

The Political Economy of Productivity Collapses and Accelerations: The Turkish Experience, 1950-2010

by

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Abstract

Developing countries have shown distinct patterns of growth and productivity rates that usually lack persistence. In Turkey, for example, endemic instability and recurrent crises and associated low and volatile productivity and growth rates have been the dominant macroeconomic themes since its transition to the multi-party democracy in 1950. This paper, inspired by the Turkish experience, aims to develop a simple model of total factor productivity for explaining the substantial volatility in long-run productivity and growth.

This study, in turn, attempts to explore the new political economy literature as the theoretical bridge to link short-term macroeconomic outcomes to long-term economic growth in a simple production function framework. More specifically, we attempt to link short-run policy outcomes to long-run productivity measure by considering political economy factors such as socio-political and institutional issues. It is shown that this framework is capable of explaining the substantial volatility in productivity and hence output trend in Turkey as well as in many other developing countries, notably Latin American countries. In fact, empirical results, based on time series econometric techniques, confirm that Turkey has experienced productivity accelerations and collapses as a consequence of the endemic instability, populist cycles, and resultant crises and regime changes since the 1950s. However, social conflicts (e.g. arising from distributional problems) and weaker institutions were the main causes of the persistence of unsound policies in Turkey with undesirable outcomes, in terms of macroeconomic instability and productivity, prior to 2001.

Keywords: *Total factor Productivity, Instability, Economic growth, Political economy, Institutions.*

JEL Codes: *E60, O40, O50*

1. Introduction

Since the publication of seminal study by Easterly et al. (1993), many economists have attempted to understand the distinct patterns of growth rates and, especially, its lack of persistence in developing countries (see, for example, Hausmann et al., 2005, and Berg et al. 2011). This recently growing literature has challenged the widely held belief that output fluctuates around a stable and rising level of trend output. For example, Cerra and Saxena (2008) have shown that output drops tend to be persistent in the aftermath of particular crises. By utilizing a standard real business cycle model augmented with transitory and trend shocks to productivity, Aguiar and Gopinath (2007) went further and argued that "the cycle is the trend" for emerging market economies. They claimed – without providing theoretical arguments or transmission channels in their model– that the frequent policy regime shifts, such as dramatic changes in fiscal and monetary policies, are responsible for the substantial volatility in output trend in emerging market economies.¹

Fortunately, the new political economy literature provides a number of transmission channels or theoretical explanations –such as strategic debt accumulation, inefficient budget deficits and the war of attritions– through which emerging market economies or developing countries may experience a policy environment which results in persistent productivity and output drops (see, for example, Drazen, 2000 and Persson and Tabellini, 2000 for a review). For instance, chronic instability episodes, populist cycles, recurrent crises and associated low and volatile growth rates have been the dominant macroeconomic themes in the recent history of the Turkish economy, since its transition to the multi-party democracy in 1950. Most of the governments in Turkey –like in many other developing countries, such as those in Latin America– behaved "fiscally irresponsible" by implementing myopic and populist macroeconomic policies over extended periods of time, with the aim of alleviating distributional pressures and hence preserving or increasing electoral support. In turn, the resultant fiscal imbalances and high inflation have been followed by major economic and/or political crises. Several stabilization programs were implemented (usually after crises) to restore stability in the economy but, mainly due to political reasons, the elected governments after seeing a temporary relief in the economy generally delayed or completely abandoned the stabilization policies. Furthermore, these governments as well as their successors usually chose to continue the popular and myopic economic policies with the similar aims. Consequently, the insistence on unsound and unsustainable policies for long periods of time lead to persistently low and occasionally falling total factor productivity and hence low and volatile economic growth rates during the chronic instability periods. Nevertheless, productivity usually rebounds quickly, particularly during the committed stabilization periods such as the one experienced after the 2001 crisis in Turkey –of which fiscal adjustment was the central part.

This paper attempts to explore the new political economy literature as the theoretical bridge to link short-term macroeconomic policies to long-term economic growth in a simple production function framework.² More specifically, by following Musolesi's

¹ According to Aghion and Howitt (2009: 319), the lack of transmission channels are not surprising since "... the RBC models were unable to account for a trend that was casually related to the business cycle".

² Existing studies utilized growth models and hence they point to the role of growth-related factors, such as the cyclicity of R&D spending, the credit market imperfections and the role of volatility on aggregate

(2011) approach for modeling the long-run productivity, we attempt to link short-run policy environment to long-run productivity measure by considering political economy factors like the ones mentioned above. In doing so, this framework is shown to be capable of explaining the substantial volatility in productivity and hence output trend in Turkey as well as in many other developing countries, notably in Latin American countries. In fact, empirical results, based on time series econometric techniques, confirm that Turkey has experienced a recurrent productivity and growth cycles along with the populist cycles and associated instability episodes since the 1950s.

This study is organized as follows. Section 2 presents a brief review of related political economy literature and then Section 3 presents a panoramic snapshot of the Turkish experience from 1950 to 2010.³ Section 4 provides the simple framework and empirical results. Finally, Section 5 concludes the paper.

2. The Political Economy of Instability, Macroeconomic Policies and Economic Performance

Policy makers in many developing countries implemented myopic and populist macroeconomic policies over extended periods of time. These countries, in turn, persistently exhibited high budget deficits, excessive debt accumulation, and high and volatile inflation rates. As a result, chronic macroeconomic instability has become a central feature of their economies. Additionally, during their macroeconomic instability episodes, most of these countries have registered remarkable declines as well as volatility in their rates of capital formation and, especially, total factor productivity. In retrospect, continuously low and volatile economic growth rates and recurrent crises have become an endemic feature of these economies.

Several authors argue that unsound policies, such as myopic and populist policies, and associated macroeconomic instability in developing countries usually emanate from deeper socio-political instabilities -e.g. due to income distribution- but not from technical "mistakes" or misjudgments of policy makers.⁴ Dornbusch and Edwards (1991), for instance, provide evidence on the link between *macroeconomic populism*⁵ and income inequality as well as on detrimental consequences of populist policies on macroeconomic stability, based on Latin American experience. The main results of this study is nicely summarized in Dornbusch and Edwards (1995):⁶

although populist episodes have had specific and unique characteristics in different nations, they tend to have some fundamental common threads. In particular, populist regimes have historically tried to deal with income inequality problems through the use of overly expansive macroeconomic policies. These policies, which have relied on deficit

savings and investment, to link short-term fluctuations to long-term economic growth (see Chapter 14 in Aghion and Howitt (2009) for a review). Nevertheless, none of these studies consider the political economy factors in their analysis. On the other hand, there are studies which attempt to explain the role of distributive spending in a pure endogenous growth models that abstract short-run policy making (e.g. Alesina and Rodrik, 1994).

³ Section 2 and 3 *partly* draw from Ismihan (2009).

⁴ See, for example, introduction part and a number of papers collected in Sachs (1989).

⁵ Macroeconomic populism is described as "an approach based on the use of overly expansive macroeconomic policies to achieve distributive goals" (Dornbusch and Edwards, 1995: 2).

⁶ Onis (2003) has also made similar arguments based on the Turkish experience. See Section 3.

financing, generalized controls, and a disregard for basic economic principles, have almost unavoidably resulted in major macroeconomic crises that ended up hurting poorest segments of society. At the end of every populist experiment, inflation is out of hand, macroeconomic disequilibria are rampant, and real wages are lower than they were at the beginning of these experiences (Dornbusch and Edwards, 1995: 5).

Moreover, many economists share the view that politics and economics are intensely interrelated. In line with this view the political economy literature has become an important and an exciting research area both for macroeconomists and development economists. Most of the studies in this literature assume that politicians are *opportunistic* and mainly motivated by re-election. In the words of Alberto Alesina:

Politicians are described as being driven by two, not mutually exclusive, main motivations: they want to be reelected and they harbour political, or ideological biases (Alesina, 1989: 55).

Additionally, recent political *macroeconomy* studies have emphasized that socio-political and institutional factors may have serious consequences on macroeconomic policy making and resultant outcomes (see, for example, Drazen, 2000; Persson and Tabellini, 2000; and Romer, 2001 for an overview).

This section provides a selective and condensed overview of the related literature.

2.1. A Brief Review of Related Literature on Socio-political Instability and Macroeconomic Performance

This section provides a selective review of the literature on the role of socio-political instability and polarization on public spending and borrowing decisions as well as on macroeconomic performance.

Political instability can be viewed in two ways, as indicated by Alesina and Perotti (1996):

The first one emphasizes executive instability. ... [That is, it] defines political instability as the 'propensity to observe government changes'. These changes can be 'constitutional' or ... 'unconstitutional' ... The second one is based upon indicators of social unrest and political violence (Alesina and Perotti, 1996: 1205).

It is clear from the above definitions that one of the ways that political instability manifests itself is through elections. However, socio-political instability may also be directly reflected in public decisions, e.g. spending decisions, due to the characteristics of the socio-political structure, such as income inequality, social fractionalization and political polarization. Nevertheless, the electoral process itself also depends on the socio-political structure of the society.

Therefore, firstly Section 2.1.1. will review the role of the characteristics of the socio-political structure on public spending decisions and then Section 2.1.2 will review the role of electoral uncertainty on public spending and borrowing decisions.

2.1.1. Inequality, Fractionalization, Polarization and Populism

Several authors argued that high degree of income inequality, social fractionalization and polarization all lead to a high level of political instability and polarization (see, for example, Alesina and Perotti, 1996; Easterly and Levine, 1997; and Annett, 2001) and, in turn, affect the public spending decisions of the incumbent governments.⁷

It is widely argued that the demand for redistributive public spending, e.g. public wage and social transfer increases, is higher the higher is the degree of income and wealth inequality (see, for example, Alesina and Rodrik, 1994; and Benabou, 1996). In other words, governments in more unequal societies have more incentives to follow populist policies which contain redistributive public spending. Dornbusch and Edwards (1990, 1991) provide evidence on the links between income inequality, macroeconomic populism and stability, based on Latin American experience (also see similar arguments by Onis, 1997, 2003 for Turkey).

More recently, several studies have emphasized that higher level of social or ethnic fractionalization may also lead to a higher level of government consumption spending directed at lowering the level of *political risk* or "placating excluded groups" (see, for example, Annett, 2001). Similarly, Easterly and Levine (1997) argued that the political instability and insufficient infrastructure in Africa is associated with Africa's high ethnic fragmentation.

Political polarization also has similar effects on public spending decisions. For example, compared to politically strong governments, weak governments tend to cut public investment rather than current expenditure (see, for example, Roubini and Sachs, 1989a for empirical evidence).

2.1.2. Electoral Uncertainty, Myopia and Strategic Political Behavior

The existence of electoral uncertainty usually leads to myopic or short-sighted policy makers with high rate of time preference. It is frequently argued that high level of political instability and polarization -via electoral uncertainty-⁸ may lead to strategic political behavior and myopic policies in the forms of excessive debt accumulation, or inefficiently high budget deficits, and low level of public investment. Therefore, this subsection reviews the role of electoral uncertainty on public spending and borrowing decisions as well as on budget deficits and inflation. Main emphasis will be given to the role of strategic political behavior resulting from electoral uncertainty.

⁷ There is also considerable empirical evidence that high degree of income inequality and social fractionalization result in lower rates of private capital formation and economic growth, by leading to a high level of political instability (see, for example, Alesina and Perotti, 1996; Benabou, 1996; Easterly and Levine, 1997; and Annett, 2001). Also see Persson and Tabellini (2000) for more detail and overview.

⁸ A high degree of political instability tends to lead to a high probability that the incumbent government may be voted out of office (see, for example, Beetsma and Bovenberg, 1997; and Cukierman *et al.*, 1992).

Strategic Use of Public Debt, Inefficient and Persistent Budget Deficits, and Inflation

Public debt is an *intertemporal* policy tool that connects *current* government to *uncertain* future government. This creates an occasion for incumbent government to enjoy the benefits of borrowing today by spending more, and burdening its successor with large debt that limits its spending. In the words of Dornbusch and Draghi (1990),

[d]ebt links one government to another, it affords the possibility of reaping benefits today at the cost of another administration or it creates an opportunity to limit the scope for action of one's successor (Dornbusch and Draghi, 1990: 11).

Given the intertemporal nature of public debt and the existence of electoral uncertainty, a high level of political instability may lead to a myopic behavior in the form of inefficient budget deficits and excessive (strategic) debt accumulation, by lowering the probability of re-election at the end of the current period. In other words, if the incumbent government faces a high probability of being voted out of office at the end of current period, then it may accumulate excessive amount of public debt to tie the hands of its successor or political competitor in the next period. That is, the incumbent lowers the popularity of its successor, which may have different political preferences, by restraining its public spending via constraining its resources (see, for example, Persson and Svensson, 1989; Alesina and Tabellini, 1990). Alternatively, the incumbent government may use debt policy strategically to increase its re-election probability (see, for instance, Aghion and Bolton, 1990).

The strategic behavior that is considered above is due to the high level of political instability that lowers the probability of re-election in the next period; therefore, the strategic behavior results from the strategic interactions between different periods. However, strategic behavior may also result from another feature of the political structure: political polarization.⁹ That is, strategic behavior may also arise in each period due to the conflicting interests of political interest groups, e.g. coalition governments (see, Persson and Tabellini, 2000, for more detail). Similarly, strategic behavior may result from the differences in the form of institutional setting between fiscal and monetary authorities (see, for example, Beetsma and Bovenberg, 1997).

In sum, the main result from the political economy theories of public debt is that political factors, e.g. strategic political behavior, are crucial determinants of public debt policy. See, for example, Drazen (2000), Persson and Tabellini (2000) and Romer (2001) for a comprehensive survey of political economy theories on public debt and inefficient budget deficits.

Seigniorage is an important source of revenue for many developing countries. It is frequently argued that high level of political instability may also lead to monetary irresponsibility and hence high and persistent inflation (see, for instance, Healey and

⁹In reality, political instability and polarization are highly correlated. As noted by Persson and Tabellini (2000: 367) "it is difficult to discriminate empirically among these two features [political instability and polarization], since they often tend to come together: coalition governments are generally short-lived." Therefore, the frequently used term "political instability" usually has the meaning of both political instability and polarization in this study, unless otherwise stated.

Page, 1993). New political economy theories on inflation¹⁰ suggest that myopic policy makers or governments, such as those having an election in horizon, are more inclined to benefit from short-term policies that rises inflation (see, Kirshner, 2001; and Persson and Tabellini, 2000, for an overview). Therefore, there is a possibility of political business cycle due to political manipulation of inflation. Similarly, Cukierman *et al.* (1992), by developing a political economy model of tax reforms, argue that the incumbent government delays the tax reform and relies more on seigniorage if she faces a low probability of re-election and opposition. In order to insulate inflation from short-term political manipulations and to achieve credible monetary policy, many studies in this literature suggested an institutional solution: central bank independence (see, Kirshner, 2001, for an overview).

Roubini and Sachs (1989b) provide formal evidence on the effects of political instability on the debt accumulation for industrial countries. Moreover, Persson and Tabellini (2000) provides a review of the empirical evidence on the political determinants of large or inefficient budget deficits and public debt.¹¹ There is also considerable evidence on the effects of political factors on budget deficits and inflation in developing countries.¹² Edwards and Tabellini (1991) and Roubini (1991), for example, argue that governments which are composed of short-lived and large coalitions are associated with huge budget deficits. Similarly, Cukierman *et al.* (1992) provide evidence on negative effect of political instability on seigniorage and hence inflation. Moreover, several authors (Haggard, 1991 and Haggard and Kaufman, 1990)¹³ argue that there is a correlation between the patterns of inflation and political events in some Latin American countries like Argentina, Brazil, Uruguay and Chile. Also see Agenor and Montiel (1996) for a review of the formal and descriptive empirical evidence on the political determinants of budget deficits and inflation in developing countries.¹⁴

The Persistence of High Budget Deficits (Delays of Fiscal Adjustment)

A related strand of work in new political economy literature focuses on the persistence of high budget deficits once it arises. Budget deficits may persists due to the conflict over how the burden of fiscal adjustment will be distributed among the powerful interest groups or political parties in a coalition. Each interest group delays agreeing on stabilization program with the expectation that the other(s) will bear the higher proportion of the burden of fiscal adjustment (e.g. agreeing to pay a higher proportion of the taxes). The seminal work in this strand of literature is the "war of attrition model" of Alesina and Drazen (1991). In this model, higher degree of political fragmentation, which usually leads to higher level of political instability and polarization, is a crucial factor leading to

¹⁰See Kirshner (2001) for a recent survey on theoretical perspectives, such as sociological and political perspectives, on inflation.

¹¹Also see Romer (2001).

¹²Budget deficits are usually considered as one of the main causes of high and persistent inflation rate in developing countries, especially in those with structural problems (e.g. inefficiencies in tax collection). See, for example, Agenor (2000) and Veiga (2000).

¹³These studies are cited in Agenor and Montiel (1996).

¹⁴Similarly, political business cycles and political economy of stabilization and structural adjustment have also become an important research area for both industrial and developing countries. See, for example, Agenor and Montiel (1996) and Persson and Tabellini (2000) for an overview (Also see Section 2.2).

delays of fiscal adjustment or stabilization (see, for example, Veiga, 2000 for empirical evidence).¹⁵

Strategic Use of Public Investment

Similar to public borrowing, public investment also has an *intertemporal* characteristic; that is, it can expand future productivity and output and thus links current government to uncertain future government. Therefore, while the costs of spending more on public investment, in terms of cuts in other categories of public expenditure (due to the budget constraint), are borne by current government, uncertain future government reaps the benefits of public investment. Hence, this *intertemporal* nature of public investment also creates a possibility for strategic political behavior.¹⁶

Persson and Tabellini (2000), for example, analyzed the role of electoral uncertainty on public investment and economic growth. If there is a high probability that the incumbent government may not be in the office in the next period, e.g. due to a high level of political instability, to realize the favorable effects of public investment committed in the previous period, then the incumbent lowers public investment. As a result, economic growth suffers from such myopic behavior.

Rogoff (1990) developed a rational political business cycle model for fiscal policy.¹⁷ He has shown that incumbents, prior to elections, tend to favor public consumption and social transfer spending, which have high "immediate visibility" for voters instead of public investment that becomes visible and productive in the next period. In this set-up, electoral and budget cycles arise from informational asymmetries between policy makers and voters.

Moreover, it is frequently claimed that myopic governments that have a high rate of time preference inclined to favor current public spending rather than public investment. See, for example, De Haan *et al.* (1996) and Agenor and Montiel (1996) for evidence on developed as well as developing countries.

2.2. A Selective Review on Political Transitions and Cycles

There is a rapidly growing strands of literature –political business and budget cycles– which emphasize the manipulative use of macroeconomic policies and/or instruments during pre-election times (see, for example, Drazen, 2008a,b for a nice overview of models and for empirical evidence). A recent empirical study by Brender and Drazen (2005) found that political budget (deficit) cycles are mainly observed in “new” and/or weak democracies. According to Brender and Drazen, this is due to the inexperience of countries with electoral politics and the lack of information for evaluating the implications of fiscal policies in “new” democracies compared to the established democracies in which voters can punish fiscal irresponsibility (*a la* Peltzman). In a more

¹⁵Veiga (2000) explains and provides empirical evidence on various political barriers to stabilization.

¹⁶See also Dur *et al.* (1998) on the idea of strategic use of public investment.

¹⁷This model is also referred to as a *rational political budget cycle* model.

recent study Vergne (2009), while agreeing with the findings of Brender and Drazen on the level of deficit, states that electoral impacts on the composition of public spending are likely to be more persistent, even though voters acquire more experience with electoral politics.

Acemoglu and Robinson (2001) developed a theory to explain a frequent political transitions between democratic and non-democratic regimes (e.g. military regime, dictatorship) that are experienced in some countries, most notably in Latin American countries. They found that countries characterized by high (asset) inequalities are more likely to switch between these regimes as a result of fiscal volatility stemming from redistributive policies. High inequalities, for instance, lead to redistributive public spending in democracies and this, in turn, may cause military coups which particularly directed at lowering redistribution. In fact, there are many striking examples of this kind in Latin America.¹⁸ Acemoglu and Robinson (2001: 957) conclude that “democracy is more likely to be consolidated if the level of inequality is limited, whereas high inequality is likely to lead to political instability, either in the form of frequent regime changes or repression of social unrest.”

2.3. Macroeconomic Instability and Growth

Inflation rate is usually utilized as the proxy measure of macroeconomic instability. For instance, according to Fischer (1993b: 487), inflation rate is the best single indicator and "serve[s] as an overall ability of government to manage the economy". Nevertheless, a rise in macroeconomic instability means a rise in one or more policy-induced macroeconomic instability indicators, such as public deficit to output ratio, external debt to output ratio, as well as inflation rate. This definition is in line with Fischer (1993a,1993b) and Bleaney (1996) among many others, and will be used throughout this study.¹⁹

It is commonly shared by many economists that macroeconomic instability is detrimental to economic growth. Fischer (1993a), for instance, conducted cross-section analysis over the 1970-85 period and provided case studies for Cote d'Ivoire and Chile to analyze the role of macroeconomic instability in economic growth. The conclusion of his study is,

[p]rovided that inflation rate, external debt, and government deficit are accepted as macroeconomic policy indicators, both the cross-sectional regressions and the case studies support ... that a country's macroeconomic policy matter for long-run growth (Fischer, 1993a: 32).

Other studies provided additional evidence for developing countries which supported Fischer's findings (see Ismihan, 2009, for a review). Moreover, many economists believe that chronic macroeconomic instability may lead to a low level of foreign direct investment, worsening of income distribution and poverty.

There are a variety of channels through which macroeconomic instability may affect the rates of capital formation and economic growth. For instance, it is widely argued that

¹⁸ See footnote #2 in Acemoglu and Robinson (2001) for examples and more detail.

¹⁹ Consistent with this definition, macroeconomic instability index (MII) is developed by Ismihan (2009) for empirical purposes.

macroeconomic instability adversely affects the rates of productivity and investment mainly by creating uncertainty about current and future macroeconomic environment. More formally, a rise in the level of macroeconomic instability, i.e. an increase in inflation (and its variability),²⁰ via creating macroeconomic uncertainty and distorting information, would adversely affect economic growth at least through the following mechanisms (Fischer, 1993b and Agenor, 2000):

- uncertainty reduces the efficiency of price system, which will in turn reduce both the level and the rate of productivity,
- temporary uncertainty also reduces the rate of private investment, by generating option value of waiting,²¹ i.e. "potential investors wait for resolution before committing themselves" (Fischer, 1993b), and reducing expected profit,²²
- uncertainty increases capital flight and this lowers capital accumulation.

Nevertheless, these channels are more relevant to *private* investment and productivity. Macroeconomic instability may also have negative effects on *public* investment but via different channels. While a rise in macroeconomic uncertainty is the main cause of a reduction in private investment, the reduction in the fiscal -as well as political- "ability" of the government is the principal reason for the decrease in public investment. That is, a rise in the level of macroeconomic instability leads to, or aggravates, fiscal stringency due to the existence of the budget constraint of the government. For example, high inflation rate and/or excessive debt accumulation lowers the overall public resources otherwise available for public expenditures, namely capital and current expenditures, at least through the following channels:

- On the one hand, a rise in inflation rate usually raises the degree of dollarization and results in a loss of seigniorage revenue, by reducing the demand for domestic currency.
- Furthermore, high inflation rate also lowers the revenues from ordinary taxes due to the Olivera-Tanzi effect.
- On the other hand, high indebtedness leads to a high debt burden (principal plus interest payment) and lowers the overall public resources available for other public expenditures, including public investment.

Hence, a rise in the level of macroeconomic instability -or the existence of *chronic* instability- lowers the public resources via these channels. In turn, the incumbent government lowers public capital expenditures rather than current expenditures when faced with fiscal stringency since it is politically easier to cut the former than the latter (Roubini and Sachs, 1989b). This view is widely shared by many economists and there is empirical evidence that supports it.²³ Moreover, in the case of politically unstable and

²⁰Empirically, it is true that a rise in the level of inflation also rises its variability and its predictability. See Romer (2001: 522) for an overview and for evidence.

²¹See Fischer (1993b: 486-90) for more detail and the references.

²²See Agenor (2000) for more detail.

²³See, for example, De Haan *et al.* (1996) for an overview and empirical evidence.

polarized environment, there are more incentives for the incumbent government to cut public investment rather than current spending

3. A Panoramic Snapshot of the Turkish Economy: 1950-2010

Since its transition to the multi-party democracy in 1950, endemic instability, populist cycles, recurrent crises and associated low and volatile growth rates have been the dominant macroeconomic themes in Turkey. During this period, Turkish economy has also gone through significant policy regime shifts; beginning in 1950, 1960, 1980 and 2001, respectively (Onis and Senses, 2007):²⁴

Phase I. The Agrarian Populism in a Broadly Liberal Policy Regime: The 1950s

Phase II. A Protectionist Import Substituting Industrialization Strategy: The 1960s and the 1970s

Phase III. The Neoliberal Model with Emphasis on Liberalization and Deregulation: The 1980-2001 Period

Phase IV. Neoliberalism with Regulatory State: The Post-2001 Period

As well-documented by Onis and Senses (2007:259) “[c]risis often constitute a clear signal that the underlying policy regime [was] unsustainable.” In fact, Turkish economy experienced a three severe economic crisis; namely, 1958/9, 1978/9 and 2000/1, that can be considered as *turning points* in the economic development path of Turkey since the 1950s.²⁵

Considering this brief information regarding the structure of the Turkish economy, we can now analyze the growth dynamics -including capital accumulation and productivity dynamics- and its relationship with macroeconomic instability processes, with a particular emphasis on TFP. Figures 1-7 provide the time plots of output (Y), capital stock (K), total factor productivity (A), inflation rate (INF) the level of macroeconomic instability index (INSW) and the growth rates of A and Y.^{26,27}

²⁴ See Onis and Senses (2007) for more detail.

²⁵ These crises are primarily caused by domestic political and macroeconomic instabilities (see Onis and Senses (2007) for more detail on these crises). The Turkish economy also experienced significant crises in 1994 and 2008/9.

²⁶ As mentioned in Section 2, inflation rate is usually utilized as the proxy measure of macroeconomic instability. However, Ismihan (2009) defined macroeconomic instability in a more general way by utilizing other macroeconomic instability indicators, such as public deficit to output ratio, change in exchange rate, in addition to inflation rate. This study develops a similar variant of macroeconomic instability index developed by Ismihan (2009). See the Appendix (the data appendix) for more detail on this new index (INSW).

²⁷ The trends of the variables (denoted as **HP**) are estimated by using Hodrick-Prescott filter with the smoothing parameter, λ , set to 6.25 on the basis of Ravn and Uhlig’s (2002) frequency rule suggestion.

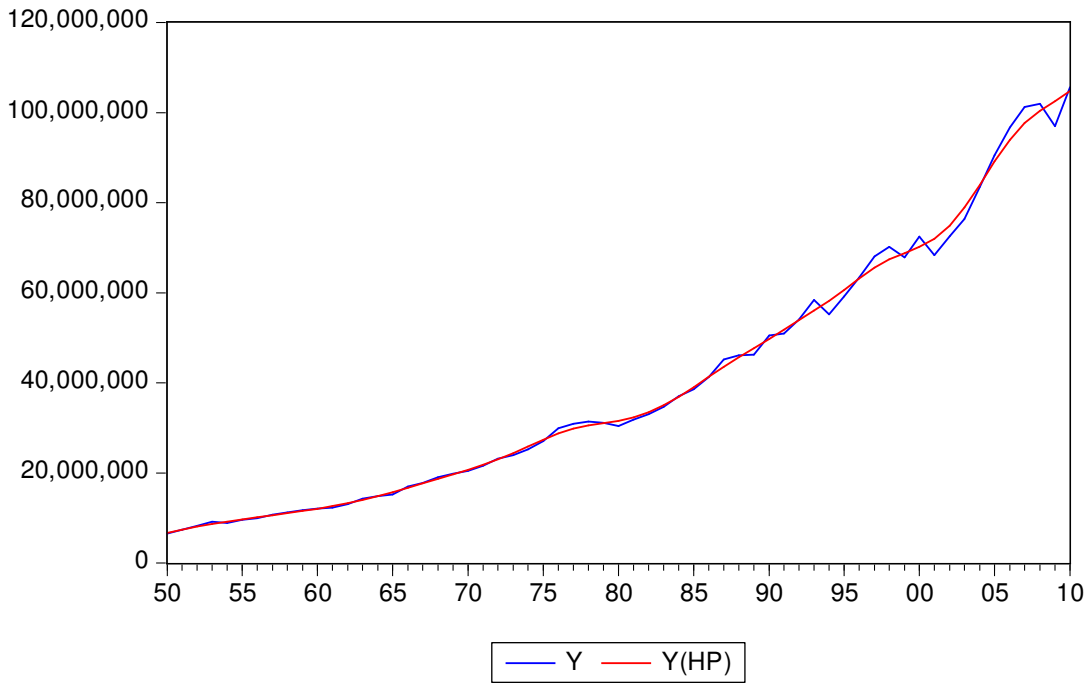


Figure 1. Time plot of real GDP (Y), 1950-2010

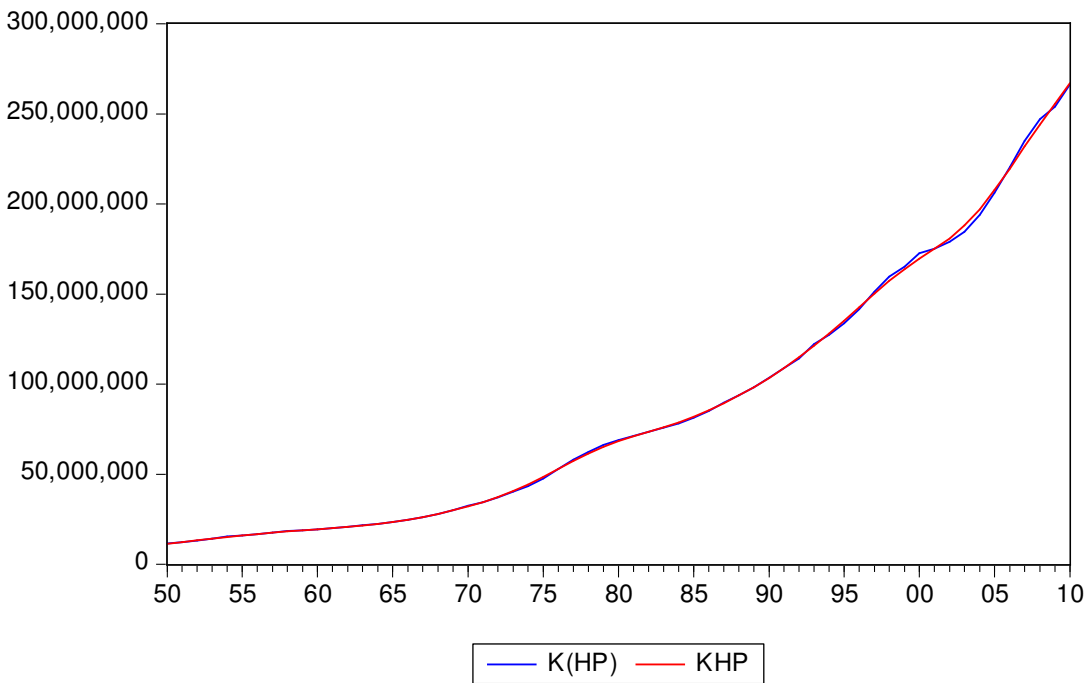


Figure 2. Time plot of physical capital stock (K), 1950-2010

Macroeconomic environment was quite stable during the 1950s and 1960s²⁸ compared to the later decades (see Figures 4 and 5). However, as noted before, Turkey experienced a severe economic crisis in 1958/9, which was mainly caused by domestic imbalances due to populist policies (See Onis 2003 and Onis and Senses, 2007, for more detail).

²⁸ This observation is in line with Celasun (1994).

Nonetheless, this instability episode was relatively short-lived (Turkey experienced a significant devaluation in 1960) but political consequences were substantial.²⁹

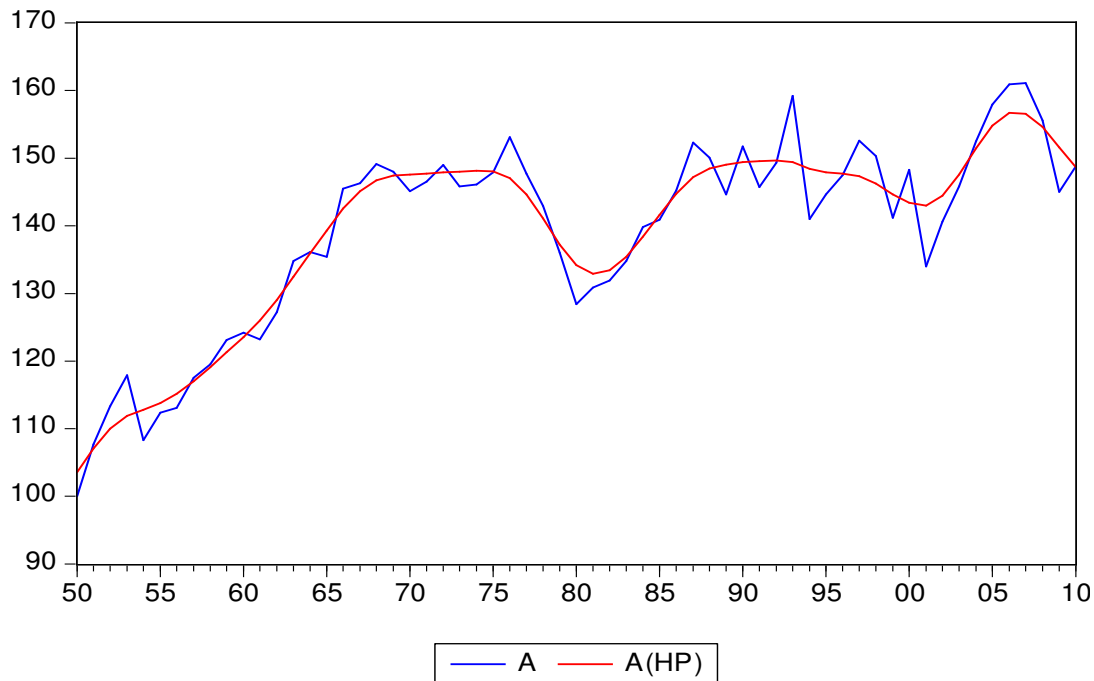


Figure 3. Time plot of total factor productivity, TFP (A), 1950-2010

As it is evident from Figures 4 and 5, the macroeconomic environment has started to become unstable from the mid-70s onwards.³⁰ During the 1973-77 period, Turkey delayed its internal adjustment to the external shocks of this period via reserve decumulation initially and excessive short-term borrowing later on (Celasun and Rodrik, 1989). In turn, the deterioration of the fiscal balances (mainly due to the significant rise in public investment) and the excessive reliance on foreign borrowing were among the main reasons behind the significant rise in the macroeconomic instability during the mid-70s.

During the 1973-77 period, the political environment was polarized and this led to inadequate macroeconomic policy making. This, in turn, has contributed to the rise in macroeconomic instability; however, as pointed out by Celasun and Rodrik (1989: 635) "this should not cloud the fact that a series of weak governments of varying political ilk still managed to undertake an impressive and sustained investment boom."³¹

²⁹ The military (coup) took the control of the country in May 1960 and the prime minister, along with two other ministers, was hanged in 1961.

³⁰ It should be also noted that, due to foreign exchange difficulties of the late 1960s, in 1970 Turkey introduced an IMF-based stabilization package, which involved a maxi devaluation. See Celasun (1994) and Krueger (1974) for more detail.

³¹ As succinctly stated by Celasun and Rodrik (1989: 629), "the 1970s were the best of times and the worst of times" for the Turkish economy.

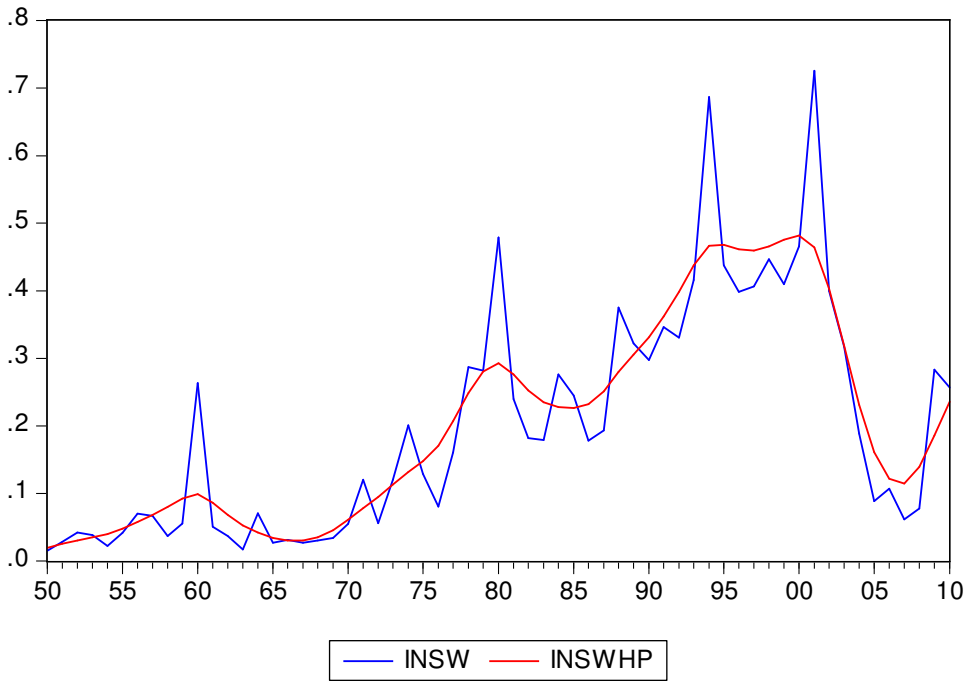


Figure 4. Time plot of macroeconomic instability index (INSW), 1950-2010

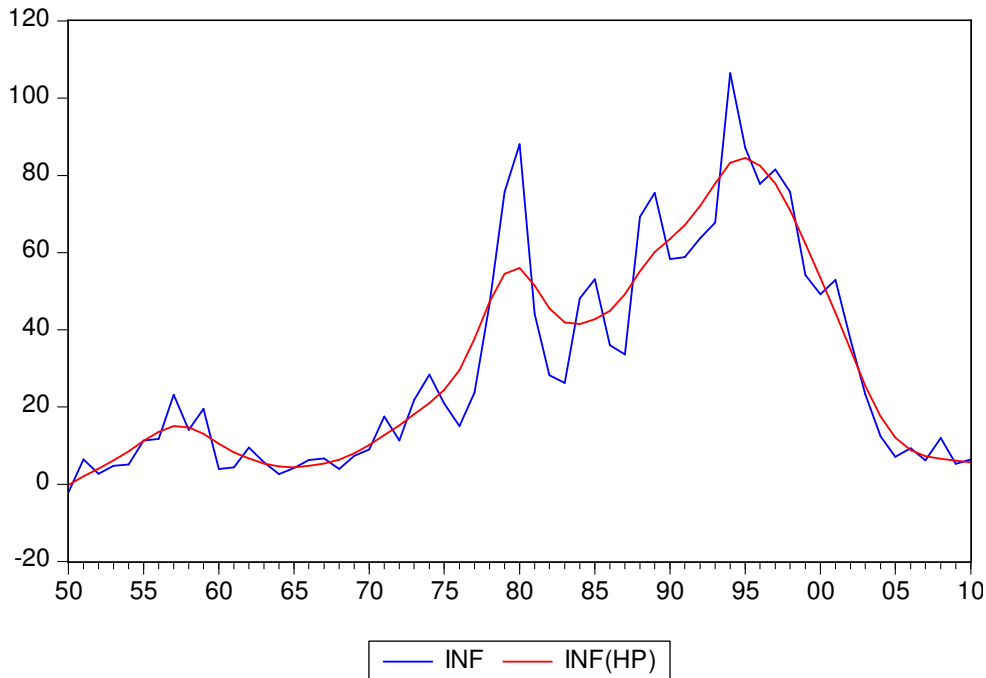


Figure 5. Time plot of Inflation Rate (INF), 1950-2010

Nevertheless, from the mid-1977 and onwards political environment has become more polarized and unstable due to more frequent changes of successive weak coalition governments. These coalition governments "have been associated with instability and lacked credibility and commitment to undertake serious fiscal adjustment" (Onis, 2003: 7). This is in line with the main implications of the theories on *delayed stabilizations* (See

Drazen, 2000, and Veiga, 2000, for an overview).³² Therefore, during the late 1970s Turkey reached a state where it could no longer service even its short-term debts and hence entered severe economic crisis.³³

The late 1970s have been very costly in terms of the losses in growth and fall in productivity and capital formation (see Figures 1-3) and since then macroeconomic instability became a chronic characteristic of the Turkish economy. As can be seen from the Figures 4 and 5, macroeconomic instability rose very sharply during the 1977-1980 period and had peaked in 1980. Furthermore, despite the high and steady growth rate of the 1963-77 period, the economic growth turned out to be negative from the 1977 to 1980 (output contracted at an average annual rate of 0.7%). Similarly, public and private investments also suffered during this period.

To sum up, 1978-9 crisis was very costly in terms of macroeconomic performance and brought an end to import substitution strategies and hence to the inward-oriented growth strategy.

1980 was a *critical* turning point for the Turkish economy since Turkey took a crucial decision to switch its overall economic strategy from inward-oriented growth strategy to outward-oriented growth strategy. Therefore, the analysis of the outward-oriented period would naturally begin with a brief summary of the 1980 Stabilization and Adjustment Program, which is the cornerstone of that overall shift in the economic strategy.

This program had both stabilization and structural aspects (e.g. trade and financial liberalization), and was strongly backed by the IMF, World Bank and the OECD consortium. The role of the state has crucially changed with this program. One of the key changes was the abandonment of the economy-wide formal planning.³⁴ Furthermore, the state changed its investment strategy from manufacturing to infrastructure. Moreover, export-promoting policies were also among the crucial aspects of the program.³⁵

In the early 1980s, Turkey successfully implemented the 1980 program, albeit under the military regime of the 1980-3.³⁶ However, this period was special in the sense that the policy makers were insulated from political pressures and conflicts under the military rule, and hence realized downward flexibility in real agriculture support prices and wages (i.e. policy makers avoided distributional pressures), which have become central elements of the adjustment process (Celasun and Rodrik, 1989: 664). Turkey also benefited from debt relief, support from the OECD countries, and favorable market conditions in the Middle East while implementing this program.^{37, 38} Thus, Turkey managed to reduce the high

³²Also see Section 2 for an overview.

³³See Celasun and Rodrik (1989) for a thorough discussion of this period.

³⁴Even though the five-year development plans are still prepared, the state has lost the means for forcing them on private and public sector (Ekinci, 2000).

³⁵See Aricanli and Rodrik (1990), Barlow and Senses (1995), Boratav *et al.* (1996), Celasun (1990,1994), Celasun and Rodrik (1989), Ekinci (1990,2000), Metin-Ozcan *et al.* (2001), Rodrik (1990) and Senses (1990,1991) for an assessment of the 1980 program and Turkey's post-1980 adjustment.

³⁶Military (coup) took the control of the country in September 1980.

³⁷See Celasun and Rodrik (1989) for more detail on these favourable conditions.

³⁸See Celasun and Rodrik (1989), Ekinci (2000) and Senses (1991) among others for further information on the implementation of the 1980 program.

level of macroeconomic instability inherited from the severe economic crisis of the late 1970s to a more moderate level during the early 1980s and restored growth (see Figure 6).

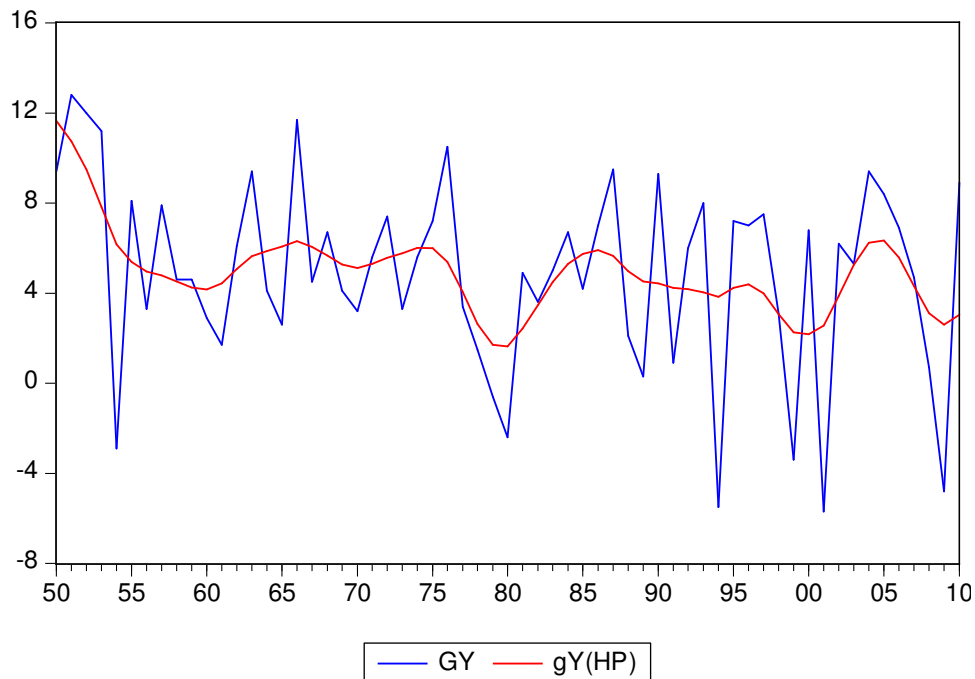


Figure 6. Time plot of the real growth rate (gY), 1950-2010

Overall, macroeconomic management was also quite good during the mid-1980s.³⁹ However, starting from the late 1980s macroeconomic instability rose again and it remained as an endemic characteristic of the Turkish economy during the 1990s. Political instability and related populist and myopic policies,⁴⁰ and associated problems of public sector imbalances were blamed most for the persistence of high macroeconomic instability and resultant unfavorable macroeconomic performance from the late 1980s onwards (see, for example, Ozatay, 1999 and Onis, 2003).⁴¹

Due to the political bans on some politicians and political parties only few newly formed political parties were able to take part in the general elections held in November 1983. ANAP (Motherland Party) won this election by obtaining the majority of the votes. Until 1987, *the competition free political arena* had provided ANAP the opportunity of being the strongest party in Turkey. In 1987, however, political bans were lifted and the banned politicians and political parties once again had entered the Turkish political arena. ANAP (the ruling party) still obtained the majority of the seats in the 1987 general elections, but compared to the previous elections its share in the total votes significantly decreased due to the increased opposition. Furthermore, ANAP was heavily defeated and became the third party (with almost 1/5 of the total votes) in the municipality elections in March 1989.⁴² With the general elections held in 1991 the ruling of ANAP came to an end and

³⁹ See Celasun and Rodrik (1989) for detailed analysis.

⁴⁰ See, for example, Ozatay (1999) and Akyurek (1999) for empirical evidence.

⁴¹ As will be explained later, other factors (e.g. structural) also significantly contributed to this undesirable performance.

⁴² This result is mainly ascribed to the disappointment of wage earners and agricultural sector due to worsening income shares during the 1980s adjustment and to the rising claims for more democratic

coalitions became the dominant feature of the Turkish governments throughout the 1990s. This has continued till the 2002 elections.

The main characteristic of the period during the late 1980s and the 1990s is that the higher political instability is significantly associated with deterioration in fiscal stance⁴³ e.g. debt accumulation and rising budget deficits, and worsening macroeconomic instability (see Figures 4 and 5). This, in turn, accompanied with a steadily falling and highly volatile TFP and growth performance (see Figures 1, 3, 6 and 7).

These results are in line with a number of key implications of the political macroeconomy models. For instance, it has shown that high level of political instability may lead to myopic policies (via electoral uncertainty) in the forms of low level of public investment and excessive debt accumulation.⁴⁴ Furthermore, it has also shown that political instability may possibly affect public spending decisions directly due to the characteristics of the socio-political structure (see Section 2). For example, governments in more unequal societies have more incentives to follow populist policies which contains redistributive public spending. Wage and agriculture price repressions worsened the income inequality during the adjustments of the 1980s (see, for example, Celasun, 1989 and Ekinçi, 2000). With the end of the *politics and competition-free political era* (1980-6) in 1987, "accumulated distributional claims" was one of the major concerns of the political parties'. Hence, this was the main incentive behind the switch to the populism in the late 1980s and onwards (Onis, 2003).

Nevertheless, as will be explained below, public spending and debt dynamics of the Turkish economy over the late 1980s and the 1990s are realized under a special set of circumstances, such as financial liberalization. Thus, two crucial changes in the policy regimes need to be mentioned before analyzing the policy dynamics of the late 1980s and onwards. During 1988 and 1989, Turkey established the domestic capital markets and the Treasury switched the mode of deficit financing from monetization to domestic borrowing with new financial instruments. Moreover, in 1989, Turkish Lira became fully convertible and capital account was fully-liberalized.

From the late 1980s to the end of 1993, the elected governments in Turkey had managed to maintain the populist and myopic policies, through the reliance on domestic borrowing, mainly with the help of capital inflows.⁴⁵ However, the cost of this strategy was very high, real interest rate on domestic debt had increased steadily during the early 1990s and this further deteriorated the fiscal balances; for instance, domestic interest payments (as % of GNP) rose from 1.9% in the 1987-89 to 2.9% in the 1990-93.⁴⁶ Similarly, budget deficit (as % of GNP) also deteriorated during this period, from -3.4% in the 1987-89 to -5% in the 1990-93 (Ismihan, 2009).

advances (Ekinçi, 2000: 4). ANAP replied by significantly rising public wages and agricultural prices. Consequently, and with the help of increased military expenditures, fiscal balances deteriorated (Ekinçi, 2000).

⁴³This argument is in line with Ozatay (1999).

⁴⁴Moreover, the higher the number of parties in the coalition, the harder will be the cooperation or agreement on economic policy. See Section 2 for an overview and further references.

⁴⁵See, for instance, Yenturk (1999) and the references therein for the discussion of the role and impact of short-term capital flows on macroeconomic policies in Turkey.

⁴⁶The performance of the Turkish economy also became very sensitive to capital flows. See Celasun (2002) for more detail.

Turkey experienced a severe financial crisis in the early 1994 mainly due to unsustainable fiscal balances, the collapse of the domestic debt market, monetization and the expectations of further monetization.⁴⁷ Real GDP contracted by 5.5% during 1994, which is the second largest rate of contraction in the Turkish economy over the 1950-2010 period. Similarly, real public investment fell dramatically, about 40% , from 1993 to 1994.⁴⁸ Real private investment, however, contracted only moderately (about 5%). Inflation peaked and INSW rose dramatically in 1994. Furthermore, Turkish Lira depreciated by more than 150% against US\$ in 1994. In mid-1994, Turkey adopted an IMF-based stand-by agreement, and managed to cool-down this severe economic crisis (see Figures 4 and 5).

However, macroeconomic instability has continued until the late 1990s, mainly due to the reluctance of governments (e.g. to avoid negative political consequences) to take the necessary painful measures (e.g. fiscal and banking sector reforms); in other words, governments delayed the reforms and stabilization.⁴⁹ During this period, especially towards the end of the 1990s, public sector balances became unsustainable due to the reliance on domestic borrowing mainly for the financing of interest payments arising from domestic borrowing. Domestic interest payments sharply rose and domestic debt (as % of GNP) doubled, from 9.9% in the 1990-93 to 19.7% in the 1994-99 (see Ismihan, 2009:99, Table 7.2). Thus, the main cause of the rise in domestic debt changed during the post-1994 crisis period.⁵⁰ That is, while the financing of the populist spending is the principal motive for the reliance on domestic borrowing during the pre-1994 crisis period, the financing of domestic interest payments is the main motive during the post-1994 crisis period of the 1990s.

During the 1990s the striking feature of the market for domestic borrowing was that the commercial banking sector was the primary buyer in the shallow market.⁵¹ Thus, government's rising demand for borrowing relative to the size and the structure of the market has been the main factor fuelling the real interest rates.⁵² As a result, real interest rate on net debt of public sector almost doubled from 1990 to 1999.⁵³ Keyder (2003: 11) points out that "[t]he real interest rate, in large part, reflects the risk premium, which is closely tied to people's confidence in the economy and in the government". Hence, real interest rates rose in conjunction with macroeconomic instability.

In retrospect, chronic and rising macroeconomic instability since the late 1980s (see Figure 4) seemed to be the main reason behind the low and volatile growth rates of

⁴⁷See, for example, Celasun (1998), Celasun (2002), Ekinci (2000), Ozatay (1997, 2000), Yeldan (1997) and the references therein for an overview and sources of the 1994 crisis.

⁴⁸This is a solid evidence of the negative effect of macroeconomic instability on fiscal "ability" of governments for making investment.

⁴⁹See, for example, Veiga (2000) for well-documented reasons and empirical evidence on "delayed stabilizations" literature. Also see Section 2 for more detail.

⁵⁰See, for example, Celasun (2002) and Ekinci (2000) for a discussion on the macroeconomic and financial developments in the Turkish economy, during the 1990s.

⁵¹During the 1990s, the average share of the treasury bills and bonds bought by the Turkish banking sector was about 84%.

⁵²Banks profited from low maturity and high yield securities offered by government to roll over public debt, during the 1994-99.

⁵³From 14.2% in 1990 to 25.2% in 1999, see IMF (2000).

output and TFP (see Figures 6 and 7) performances during the outward-oriented period, especially in the 1990s.

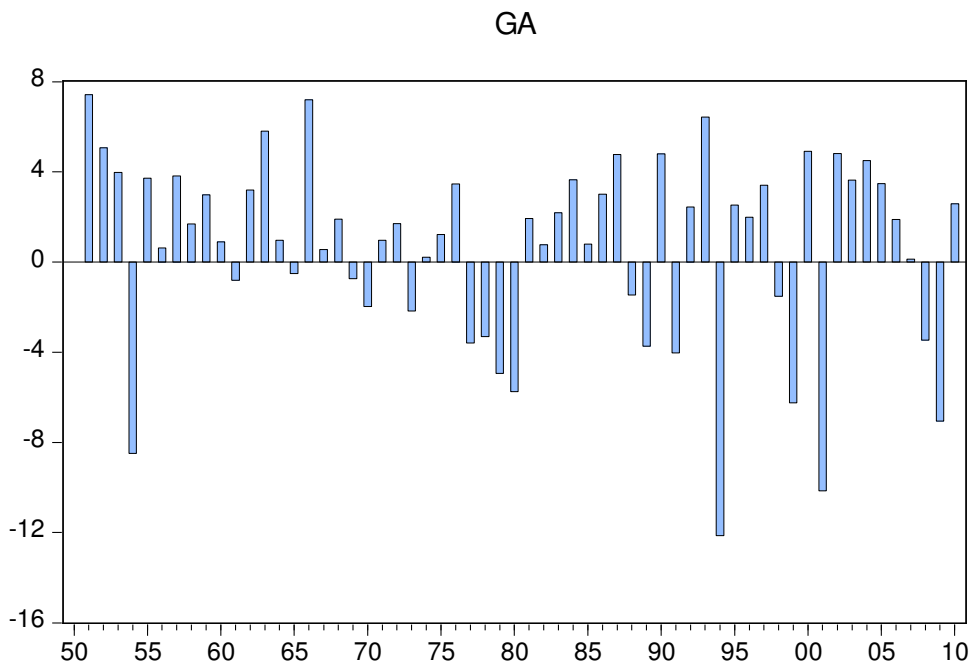


Figure 7. Time plot of the growth rate of TFP (gA), 1950-2010

Celasun (2002: 53) pointed out that "especially after 1997, the gap between real interest rates and GDP growth rates increased, worsening the public sector debt dynamics and leading to a debt accumulation problem which is very painful to resolve". Therefore, in the late 1990s, "[t]here is no question about the fact that public balances of Turkey were on an unsustainable path and that immediate action was required to redress them" (Ekinci, 2000: 14). Hence the coalition government signed a three-year IMF-based stand-by agreement in December 1999, which mainly aimed to solve the public sector imbalances.⁵⁴ Unfortunately, this program had failed in the February 2001 due to a major economic crisis (real GDP contracted by 5.7% during 2001, which is the *largest* rate of contraction over the 1950-2010 period).⁵⁵ The coalition government signed another program backed by the IMF and the World Bank. The coalition government started to implement the new program (with the new cabinet) by making institutional and structural reforms, which strengthened the regulatory capacity of the state in Turkey.⁵⁶ This program was also quite successfully implemented by AKP (The Justice and Development Party) from the end of 2002 until early 2006. It should be noted here that AKP, newly formed party, won the general elections in November 2002 by obtaining the majority of the votes and it is the ruling party in Turkey since then.⁵⁷

⁵⁴ See Ekinci (2000) and the references therein for a thorough overview of fiscal and other public sector related problems and extensive assessment of the aspects of this program.

⁵⁵ See Onis (2002), Celasun (2002) and Ozkan (2003) for a detailed analysis on the November 2000 and the February 2001 crises.

⁵⁶ Also see Onis and Senses (2007).

⁵⁷ It is also important to note that the characteristics of this period are in line with findings of Alesina et al. (2006). They found that "stabilizations are more likely to occur when times of crisis occur, when new governments take office, when governments are "strong" (that is, presidential systems and unified

In line with these developments, TFP has increased steadily and quickly during 2001-2006. As noted by Ismihan and Metin-Ozcan (2006), the main contributor to this performance was successful reduction of the inflation rate, the attainment of fiscal discipline and the resultant stable macroeconomic environment. This performance was, in turn, fuelled by institutional and structural reforms (e.g. related to the banking sector and central bank) that improved the regulatory capacity of the state in Turkey. However, other factors, like the relatively stable internal and external political environment, the rising capital flows to emerging markets and the prospect of possible EU membership, were also contributed to the speed-up in TFP as well as output (see Figures 6 and 7) from 2001 to 2006. It should be noted that this performance has also provided some unfavorable side effects like high unemployment rate and significant deterioration in current account balance.

The favorable performance in TFP and economic growth was not sustained during the post-2007 period. As noted by Dani Rodrik, in his current study on the recent economic performance of Turkey, "[a]n economic-development model that relies on foreign savings and large current-account deficits can generate respectable growth, but it runs into inherent problems ... [e.g. due to] shocks that emanate outward from financial instability elsewhere." (Rodrik, 2012: 41, 59). The solid example to this important remark is that the Turkish economy contracted significantly in 2009 (Real GDP fell by % 4.8) as a result of global financial crisis, despite the fact that macroeconomic policies were sustainable and the single party was in power.⁵⁸

The *Common Threads* in the Turkish experience

The above analysis suggests that there are a number of *common threads* in the Turkish experience, especially from the 1970s and onwards:

- most of the governments in Turkey behaved “fiscally irresponsible” by implementing myopic and populist macroeconomic policies over extended periods of time, with the aim of alleviating distributional pressures and hence preserving or increasing electoral support;
- even though chronic instability episodes have taken place under different economic structures and policy making framework, fiscal imbalances as well as political instability and polarization have remained as the endemic characteristics of the Turkish economy;
- the insistence on unsound and unsustainable policies for long periods of time lead to persistently low and volatile, and occasionally falling, total factor productivity and economic growth rates. The resultant chronic fiscal imbalances and high inflation have been, usually, followed by major economic and/or political crises;

governments with a large majority of the party in office), and when the executive branch faces fewer constraints” (Alesina et al., 2006:1)

⁵⁸ Also see Onis and Senses (2007) and the references cited therein for the vulnerabilities of the Turkish economy in the post-2001 period (as well as for the post-financial liberalization era since 1989).

- several stabilization programs were implemented (usually after crises) to restore stability in the economy but, mainly due to political reasons, the elected governments after seeing a temporary relief in the economy generally delayed or completely abandoned the stabilization policies. Furthermore, these governments (usually weak and/or coalition governments) as well as their successors usually chose to continue the popular and myopic economic policies with the similar aims. However, post-2001 period is an important exception as explained above;

- productivity usually rebounds quickly, particularly during the *committed* stabilization periods such as the one experienced after the 2001 crisis in Turkey –of which fiscal adjustment was the central part;

- and, finally, as is clear from the above analysis, volatility of output seems to be mainly caused by the changes in the level of TFP rather than capital (K).⁵⁹ And the changes in the level of TFP are primarily related to the movements in the level of macroeconomic instability in the economy. More specifically, since the mid-1970s macroeconomic instability has steadily increased and has become a chronic problem in the Turkish economy until 2000/1 crisis. This, in turn, leads to a highly volatile, low (non-rising) and, occasionally, falling TFP.

To sum up:

Policy makers in Turkey followed unsound policies, such as myopic and populist policies, over extended periods of time. The main conclusion from the new political economy literature is that such policies and associated macroeconomic instability in developing countries usually emanate from deeper socio-political instabilities -e.g. due to income distribution- but not from technical "mistakes" or misjudgments of policy makers. The Turkish experience from the 1950s to early 2000s, as nicely summarized by Onis (2003), seems to be broadly in line with the main predictions of this literature.

Turkey's performance in the economic and political realms is heavily interrelated. The performance of the democratic regime has clearly been inadequate in terms of generating high rates of economic growth on a sustained basis. What seemed to underlie this inadequate performance was the failure in terms of effectively managing the severe distributional conflicts, with different groups in society aiming to obtain a greater share of the "rents" associated with easy access to state resources. ... Indeed, "populist cycles" and periodic fiscal crises of the state have emerged as persistent features of the Turkish economy ever since the Menderes era of the 1950s. Democratically elected governments have typically initiated populist cycles in order to establish broad electoral support. ... The endemic nature of populist cycles clearly highlights the weaknesses of Turkish democracy in providing effective governance of the economy. Populist cycles and the ensuing crises have [been] costly in the sense that they have reduced the rate [of] growth below what would otherwise have been the case.

⁵⁹ It should be noted that the effect of a rise in macroeconomic instability is quickly reflected on TFP compared to K. Nevertheless, this does not mean that capital formation is not affected from macroeconomic instability. In contrast, Ismihan (2009) [see also Ismihan et al. (2005)] by utilizing time series methods for the 1963-1999 period, have shown that the chronic and increasing macroeconomic instability of the Turkish economy has seriously affected its capital formation –both private and public- and persistence of such unstable environment seems to be a serious impediment to public investment and shatters, or even reverses, the complementarity between public and private investment in the long-run.

Moreover, in a rather ironic and yet typical Latin American fashion, populist cycles have been associated with high rather than low inequality (Onis, 2003: 1-2).

Finally, Figure 9 provides the visual presentation of a typical instability episode in Turkey as explained above.

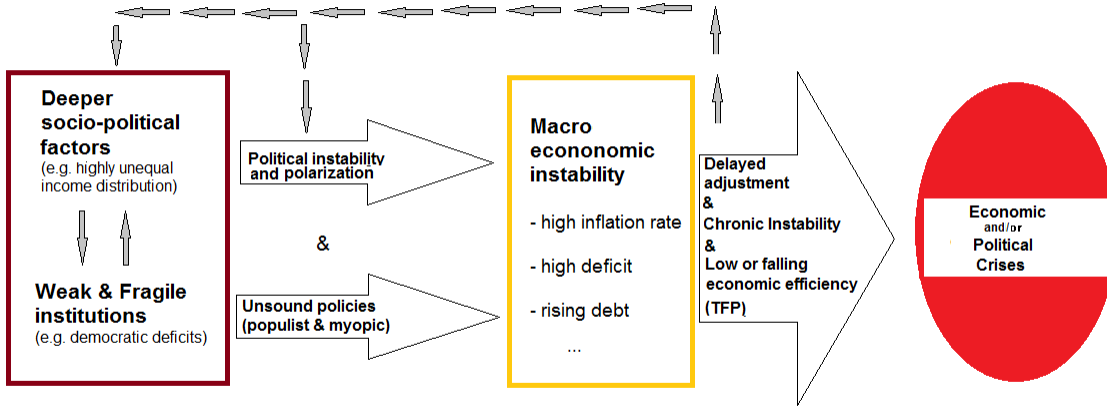


Figure 9. Visual Presentation of a Typical Instability Episode

4. The Framework and Empirical Results

4.1. The Framework

Consider the following Cobb-Douglas production function:

$$Y_t = e^{\theta_0 + \theta_1 t + \theta_2 INSW + \theta_3 FTRAT} K_t^\alpha H_t^\beta \quad (1)$$

where Y, K and H denote output, physical and human capital, respectively. INSW represents the level of instability (i.e. the macroeconomic instability index), FTRAT is the foreign trade to output ratio which represents the level of integration of country to the global economy (via trade) and t represents time.⁶⁰

Assuming constant returns to scale ($\alpha + \beta = 1$) and introducing disturbance term for unobservable components (e.g. supply shocks), the long-run total factor productivity equation (model) can be obtained in log-linear form as follows:⁶¹

$$\ln A_t = \theta_0 + \theta_1 t + \theta_2 INSW_t + \theta_3 FTRAT_t + u_t \quad (2)$$

where A is TFP or Solow's residual [$A = Y / (K^\alpha \cdot H^{1-\alpha})$]⁶² and Ln represents natural logarithm and u denotes the error term.

⁶⁰ See the Appendix for more detail.

⁶¹ This approach is similar to Musolesi's (2011) approach for modeling TFP (A). However, the aim(s) and the scope of this paper are completely different from that of Musolesi's (2011).

⁶² In this case, A could be referred to as *augmented* Solow's residual since the production function also includes the role of education (see, for example, Ismihan and Metin-Ozcan, 2006 and Senhadji, 2000).

A number of well-known economists warn that TFP -as measured by Solow's residual in growth accounting- is not synonym for technical progress but can be considered as a measure representing the shifts in production function. This point is nicely summarized by Hulten (2001) and Bosworth and Collins (2003):

The TFP residual captures changes in the amount of output that can be produced by a given quantity of inputs. Intuitively, it measures the shift in the production function. ... Many factors may cause this shift: technical innovations, organizational and institutional changes, shifts in societal attitudes, fluctuations in demand, changes in factor shares, omitted variables, and measurement errors. The residual should not be equated with technical change, although it often is. (Hulten, 2001:40)

[TFP] residual provides a measure of gains [or losses] in economic efficiency ... which can be thought of as shifts in the production function. But such shifts reflect myriad determinants, in addition to technological innovation, that influence growth but that the measured increases in measured inputs do not account for. Examples include the implications of sustained political turmoil, external shocks, changes in government policy, institutional changes or measurement errors" (Bosworth and Collins, 2003:115).

Considering all this (as well as the arguments and the analyses in the previous sections), the above simple framework seems to be capable of explaining the substantial volatility in TFP and hence trend output in developing countries like Turkey and Mexico.

In doing so, this framework also provides a useful tool for analyzing growth dynamics by linking short-run –as well as medium-run– policy outcomes to long-run measure. More specifically, equation (2) introduces short-run changes (via INSW) –possibly including a number of political (macro) economy channels as noted before– the long-run indicator (A). This specification is in line with the existing empirical evidence. Rodrik (1999), for instance, empirically confirmed that countries with higher social conflicts and weaker institutions were the ones following unsound policies with undesirable macroeconomic outcomes such as high rates of inflation. In another strand of literature (see Section 2.3), it is argued that unstable macroeconomic environments –e.g. resulting from high inflation rate or budget deficits– are detrimental to both productivity and growth (see, for example, Fischer 1993). There is by now a convincing evidence on the negative effect of rising or chronic macroeconomic instability on productivity and growth (See Section 2.3 for more detail).

4.2. The Empirical Results

Before estimating the above productivity equation with the time series data it is essential to check for the presence of a unit root in each series.⁶³ Table 1 presents the unit root test results. As is clear from this table, for the *levels* of all the three variables, the null hypothesis of a unit root is not rejected at the 1% significance level.⁶⁴ Furthermore, the null hypothesis for the *first differences* of all variables is rejected (p-values=.0000). Thus, all three variables contain a unit root.

⁶³ See the appendix for the definitions and the sources of the data.

⁶⁴ The null hypothesis of a unit root is also not rejected at the 5% significance level except for Ln A (without trend). However, ERS test supports the presence of a unit root in Ln A.

Table 1. Unit Root Tests

Variables	ADF Tests		
	Level		First Difference
	Without Trend	With Trend	Without Trend
Ln A	-3.1139 (0) ^a [0.0308] ^b	-3.0619 (0) [0.1248]	-8.6449 (0) [0.0000]
INSW	-2.6650 (0) [0.0861]	----- ^c	-9.3661 (0) [0.0000]
FTRAT	-0.4785 (0) [0.9846]	----- ^c	-6.5826 (0) [0.0000]

^a Numbers in parentheses are the optimal lag length chosen by the Schwarz Bayesian Criterion (SBC). Max lag=4.

^b Numbers in square brackets are p-values.

^c INSW and FTRAT do not have apparent trend; therefore, we did not include the deterministic trend term in ADF tests.

In this study, we utilize Johansen cointegration techniques to estimate long-run productivity equation as set out in Equation (2). The Trace and Max statistics suggest one cointegration relation, which is in line with the priori expectations. By utilizing Johansen method Equation (2) is estimated as follows:⁶⁵

$$\text{Ln A} = 4.811 + 0.017 t - 0.8726 \text{ INSW} - 0.0136 \text{ FTRAT} \quad (3)$$

(6.9921) (-7.2257) (-4.4724)

Note: t-statistics are in parentheses.

Equation (3) suggests that TFP tends to be growing over time but it is negatively affected by the level of macroeconomic instability. This, in turn, reflects many determinants but mainly affected by socio-political instability and polarization and associated myopic and populist policies (see Sections 2 and 3). Nevertheless, social conflicts (e.g. arising from distributional problems) and weaker institutions (including but not limited to democracy) were the main reasons for the persistence of such unsound policies in Turkey, prior to 2001. Such undesirable environment, in turn, leads to a higher level of macroeconomic instability and hence recurrent productivity collapses.

Foreign trade to GDP ratio (FTRAT) represents the level of integration to the global economy, and hence represents the important structural feature of the economy (see Section 3). The above equation implies that the Turkish economy is affected unfavorably during the episodes corresponding to the higher level of integration. This result seems to be counter-intuitive to many researchers but it should be noted that higher level of integration can increase the vulnerabilities to the external shocks. Furthermore, one of the serious structural weaknesses of the Turkish economy is its over-dependence on imported intermediate and capital goods and related exposures to the international developments (see, Rodrik, 2012).

Now, let's consider the short and medium term dynamics of TFP growth. This study utilizes generalized impulse responses to analyze these dynamics. Figure 9 presents the generalized impulse responses of Ln A to a positive innovation (shock) in INSW and FTRAT.

⁶⁵ Given the presence of deterministic trend in Equation (2), the trend term is restricted to lie in cointegration relation but with no trend in VAR. The lag length of a VAR is specified as 1. Residuals are normal, homoscedastic and are not serially correlated. It should be also noted that FM-OLS method yields quite similar estimates for Equation (2) (not reported), which lent some support to the results in Equation (3).

Response to Generalized One S.D. Innovations

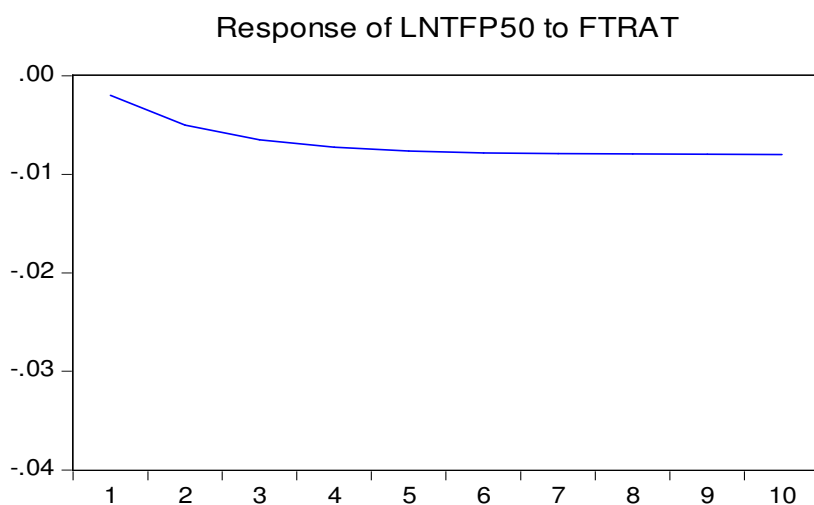
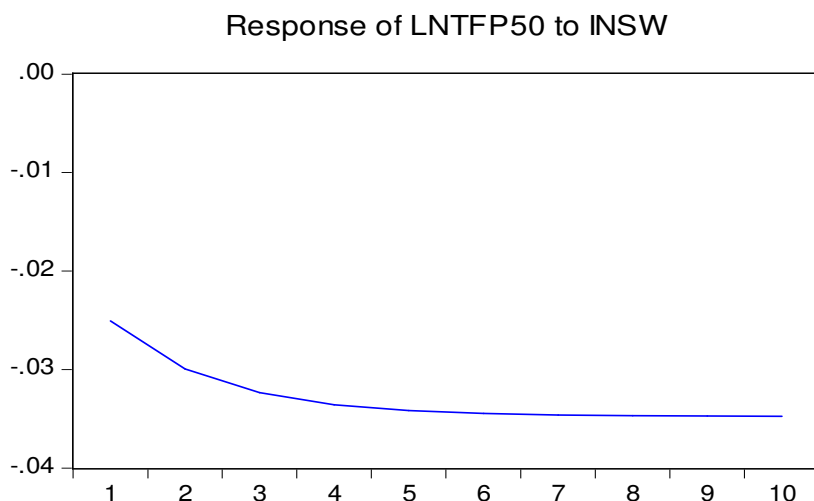


Figure 9. Generalized Impulse Responses of $\ln A$ (LNTFP50) to INSW and FTRAT

As can be seen from the upper panel of Figure 9, TFP is negatively and permanently affected by an increase in instability over the medium-term. This is in line with the above descriptive analyses and theoretical expectations (see Sections 2 and 3). As is seen from the lower panel of Figure 9 TFP is negatively affected by the level of economic integration (via trade). This is in line with the above explanation.

5. Concluding Remarks

This paper attempted to develop a simple framework capable of explaining the substantial volatility in TFP and hence trend output in developing countries like Turkey, by linking short-run policy outcomes to long-run measure (TFP). In doing so, this framework also provides a useful tool for analyzing growth dynamics by considering a number of political (macro) economy channels through which developing countries may experience a policy environment which results in persistent productivity and output drops.

The main empirical result of this paper is that Turkey has experienced productivity accelerations and collapses as a consequence of the endemic instability, populist cycles, and resultant crises and regime changes since the 1950s. However, social (e.g. distributional) conflicts and weaker institutions were the main causes of the persistence of unsound policies in Turkey with undesirable outcomes, in terms of macroeconomic instability and productivity, prior to 2001.

Appendix Data Definitions and Sources

FTRAT is foreign trade (imports+exports)-to-GDP ratio (%). Source: TurkStat (SIS)

INSW is a similar variant of macroeconomic instability index (MII) developed by Ismihan (2009) and used as a proxy for macroeconomic instability. This index is calculated by using human development index (HDI) methodology and it is based on four macroeconomic instability indicators; namely, public deficit to GDP ratio, inflation rate, change in the current account balance to GDP ratio and change in exchange rate. Note that the absolute values of the last three indicators are used. INSW is a weighted average of the four sub-indices obtained from these four variables and the respective weights are determined by using the principal components analysis. INSW is bounded between 0 and 1 due to its construction. Data for the four instability indicators are obtained from TurkStat and SPO (MD, Ministry of Development)

Y (output) is measured by GDP (at 1998 prices, in 1000 TL). A new GDP series is available for the 1998-2010 period from TurkStat. MD (SPO) has provided a new GDP series extending back as far as 1950.

INF represents the inflation rate calculated as a percentage change in (new) GDP deflator. Source: MD.

K (physical capital stock) is calculated by perpetual inventory method as in Ismihan and Metin-Ozcan (2006). We have used the most recent investment series of TurkStat. However, TurkStat data is available for the 1998-2010 period. We used the series provided by Saygili and Cihan (2008) for the Pre-1998 period. Note that the estimated capital stock series are at 1998 constant prices (in 1000 TL).

L (labor input) is measured by employment data. Source: TurkStat, Bulutay (1995) and Saygili and Cihan (2008).

H (human capital) represents a human capital augmented labor series and it is obtained as follows, $H_t = h_t L_t$, where h_t is the educational attainment per worker or the average per worker human capital stock. Following Ismihan and Metin-Ozcan (2006), h_t is estimated as: $h_t = e^{rs}$, where s_t is the average years of schooling of the adult population (aged 15 + over) and r is the rate of return to schooling (set as 10%). This study uses the Altug et al.'s (2008) data on the average years of schooling for Turkey because it provides estimates for this variable from 1950 to 2005 and we extended this data till 2010.

A (or TFP50) refers to the estimated series of TFP with α set at 0.50 [$A=Y/(K^{0.5} \cdot H^{0.5})$], 1950=100 (see, Ismihan and Metin-Ozcan, 2006).

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