn]* matrix. It is assumed that all errors are normally distributed and $E(e_t e^*_{t-s})=0$ for all s.[20]

Finally, following the theory of Agenor and Taylor (1993) "The Kalman filter recursions can then be applied to yield optimal estimates of the state variable sequence (a_t). The resulting estimate of "γ" should be negative: the higher credibility is, the lower the 'inertial' effect on inflation" [21]. The coefficient a_t of the equation [3.7] should be smaller after the accomplishment of a credible disinflation programme.

4. Empirical specification

The choice of this sample was essentially based on the need of including all the main events that determined substantial changes in government and monetary policies. It was the latter which showed a strong determination in pursuing a 'credible' policy. In fact, despite different

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[18] Harvey (1989, p. 10).

[19] Where A stochastic process in which the current value, X_t, depends on the previous value, X_{t-1}, and a white noise disturbance term, ε_t, is known as an autoregressive process. The process may be written $X_t=\alpha_1 X_{t-1}+\alpha_2 X_{t-2}+...+\alpha_n X_{t-n}+\varepsilon_t$ where ε_t has mean zero and variance σ^2, and α is a parameter. This is called an autoregressive process of order 'n', and is denoted by AR(n).

[20] For a more complete explanation of the Kalman filter approach, the state space form and the measurement and transition equations, see Harvey (1989).

[21] Agenor and Taylor (1993, p. 332).

programmes were implemented, only the last one (end 1999) seems to rely on a concrete political support. The lack of political support was, in our opinion, the first reason of the previous programmes' failure.

The model is divided in two steps. The first one consists of decomposing the parallel market premium P_t into two components: the fundamental and non-fundamental component. In this first step we adopt a general to specific approach. We end up with the following specification[22]:

$$P_t = f_0 + f_1 P_{t-1} + f_2 P_{t-2} + f_3 INF_t + f_4 INF_{t-1} + f_5 BILL_t + f_6 BILL_{t-1} + f_7 EX_t + f_8 EX_{t-1} + e_t$$

[3.8]

Where:

- P_t is the parallel market premium, calculate as difference between the change in three-month domestic interest rate and the change in interest on deposits denominated in US$;
- *BILL* is the logarithm of the government expenditure variable;
- *EX* is the logarithm of the TL/$ exchange rate ;
- *INF* is the three-month inflation rate. It corresponds to the first difference of the log-normal of the CPI;

Equation [3.8] can be interpreted as the first equation in a vector autoregressive system for P_t and all the other independent variables. The right hand side component of [3.8] shows the 'fundamental factors', which tell us if innovations in the dependent variable P_t can be explained by changing in 'fundamental factors'. If not, then the remaining variation is due to the variation in the perceived degree of policy credibility.

The second step consists of the estimation using the Kalman Filter approach. A 'backward-looking' process for inflation with parameters that vary with the non-fundamental

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[22] We tested also for other variables, for longer lags, and considering annual changes. None of those were found to be significant, therefore we dropped from the empirical specification.

component (i.e. the error term) of the parallel market premium. The second step of the model to estimate (the state space form) is given by

$$INF_t = a_t INF_{t-1} + \mathbf{e}_t \qquad \text{(measurement equation)} \qquad [3.9a]$$

and

$$a_t = a_{t-1} + \mathbf{b_1}\, CRED_t + \mathbf{e}_t * \qquad \text{(transition equation)} \qquad [3.9b]$$

where '$CRED$' is the credibility variable generated as the complement of the residuals of equation [3.8].

5. EMPIRICAL RESULTS

As said in the previous paragraph, the first step consists in the estimation of Eq. [3.8]. Preliminary estimates for the period 1990:4-2001:9 indicates that some of the explanatory variables seem to have a structural break at the end of the 2000. Tests made for the whole sample show high instability of the parameters, the Chow test indicates a possible break at 2000:5. In light of this, the sample 1990:4-2000:3 was chosen. Several different seasonal dummies and dummies covering crisis periods where tested, none of them was found significant and therefore not included in the final specification.

Table 1: equation [3.8]: regression results period (1990-2000)

	CONST	*DIF(-1)*	*DIF(-2)*	*BILL*	*BILL (-1)*	*EX*	*EX(-1)*	*INF*	*INF (-1)*
Coeff.	.965547	.69914	-.33191	.364E-05	-.373E-05	61.8304	-61.9231	16.3547	-34.2018
t-stat.	.424101 [.671]	9.11834 [.000]	-4.48721 [.000]	3.03477 [.002]	-3.09837 [.002]	8.28528 [.000]	-8.30109 [.000]	1.93751 [.053]	-4.19063 [.000]
R^2 0.58		DW 2.10		Nº Obser.119					

Table 1 presents the empirical results obtained estimating equation [3.8] for the period 1990-2000[23]. All the variables appear to be significant at a very low rejection probability. Fig. 1 shows the credibility measure, that is, the negative of the residuals series, derived from the ARDL system. For the period of interest, 1990 to 2000, this measure displays an unstable pattern: credibility, except for the years 1992-1994, seems to be on average unstable, at least after 1994. Moreover, Fig. 1 shows that the credibility measure fit well with the idea of loss of credibility of a disinflationary programme. In fact, during and soon after the crisis, the variance of the credibility proxy increases while during a stable period its variance fluctuate but at a lower level. These results could suggest the idea that, even if the economic policies were not fully credible, they contributed to reduce on average the fluctuation, in the long run, of its variance.

The second part of the model aims at estimating a backward-looking process for inflation with parameters varying with the non-fundamental component of the parallel market premium, using a Kalman filter approach. In equation [3.9b], the coefficient a, estimated using Kalman filter approach, against credibility variable ($CRED$) has been regressed, in order to evaluate the evolution of the credibility coefficient on the inflation. The empirical results are summarised in table 2.

Table 2: The transition equation [3.9b] 1990-2000

	Coefficient	t-statistic	Stand. Error
CRED	-.129824E-02	-1.75479	.739825E-03

The sum of the squared residuals is 1.52 and the Log of likelihood function is 170.848. The maximum likelihood estimates of the parameters of the equation [3.9a] and [3.9b] using the credibility index derived from the first-order ARDL system are as follows: $\beta 1 = -0.129824E\text{-}02$. The coefficient β' is negative and significant, as predicted by the model. Fig. 2 shows the behaviour of the coefficient a_t, for the entire sample. More precisely, as suggested by the analysis, the persistence effect reflects the behaviour of the prices when policy credibility is low.

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[23] The estimates are obtained using a ML procedure, considering the error term as following and AR1 process. This procedure was necessary to correct for serial correlation.

The pattern of the coefficient a_t seems to capture perfectly the economic dynamic of the period. Relating Fig.1 and Fig.2 it appears quite clearly that when the credibility variable exhibits high variability, the coefficient a_t has the tendency to rise.

At the beginning of our sample (1991-92) we register an increasing dynamics of the coefficient a_t. The main cause of high inflation persistence might be attribute to the Gulf war and the consequent political and economic instability of the period. Given the uncertainty surrounding the events, in that year the CBRT did not announce a monetary program. It follows a period of approximately 15 months of increasing in credibility. From the end of l992 the coefficient a_t decreased and, after a positive overshot in the first months of the 1994, reaches a negative peak during the first semester of that year. At this point it is worth to remember how the crisis evolved. "In the last months of 1993, the Treasury had tried to keep interest rate low for government securities […] The treasury policy to lower interest rates continued during the first months of 1994, which prevented the Treasury from borrowing from the domestic market, which in turn resulted in excess liquidity, causing an upward pressure on foreign exchange rate."[24] This pattern of the coefficient seems to capture perfectly the economic situation (i.e. lack of fiscal discipline) in the country in that period. The crisis happened at the end of March 1994, but the decrease in credibility starts earlier because agents were already expecting a higher level of inflation, following the Treasury policies of debt financing. In the following year the situation deteriorates when "[...] in the 1993 CBRT did not announce a monetary program because of the difficulty in controlling its balance sheet items due to the inability in controlling the financing needs of the public sector" Emir *et al.* (2000, p. 4). The recover at the end of 1994 was mainly due to the IMF intervention and the policy pursued by the Treasury. The period that goes from the beginning of 1995 until the end of 1996, shows a quite stable trend of the persistence effect, as shown in Figure 2. The value of a_t came back to its pre-crisis value. The increase in budget during the 1995, this might explain this sharp boost of credibility. A period of uncertain but, on average, stable credibility seems to characterise the last part of the sample. Three might be the explanations: 1)

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[24] Central Bank of the Republic of Turkey (1994, p. 33 and 59).

monetary policy was acting more on the financial stability rather than on the price stability side; 2) the memory of the crisis was still vivid; 3) the budget deficit did not appear to decrease, no structural measures were undertaken. During the 1997 inflation persistence boosted to its pre-crisis level. Indeed this can be attributed to the world economic conditions rather than a sharp lost in credibility by the monetary authorities. In fact the world financial crisis which started in Asia and evolved until the Russia crisis caused a large outflow of capital from the emerging market (among those Turkey). The consequence was an increase in the cost of borrowing both for the private and the public sector with a resulting overall economic condition. In the 1998 authorities promoted a monetary programme in order to keep inflation at a low and sustainable level, at the same time a tight fiscal policy started to have some effect. However, if looking at the CPI and at the WPI we see that they exhibited a clear downward trend, suggesting a success of the policies, we cannot say the same for the fiscal side. The public debt continued its increasing trend. Last period goes from the end of 1998 until May 2000. Despite the political instability in the first part of the 1999, figure 2 shows a decreasing trend of the persistence effect due essentially to the decision taken by the monetary authority. The end of the 1999 saw the launch of a disinflationary programme. The basic goals of this programme consisted in reducing the real interest rate, increasing the growth potential of the economy and generate a more efficient allocation of the resources in the economy. This program was of particular interest since both political and monetary authorities were committed to the final goal. Such a co-ordination makes the variable CRED react promptly and positively to this new "co-ordinated" program. Inflation persistence (a_t), as a consequence, decreases. Unfortunately this programme failed, or at least had to be stopped, because of the strong political crises that occurred in February 2001. One of the new instruments of this programme was the pre-announced exchange rate mechanism, that is, to construct an exchange rate basket, which was composed of 1 US dollar plus 0.77 Euro. It would be announced on a daily basis covering one-year period. In doing so, additional credibility was gained by the monetary authority from the economic agents.

CONCLUSIONS

In light of the existing literature on the impact of the 'credibility' of a disinflationary program on the rate of inflation, and in the light of the econometric methodologies for testing such an impact, this study has applied a procedure to estimate the size of the credibility factors in the context of disinflationary policies in Turkey for the period 1990-2000. In other words we wanted to demonstrate that disinflationary programmes do not have a positive impact if only the monetary authorities implement them. The model presented was built on two assumptions: (i) inflation is a serially correlated process; (ii) a proxy that is able to measure the degree of credibility of a programme, or generally an economic policy that can stabilise the level of inflation is the difference between the 'fundamental' component of the market premium and the 'non-fundamental component' of this market with the interest rate of three month deposit, and interest rate on three month FX deposit. A recursive Kalman filter was then applied in order to verify the impact of the credibility on the inflation pattern. The empirical results show that there was a sharp loss of credibility at the end of the 1991 and at the beginning of the 1994. The Program that the Central Bank implemented after the crisis was not able to restore the level of credibility that the bank had gained previously. From the evidences presented we attribute to the lack of fiscal discipline the main cause of the failure of a stable and sustainable inflation rate.

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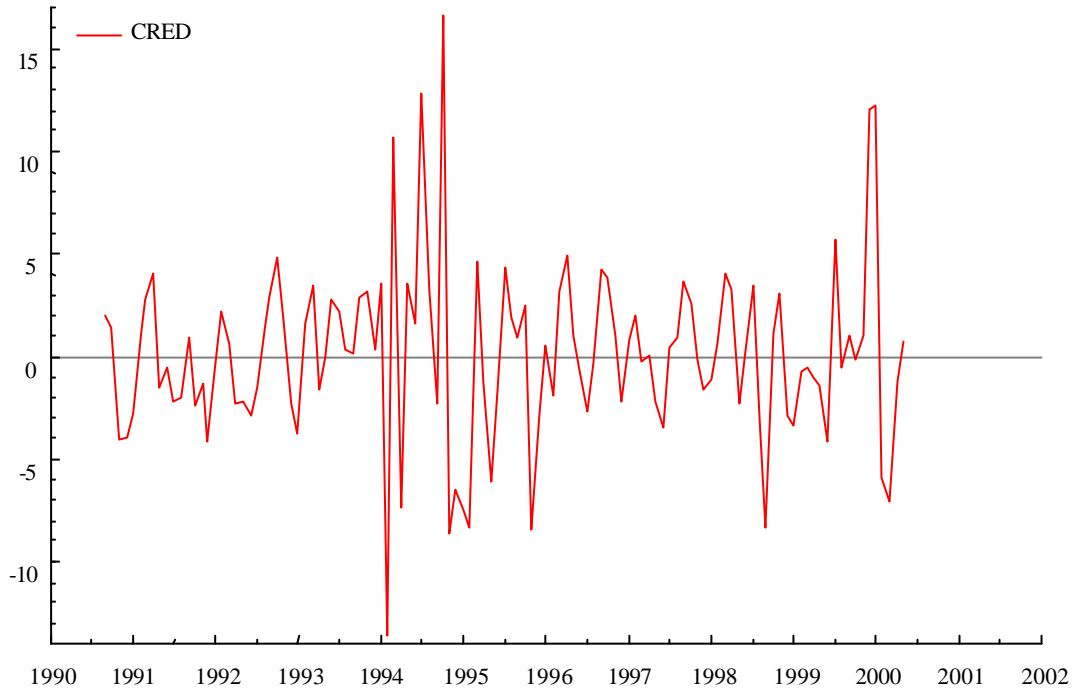
Appendix

Fig.1: CRED (Credibility Variable)

Fig.2: Dynamic of the coefficient *a1*