DYNAMICS OF MACROECONOMIC ADJUSTMENT IN A GLOBALIZED DEVELOPING ECONOMY: GROWTH, ACCUMULATION AND DISTRIBUTION, TURKEY 1969-1998*

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Abstract

Our purpose in this paper is to establish stylized facts of the Turkish macroeconomic adjustments using data from 1969 to date. We adopt a traditional a-priori definition of business cycles as cyclical co-movements of economic variables such as public, private and construction investments, trade balance, labor productivity, wages and fiscal accounts with the cyclical component of real GDP. We also incorporate in our analysis an investigation of the cyclical components of exchange rates, interest rates, price inflation and the monetary aggregates. Our quantitative findings reveal a robust and significant positive relationship between public and private investments and real GDP growth, suggesting the presence of "crowding in" effects of public investment. Trend growth of manufacturing wages and average labor productivity display a loose association over the whole period, and the rapid gains in productivity in the post-1980 reform era are not observed to be materialized as gains in remuneration of wage labor. We also find a significant negative correlation of manufacturing wages with merchandise exports and the exchange rate; and document further evidence on the strong negative correlation between variations in consumer prices and production.

I. Introduction

The concept of business cycles has a long tradition of research in economics dating back to Ricardo and Marx. As an indicator of the dynamics of growth and accumulation, the concept is directly embedded in the quest of "the laws of motion of capital" under the realm of classical economics. Recently, one can witness a renewed interest on the empirics of business cycles and economic growth. A variety of empirical evidence revealed that fluctuations in national output are correlated with many macroeconomic and political variables, including many that are under the direct control of the government policies.[1] Together these efforts strive to explain many of what Burns and Mitchell (1946) identified as the facts of business cycles which were later re-defined as "repeated deviations of output from some trend" in Lucas (1977).

It is the purpose of this paper to identify and study the main stylized facts characterizing the dynamic macroeconomic adjustments of a globalizing developing economy, Turkey, 1969-to date. Even though quite a number of recent studies exist on the exposition of business cycles experienced in the industrialized economies,[2] there is a lack of similar studies in the development literature, addressing the adjustments faced by the developing world. Thus, a related motivation of this paper is our further attempt to draw comparisons between our findings in the context of a developing economy and those obtained for the developed industrial economies, and contribute to the empirics of development macroeconomics.

After following a rather long period of inward looking, import substitutionist pattern of growth, Turkey initiated an extensive reform process in 1980 which aimed at integrating with the world commodity and financial markets. During this process, first the existing system of multiple exchange rates was abandoned and quantitative restrictions on imports were eliminated. Capital account liberalization was completed with the recognition of full convertibility of the Turkish Lira and the elimination of all controls on foreign capital flows in 1989. Currently, the Turkish economy can be said to be operating under conditions of a truly "open

economy" –a macroeconomic environment where its capital account is completely liberalized, and the process of financial de-regulation is completed. In this setting many of the instruments of monetary and fiscal control have been transformed, and the constraints of macro equilibrium have undergone major structural change.

In what follows, we adopt a traditional a-prior definition of business cycles as cyclical co-movements of economic variables such as public and private investments, trade balance, labor productivity, wages of different labor categories, and fiscal accounts with the cyclical component of real gross domestic product. We also incorporate in our analysis an investigation of the cyclical behavior of exchange rate, interest rates, price inflation, and the monetary aggregates.

Our inquiry will use both annual and quarterly data covering 1969-onwards. We conduct our analytical investigation with the aid of the standard approach by decomposing time series into a trend component and cyclical deviations around the trend. While there are many techniques dealing with this problem,[3] we chose to adopt the Hodrick-Prescott (1980, 1997) methodology, as it presents, to our reading of the literature, one of the most widely used decomposition filters in modern theories of the business cycles, thus enabling us to draw direct inferences with previous results obtained for the developed industrialized economies.

The paper is organized under five sections. In the next section, we provide a broad overview of the recent development path of the Turkish economy. We find it analytically convenient to decompose this path into three major sub-periods: (i) import substitutionist industrialization (ISI), 1969-1979; (ii) commodity trade liberalization and export promotion, 1980-1988; and (iii) post-financial liberalization, 1989-current. We introduce and execute our analytical methodology in section III, and investigate our quantitative results in section IV. Finally, section V summarizes and concludes.

II. Phases of Macroeconomic Adjustment in Turkey, 1969-1998

We portray the recent evolution of the Turkish economy in Table 1. Overall, it is seen that the Turkish economy has experienced three distinct cycles of growth-crisis-and adjustment during the last three decades: The first covers broadly the period until 1979, with its main attribute being the deepening of the import substitutionist industrialization strategy. This period, often called as the second phase of import substitution, is characterized by the implementation of a vigorous

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[1] Part of this literature is surveyed in Barro and Sala-i-Martin (1995), Mankiw, Romer and Weil (1992), Levine and Renelt (1992), and Barro (1991). On the business cycles literature see Lucas (1977); King, Plosser and Rebelo (1998a, 1988b) and the recent Symposium papers by Romer, Basu and Taylor and Zarnowitz in J. of Economic Perspectives (1999).

[2] See, e.g., Hodrick and Prescott (1997); Backus and Kehoe (1992); Blackburn and Ravn (1992); Englund, Persson and Svensson (1992); Brandner and Neusser (1992); Kydland and Prescott (1990); Romer (1994) and Lucas (1977, 1980).

[3] For an evaluation of the robustness of alternative techniques of decomposition of the business cycles, see Cogley (1997); Cogley and Nason (1995): and King and Rebelo (1993).

public investment program which aimed at expanding the domestic production capacity in heavy manufacturing and capital goods, such as machinery, petrochemicals, and basic intermediates. The foreign trade regime was under heavy protection via quantitative restrictions along with a fixed exchange rate regime which, on the average, was overvalued given purchasing parity terms. The state was both an investing and a producing agent with state economic enterprises (SEEs) serving as the major tools for fostering the industrialization targets.

In retrospect, the underlying political economy basis of the ISI strategy was one of grand, yet delicate, alliance between the bureaucratic elites, industrial capitalists, industrial workers, and the peasantry (Boratav, 1983; Boratav, Keyder and Pamuk, 1984). Accordingly, private industrial profits were fed from two sources: First, the protectionist trade regime, often implemented through strong non-tariff barriers, enabled industrialists to capture oligopolistic profits and rents originating from a readily available, protected domestic market. Second, the existence of a public enterprise system with the strategic role of producing cheap intermediates through artificially low, administered prices enabled the private industrial enterprises (and the rural economy) to minimize on material input costs. Industrialists, in turn, can be claimed to have "accepted" the conditions of a general rise in the manufacturing wages, and an agricultural support program which induced the domestic terms of trade to favor agriculture.

The import substitutionist development strategy was observed to reach its limits beginning 1976 when financing of the balance of payments and industrial investments became interestingly difficult. The foreign exchange crisis of 1977-80 brought together the cessation of the civilian democracy and imposition of a new constitution and labor codes regulating the industrial relations under a military regime.

Growth was re-invigorated following the introduction of a structural adjustment program in January, 1980 under the auspices of the international centers such as the World Bank and the IMF. The period 1981-87 was marked with commodity trade liberalization and export promotion along with a price reform aimed at reducing the state's role in the economic affairs. The existing system of fixed exchange rate administration was replaced by a flexible regime of crawling-peg, and together with the introduction of a complex system of direct export subsidization, acted as the main instruments for the promotion of exports and pursuit of macroeconomic stability.[4]

During the decade export revenues increased at an annual rate of 15 percent. Gross domestic product rose at an annual rate of 4.2 percent in 1981-82, and 6.5 percent between 1983-87. The period was also characterized by severe erosion of wage incomes via hostile measures against organized labor. The suppression of wages was instrumental both in lowering production costs and also in squeezing of the domestic absorption capacity. Through this manner, an exportable surplus could have been generated which found its way to the newly growing Middle Eastern markets with heavy use of export subsidies. Consequently, the share of wage-labor in private manufacturing value added receded from 30 percent to 20 percent, and in public manufacturing from 27 percent to 15 percent between 1980 and 1988. In this process, the average rate of profit margins in private manufacturing has increased from 31 percent to 38 percent.

During the 1980s public sector balances were in general maintained, and the public sector-borrowing requirement (PSBR) has been on the order of 4.7 percent of the gross domestic product (GDP). Domestic saving rate reached to 20 percent, and the share of investments increased to 21 percent of the aggregate GDP. However, the composition of total fixed investments displayed quite adverse trends at the sectoral level from the point of view of strategic targets. In fact, as gross fixed investments of the private sector increased by 12.3 percent during 1983-87, only a small portion of this amount was directed to manufacturing. The rate of growth of private manufacturing investments has been on the order of only 2.1 percent per annum, and could not reach its pre-1980 levels in real terms until the end of 1989. This resulted in a significant anomaly as far as the official stance towards industrialization was concerned: in a period where outward orientation was supposedly directed to increased manufacturing exports through significant price and subsidy incentives, distribution of investments revealed a declining trend for the sector. The implications of this non-conformity between the stated foreign trade objectives towards manufacturing exports and the realized patterns of accumulation away from manufacturing constituted one of the main structural deficiencies of the export oriented growth strategy of the 1980's, and according to our view, had played a crucial role in the failure of maintaining the export promotion program as a sustainable strategy of development.

[4] See Boratav and Türel (1993), Şenses (1994), Celasun and Rodrik (1989), Uygur (1993), and Celasun (1994) for a thorough overview of the post-1980 Turkish structural adjustment reforms. For a quantitative assessment of the export subsidization program, see Milanovic (1986) and Togan (1996).

As this unbalanced structure failed to generate the necessary accumulation patterns for achieving sustained growth, it ran out of steam by the end of the decade. The artificial growth path generated by way of wage suppression and price subsidies was observed to reach its economic and political limits by 1988. As summarized in Table 1, all economic indicators of 1988 signal a stagflationary macro environment. Furthermore, the real exchange rate started to appreciate for the first time since the inception of export orientation. Thus, the classical accumulation episode based on wage suppression had come to a halt by 1989 (See also Yeldan, 1995 and 1999). Commensurate with these facts, we observe real wage earnings to enter a period of recovery following the gains of union movement and also the new wave of populist pressures. As can be witnessed from data tabulated in table 1, real wages in manufacturing increased at an annual rate of 10.2 percent consecutively, from 1989 to 1993.

In what follows, it was clear that the process of opening up of the Turkish economy through commodity trade liberalization had reached its limits, and that the next steps would necessarily involve administration of new polices towards liberalization of the financial markets and of the full exchange transactions. Among the many economic and institutional reforms undertaken following 1988, the most important one was that of full liberalization of the capital account and the declaration of the domestic currency, the Lira, as convertible in the world exchange markets. Through this way the Turkish economy is witnessed to have completed the second phase of full integration to the world markets by the end of the 1980s.

In retrospect, it can be argued that the post-1988 populism could evidently be financed by expanding the tax base over the so-called "unrecorded private commercial transactions", and by moving towards a "fair" tax system. Yet, the strategic preference of the government was the maintenance of its current stance towards erosion of taxable capital incomes and absorption of all costs of adjustment in favor of profit incomes against the culminating wage pressures (Boratav, Yeldan and Köse, 1999; Cizre-Sakallıoğlu and Yeldan, 1999; and Türel, 1999). As one of the major indicators of the (functional) distribution of income, we observe that the profit margins in fact followed a rising trend, and reached 47 percent in 1994, from its average of 33.5 percent in 1989.[5] In the meantime, the

fiscal gap widened abruptly, and the public sector borrowing requirement as a ratio of the GDP rose to 10.1 percent in 1991, and to 12.1 percent in 1993.

Given these broad shifts in the macroeconomic environment, the 1989 policy maneuver of capital account liberalization served as one of the major policy initiatives in order to sustain the culminating fiscal deficits of the 1990s. This policy maneuver paved the way for injection of liquidity to the domestic economy in terms of short-term foreign capital (flows of "hot money"). Such inflows enabled, on the one hand, financing of the accelerated public sector expenditures, and also provided relief of the increased pressures of aggregate demand on the domestic markets by way of cheapening costs of imports.[6]

Erratic movements in the current account, a rising trade deficit (from 3.5 percent of GNP in 1985-88 to 6 percent in 1990-93) and a drastic deterioration of fiscal balances disclose the unsustainable character of the post-1989 populism financed by foreign capital inflows. This prolonged instability reached its climax during the fourth quarter of 1993, when the currency appreciation and the consequent current account deficits rose to unprecedented levels. With the sudden drainage of short-term funds in the beginning of January 1994, imports dwindled by 15 percent, GDP fell by 5.5 percent, and the inflation rate soared to 106 percent. Together with this contraction, the post-1994 crisis management gave rise to significant shifts in income distribution, and real wages in manufacturing declined by 36.3 percent. Likewise dollar-denominated wage costs decreased substantially and enabled export earnings to rise. In this manner, Turkey has, once again, switched back to a mode of surplus extraction whereby export performance of industrial sectors depended on savings on wage costs. In fact, the disequilibrium could have only been accommodated by the massive (downward) flexibility displayed by real remunerations of wage-labor.

The post-1994 crisis management is observed to depend crucially on wage suppression coupled with re-invigoration of short-term foreign capital inflows. As real wages continued to decline, the inflows of foreign capital enabled the financing of the fiscal gap and the consequent current account deficit. The cost of these adjustments to the Treasury, however, was the acceleration of the interest burden on its borrowing instruments. The average real rate of interest offered on the government bonds increased to 24.9 percent after the 1994 crisis, and servicing of the domestic debt reached to 10 percent of the gross national income

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[5] State Institute of Statistics, *Manufacturing Industry Surveys*. See also Voyvoda and Yeldan (1999); Köse and Yeldan (1998); Yentürk (1997); and Şahinkaya (1993) on the behavior of the profit margins (mark-ups) under the Turkish structural adjustment episode.

[6] See Özatay (1999), Balkan and Yeldan (1998); Selçuk (1997); Boratav, Türel and Yeldan (1996); Ekinci (1998); and Yentürk (1999) for an extensive discussion of the post-financial liberalization macroeconomic adjustments in Turkey.

after 1996. Finally, the global deceleration following the contagion of the Asian financial crisis hit the Turkish economy starting August of 1998 under the already adverse conditions of severe macroeconomic disequilibria with accelerating fiscal and current account deficits, high inflation and unemployment, and increased social unrest.[7]

Clearly, the inherent characteristics of the growth-crisis-adjustment cycles identified thus far have had quite different macroeconomic dynamics in operation. While the import substitutionist (1969-1976) legacy was based on the protectionist rents of a closed economy with an overvalued exchange rate, the export orientation phase (1980-1988) was driven by commodity trade liberalization and real depreciation under conditions of wage suppression. The post-1989 financial liberalization completed the integration of the domestic economy with the global commodity and financial markets, and initiated a process of short-term foreign capital-led growth with abrupt mini cycles of boom and crisis throughout the 1990s.

In the next section, we turn to an analytical investigation of these dynamics from the viewpoints of growth, accumulation, and distribution. We first provide a formal presentation of our methodology.

III. The Methodology

Most of the macroeconomic series can be decomposed into a cyclical, trend, and a noise component if the data frequency admits more than yearly intervals. Among the given decomposition measures, Blanchard and Fisher (1989) give a precise definition of the structural measure of the cyclical component and describe how it relates to various other non-structural measures. Beveridge and Nelson (1981), on the other hand, developed decomposition measures of trend and cycle that are based on long-horizon forecasts. Cochrane (1994) also suggests a forecast-based approach by using consumption as a measure of the trend in output. In our scrutiny, we chose to utilize the linear filtering methods due to Hodrick and Prescott (1980) (hereafter HP) as it is one of the most well known technique in modern business cycle research.[8] Hodrick and Prescott cast the problem as one of minimization of the squared deviations from the underlying trend component of a given variable subject to a penalty parameter. Once the trend is observed, the business fluctuations are derived as cyclical deviations from this path, and become the object of investigation for characterizing the dynamic adjustment patterns of the macroeconomy. Cyclical variations can be modeled by use of stationary stochastic time series procedures.

More formally, the HP method of detrending is summarized as follows: Let y_t, t = {1,...,T} be the observed time series expressed in natural logarithms, with $y_t = y_t^G + y_t^C$ where y_t^G is the trend of this series, and y_t^C denote the cyclical components. To identify the two components, HP minimizes the variance of y_t^C subject to a penalty for the second difference of the growth term (ie., penalizes the variability factor in the trend component) of the following function:

$$\min_{\{y_t^G\}_{t=1}^T} \sum_{t=1}^{T}\left[y_t - y_t^G\right]^2 + \lambda \sum_{t=2}^{T-1}\left[(y_{t+1}^G - y_t^G) - (y_t^G - y_{t-1}^G)\right]^2$$

Here λ controls the degree of smoothness of the growth component, y_t^G. The larger the value of λ, the smoother is the trend path of the series. If $\lambda=0$ an extreme real business cycle model is taken into consideration where all of the fluctuations in real output are caused by "exogenous" shocks. In this case, the HP trend would be the same as the historical time series itself. As λ increases, ytG becomes smoother, and as it tends to infinity y_t^G becomes a linear deterministic trend.

Given historical economic data and a value for λ, the above given minimization can be solved by using standard numerical routines. We wrote our own subroutine in the GAMS language. However, standard codes are also available in Fortran and Gauss.

In this study, having influenced by Hodrick-Prescott (1997, p:4), we regard that a 5 percent cyclical component to be moderately "large", as is a one-fourth of 1 percent change in the growth rate of annual data, and a one-eighth of 1 percent change in the growth rate under the quarterly data. Therefore, in the annual data analysis (1969-1996), λ satisfies, $\left(\dfrac{\sigma_C}{\sigma_G}\right)^2 = \left(\dfrac{5}{1/4}\right)^2$, i.e. assumes a value of 400.

Similarly, in the quarterly series (1987.I-1996.IV), it assumes a value of 1600, with: $\left(\dfrac{5}{1/8}\right)^2$. In the previous business-cycle decomposition research, when HP is applied to quarterly data, λ is almost always set equal to 1600. In this case the HP filter approximates a high-pass filter, and our choice of λ is directly comparable to the existing studies.

For an initial test of robustness, we have also tried various other values of λ such as 100, 800, 400, 3200, 6400 and 12800 to filter the data. In Figures (1) and (2) we plot, respectively, the cyclical component of GDP and real wage costs (WR) in the manufacturing industry large enterprises for two sufficiently distinct values of λ (λ=100 and λ=12800). The time path of the cyclical component of the series is observed to be quite robust under the relatively wide spectrum of λ and match each other uniformly. With this observation, we will rely on our initial choices of λ as set above, and implement the HP-filtering methodology on the Turkish time series data on key macroeconomic aggregates in the next section.

IV. Investigating the Dynamic Adjustments in Macro Aggregates

IV.1. Variability of the Series

We first report on the overall variability of the selected macro aggregates. As a measure of a series' variability we use the sample standard deviations. We tabulate our results in Table 2. To put some structure on our analysis we categorize our variables of interest under three headings of production, distribution, and internationalization.

The standard deviation (σ) of each group of macro variables is given under two periodizations. The first column reports on the standard deviation of the relevant variable throughout the whole time horizon, 1969-1996. We then split the time horizon into two: first we concentrate on the 1969-82 period which encompasses the import substituting development, along with the structural adjustment phase. This is reported under column two. Next, we report the deviations relevant to the post-opening, 1983-96. Under the next set of columns we contrast the ratio of standard deviations with that of the GDP. Finally, as a further measure of the strength of association with real GDP, we make use of a simple OLS regression

$$c_{jt} = \alpha_j + \sum_{i=-2}^{2} \beta_{ji} GDP_{t-i} \quad (*)$$

for each of the series, and report its R^2 under the last column.

We find that variability of real GDP is secularly less than the variability of its components. Public sector borrowing requirement reveals itself as the most volatile macro variable in the list. Furthermore, it has the smallest R^2 for the above regression, indicating that lead and lagged variations of GDP have very little explanatory impact on the current period PSBR. All our investment categories display sharper cyclical variations as compared to national output. With a ratio of 4.4, construction investments record the highest volatility in this group. The relatively higher variability of the investment aggregates is a persistent feature of the modern market economies as well. We also witness that much of this variability can be explained by the lead and lagged variations of real GDP. This is manifested by the relatively high values of R^2 reported in the last column of Table 2.

On the distribution front, we observe consistently higher variability displayed by the real wages of different labor categories. Real wages of both the public sector and large private enterprises (employing more than 10 workers) report significantly higher fluctuations as compared to GDP. Average real product of industrial labor displays a fairly stable character, a feature which is also quite common in the postwar development patterns. The variation in consumer prices is also one of the variables which show a rising trend over time. Furthermore almost 80 percent of this variation is explainable by changes in real output.

Finally, on the foreign economy side, exports reveal sharper fluctuations compared to imports, which is notably a reflection of the complementary nature of imports. In fact, we find that 70 percent of variations in imports can be explained by variations in national output.

On the average, we observe a general rise in the variability of the macro aggregates over the post-structural adjustment era when the economy is opened up. The PSBR is the major exception to this observation. Investment aggregates and wages yielded increased fluctuations both in absolute terms and vis-a-vis real GDP. Foreign trade components and consumer inflation, on the other hand, experienced dampened fluctuations over the post-1989 era; yet, relative to real national output, vacillation of their cyclical movements nevertheless increased.

IV.2. The Business Cycle Facts

We now turn our attention to patterns of the business cycle as reflected in the behavior of the detrended movements (cyclical variations) of our macro aggregates. We utilize the operational definition of the term business cycle as

commonly used in the literature to "describe related fluctuations in a wide range of economic activities" (Backus and Kehoe, 1992: 873). Accordingly, we report on the patterns of correlation between fluctuations of real GDP and those of other macro aggregates. We tabulate our results in Table 3. The table reports the cross-correlation coefficients between the cyclical deviations of real GDP at time period t with the cyclical deviations of the relevant macro variable. Values under column t yield the contemporaneous cross-correlation coefficients; and values in columns t-i and t+i (with i∈{1,2}) give, respectively, the lead and lag correlations. A positive value indicates that the series is pro-cyclical, and conversely it is said to be counter-cyclical. In other words, a relatively large value appearing under column t±i indicates that a series tends to lead or lag the cycle by i-years.

Results in Table 3 disclose that investment aggregates have strong contemporaneous cross-correlation coefficients and they tend to increase over t+i (lagging the cycle). Industrial production peaks at current period GDP. Variations in CPI depict quite strong negative correlations both contemporaneously and in a non-contemporaneous fashion. These observed movements share the same attributes as reported in Backus and Kehoe in their study of the ten major industrial countries under the postwar period. The counter-cyclical pattern of fluctuations of the price level vis-à-vis real GDP is argued to be an underlying feature in many independent studies as well, such as England (Blackburn and Ravn, 1992), USA (Kydland and Prescott, 1990), and Sweden (Englund, 1992), and is confirmed as one of the most robust empirical regularities.

One of the most striking results that emerges from Table 3 pertains to the behavior of public investment and that of PSBR, in particular. Both the current and also the one-period lagged public investment fluctuations are significantly correlated with the real GDP. This finding suggests the presence of crowding-in effects of public investments on real national product. Furthermore, our independent calculations reveal that the private and public investments do disclose relatively strong pro-cyclical behavior between t-2 to t+2 time intervals at the rates of 60.6 percent, 37.7 percent, 59.3 percent, 23.2 percent and 12.1 percent, respectively.

The overall crowding-in characteristic of the public expenditures is further studied in Table 4 with attention now being focused on the behavior of public sector borrowing requirements. Table 4 presents the cross-correlation coefficients of current period PSBR with the lead and lag behavior of selected macro variables. Furthermore, we categorize the observed relationship under two sub-periods, partitioned by the strategic step of capital account deregulation which had taken

place in 1988-89. As narrated in section II above, the government's mode of financing the fiscal gap had undergone a structural change in 1988-89, with a switch from monetization to securitization of the domestic debt by way of newly introduced financial instruments. We take stock of this account by applying our detrending procedure separately under all three periodizations in Table 4. Note that the exercise in Table 4 is carried on the behavior of the PSBR, rather than the public investments, as it is often alleged, it is mostly the former which inflicts a non-stabilizing pressure on the domestic economy.

Our results on the PSBR, share the overall behavior of the public investments vis-à-vis real national product and other relevant series. The cyclical deviations of real output are positively related with those of the PSBR. Interestingly, however, such crowding-in attributes of the PSBR diminish and the correlation coefficients change sign under the 1988-96 periodization for the one-period ahead (lagged) values of the real GDP. Although our methodology precludes us from carrying out any casual remarks on the nature of this relationship, we find it difficult to resist extrapolating on the source of this shift. Generally speaking, one can conjecture that the main source of this shift towards the counter-cyclical nature of correlations between PSBR and the one-period ahead deviations in real output has more to do with the changing mode of finance of the fiscal deficit after 1989. As the treasury shifted towards domestic borrowings rather than expansionary monetization, financing of the PSBR seemed to generate more of a crowding-out, or at best neutral, effect on national output.

One hypothesis implicit in Selçuk (1997) is that, with increasing fiscal gap in the 1990s, private agents effectively found themselves with an additional binding constraint on the realization of their foreign borrowing plans. As the fiscal gap widened, the government sought to rely on foreign finance, squeezing out the optimal plans on private consumption smoothing. As the major expenditure category of the national product, the increased constriction of private consumption over the post-1989 period seems to have played a direct role in transmitting the perils of the widening fiscal gap over to the national output. As a further manifestation of this effect, we also conjecture on the increased pro-cyclical behavior of PSBR and the lagged values of trade deficit across our sub-periods. In Table 4, it is reported that the cross-correlation coefficient between one-period ahead values of the trade deficit with the current period PSBR has increased from 15.1 percent in 1969-87, to 43.3 percent in 1988-96.

Even though much of these arguments rely on conjectural numerical evidence, they seem to reflect the changing nature of the dynamics between public expenditures and components of the GDP. This verdict contrasts starkly with the findings for the developed economies where government purchases are reported to behave almost orthogonally to output and show no sign of a phase shift in either direction (See Backus and Kehoe, 1992; Blackburn and Ravn, 1992). This contrast can most possibly be explained by the sharp swings of the policy regimes as reported throughout the time span of our analysis.

Another interesting observation on the public sector borrowing requirement is the counter-cyclical nature of its correlations with variations in consumer prices. The two series display quite strong contemporaneous counter-cyclical movement which, in fact, is intensified over the post-1988 period. This outcome suggests that the nature of financing of the PSBR has had deflationary consequences on the price level, and that the so-called destabilizing consequences of the fiscal gap reveal themselves not through the cyclical component of price inflation, but through inertial expectations built over a series of failed attempts in reforming the state apparatus (Selçuk and Rantanen, 1996; Özatay, 1999). In fact, our exercise in filtering of the variations of consumer prices, documents that the amplitude of the cyclical component of CPI is extremely low, and is almost at par with its (inertial) trend.

IV.3 Dynamic Adjustments of Wages and Distributive Variables

We now turn our attention to the patterns of wage costs, average labor productivity, and macro aggregates. Our findings in Table 3 suggest that real GDP has relatively modest counter-cyclical correlations with the two-year lead of public sector wages (-41.2 percent), and pro-cyclical correlations with the lagged private sector wages (+46.5 percent to +57.1 percent). The contemporaneous correlations among the wage costs of all three labor categories and real national product are positive, albeit quite weak.

We investigate the dynamics of the cyclical deviations of real wage costs with the relevant macro aggregates further in Table 5. Here, the variable of interest on the column heading is the real wage cost in large private enterprises, and the entries yield the correlation coefficients of the cyclical deviations of macro variables with the order of series adjusted to span t-2 to t+2 periods around the W^R at time t.

A variable of major interest in Table 5 is the average product of labor in manufacturing industry. Our findings suggest quite a modest set of correlation coefficients between both lead and lagged values of labor productivity and real wage costs in private manufacturing. The cycle seems to peak at the one-period lagged value of the average labor product, though still at a modest 52.1 percent. Thus, over the cycle, deviations of real wage costs and average productivity of labor seem to be correlated only about half of the time in large private manufacturing enterprises. This is a contrasting finding against the results documented in the business cycle studies on the U.S and other industrialized OECD economies. Blackburn and Ravn (1992) report for England, for instance, a generally strong pro-cyclical relationship between productivity and wages, and state that both tend to move contemporaneously with the cycle. This contradistinction in our case is most probably an artifact of the wide swings in the real wage cycle in Turkey and abrupt regime changes in variables most effecting labor remunerations. Figures 3a and 3b portray this line of reasoning quite clearly. In Figure 3a, we document the trend in real average product of labor in manufacturing industry enveloped by the historically realized values over a broader time horizon, 1950-1996. The units on the y-axis are in real 1963 TL prices in log scale. In Figure 3b we portray the same information for real wages in private manufacturing. The contrast of the two pictures is striking: Whereas the trend of average labor product follows a secular rise for the whole cycle, that of real wages fluctuates with an increasing path until mid-1970s, enters a deceleration between 1980 and 1988, and recovers following 1989. The observed recovery in real wage is clearly the end result of the post-1989 populism which enabled sharp increases in real wages between 1989 and 1993 as narrated in Section II above. Given this record of events, it seems plausible to argue that the post-1989 upswing in manufacturing real wages was in fact in line with the real average product of labor as far as the long trends of the series are concerned. [9]

Other interesting results of Table 5 relate to investment expenditures and the movements in the consumer price index. Both the private fixed and construction investments reveal strong pro-cyclical correlations with two-year and one-year leads. Public sector fixed investment, on the other hand, displays very weak correlation with the private manufacturing real wages and tends towards a counter-cyclical character over the cycle. As for the behavior of the cyclical deviations of the consumer price index, we observe quite weak and counter-cyclical patterns with its lead values. There is no evidence that the deviations of the CPI lag the real wage movements in any systematic fashion. This complements our finding above that the behavior of CPI has very weak (and often

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9 See Boratav (1991) for a narrative support of this claim.

of the opposite sign than otherwise expected) correlations with the deviations in macro aggregates.

IV.4 Dynamic Adjustments of Foreign Trade Magnitudes

Trade deficits are pro-cyclical and move contemporaneously with the real GDP. Qualitatively, this is also a feature shared by the U.S. and other industrialized OECD economies. The individual behavior of exports and imports, on the other hand, is quite different when contrasted against the results obtained for those countries. Merchandise exports indicate a counter-cyclical relationship with a two-year lag (See Table 3). A two-year lead of exports have a pro-cyclical - but relatively modest - correlations with real national output. This unexpected and puzzling characteristic of the export cycle warrants an explanation. Our main line of reasoning is based on our earlier remarks on the rather feeble character of merchandise exports and the post-1980 export promotion program, in general. The artifice of the export boom during the 1980s was mostly sustained by a very generous export subsidization program coupled with wage suppression. Furthermore, throughout the whole decade, export oriented manufacturing was not supported by a sound investment program and export flows had been subject to erratic signals and wide swings of the unstable international political relations of the region. Under these conditions, export orientation clearly had a very loose association with the real production sphere of the domestic economy and it should come as to no surprise to find quite weak and often contradictory effects of the cyclical component of exports.

The belligerence of the export orientation on labor remunerations is reflected quite clearly in our numerical findings. Results in Table 5 suggest a strong counter-cyclical contemporaneous relationship between exports and manufacturing wages. In general, cyclical deviations of exports do have a counter-cyclical pattern against manufacturing real wages under all time horizons considered.

As far as imports are concerned, we have a dual pattern. Real GDP is negatively correlated with a two-period lead of imports but is positively related with their two-period lag. In particular the contemporaneous behavior of imports is relatively weak. This is a stark contrast with the reported behavior of imports in the U.S. and England. The observed pro-cyclical lead pattern signifies the complementary character of merchandise imports. This observation, however, fails in explaining the shift towards the counter-cyclical nature of the lagged series, indicative of the existence of third party relationships affecting the overall cycle, which our decomposition exercise is not equipped to address.

All these propositions can be studied from a different angle with account being given to (nominal) exchange rate movements. In Table 6 we study the cross-correlations of the cyclical deviations of the exchange rate and selected variables under different policy regimes. Currency depreciation has a counter-cyclical correlation with the two-year lead of the (GDP) over the whole 1969-96 time span. This verdict contrasts strongly, however, across the two sub-periods. Under the import substitution domestic demand-oriented 1969-79 phase, this observation persists in qualitative terms. On the other hand, under the outward orientation of the post-1980 period, the counter-cyclical nature of the two correlations gave way to a pro-cyclical pattern with the one-year lagged values of the deviations of real GDP.[10] The exchange rate does show very strong and robust pro-cyclical relationship with both the contemporaneous and lagged export cycles.

Currency depreciation reveals strong lead and lagged counter-cyclical correlations with manufacturing real wages under the 1980-96 period. This is a further manifestation of the overall contractionary character of real devaluations on labor incomes in the Turkish context. We witness that cross-correlations of the trade deficit cycle with the exchange rate movement are rather weak, but towards more of a leading counter-cyclical pattern. Finally behavior of CPI suggests a pro-cyclical behavior with two period lead for the whole time horizon. This effect, however, is not found to be robust for the post-1980 episode.

IV.5 Cyclical Properties of Monetary Aggregates

The behavior of the monetary aggregates and their nominal rates of return have traditionally been a matter of controversy in business cycle literature. We study the characteristics of the cyclical behavior of the key nominal magnitudes using quarterly data, spanning 1987 to end of 1996. We report on two sets of relationships of the monetary aggregates: one with the real GDP, and the other with changes in the consumer price index. Our results are tabulated in Tables 7 and 8.

The most direct observation is the quite weak association of the monetary aggregates - either broad or narrow - in any systematic fashion with the real GDP. One can trace no systematic pattern between the cyclical deviations of money supplies and those of the real GDP across the post-financial liberalization era. With the correlation coefficients hovering around, at most, 25 percent, the Turkish patterns share much of the properties of the industrialized economies disclosing

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10 Due to insufficiency of time series data, we abstain from carrying our analysis to longer time intervals.

only slight association of money stocks and output, as reported in Backus and Kehoe (1992) and Kydland and Prescott (1990).

The CPI has a relatively strong pro-cyclical contemporaneous relationship with the broad money supply, M2Y. The finding that both of the narrow supplies of money, M1 and M2, display quite weak - and mixed - correlations is suggestive of the fact that any link between the money stocks and price movements - if at all - originate from the foreign currency flows and the banks' ability to create money via the foreign exchange deposits. The CPI reveals a very weak association with either of the two interest rates - the rate of return on government debt instruments and the one-year time deposits - or the nominal exchange rate. In formal terms, the deviations of the consumer price index have very weak, non-robust and often contradictory correlations with the cyclical deviations of either the macro aggregates or the monetary magnitudes. All of these are indicative of the fact that the behavior of the CPI is very much explainable by its inertial component, rather than by the cyclical variations. Portrayal of the trend CPI along with its historical values signifies this characteristic very clearly. In Figure 4 we plot this relationship and observe that the historical values of consumer prices are almost "stuck" to their trend, admitting little deviations.

V. Concluding Comments

In this paper, we aimed at presenting empirical evidence on the nature of the business cycles and dynamic macro adjustments in a globalizing and developing economy, Turkey. Using both annual (1969-96) and quarterly (1987.I-1996.IV) data we have followed the now-seminal work of Hodrick and Prescott (1980) to decompose the time series of key macro aggregates into a trend component with cyclical deviations around the trend. Our study of the statistical properties of the cyclical component of the macro aggregates reveals that even though the Turkish economy shares most of the attributes of the business cycles of the developed world, it discloses quite contrasting trends in the behavior of certain key variables. Our results reveal a general rise in the variation of macro aggregates over the post-structural adjustment era of the 1980s and 90s. The public sector borrowing requirement displayed the highest variability measured in terms of its standard deviation. Real wages of both the public and the large private manufacturing sectors reported significantly high fluctuations, while average product of labor was found to be relatively more stable.

Public investments revealed significant contemporaneous pro-cyclical behavior with both the real GDP and private investment, suggesting crowding-in attributes. When, however, the public sector borrowing requirement is taken into account, ,

we find that the significance of this characteristic is diminished and tended to be reversed for the 1988-96 period - the completion of financial liberalization and capital account deregulation. This contrasts with the results reported for the industrialized economies of the OECD where government purchases display no sign of a phase shift in either direction.

Manufacturing real wages in the public sector displayed relatively modest counter-cyclical correlations against real output, whereas lagged wages in small and large private manufacturing enterprises disclosed pro-cyclical behavior. In general, real wages in large private manufacturing is found to generate relatively weak correlations with the average labor productivity. In particular the trend components of the two series display a negative relationship between 1980-88, and reveal a co-movement only after 1989 with the admission of significant real wage increases under the "new populism" of 1989-91.

Overall merchandise exports revealed a poor correlation coefficient with the real GDP, and displayed a significant counter-cyclical pattern between the current-period national output and two-year lagged exports. We attributed this result to the rather artificial character of the export promotion program of the 1980s based on heavy subsidization and wage suppression. Exports had, in fact, a strong and robust counter-cyclical correlation with manufacturing real wages under all time horizons considered. Exchange rate depreciation was found to be counter-cyclical with the real GDP for the import substitution era (1969-79), yet displayed a slight pro-cyclical behavior for the post-1980 period.

The quarterly data of the post-financial liberalization era indicated no systematic relationship between nominal or real monetary aggregates and the real GDP. This is suggestive of the fact that the Turkish economy shared the general business cycle characteristics of the industrialized OECD economies, which depicted very poor correlations between monetary aggregates and real output.

Finally, variations in the CPI disclosed significant counter-cyclicality against real national product. This observation, however, runs counter to the widely held belief that has been confirmed in previous studies regarding the empirical regularities of the OECD business cycles. Variations of the CPI, on the other hand, indicated very weak correlations with the cyclical deviations of the public deficit or real wage costs in manufacturing. We interpret this observation as suggesting that the behavior of consumer prices is very much explainable by its inertial component, rather than by the cyclical impulses of fiscal deficits, wage costs, or fluctuations in the monetary aggregates.

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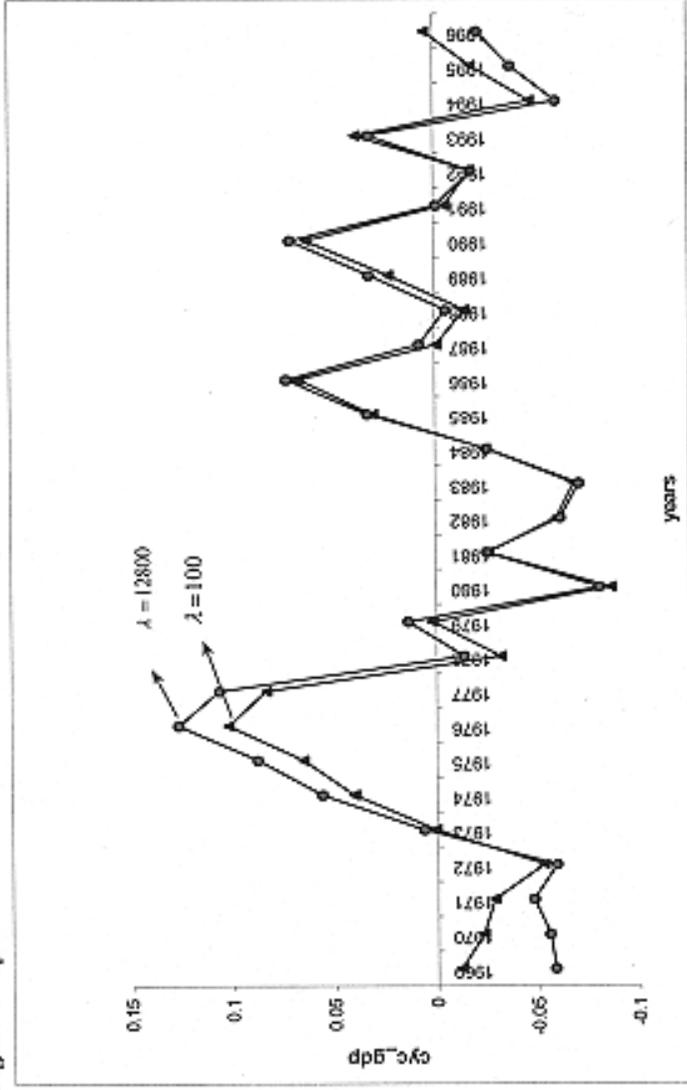Figure 1: Cylical GDP under Alternative Penalty Parameter Values

Figure 2. Manufacturing Industry, Large Enterperises, Cylical Wages.
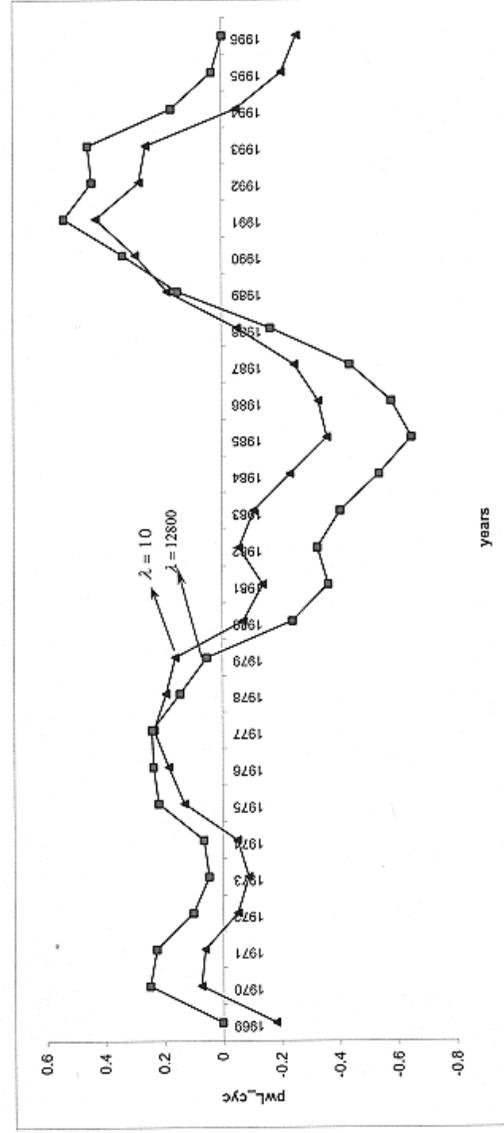
Figure 3a: Real Average Labor Productivity in Large Private Manufacturing: Trend and Historical Values
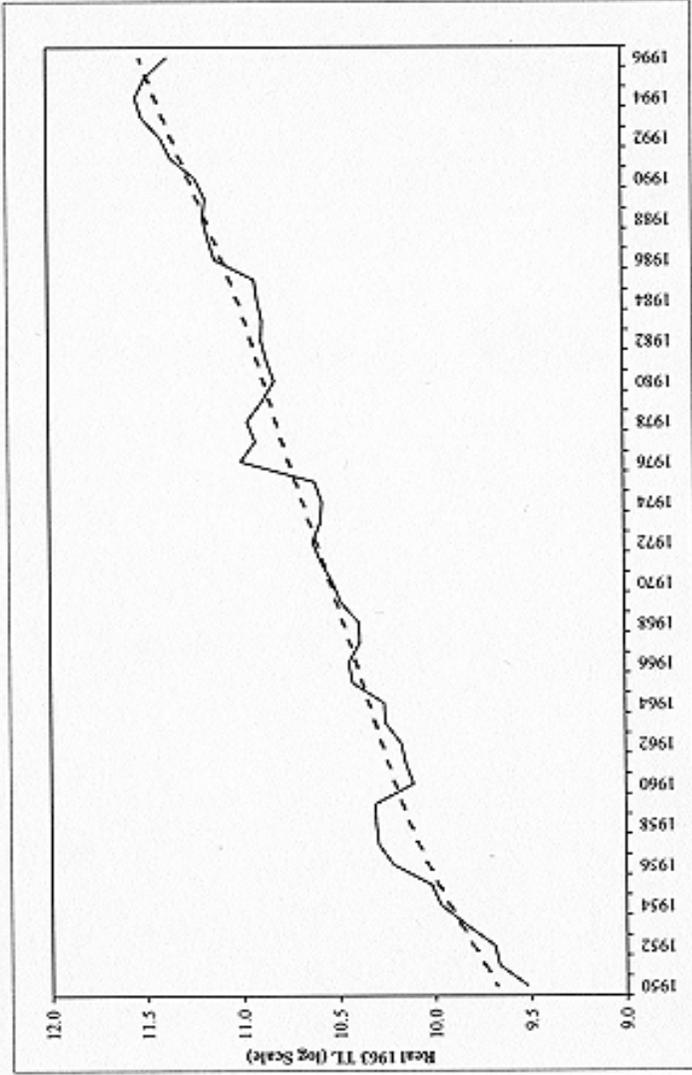

Figure 3b: Real Wages in Large Private Manufacturing: Trend and Historical Value
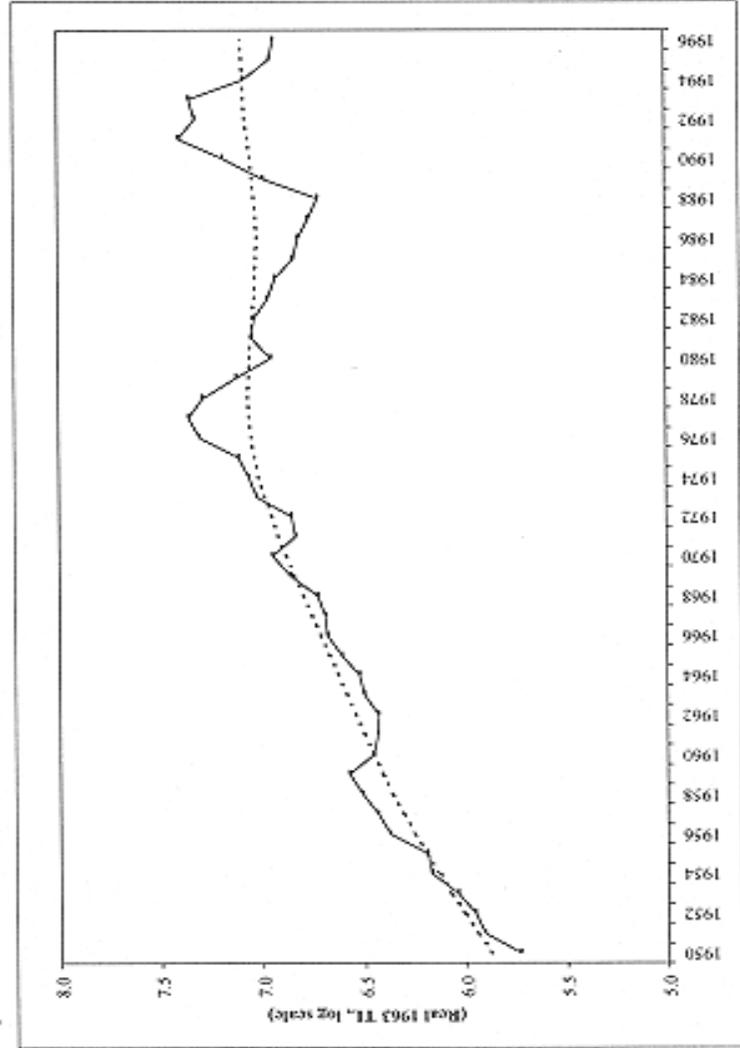
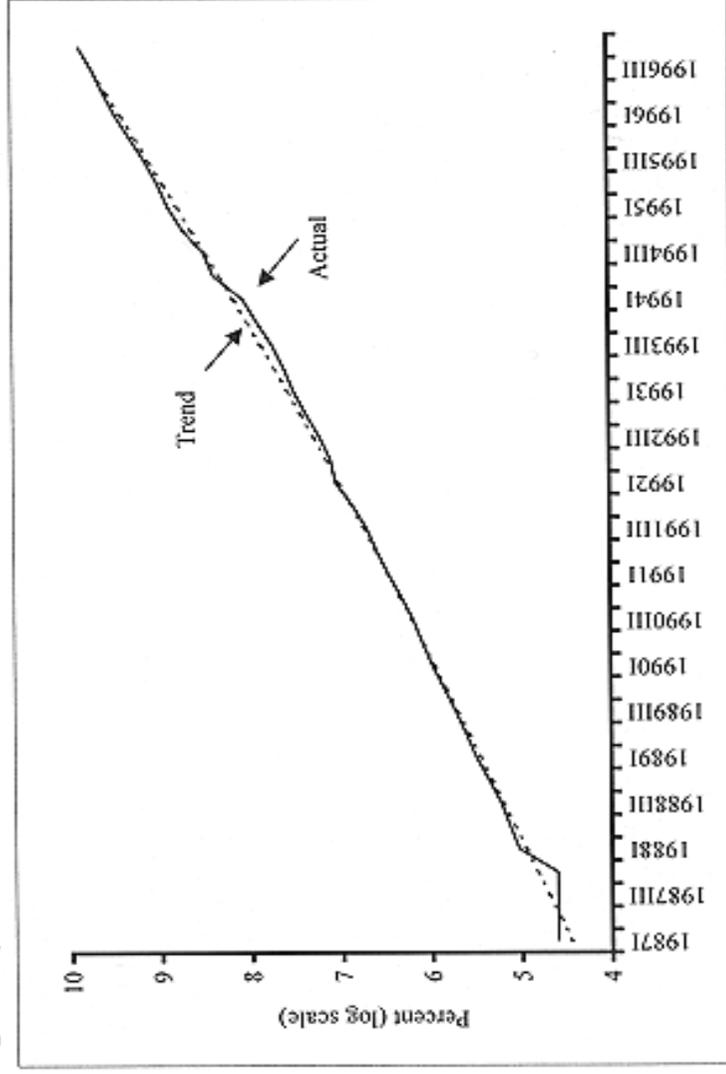Figure 4: Dynamics of Turkish Inflation: Historical Values and the Trend

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Table 1: Phases of Macroeconomic Adjustment in Turkey, 1972-1998

	Import Sub Indstn 1972-76	Econ Crisis 1977-80	Post-Crisis Adj. 1981-82	Exp-Led Grwth 1983-87	Exhstn 1988	Unregltd Fincl Librlztn 1989-93	Fincl Crisis 1994	Reinvig Shrt-term Frgn Cap-Led Grwth 1995-97	Contagian of the World Financial Crisis 1998	1999.I
I. Production and Accumulation (Real Rate of Growth, %)										
GDP	6.8	0.5	4.2	6.5	2.1	4.8	-5.5	7.2	2.8	-8.5
Agriculture	1.8	0.5	0.6	0.8	7.8	0.1	-0.7	1.3	7.6	-
Manufacturing	9.7	-0.2	7.9	8.6	1.6	6.0	-7.6	9.8	1.2	-
Fixed Investment:										
Private	10.6	-5.8	-5.3	12.3	12.6	11.5	-9.1	13.6	-6.7	-6.7
Public	18.0	-3.6	0.2	10.3	-20.2	4.3	-34.8	9.0	30.0	5.0
Manufacturing	16.1	-8.6	-5.1	2.1	-4.8	6.3	-4.7	4.6	-4.8	-
As % Share of GNP:										
Savings	20.9	17.3	17.7	19.5	27.2	21.9	23.0	21.1	21.2	-
Investment	21.3	22.3	18.3	20.9	26.1	23.7	24.4	24.8	25.6	-
PSBR	5.7*	6.9	3.7	4.7	4.8	9.1	7.9	7.2	8.7	-
II. Distribution and Prices										
Inflation Rate (CPI)	21.3	61.0	33.2	39.5	75.4	66.4	106.3	84.5	92.6	73.5
Annual Rate of Depreciation	3.9	48.0	45.0	39.7	66.0	50.4	170.0	68.9	76.0	54.7
Real Int Rate on Govt Bonds	-	-	-	-	-5.8	10.5	20.5	23.6	15.8	32.6
Manufacturing Real Wages	3.1	-1.1	-1.1	-3.9	-7.1	10.2	-36.3	-4.9[4]	-	-
Share of wages in mfg.value added (%)	27.7	35.6	24.5	20.6	15.4	21.8	16.1	16.6[d]	-	-

Table 1: Contd.

	Import Sub Indstzn 1972-76	Econ Crisis 1977-80	Post-Crisis Adj. 1981-82	Exp-Led Grwth 1983-87	Exhstn 1988	Unregltd Finel Librlztn 1989-93	Finel Crisis 1994	Reinvig Shrt-term Forgn Cap-Led Grwth 1995-97	Contagion of the Wrld Financial Crisis 1998 1999.I
III. Internationalization									
Mfg. Exports Growth e	39.4	14.3	19.7	12.5	14.0	5.1	18.0	10.8	1.3 -
As % Share of GNP:									
Import	11.7	11.2	14.0	15.9	15.8	14.6	17.8	23.2	22.9 -
Exports	5.3	4.2	8.5	10.8	12.8	9.1	13.8	15.8	15.7 -
Current Account	-1.4	-3.4	-2.7	-1.9	-1.7	-1.3	-2.0	-1.2	1.4 -
Foreign Debt	1.4	14.5	27.1	37.8	44.8	35.1	49.6	45.6	51.7 -

Notes: a. 1975-76 only. b. Annual average of Compounded Interest Rate on Government Debt Instruments deflated by the whole sale price index. c. Wage earnings of workers engaged in production. Private manufacturing labor data pertain to the enterprises employing 10 and above workers. d. 1995-96 only. e. Annual growth rate in manufacturing exports (in millions US $).
Sources: SPO Main Economic Indicators; Undersecretariat of Foreign Trade and Treasury Main Economic Indicators; SIS Manufacturing Industry Surveys.

Table 2: Statistical Properties of Selected Macroeconomic Aggregates

	Standard Deviation (σ)			σ/ σ GDP			R² (*)
	69-96	69-82	83-96	69-96	69-82	83-96	71-94
Production and Accumulation							
GDP	0.056	0.061	0.040	-	-	-	-
Industrial Production	0.082	0.064	0.086	1.471	1.054	2.156	0.48
Public Sector Investment	0.143	0.132	0.155	2.575	2.159	3.870	0.61
Private Sector Investment	0.153	0.163	0.112	2.740	2.674	2.800	0.77
Construction Investment	0.245	0.210	0.238	4.404	3.437	5.950	0.57
PSBR	0.868	2.761	0.313	15.575	45.188	7.825	0.17
Distribution and Prices							
Wages (Public)	0.281	0.134	0.327	5.043	2.187	8.168	0.25
Wages (Private sector, small ent.)	0.145	0.112	0.170	2.605	1.826	4.243	0.34
Wages (Private sector, large ent.)	0.263	0.157	0.310	4.713	2.570	7.738	0.37
Labor Productivity in Mfg. Ind.	0.094	0.098	0.080	1.696	1.611	2.000	0.62
CPI	0.164	0.238	0.171	2.944	3.894	4.277	0.79
Internationalization							
Exports	0.270	0.258	0.214	4.846	4.221	5.338	0.59
Imports	0.187	0.226	0.130	3.357	3.705	3.248	0.70
Trade Deficit	0.320	0.370	0.276	5.738	6.057	6.890	0.36
Exchange Rate	0.182	0.172	0.145	3.273	2.815	3.630	0.47

* R² for the regression equation (*) in the text.

Table 3: Correlation Coefficients of Macro Aggregates with the GDP, 1969-96 (%)

Variable, C	Cross-corr. Between GDP and t and C at:				
	t-2	t-1	t	t+1	t+2
Industrial Production	32.71	32.17	62.88	25.01	21.70
Public Sector Investment	-7.64	22.76	72.07	55.36	28.02
Private Sector Investment	21.89	38.81	68.52	70.30	59.49
Construction Investment	-4.32	12.67	34.97	59.86	69.69
Wages (Public)	-41.18	-14.91	8.89	23.33	30.78
Wages (Private sector, small ent.)	-11.65	-0.41	37.13	48.60	46.47
Wages (Private sector, large ent.)	-8.52	31.96	32.05	49.91	57.06
Labor Productivity in Man. Ind.	-37.35	-9.82	30.73	63.18	69.98
Exports (E)	46.85	26.49	-17.70	-45.62	-65.12
Imports (I)	61.34	51.71	31.95	-13.79	-60.37
Trade Deficit	25.22	26.87	51.83	15.13	-17.72
Exchange Rate	41.50	15.47	-18.83	-37.58	-60.21
PSBR	23.89	21.48	31.84	58.53	19.38
CPI	-30.71	-48.28	-78.30	-67.62	-42.81

Table 4: Public Sector and Selected Macro Variables, Correlation Coefficients (%)

Variable, C	Cross-corr. between PSBR at t and C at:										
	1969-96					1969-87			1988-96		
	t-2	t-1	t	t+1	t+2	t-1	t	t+1	t-1	t	t+1
GDP	10.38	30.49	31.84	21.23	22.77	28.22	28.15	24.37	11.34	33.81	-13.33
Private Investment	21.89	38.81	36.42	70.30	59.49	35.53	27.36	37.20	-49.04	-8.72	-7.75
Trade Deficit	25.22	26.87	34.75	15.13	-17.72	43.83	38.52	15.07	38.47	35.65	43.27
CPI	-30.17	-48.28	-22.60	-67.62	-42.81	-52.90	-44.92	-38.94	-5.47	-80.13	-69.60

Table 5: Correlation of Macro Aggregates with the Private Manufacturing Industry Real Wages, 1969-96 (%)

Variable, C	Cross-corr. between Wages at t and C at:				
	t-2	t-1	t	t+1	t+2
Industrial Output	69.09	45.32	11.44	-29.64	-47.93
Public Sector Investment	37.19	25.27	13.45	-8.88	-28.13
Private Sector Investment	71.77	67.11	56.97	37.43	15.41
Construction Investment	71.10	64.40	54.32	27.01	21.71
Wages (Public)	6.30	44.18	75.35	69.48	47.92
Wages (Private, small ent.)	22.46	57.86	83.89	69.56	19.59
Labor Productivity in Man. Ind.	26.75	41.22	50.76	52.11	37.53
Exports (E)	-17.41	-44.14	-69.36	-64.89	-50.36
Imports (I)	2.75	-21.88	-43.29	-50.24	-47.56
Trade Deficit	7.54	10.17	15.93	3.73	-7.25
Exchange Rate	-17.85	-47.33	-64.51	-50.73	-36.81
PSBR	12.64	4.18	28.82	34.21	1.47
CPI	-35.47	-37.29	-26.74	-10.82	22.04

Table 6: The Foreign Sector and Selected Macro Variables, Correlation Coefficients (%)

| | Cross-corr. between Exchange Rate at t and C at: | | | | | | | | | | |
| | 1969-96 | | | | | 1969-79 | | | 1980-96 | | |
Variable, C	t-2	t-1	t	t+1	t+2	t-1	t	t+1	t-1	t	t+1
GDP	-62.47	-40.73	-18.83	15.44	44.57	-64.9	-28.91	-21.68	-1.97	-3.15	48.95
Exports	42.73	69.58	88.38	71.93	47.46	-16.03	44.66	54.63	62.29	91.08	59.86
Trade Deficit	-35.59	-24.46	-30.66	-8.3	-5.87	-42.2	-13.85	5.42	5.04	-36.91	12.82
Wages in Private Mfg	-62.41	-64.51	-50.09	-17.68		41.74	-3.44	-43.8	-71.32	-85.32	-72.03
CPI	68.33	49.58	22.97	-10.92	-34.32	52.76	18.88	-23.29	-15.8	-18.15	-26.82

Table 7: Monetary Aggregates and the GDP, Correlation Coefficients (Quarterly Data: 1987.I-1996.IV)

| | Cross-corr. between GDP at t and C at (%) | | | | |
Variable C	t-2	t-1	t	t+1	t+2
M1, *Nominal*	9.77	22.09	-22.07	-10.28	-4.63
M1, *Real*	0.85	16.39	29.72	1.89	-17.53
M1, *Velocity*	-30.16	-32.19	15.99	-6.27	2.63
M2, *Nominal*	11.13	19.85	-2.22	5.59	1.78
M2, *Real*	-10.00	-12.40	2.03	15.65	-2.11
M2, *Velocity*	-9.74	-10.66	84.18	-20.72	-10.57
M2Y, *Nominal*	15.49	5.31	-11.22	2.40	6.80
M2Y, *Real*	-14.65	-10.03	-25.84	12.56	-8.16
M2Y, *Velocity*	-21.09	-18.66	62.62	-7.05	-7.54
Rate of Return on GDIs	-10.78	20.89	-0.06	-6.36	4.31
Interest Rate on 1-Year Time Deposits	-23.94	-13.45	-27.10	-0.10	-2.01

Table 8: Monetary Aggregates and Price Inflation, Correlation Coefficients (Quarterly Data: 1987.I-1996.IV)

| | Cross-corr. between CPI at t and C at (%) | | | | |
Variable C	t-2	t-1	t	t+1	t+2
M1, *Nominal*	16.83	-8.55	-28.90	-2.45	-6.43
M1, *Real*	18.78	-0.21	-31.58	-6.47	-1.68
M2, *Nominal*	-11.32	29.80	-3.38	-4.39	7.31
M2, *Real*	6.02	-1.73	-3.70	3.96	12.01
M2Y, *Nominal*	3.50	22.01	71.03	16.65	-9.68
M2Y, *Real*	-7.16	11.87	21.98	12.64	10.10
Rate of Return on GDIs	11.10	-6.70	-11.94	0.98	1.17
Interest Rate on 1-Year Time Deposits	14.14	11.15	-9.90	-10.68	-19.82
Exchange Rate	-5.61	-7.22	-3.21	-0.12	12.48