Public Debt Sustainability: What Does the Turkish Experience Suggest?
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Abstract
During the 1980s and 1990s, debt sustainability issue had been at the heart of several crises in developing countries, including prominent ones such as Argentina, Brazil and Turkey. Heavy debt burden had been the source of the economic crises in some countries while being the result of them in some others. Today, global economic crisis has taken a heavy toll on EU Member States’ public finances and made debt sustainability a major challenge across the European Union. Indeed, the debt to GDP ratio is continuing to rise and is expected to reach 84.9% of GDP in 2012—an increase of over 20 points of GDP from its level of 2007.

Until the previous decade, the Turkish economy was challenged by mounting sovereign debt concerns which were fed by an unsustainable combination of loose fiscal and monetary policies. In this study, based on the Turkish case, we demonstrate how its debt became more sustainable in a short period of time while analyzing the role of macroeconomic policies to convert a vicious cycle to a virtuous one. Besides that, we show how the steps taken in debt and risk management provided a structural impetus for transformation. In light of these findings, Turkish approach for handling the current European debt problem is considered.

Keywords: Debt sustainability, European debt crisis, Risk management

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1. Introduction
Until recently, sovereign default risk was perceived solely as a problem of developing countries. During 1980s and 1990s, developing countries including Mexico, Brazil, Argentina, Thailand and Indonesia experienced deep economic crises in tandem with liberalization efforts. Heavy debt burden and/or weak debt dynamics had been the source of the economic crises in some countries while being the result of them in some others. In fact, while economic, financial and political dynamics of a country have an impact on its public debt stock; poor debt dynamics can be a critical source of risk for the whole economy by itself. In the case of Argentina and Brazil, high level of debt burden was the source of economic vulnerability and one of the main factors that triggered financial crises. Although, fiscal policies were sound in some countries including Thailand and Indonesia, once the crises hit, it adversely affected budget and current account balances and required heavy uses of external funds in short period of

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time, which in turn led to a significant increase in debt stock. With respect to this categorization, 2001 crisis of Turkey comprises elements of both cases. Although, debt burden in the economy before the crisis was not at unsustainable levels, structure of debt was weak especially in terms of maturity profile. In this regard, high roll-over ratios together with fragile banking sector balance sheet were the driving factors of the crisis. Moreover, as the crisis deteriorated fiscal parameters and economic growth, these developments resulted in a record level of public debt to GDP ratio of 74% in 2001.

Today, as global economic crisis has taken a heavy toll on EU Member States’ public finances, debt sustainability issue has become a major challenge across the European Union. Indeed, the debt to GDP ratio is continuing to rise and is set to reach 84.9% of GDP in 2012 (European Commission, 2011) – an increase of over 20 points from its level of 2007. Even before the crisis, debt to GDP ratios of Greece and Italy were much higher than the level of Maastricht criteria suggested. In those countries, debt stock was 104% of GDP on average in the period of 2000-2007. Debt stock was already an important source of vulnerability though it was not reflected in sovereign risk assessments. During the crisis, borrowing needs increased while economies contracted. As a result, debt burden jumped to a higher plateau, thus average debt to GDP ratio increased to 127% of GDP within the period of 2008-2011. In Ireland and Spain, debt stocks to GDP ratios were comparatively low and within the limits of Maastricht criteria before the crisis. Due to realization of contingent liabilities and contagious effect in the region, debt to GDP ratio increased by 28 points within the same period in these countries. After almost 2 years, although governments are forced to introduce ambitious fiscal consolidation programs, market confidence has not been restored and sovereign default risk continues to dominate economic agenda.

During 1980s and 1990s, the Turkish economy experienced growing sovereign debt stock as a result of a combination of loose fiscal and monetary policies. Because of the fragile conditions in the economy during that time, there had been several crises of which the one in 2001 was certainly the most severe of all. However, the structural reforms and sound macroeconomic policies followed after the crisis reversed that trend. Specifically, tight fiscal policies have enhanced public sector fiscal position and monetary policies achieved price stability in the Turkish economy. Meanwhile, risk based public debt management was adopted and strategic benchmarks were set to improve composition of public debt. As a result, public finances were put on a sustainable path. These achievements have provided a room for maneuver for policy makers and reduced exposure to external shocks during the recent global crisis. In this framework, the aim of this paper is to analyze Turkish experience of handling public debt sustainability problem and to assert suggestions for the current European crisis in light of the lessons derived from Turkish case.
However, it should be noted that unlike Turkey; troubled economies of the EU have been experiencing a debt sustainability problem inside a monetary union. Throughout the union, there is a wide divergence regarding the levels of government debt which are issued in a single currency. Thus, issuing in a currency over which they have limited control imposes some policy constraints for these states. In the scope of this paper, we are not going to elaborate this issue, rather focus on Turkish experience.

In this study, we adopted a historical perspective to explain Turkish case. In this regard, the role of debt management, fiscal and monetary policies during both debt accumulation and reduction periods are elaborated. Turkish experience has shown the importance of accurate identification of nature and dimensions of problems and decisive implementation of a comprehensive program to resolve structural problems. Moreover, we discuss how the steps taken in debt and risk management provided a structural impetus for transformation in the aftermath of the crisis. Turkish case suggests that transparent, accountable, predictable and risk based debt management policies are vital for a healthy financial sector. In this framework, risk assessments in Treasury have been made in a comprehensive fashion based on Asset Liability Approach (ALM) which covers not only financial liabilities but also financial assets of the sovereign balance sheet - including undertaken guarantees, Treasury cash reserve and collections from these guarantees.

In light of these findings, Turkish approach for handling the current European debt problem is considered. Our findings support the view that winning back the market confidence is a key element to turn vicious cycle into a virtuous one. In this regard, well framed medium-term fiscal consolidation programs are proved to be conducive to restore confidence and stimulate economic growth. Also, as sovereign debt stock is the largest portfolio in the market in many countries, prudent debt management has a crucial role for healthy financial markets. In this regard, Turkish experience in debt management approves that adopting a holistic risk management approach within the framework of ALM creates more efficient results than those of the approaches which take into account only the level and the structure of debt stock.

The remainder of the paper is structured as follows. Section 2 provides an overview of ongoing European debt crisis and efforts to solve the debt sustainability problem. Section 3 provides an historical analysis of Turkish debt sustainability problem, impact of the recent global crisis and main elements of current debt management practices. Finally, Section 4 presents the suggestions of Turkish experience on how to bring public debt back to a sustainable path and concludes.

2. European Debt Crisis at a Glance

Since the breakdown of the Bretton Woods System at the early 1970s many currency, banking and sovereign debt crises occurred all over the world. Specifically,
between 1992 and 1995 Europe experienced currency crises due to European Monetary System’s (EMS) weak framework. EU’s response was the establishment of the Euro in 1999 to avoid currency crises. However, foundation of a monetary union was not a cure for all. Despite Euro provided protection against currency crises, it did not help against banking and debt crises. The recent financial crisis, one of the biggest in the world history, destabilized the entire financial system and Europe was no exception to that. Problems emerged as a financial crisis at the beginning of summer 2007, turned out to an economic crisis as of winter 2009 and led to a public debt crisis at the summer of 2010.

The effects of the financial crisis are started to be seen in the real economy beginning from the first quarter of 2009. The global GDP contracted by 0.6% while the decline was 4.1% in the Euro area. Even though there were different transmission mechanisms, the contraction in the credit lines was the main factor limiting the funding sources of the real economy via bank loans. Banks also reduced their exposure to emerging markets by rationing credits in their local branches and ceasing capital outflows (Paulo, 2011). Another important impact was emerged through trade channels. In 2009, the global trade volume of goods and services reduced by 10.7% and export oriented countries was hit the worst as the foreign demand declined and prices fell sharply. Although developed countries were affected the most, these developments also hit the emerging markets. As the starting point of the financial crisis can be spotted in the sub-prime mortgage market, the eventual results revealed several weaknesses of the financial system and the European Union. First of all, inadequacy of financial regulation and supervision was the first factor came forward. The abundant liquidity at the pre-crisis era led the market participants to act in a financial environment where risks are underestimated. Complex structure and the excessive use of the derivative instruments complicated the risk assessments embedded in those instruments. Moreover, exposure to systemic shocks was neglected to some extend and applied stress tests were based on rather favorable assumption sets.

Lack of transparency rendered crucial problems to stay intact for a long time. The volume of over-the-counter transactions had risen to significant level accompanied by off-the-balance sheet operations and unregulated shadow banking sector. Design of the compensation packages distributed to the managers of financial institutions in the form of options and shares also created myopia and urged them to focus rather on the short-term.

Insufficient framework of the regulatory measures in the financial system at the global scale was another loophole. Despite there are regulations on the micro and national level, non-existence of regulations against systemic risks has dispersed and deepened the effects of crisis. On the other hand, current structure of the system
revealed that there was only limited mechanism to assure the necessary coordination between the existing global institutions (G20, IMF, Financial Stability Board etc.) regarding decision making and collective action.

Another aspect was the macroeconomic imbalances. Especially after the dot.com crisis there was loose monetary policy in the US. Ample liquidity and low interest rates spurred consumption and eventually led to real estate bubble which caused massive defaults in US sub-prime mortgage market with immediate contagious effects in Iceland and Hungary.

In 2010, public finances all over the EU heavily hit by the decrease in the revenues and increased spending due to stimulus plans. There was a similar deterioration trend in the market confidence which led to hikes and divergence in the interest rates of EU countries, especially so called PIGS (Portugal, Ireland, Greece and Spain). This trend led to a vicious cycle bringing the debt levels of these countries to unsustainable levels. Compared to the 2007, euro area gross government debt has risen by 21.4 points in Q3-2011 to a level of 87.7% of GDP. Most of the countries were not able to abide the Stability and Growth Pact (SGP) rules (Nauschnigg, 2012). It was clear that the SGP and the other regulations failed to ensure the required supervision inscribed by the EU Law.

These results showed that the surveillance mechanisms have to be strengthened within the EU. Especially it revealed the need to ensure coordination and harmonization of the national budgets towards a fiscal union. Against this backdrop, EU implemented various regulations which aim at strengthening the SGP and creating a fiscal compact. The latest measures\(^2\) taken regarding these developments are the so called “six-pack regulations” and the “Treaty on Stability, Coordination and Governance” which clarifies the procedures and sanctions against significant deviations while bringing binding rules at the constitutional level. “Two-pack” is also on the table to assure monitoring and ensuring the correction of excessive deficits. Even though new regulations are expected to increase the efficiency and speed up the procedures within the EU, the power of the executive units are still in question. Moreover, these fiscal and economic reforms in terms of austerity and stimulus plans, accompanied by the monetary easing policies, are away from bringing the economy back to stable growth path.

Following section elaborates the conditions that led Turkey into debt sustainability problem and how it was solved out. It demonstrates that Turkish experience of vicious cycle -in which debt stock escalated through high interest expenditures and contingent liabilities- has similar characteristics with today’s heavily indebted EU member states.

\(^2\)For more information see:
http://ec.europa.eu/economy_finance/articles/governance/2012-03-14_six_pack_en.htm
3. Turkish Experience

Debt stock emerges a result of fiscal imbalances and off-budget expenditures arose in the past. In this regard, when analyzing government debt, one should adopt a historical perspective to capture the current picture. Indeed, examining the sources of that accumulation would help a lot in answering how to reverse its trend. In this respect, we analyze the course of Turkish public debt with a historical view under two periods. 1980s are evaluated as the initial years of debt accumulation which increased to its highest level after the 2001 crisis. Second period starts with reform efforts in 2002 and continue with structural transformation process in the following years. Given the characteristics of debt developments during these periods, the former is titled as “vicious cycle” and the latter as “virtuous cycle”.


During the 1980s, reforms on liberalization of foreign trade regime, financial sector and capital accounts are carried out in Turkish economy. However, lack of fiscal and monetary discipline led to an unsustainable economic structure (CBRT, 2002). During this period, budget deficit gradually increased as expenditures had grown more than revenues. Budget revenues to expenditures ratio declined to 0.8 at the end of 1980s, and 0.7 in 1990s. Moreover, there were off budget expenditures as well: Specific sectors in the economy were supported through funding by public banks and extra budgetary funds. This in turn created quasi fiscal activities due to duty losses of public banks and borrowing made by extra budgetary funds. Because of the dominant share of public banks in the sector quasi fiscal activities degraded the entire sector.

Between 1980 and 1985, about 35% of budget financing was covered by short-term advances from Central Bank of the Republic of Turkey (CBRT) which surged inflationary pressures. Thus, the CPI increased to around 50% in 1980s and jumped to a higher plateau above 70% in the 1990s.

As fiscal balance worsened and the liberalization process moved forward, structure of the financing shifted significantly. In domestic markets, first public debt auction was held in 1985 and the share of domestic borrowing increased gradually in the following years in line with the developments in domestic financial markets (Turan et al., 2012). However, the maturity profile of domestic borrowing was mostly short-term. Indeed, more than half of total domestic borrowing was in the form of T-bills between 1989 and 1998. After 1994 crisis, main source of the budget financing was domestic borrowing and that helped to decrease the need for short-term advances from the Central Bank.\footnote{The revision of the Central Bank Act in October 1995 had set limits for the short-term advances to the Treasury. Later in 2001 short-term advance facility was forbidden with the Central Bank Law.}
During 1990s increasing availability of foreign capital eased the financing constraint of the government. External funds were largely raised from multilateral agencies - especially from International Monetary Fund (IMF) - and bilateral lenders until the international bond issuance for the very first time in May 1988. In parallel to the liberalization and globalization process, Eurobond issuances gained momentum in early 1990s and the level of external borrowing increased rapidly (Cangöz and Erdener, 2012). External debt stock which was 16.6 billion USD in 1986 almost doubled in less than a decade and reached to 33.4 billion USD in 1994.

However, reliance on short term advances from CBRT and growing domestic borrowings at high interest rates had some implications in the economy and led to 1994 crisis. Although the economy was already vulnerable at the end of 1992, confidence loss in the market determined the timing of the crisis. From late 1993 to early 1994,
Treasury offered interest rates lower than market clearing levels and cancelled several auctions which deteriorated market sentiment and triggered the crisis (Özatay, 1996). During the crisis, Turkish Lira (TL) was devalued more than 50% against the USD and CBRT lost almost half of its reserves. A stabilization program, supported by an IMF Stand-by agreement was launched on April 5th. After a while, TL stabilized and Treasury resumed domestic borrowing auctions but structural problems in the economy persisted.

During and after the 1994 crisis, high domestic borrowing requirement elevated interest rates, which led to higher interest payments and a further widening of the public sector deficits. With this snowball effect vicious cycle in debt accumulation accelerated. Thus, interest payments of domestic debt to GDP ratio rose significantly from 1.4% in 1985 to 5.7% in 1994 and further to 17.1% in 2001.

**Figure 3. Interest expenditures to GDP ratio between 1985 and 2001**

These events also deteriorated the balance sheets of domestic banks. Share of government securities in total assets of deposit banks increased to 23% in 1999, from 10% in 1990. During this period, banks heavily used external funding to invest in high yield government securities. As a result, growing currency and interest risks in banks’ balance sheets exposed the sector to shocks. In addition, the total stock of duty losses of the public banks as a share of GNP rose from 0.7% in 1993 to 16.7% in 1999. This stock was not recorded in the budget although it represented more than half of the Treasury domestic debt stock to GNP ratio (29.3%) in 1999.
Public debt management, while being a natural part of fiscal policy due to the provision of budget financing, is in closely linked to the financial sector and monetary policy given the size of public borrowing in an economy. In this regard, on one hand all risk factors influential on the economy have an impact on public debt stock and on the other hand, debt sustainability issue can be a source of risk for the whole economy by itself. Economic crisis of 2001 in Turkey has reflected this situation; borrowing requirement increased significantly due to the financing needs of the banking sector and duty losses arising from the public sector. In 2001, crisis-led debt issuances reached to 57.5 billion TL, which was about 24% of GDP. The dramatic increase in financing requirement together with the fragile structure of the debt stock caused a loss of confidence in markets and pushed the interest rates to record levels. Debt dynamics, already being highly sensitive, were further distorted with the abrupt and massive borrowing practices in the worsened market conditions.

In 2001, the ratio of debt stock to GDP increased approximately 36 points compared to the former year and the average cost of TL denominated zero-coupon borrowing increased to 99%. At the end of 2001, share of FX denominated/indexed debt in central government debt stock increased roughly by 27 points from its level in the previous year to 35.6% and the share of floating rate debt in the TL denominated debt stock increased nearly by 39 points to 77.4%. In addition, increased sensitivity of the debt stock to exchange rate and interest rate fluctuations raised the concerns regarding debt sustainability. In summary, Turkish economy of 1990s can be characterized by large public deficits, unhealthy financial sector, high interest rates, high inflation rates and dependency on short-term capital inflows. As a result of this unsustainable combination of loose fiscal and monetary policies, Turkish economy became vulnerable and experienced several crises during this period. This in turn led to higher public debt burden in the economy, and public debt stock reached to an unsustainable level of 74%
as a share of GDP in 2001. Fortunately, this unfavorable cycle has been reversed thanks to the decisive attitude regarding fiscal discipline and a series of measures being taken since 2002.

3.2. Virtuous Cycle: Transformation Process after 2001 Crisis

In the aftermath of 2001 crisis, in order to establish a prudent base for recovery and sustainable growth path, many reforms in various areas are put into practice with a focus on the banking sector. Fiscal discipline was selected as the main tool to ensure strong public sector balances whereas successful reforms, accompanied by the political stability, led to enhanced market confidence and improved the fundamental indicators in many areas. As concerns regarding debt sustainability has been eased, this process paved the way for a virtuous cycle.

First set of reforms consist structural reforms. One of the main important reforms was the restructuring of social security institutions and the establishment of private pension funds. Moreover, 25 intra-budget and 2 non-budget funds were cancelled. Legal arrangements have been made to limit government privilege on communication and energy sectors to create a convenient environment for privatization. The Law on Public Financial Management and Control Nr. 5018 was put into effect in 2003 to regulate the provision and use of public resources in an effective, economical and efficient manner. Another aspect of that law was to improve the structure and operation of public finance administrations, preparation and implementation of public budgets, accounting of financial transactions and performing financial control.

The performance criterion of the 18th stand-by agreement (2002-2005) signed with the IMF was having a 5.5% primary surplus in the public sector. Primary surplus was adopted as the principal tool regarding the debt sustainability as it was the only way to decrease the level of borrowing requirement where interest expenditures were determined exogenously. In order to achieve that target, tax reforms aiming to broaden the tax base and simplify the tax structure has been made. To that end, a tax peace and additional taxes are put into effect together with several indirect tax hikes. Additionally, policies aiming to reduce over-staffing and personnel expenses were applied at this period. Program defined public sector primary surplus was 3.9% on average between 2002 and 2008. In the same period, share of public sector borrowing requirement to GDP has been diminished gradually and reduced from 10.0% to 1.6% by the end of 2008.

The crisis in 2001 also revealed the problems in the financial sector, “Banking Sector Restructuring Program” was put into effect in May 2001. The main purposes of the Program were the restructuring of public banks, resolution of banks taken over by the

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4The official target announced in the stand-by agreement was 6.5% according to the former GNP series. 5.5% is used for comparison purposes with the recent GDP series.
SDIF, rehabilitation of private banking system, strengthening of surveillance and supervision frame and the increase of competition and efficiency in the sector. Receivables of banks emanating from the duty losses are paid and regulations which would lead to new duty losses are removed. Turkish Treasury, in coordination with CBRT, issued government bonds in return for state banks’ duty loss and capital deficit of the banks under structure of SDIF (BRSA, 2010). With this operation the capital structure of public banks was strengthened significantly whereas the liquidity squeeze at these banks was resolved.

To increase the institutional capacity throughout the post-crisis period, the supervisory field of the BRSA was expanded, its organizational structure was reviewed, strategic planning approach was adopted and its supervisory process was strengthened with the unification of on-site audit and off-site audit, as well as new approaches, methods and applications (BRSA, 2010).

Regarding the monetary policy, amendment of Central Bank Act Nr. 4651 on May 05, 2001 defined CBRT as the sole authority responsible for the determination and implementation of the monetary policy with the primary objective of achieving and maintaining price stability. That amendment also made a significant contribution to have healthier public finances by prohibiting the transfer of funds to Treasury and other public institutions in the form of advance loans.

Crisis also showed the importance of risk oriented debt management and accelerated the transition process to effective debt management together with the adoption of risk management framework. Within this context, Law 4749 on Regulating Public Finance and Debt Management (April 9, 2002) and the consequential legal regulations established the legal framework and the principles of public debt and risk management as follows:

- The maintenance of a sustainable, transparent and accountable borrowing policy in consistency with monetary and fiscal policies taking account of macroeconomic balances.

- The fulfillment of financing requirements at the lowest possible cost in the medium and long term in accordance with the levels of risk determined in consideration of domestic and external market conditions and cost factors.

Based on compact and transparent legal infrastructure, prudent debt management policies have been implemented. During this period, steps towards improving transparency have taken promptly: These steps include introduction of primary dealership system, announcement of quarterly borrowing strategy and issuance of monthly/annual debt management reports. These developments contributed to
predictability and transparency of sovereign debt and risk management, thus enhanced market confidence.

**Figure 5. Interest expenditures to GDP ratio between 2002 and 2011**

Source: www.treasury.gov.tr

Thanks to the strategic benchmarking that have been followed since 2002, financing strategies have been designed within a medium term perspective with the aim of managing and taking the risks under control arising from public debt stock. Risks emerging from the liquidity, interest rate and the exchange rate fluctuations have become a priority. In this context, Treasury keeps a high level of cash reserve as a cushion against the liquidity risk and aims to smooth out the redemption profile. In order to reduce the sensitivity of debt stock to the interest rate fluctuations, Treasury predominantly uses fixed rate instruments. Lastly, against exchange rate risk, borrowing is performed mainly in TL accompanied by targets set for the composition of the foreign exchange debt stock. Borrowing strategies which takes into account cost and risk structures of different instruments, have contributed not only to relieve the debt burden but also to decrease the sensitivity of the debt stock to the external shocks. The ratio of EU defined debt stock to GDP which was 74.0% in 2002, decreased by 34 points and reached to a level of 40.0% at the end of 2008. Furthermore, the share of FX denominated debt and the floating rate debt in total debt stock have declined significantly in this period thanks to policies that have been implemented in line with strategic benchmarks. While the average maturity of the domestic borrowing has increased from 9 months to 32 months, borrowing cost of the zero-coupon bonds has decreased from 63% to 19% in the same period. The total effect of all these improvements in the area of debt management and public finances alleviated the interest expenditure burden significantly (Figure 5). Thus, before the burst of the global crisis in 2008, debt indicators had improved dramatically and unlike many other economies, policy flexibility in the area of public finance had been ensured in Turkey.
3.3. *Impact of Recent Global Crisis*

The recent global crisis has been an extraordinary period for the debt managers all around the world. Unfavorable macroeconomic indicators and expectations regarding the global economy adversely affected financial markets. Debt managers faced dramatic increases in their financing requirement in a very short time, particularly in the countries that have used substantial expansionary fiscal policies in order to ease the effects of crisis. Thus, debt stock levels for these countries increased rapidly. Like many countries, budget deficit also increased in Turkey as a result of the contraction of the economy and hence increased public financing requirement. However, the room for maneuver provided before the crisis has ensured the effects of the global crisis on Turkey's debt dynamics to be limited while precautionary measures against the crisis have been taken. Additionally, demand for the Public Domestic Borrowing Instruments (PDBI) have been high and the cost of borrowing has stayed at low levels. During this period, also a close coordination has been maintained between the Treasury and the CBRT on debt and liquidity management issues. Monthly meetings with the Central Bank created the opportunity to discuss the liquidity conditions in domestic and global markets, local banking sector positions, Treasury financing program and the scope of CBRT operations. As a result of these coordinated efforts Central Bank, when necessary, provided liquidity to financial markets through the purchase of government securities from market participants which enabled Treasury to enhance its cash position. Besides the Central Bank, a strong communication with the market participants have also been among the priorities of the Treasury. In that regard, market developments have been monitored closely and consistent borrowing policies in line with dynamic market conditions and strategic benchmarks are carried out in this period. In the meantime, high level of cash reserves against possible demand-sided fluctuations in financial markets helped to minimize the adverse effects on borrowing costs.

Nevertheless, as a result of economic contractions and expansionary fiscal policies, ratio of the EU defined debt stock to GDP increased roughly by 6 points compared to 2008 and reached to the level of 46.1% at the end of 2009. Although the debt stock level increased, debt dynamics have continued to improve substantially. Specifically, average maturity of the domestic borrowing increased to 35 months in 2009 and 61 months on April 2012, cost of zero-coupon bonds has decreased to 11.3 and 10.1 respectively in the same period. Meanwhile, Turkey has been one of the first countries to develop an exit strategy. Medium Term Frameworks were announced in the second halves of the years 2009 and 2010. Forward-looking strategies and debt management targets have been put forward and policy priorities designed on the basis of debt sustainability have revealed favorable results. In fact, ratio of the EU defined debt stock to GDP receded to 39.4% at the end of 2011 thanks to high growth rate and positive budget performance. In this context, while in a number of countries the precautionary measures against the crisis...
has brought anxiety regarding the debt sustainability and generated after-crisis shocks, Turkey managed to stay out of the debt sustainability debate and deviated positively from most of the countries.

3.4. Debt Management Practices

Traditionally, the purpose of public debt management is to borrow at the lowest cost with a reasonable risk level while strengthening the structure of debt stock against external shocks. On the other hand, when public assets and liabilities are evaluated in a comprehensive way, vulnerability of public balance sheets to external shocks may differ according to the degree of harmony of the structures of public debt stock and the assets.

As sovereign balance sheets have become larger and more complex recently in many countries, the ALM approach is attracting more attention in terms of the analysis and management of risks in the public sector (Blommestein and Koç, 2008). This approach which envisages an integrated management of assets and liabilities provides a valuable tool for debt managers to measure and to control financial risks of the public sector balance sheet. However, implementation of ALM in public sector balance sheet entails important challenges such as collection of data, identification of scope and priorities, pricing of non-financial assets and the use of derivative instruments. In this regard, the scope of country applications is affected by such difficulties in practice. Turkish Treasury employs a relatively narrow-scope of ALM approach due to lack of data and fragmented institutional roles.

3.4.1. ALM Approach

Within the ALM framework, together with the outcomes of the simulation model based on Treasury’s direct liabilities, qualitative and quantitative aspects of Treasury’s financial assets, other liabilities and budget outlook are also assessed in the formation of debt management strategies. Thus, main financial items like Treasury cash reserve, undertaken guarantees and collections from these guarantees, on-lent credits, collections from Treasury receivables and risk account are used as inputs for debt and risk management in terms of both level and composition which have an important role in designing policies.

In line with this approach adopted in 2002, capacity building activities in public finance area were fulfilled and starting from 2003, models developed within ALM approach have become a very important tool for decision-making in public debt and risk management. Given that Treasury has a limited amount of FX denominated assets, reducing the share of FX denominated debt has been the main priority to minimize exchange rate risk in the context of strategic benchmarks. The share of FX denominated public net debt stock in GDP declined to 0.7% in 2011 from its 2002 level of 35.4% as a result of this strategy.
In addition, Treasury cash reserve has been used actively in recent years to reduce liquidity risk. The high level of cash reserves acts as an efficient measure to cope with the possible adverse effects of short-term demand-sided auction volatilities on borrowing costs. Like cash reserves, collections from Treasury receivables and undertaken guarantees are also taken into account in developing borrowing strategies and used as inputs in estimating financing requirement.

As an extension of ALM approach, the selection of borrowing instruments also aims at reducing the effects of both supply and demand-sided shocks on budget dynamics. Issuance of “Inflation Indexed Bonds” are expected to have a positive influence on budget balance, since impact of supply-sided shocks on interest expenditures of these securities and budget revenues are similar. Furthermore, the coupon payments of “Revenue Indexed Bonds” are indexed to the revenues of State Owned Enterprises which is a sub-item of public sector assets. This enables budget smoothing due to correlation between interest expenditures and primary surplus.

In order to assess the fiscal risks and quantify the public debt burden, it is also crucial to scrutinize the movements of macroeconomic variables that could influence debt dynamics. In that regard, sustainability and sensitivity analyses within the scope of risk management are being conducted since 2002. These analyses make a great contribution to the formulation of medium-term borrowing strategies while enabling debt managers to assess the effects of various macroeconomic scenarios on the debt stock. Turkish Treasury has adopted the accounting approach and the results are announced via various policy documents such as Debt Management Reports, Medium Term Program and Pre-accession Economic Program in line with transparency and predictability principles. We touch upon the aforementioned analyses next.

3.4.2. Sustainability Analyses

Possible values of the debt stock under various risk scenarios are estimated by using “Medium-term Financing Program” and “Debt Management Simulation Model”. Financing program is a comprehensive data set which covers monthly domestic and external debt payments with respect to each instrument type and non-borrowing sources that define the level of financing requirement. It provides information for both realization and projection figures. Thus, financing program makes it possible to estimate the path of debt/GDP in the medium term under various shock scenarios. Unlike the accounting approach, financing program also takes into account detailed information such as interest rate, FX composition, the maturity profile and the level of monthly financing requirement. Therefore, financing program brings out more precise results than the accounting approach provides solely
Moreover, simulation analyses are carried out via “Cost at Risk” approach for distinct borrowing strategies. In this context, alternative borrowing strategies are being tested under different macroeconomic scenarios in order to assess the sustainability of debt. To do so, the probability distributions and the expected values of the indicators such as interest payments and stock levels are derived for a given confidence interval through “Debt Management Simulation Model”.

![Figure 6. Sustainability scenarios](image)

Source: Pre-Accession Program 2012-2014

The sustainability analyses regarding the course of debt stock against various macroeconomic shocks in the period of 2012-2014 are presented above. In Figure 7, under various scenarios, the course of EU Defined General Government Gross Debt Stock to GDP ratios in response to the exogenous shocks such as exchange rate, real growth rate and real interest rate shocks, has been analyzed (Pre-Accession Economic Program 2012-2014).

3.4.3. Sensitivity Analyses

In order to analyze the debt burden and assess the fiscal risk with a medium-term perspective accurately, effects of changes in various macroeconomic indicators and the sensitivity of debt stock to those indicators have to be examined as well as the level of the debt stock. Analyses are intended to determine the sensitivity of the public debt stock to the macroeconomic shocks and how debt/GDP ratio is affected in the medium term by the changes in real interest rate, real growth rate, exchange rate and the primary surplus.

The results of sensitivity analysis are presented in Figure 8. With the impact of significant reforms on public debt and risk management in recent years, the sensitivity of the public debt stock to debt dynamics improved significantly.
Tight fiscal policies and strategic benchmarking implemented in recent years have important roles in decreasing the sensitivity of General Government Debt to GDP ratio to the changes in debt dynamics. While decrease in the borrowing requirement and debt stock levels have limited the effects of changes in debt dynamics, decline in the share of foreign currency denominated/indexed debt in line with the strategic benchmarks has enabled to mitigate the sensitivity to exchange rate shocks.

**Figure 7. Sensitivity of gross public debt to shocks**

![Chart showing sensitivity of gross public debt to shocks](source: Koç et al. (2012))

4. **Conclusions and Policy Implications for Current Environment**

The recent global crisis has created a debt conundrum in some of the EU member states. It is argued that fiscal austerity programs are the only solution for those countries. Based on this view, widened budget deficits should be cut immediately regardless of social and other economic consequences. However, as economic slowdown in those countries deepens and sovereign default concerns persist, discussion topics have expanded. From the level and composition of the fiscal compact packages to external imbalances and labor market competitiveness among member states, a wide range of economic problems and possible solutions have been discussed thoroughly. In light of these developments, one can argue that besides its detrimental impacts, crises can also provide an opportunity to identify problems in economies and find structural solutions for these problems. In this paper, we focused on Turkish experience of debt sustainability; lessons learned from previous crisis and explain the main factors transforming a vicious cycle to a virtuous one in the last decade. In this framework, we touched upon the relevant reform areas of the Turkish case which might help making inferences for the recent problems in Europe.

Besides the similarities of the crises it should be noted that there are quite important differences between Turkey and the EU member states. Turkey is a developing country with a great potential for growth arising from its young and qualified human resources.
This played a crucial role to achieve high growth and implement tight fiscal policies at the same time. Moreover, there are some Union specific factors that might curb the desired impacts of tight fiscal policies. For instance, devaluation of TL supported competitiveness after the crisis. However, members of the euro area lack of a sovereign currency which could play a stabilizing role in periods of distress. Moreover, strong social resistance and lack of public support might undermine the success of fiscal consolidation plans in those states. Even though there are some crucial differences between the EU countries and Turkey, we believe that Turkish experience has a lot to offer for the establishment of resolution mechanisms.

Turkish experience confirmed the importance of accurate identification of the problems which carried the economy into the crisis and rapid implementation of comprehensive actions that is devoted to resolve structural problems. As it was discussed in previous sections, debt accumulation can easily turn into a vicious cycle. When budget deficit is high, and debt dynamics are weak, once sovereign risk perception of markets deteriorate, this adversely affect borrowing conditions. Especially in periods of weak demand and high interest rates, this market behavior consecutively deteriorates debt dynamics and budget balances via higher interest expenditures. In this framework, ensuring investor confidence is vital for managing expectations and taking the perception of default risk under control. Turkish experience also suggests that despite external funds are favorable to revive animal spirits in the short-run, sustaining fiscal discipline is a fundamental way to change the course of the cycle in the long run. Otherwise, vicious cycle remains as an obstacle for achieving sustainable and stable economic growth and sovereign default concerns become a determining factor.

Another lesson that can be noted from Turkish experience is that a priority should be given to structural reforms in necessary areas. After 2001 crisis, it is clearly understood that strengthening the system permanently could only be achieved by structural reforms in banking sector, social security sector and in the area of public financial management. Besides that, 2001 crisis showed that effective coordination among related authorities assists managing the problems raised during stress periods. Public debt in many countries is managed by debt management offices and considered as a separate policy area with targets and tools different from those of monetary and fiscal policies. This increases the importance of coordination among agencies. In Turkey, Turkish Treasury is the sole authority responsible for debt management now. Before the 2001 crisis, weak policy coordination and communication between Central Bank, Ministry of Finance and financial sector aggravated the tensions of stress periods. Taking lessons from the past, effective coordination mechanisms have been introduced among these institutions on various platforms. Different from Turkish case, monetary policy of EU is set at supranational level by ECB while member states manage public debt at sovereign level.
This framework imposes complexities and limits on policy coordination between ECB and DMOs.

Last but not the least; we can derive from the Turkish experience that prudent debt management policies can make an important difference to avoid or reduce the impact of future crises. In this respect, Turkish Treasury has made significant progress in adopting ALM approach and implementing risk based borrowing strategies since 2002. Accordingly, borrowing strategies are designed by taking direct/indirect liabilities, receivables and cash reserve into account within this structure. Thanks to the borrowing strategies which improved risk profile of debt, impact of market volatilities on debt stock has been limited during the global crisis. Indeed, in order to achieve a sustainable debt stock; reducing not only the level but also the sensitivity of debt stock should be an integral part of debt management strategy.

References


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