# PUBLIC DEBT SUSTAINABILITY IN THEORY: TURKISH EXPERIENCE

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## ABSTRACT

Public debt management is a very special niche area within public finance that can connect fiscal policy with monetary policy and helps to understand the implications of any policy links between financial sectors and real sectors of the economy. Public debt has played a critical role in many governments' economic life. During economic and political crisis, public debt is often either the cause or result. OECD Sovereign Borrowing Outlook 2017 gives a framework for showing the advanced economies gross public debt as a percentage of GDP through 19th century till today. It is very striking that the current debt levels of the advanced economies are the same as in the World War II. Until the previous decade, Turkey has been consistently forced into paying the external debt as a result of the combination of loose monetary and fiscal policies. The aim of this study, based on Turkish case, is to show how its public debt has become more sustainable recently by analyzing the role of macroeconomic policies. Besides, we indicate the steps taken in risk management and debt sustainability ensured driving power of structural transformation of Turkish economy. In the view of such information, Turkish experience for managing the previous economic and political crisis and current debt problem are considered.

**Keywords:** Public Debt, Debt Sustainability, Risk Management

**JEL Classification Codes:** G32, H63

## INTRODUCTION

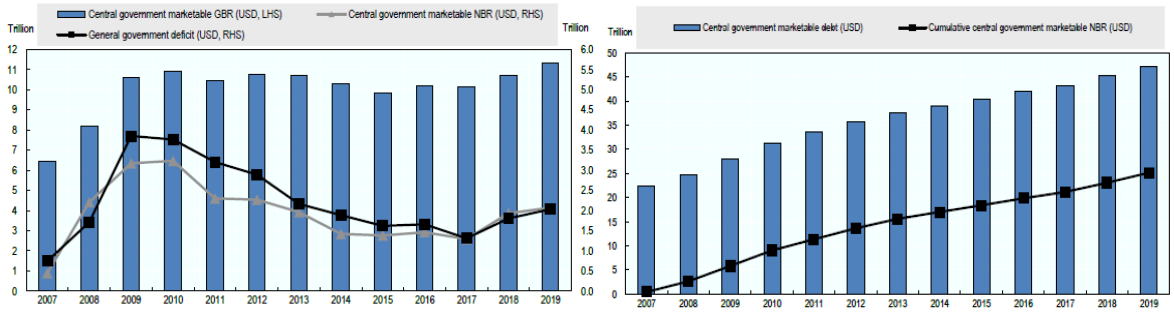
Government debt management is a very special niche area within public finance that can connect fiscal policy with monetary policy and helps understand the implications of any policy links between financial sectors and real sectors of the economy.

Government debt has played a critical role in many governments economic life. During economic and political crisis government debt was often time either the cause or end result.

OECD Borrowing Outlook in 2013 [7] gave a graph showing the advanced economies gross public debt as a percentage of GDP through 19th century till today. It is very striking that the current debt levels of the advanced economies are almost the same as in the World War II.

Debt matters because in the contracting phases of any economy, to boost the economic activity governments want to increase spending however this results higher government debt leaving very little space for fiscal incentives further in the future. This might produce a vicious cycle of debt as well. In that case fiscal austerity will be very severe. This is almost the situation for many developed countries today as they go through lower growth higher debt periods [14].

**Table 1**
**Public Debt of OECD Countries, 2007-2019**




**Notes:** GBR: standardised gross borrowing requirement, NBR: net borrowing requirement
**Source:** OECD Sovereign Borrowing Outlook, 2019 [17]

In the case of high government debt times, debt sustainability became the top issue for economic policies. Economic policy definition of debt sustainability states that debt is sustainable if the country (or its government) does not, in the future,

- ✓ need to default or
- ✓ renegotiate or
- ✓ restructure its debt or
- ✓ make implausibly large policy adjustments.

### *1.1. Visiting Concepts from Literature*

In the economic literature, government debt and debt sustainability attracted attention of many economists. Below is a very brief snapshot of the concepts from the literature on debt and debt sustainability [8].

***Barro Ricardo equivalence:** The hypothesis states the choice between "tax now or tax later'' to finance government expenditure.

***Ponzi scheme:** Ponzi game implies continuous debt financing. The initial debt is serviced by relying on new investors, rather than serviced out of future surpluses.

***Sargent Wallace unpleasant monetarist arithmetic:** The arithmetic shows that control of inflation depends on monetary and fiscal policy coordination. The arithmetic and dynamics of the debt burden is reviewed below.

***Hausman original sin hypothesis:** The hypothesis states a situation "in which the domestic currency cannot be used to borrow abroad or to borrow long term even domestically" due to the high debt levels one country face.

IMF Debt Sustainability Analysis for Market-Access Countries (August, 2018) suggests that initial debt and future stream of primary expenditure brings out future stream of income.

Debt is sustainable if the intertemporal solvency condition is satisfied, that is, if the expected present value of future primary balances covers the existing stock of debt.

The market-access country (MAC) debt sustainability analysis (DSA) [6] framework is based on a general and flexible identity characterizing the evolution of the stock of public debt. In its most basic form, the evolution of public debt can be characterized in the following way:

$$D_{t+1} = \frac{e_{t+1}}{e_t} * (1 + i^f_{t+1}) * D^f_t + (1 + i^d_{t+1}) * D^d_t - (T_{t+1} + G_{t+1} - S_{t+1}) + O_{t+1} + RES_{t+1} \quad (1)$$

Obligations associated with the stock of debt from the previous period

Primary Fiscal Balance

Other one-time factors

$$D_{t+1} = (1 + \varepsilon_{t+1}) * (1 + i^f_{t+1}) * D^f_t + (1 + i^d_{t+1}) * D^d_t - PB_{t+1} + O_{t+1} + RES_{t+1} \quad (2)$$

where, $1 + \varepsilon_{t+1} = \frac{e_{t+1}}{e_t}$

From the debt equation we can derive the law of motion that is dynamics of the debt to GDP ratio:

$d_t = (1+r_t) / (1+g_t) d_{t-1} - pb_t$

$\Delta d = ((1+r_t) / (1+g_t) - 1) d_{t-1} - pb_t \quad (3)$

This equation reveals very important facts on debt management. First of all, a higher primary balance or higher growth rate lead to a lower debt/GDP ratio. On the other hand higher initial debt or higher real interest rates lead to higher debt/GDP ratio. One can also conclude that real interest rate greater than growth rate end up with higher debt to GDP ratio.

In addition to this analysis there are also commonly used ratios for debt burden indicators for solvency and liquidity. Liquidity problems are symptoms of underlying solvency problems: creditors refuse to roll over maturing debt because of solvency concerns. Liquidity problems may give rise to insolvency, by raising interest rates or pressuring the exchange rate.

Ratios of the debt stock or debt service relative to the measures of «the ability to service debt» (repayment capacity), e.g.:

*GDP

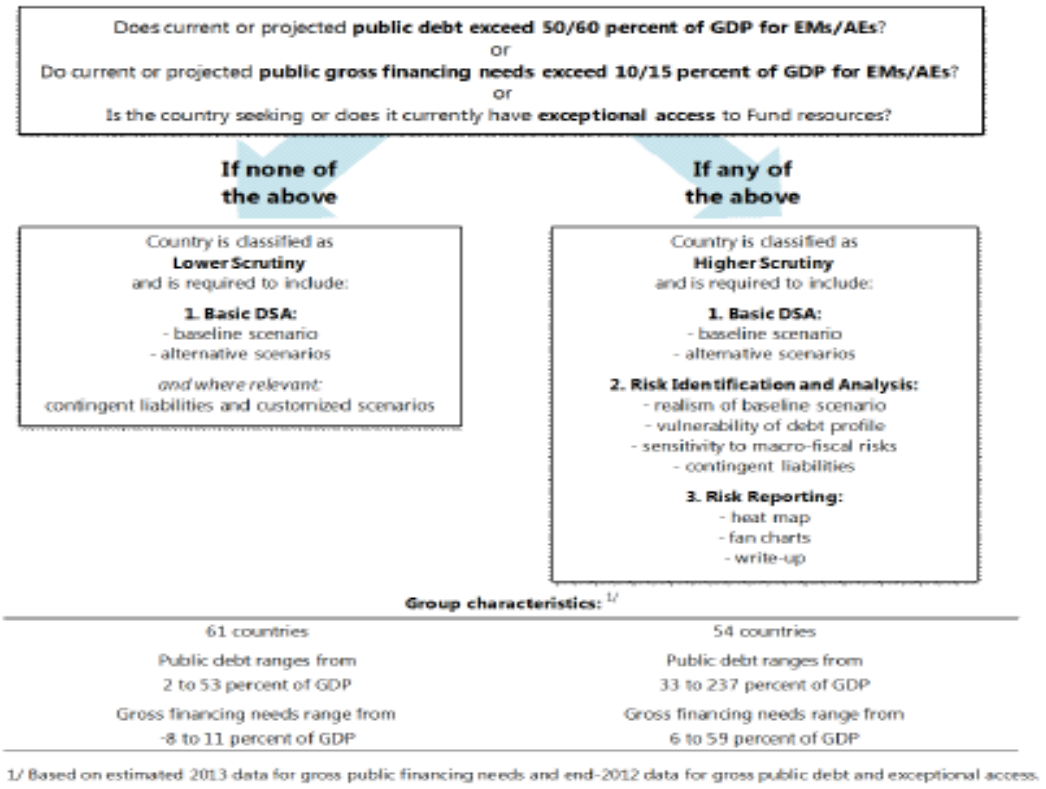
*export proceeds

*fiscal revenue

*Other

Recently IMF has launched Debt Sustainability Analysis Framework [6] In its framework for market access countries (MAC) they also separated certain group of countries `Reporting of Risks For "Higher Security'' with heat maps and fun charts. The risk based approach of IMF DSA for MAC is given below in the chart.

**Figure 1**
**Risk-Based Approach**




**Source:** IMF Debt Sustainability Analysis for Market-Access Countries (May, 2013) [6]

The heat maps and evaluation parameters are given below.

**Figure 2**
**Heat Maps and Evaluation Parameters**

| Debt profile indicators | Low risk | Moderate risk | High risk |
|---|---|---|---|
| EMBI global spreads (basis points) | Below 200 | Between 200 and 600 | Above 600 |
| External financing requirements (percent of GDP)[2] | Below 5 | Between 5 and 15 | Above 15 |
| Public debt in foreign currency (share of total) | Below 20 | Between 20 and 60 | Above 60 |
| Change short-term public debt (in percent of total debt)[3] | Below 0.5 | Between 0.5 and 1.0 | Above 1.0 |
| Public debt held by non-residents (share of total) | Below 15 | Between 15 and 45 | Above 45 |

Source: Fund staff estimates.
1/ Benchmarks are rounded.
2/ Defined as current account balance plus amortization of total short-term external debt at remaining maturity.
3/ Annual change in short-term public debt (at original maturity) as a percent of total public debt.

| Debt profile indicators | Low risk | Moderate risk | High risk |
|---|---|---|---|
| Bond spreads (basis points)[2] | Below 400 | Between 400 and 600 | Above 600 |
| External financing requirements (percent of GDP)[3] | Below 17 | Between 17 and 25 | Above 25 |
| Change short-term public debt (in percent of total debt)[4] | Below 1.0 | Between 1.0 and 1.5 | Above 1.5 |
| Public debt held by non-residents (share of total) | Below 30 | Between 30 and 45 | Above 45 |

Source: Fund staff estimates.
1/ Benchmarks are rounded.
2/ Bond spreads are defined as the spread over U.S. or German bonds at similar maturity.
3/ Defined as current account balance plus amortization of total short-term external debt at remaining maturity.
4/ Annual change in short-term public debt (at original maturity) as a percent of total public debt.

**Source:** IMF Debt Sustainability Analysis for Market-Access Countries (May, 2013) [6]

### *1.2. Turkish Public Debt Sustainability Analysis (2003-2013)*

Since 2001 financial crisis Turkey has had significant performance in debt management. In terms of all debt related indicators one can see the performance as well as relative to the peer group [5]. Looking at the OECD Sovereign Borrowing Outlook Report in 2013 and Turkish Statistical Institute reports and datas, while many advanced countries are still in the location of high debt to GDP ratio high general government deficit to GDP

ratio, Turkey was able to reduce both by means of the loose monetary and fiscal policy between 2003-2013 [18].

One of the main factors in the success of Turkey in reducing the debt is fiscal performance or fiscal discipline. The public sector primary surplus average is 2.7 between 2003 - 2007 although in the financial crisis period of 2009 the balance gave deficit the MTP targets are for the surplus of 1 % of GDP over the near future. Another good indicator of fiscal performance that is interest payments to tax revenues also shows the increasing fiscal space for other expenditure items than debt interest payments. EU defined general government gross debt stock as a percentage of GDP which is the Maastritch criteria for EU membership necessitates 60% as the bench mark. Since 2004 Turkey successfully were able to reduce the debt ratio well below many EU countries [7].

In terms of the currency and interest rate risk, the composition of the debt stock also supports the declining exposure to the currency and floating rates of interest. Average maturity of borrowing is also increasing which is an important indicator of the market confidence to the sustainability.

The share of the non-residents was around 20%. This ratio shows the portfolio inflows of the foreigners in the form of investments in the government securities. The movement also shows the global cyclicality along with other emerging economies. After the US FED Quantitative Easing periods many EMs experienced capital inflows. Turkey also benefitted from the flows. At the end of 2012 and at the mid of 2013 there was the discussion of tapering by FED to reduce the global liquidity supply by FED buying of the US Treasury securities. With tapering decisions EMs experienced capital outflows and Turkey also showed decline in the share of non-residents in the government securities [7].

Another factor for the sustainability of debt and being able to borrow in the future was the cost of borrowing. Sustainability analysis in a simple way insists that as long as the real interest rate was less than the growth rate of the economy basically debt was sustainable. In 2013 average cost of borrowing was 7.6 while the inflation rate was 7.4 letting a very slight real interest rate of being nearly zero [10].

Looking at the sensitivity analysis of the general government debt to GDP ratio by making comparisons between 2001 and 2013 the sensitivity of the D/GDP ratio improved a lot. While the stock increased by 2.2 % as a result of 5% increase in real exchange rate in 2001, it increased by 0.6 % in 2013. This shows the currency risk has decreased over the years as a result of borrowing in terms of TL [7].

### *1.3. Turkish Public Debt Sustainability Analysis (After 2013)*

But when it comes to 2017, Turkey's external position was weaker than Fundamental Principles and medium-term levels consistent with desired policies. Turkey's net international investment position (NIIP) in 2016 from -42's % of GDP, falling to -53 % of GDP, sets a precedent by a weaker position, a wider current account deficit and stock that it caused increase of the valuation of debts. Higher share prices are higher than compensating for the effect of the depreciation of TL [11].

The current account (CA) deficit widened sharply to 5.5 % of GDP in 2017 (4.6 % on a cyclically adjusted basis) though 1.1 % of GDP was due to increased demand for gold against the backdrop of de-anchored inflation expectations and depreciation pressures. High import growth underpinned by strong domestic demand offset the growth in exports and recovery in tourism. The stimulus-backed recovery in domestic demand has led to the output gap turning positive in 2017 with signs of overheating [11].

The EBA model estimates that in 2017 the cyclically-adjusted CA was some 3.5 % of GDP weaker than the level implied by medium-term fundamentals and desirable policies. The external sustainability (ES) approach suggests that the CA deficit is broadly in line with fundamentals. Given the fickle nature of available CA financing, which has relied significantly on short-term and portfolio inflows, staff assesses that the CA gap to be in the range of -0.5 to -2.5 % of GDP, with the gap primarily driven by policy factors. This is consistent with a CA norm in the range of -0.5 to -2.5 % of GDP [16].

Within that period, Turkey’s debt to GDP ratio increased to around 38 % at end of 2018 while Turkey’s external debt to GDP ratio increased to 53,8 %. IMF DSA Framework (August 2018) forecasts that the ratio will remain

around this level over the medium term as the ongoing and projected fiscal expansion is broadly offset by the positive growth-interest rate differential [17].

Approximately 28 % of GDP (according to the Maastricht criteria, the general government is measured as gross debt), Turkey's public debt rate is far below its historical ten-year average. Gross public sector financing needs are significantly reduced and should remain low in the medium term. Public DSA shows that Turkey's government debts are sustainable under basic and various shock scenarios. Given the structure of debt, the direct interest and exchange rate pass-through to the budget is relatively low. All public debt profile indicators are under the early warning criteria, with high external financing requirements pointing to the risks arising from the country's external debt position [18].

In the baseline, the general government structural primary deficit is projected to increase from 1.7 % of potential GDP in 2017 to 2.0-2.1 % in 2018-19, driven mainly by pre-election spending pressures. In the medium term, the general government structural primary deficit is projected to be around 0.6 % of potential GDP [12].

Given the current public debt structure, the direct interest and the exchange rate pass-through to the budget are small. The central government debt, which accounts for over 90 % of public debt, has an average remaining maturity of 6.4 years. Fixed interest debt accounts for the share of approximately 74 % of the total public debt, and approximately 39 percent of the public debt are issued in foreign currency. While indicators of public debt are under the EM high risk early warning thresholds, Turkey's debt profile is predicted high risk that the EM benchmark is in excess of 15 % of GDP regarding external financing requirements. This, together with the moderate risks associated with the market perception and the share of public debt in foreign currencies, point to the deficits of foreign investors' feelings and foreign market condition [13].

Past projections of growth outcomes show significant forecast errors, possibly due to the high volatility of GDP in Turkey and the large national accounts revisions at 2016-2017 and 2018. However, abstracting from the national accounts revisions, past growth projections do not seem to have any systematic bias that undermine the assessment of sustainability. Growth is expected to decelerate in 2019 but to continue to be strong in the run-up to the 2019 local elections, before returning to its long-run potential of about 3.6 percent over the medium term. The output gap is estimated to remain positive throughout the projection period, driven by pro-cyclical policies. This, together with the high sensitivity of public debt to swings in GDP growth, highlights the relevance of growth shocks in the stress tests [15]

**Conclusion and Policy Remarks**

Historically, since the establishment of the Republic, the Turkish economy has managed to record an average real growth rate of about 4.8 % per annum. More recently, in the period 2011-2017, the average growth rate of the economy soared above 6.7 % per annum.. Although Turkey has improved its sustainability of public and external debt past decades by using strictly fiscal and monetary policy instruments, for reasons such as national and international political developments, increase in inflation and unemployment indicators, exchange rate volatility, increased infrastructure expenditures, high level of public and private sector budget deficit, public debt still remains high. In parallel with the recent developments, the Turkish government announced an economic program which is called New EconomY Program (NEP) to take some measures in the economy.

The New Economy Program (2019-2021), announced in September, 2018. It focuses on nexus of three concepts: balance, discipline, transformation. According to this program it is predicted that:

-The current account deficit will be contained: The authorities closely monitor the developments on the current account and put external rebalancing as one of the key policy objectives. The target for the current account deficit is respectively at 4.7 %, 3,3 %, 2,7 %, 2,6 % of GDP between 2018-2021.

-Inflation is projected to moderate: The Central Bank will utilize all tools in a decisive and independent manner to ensure price stability. The Ministry of Treasury and Finance will support Central Bank’s efforts towards price stability with strong fiscal discipline. The cap of rent increase will be determined in line with consumer price index instead of producer price index which is more vulnerable to exchange rates. The inflation target rate is respectively 20,8 %, 15,9 %, 9,8 %, 6,0 % between 2018-2021.

-External debt continued to increase and is estimated to reach 53,8 % of GDP in 2018. The private sector comprises the bulk of external debt at 38 percent of GDP. A large share of the external debt, about 15,8 percent of GDP, resides with the banks which intermediate capital inflows into domestic loans, mostly in TL but also in foreign currency. In addition, non-financial corporates are externally indebted by another 16 percent of GDP, around a third of which is short-term trade credits. Private creditors, including bondholders, hold close to 90 percent of debt.

There is strong political ownership and resolve to implement comprehensive structural reforms in an effort to improve the Turkish economy's competitiveness, strengthen its resilience to external shocks, and address impediments to job creation and investments. Against a very challenging backdrop, authorities managed to secure progress in labor market, business environment, public administration and finance, and judicial and education systems through their reform steps in the last couple of years. Authorities acknowledge the need for renewed reform momentum and have identified *inter alia* the following as their reform priorities [9]:

***Labor Market:** Severance pay reform, enhancing active labor market programs, boosting on the job training

***Public Finance:** Income Tax Code, Tax Procedures Code, VAT reform, extending the Treasury single account coverage, public expenditures reform

***Capital Markets:** Capital Markets Law, Istanbul Finance Center reform, restructuring the private pension system, introduction of new savings and investment instruments (e.g. housing accounts, and gold lease certificates)

***Public Personnel Reform:** Civil Service Code

***Education:** Increasing share of private sector, lifelong education centers, prioritization of foreign language learning, establishing an academy for teachers, introducing compulsory pre-school education, improving vocational and technical education

***Investment Climate and Competitiveness:** Boosting R&D and innovation, easing regulatory burden, access to finance, improving logistics, establishing the Localization Board, restructuring the Scientific and Technological Research Council of Turkey (TUBITAK) and the state-owned development bank.

In other respects, Turkey continues to host about 4 million refugees and caters to more than 600,000 beyond its borders, making it the largest refugee-hosting and supporting country. Significant efforts and funding were mobilized to establish high-standard refugee camps along with essential public services, including education and health. The authorities continuously take measures to integrate refugees to social and economic life, including through granting work permits. Authorities, while recognizing the challenges facing Syrian refugees in the labor market, see those mostly stemming from market dynamics, rather than administrative restrictions. Turkey and the EU continue to cooperate on the refugee matters.

In the view of these developments and informations, Turkey's public debt, while sustainable, is vulnerable to valuation shocks. The debt trajectory stabilizes under the baseline, and this result holds for minor changes in baseline assumptions. Forecasts suggest debt levels could increase substantially under a real depreciation shock. Given that over 90 % of Turkish external debt is denominated in foreign currency, the debt path is susceptible to exchange rate movements. A permanent TL depreciation of 30 % would push the external debt stock to 83 % of GDP by 2023, including about 60 % of GDP of private debt. This analysis, however, does not account for the potential contraction of the current account deficit associated with such sharp currency movements. A steeper recovery of fuel prices, leading to a non-interest current account of about 5 % of GDP would push the debt ratio above 60 % of GDP over the medium term.

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