UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT

UNCTAD

Ninth UNCTAD Debt Management Conference

Geneva, 11 - 13 November 2013

Debt Portfolio:
Composition and Risk Management

by

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The views expressed are those of the author and do not necessarily reflect the views of UNCTAD

Debt Portfolio: Composition and Risk Management: Notes from Turkish Experience

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November 12, 2013

Outline

- Debt stock as a parameter in public debt management
- Debt management strategies to manipulate debt stock
- Notes from Turkish experience
- Final Remarks

Debt Stock as a Parameter in Public Debt Management

Importance of Debt Stock

- Considered as an important indicator of financial health and solvency
- Not only the level but also the structure of the debt stock is an important indicator for vulnerability assessments (maturity, currency and interest rate composition)
- Also, its relation with the macro economic parameters (e.g. GDP, tax revenues) and sovereign assets (e.g. International reserves, sovereign funds) needs to be carefully evaluated.

Major Risks Associated with the Debt Stock

- Interest rate risk
  - Ratio of floating rate debt
  - Ratio of debt with interest rate re-fixing in a short term period of time (e.g. Less than 12 months)
- Exchange rate risk
  - Ratio of FX denominated/indexed debt
- Refinancing risk
  - Average time to maturity
  - Ratio of short-term term debt

Debt Management Strategies to Manipulate Debt Stock

Debt Management Strategies to Manipulate Structure

- Borrowing policies
  - Easier to implement
  - Have limited effect on debt stock if the ratio of new borrowing to debt stock is low
  - Liability management
  - Needs well-designed legal and operational infrastructure
  - Could more directly and rapidly affect the debt stock

Debt Management Strategies to Manipulate Structure

The concept and the role of risk management

- Debt managers face cost and risk trade off when determining how to finance the borrowing requirements
- Debt portfolio can be structured on the bases of cost and risk criteria to reduce vulnerabilities to various shocks: Strategic debt targets
- Strategic debt targets provide medium term guidelines for debt management operations
- Risk management policies and risk control procedures covers formulation and implementation of strategic debt targets

Source: Advances in Risk Managment of Government Debt, OECD 2005

Debt Management Strategies to Manipulate Debt Stock

- To effectively manage the risks embedded in debt stock, debt management strategies should
  - Cover all the risks associated with the debt stock
  - Have consistent targets given current portfolio
  - Set target ranges instead of exact levels
  - Have monitorable parameters
  - Be applicable given market conditions

Notes from Turkish Experience

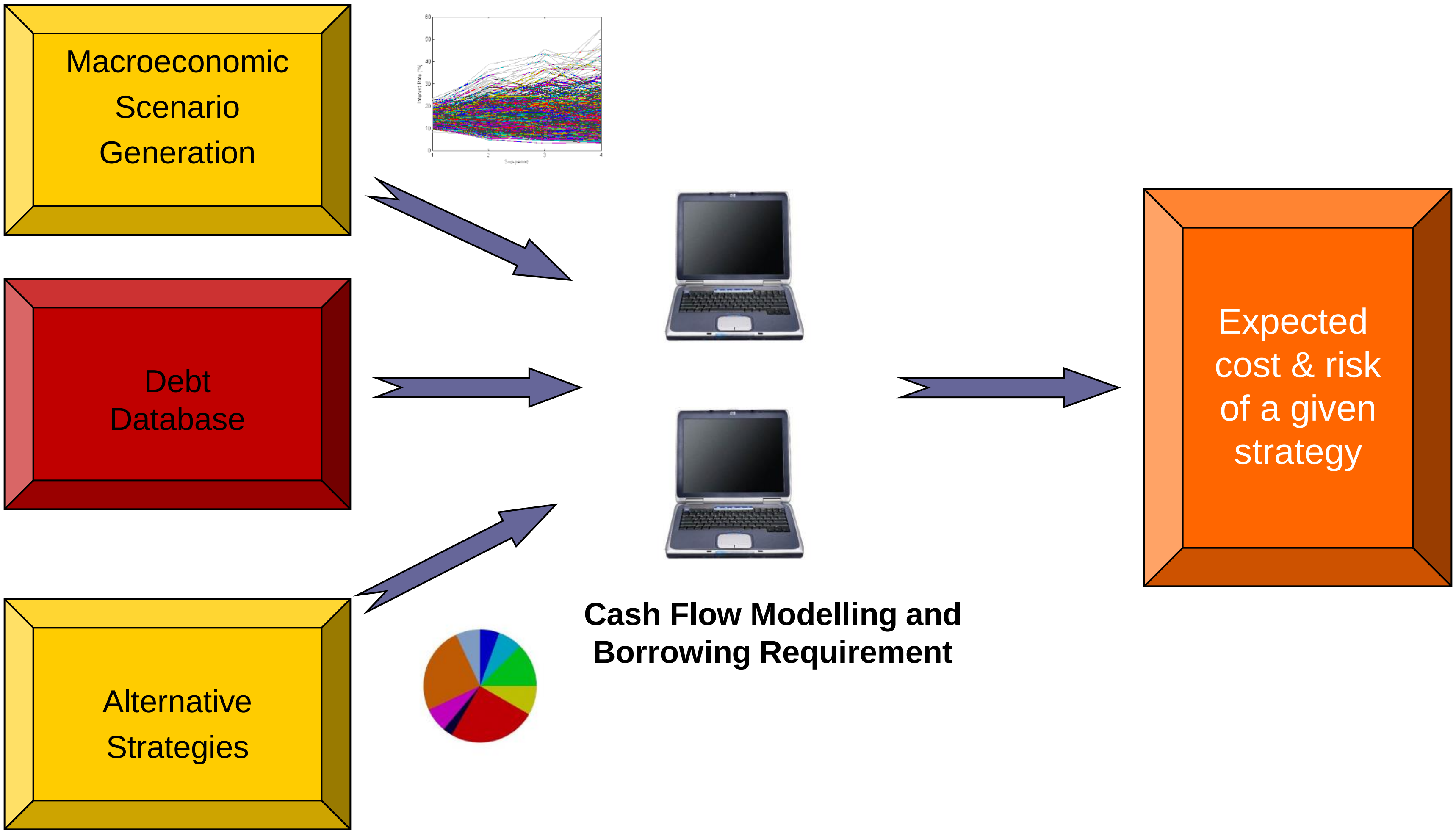
Debt Management Strategy of Turkey

- Covers
    - Borrowing policies
    - Cash management
- Implemented through medium-term strategic benchmarks
- Strategic benchmarks are
    - developed by the Middle Office based on debt simulation model and complementary scenario analyses
    - set up by the Debt and Risk Management Committee

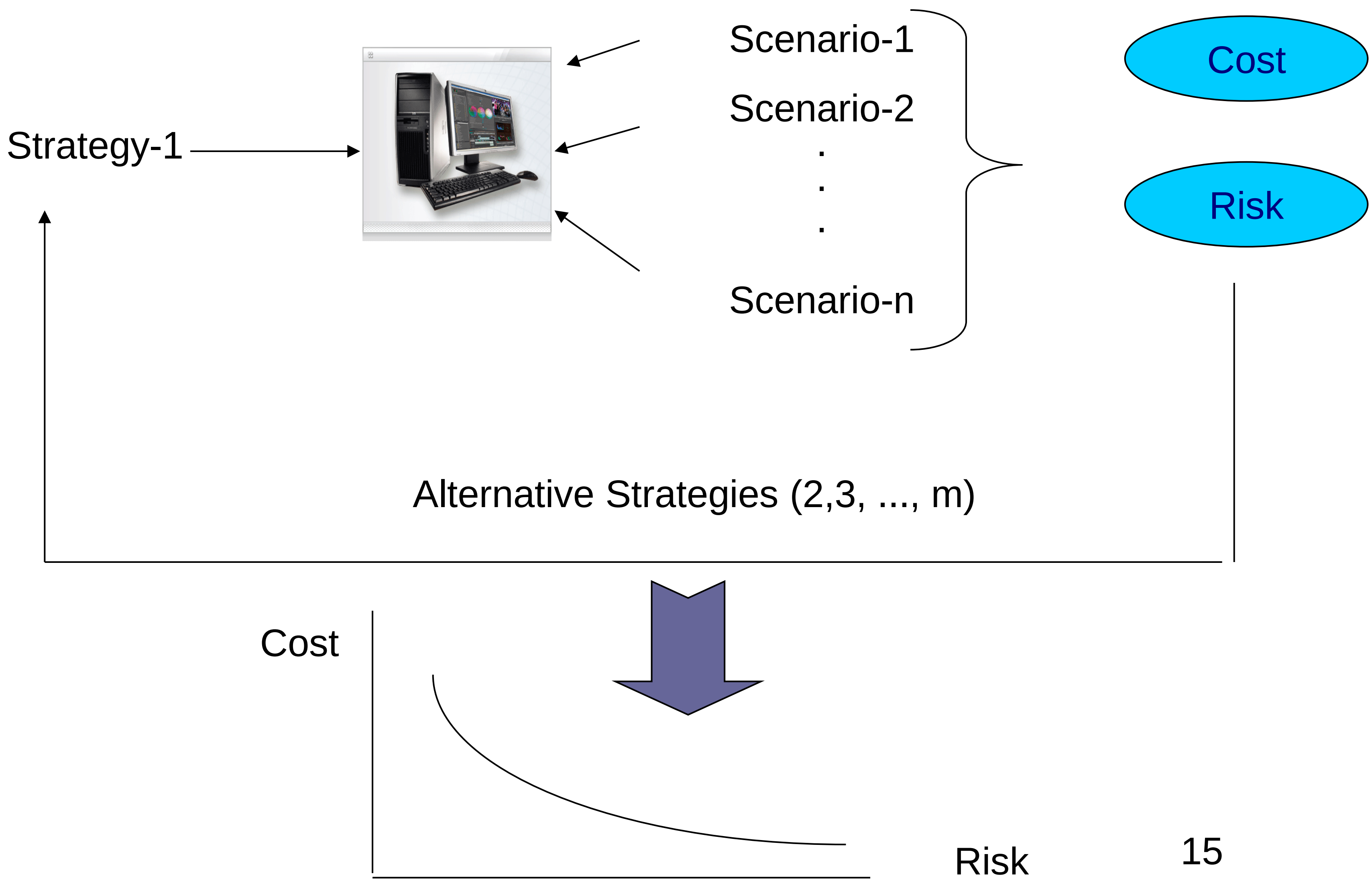
Turkish Debt Simulation Model

- Stochastic
- Cost and Risk Metrics:
    - Cash-based interest expenditures
    - Level of inflation adjusted debt stock
- Risk Methodology: Cost-at-risk (C@R)
- Time Horizon: 5 years
- Number of Scenarios: 5000

Turkish Debt Simulation Model



Turkish Debt Simulation Model



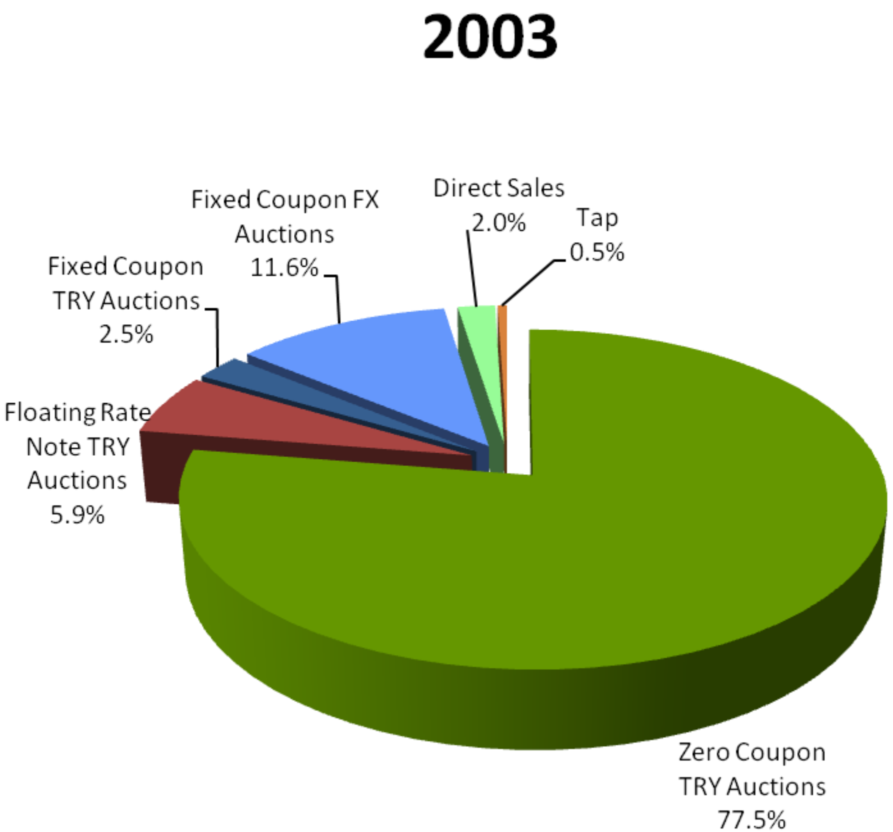
Setting Strategic Benchmarks

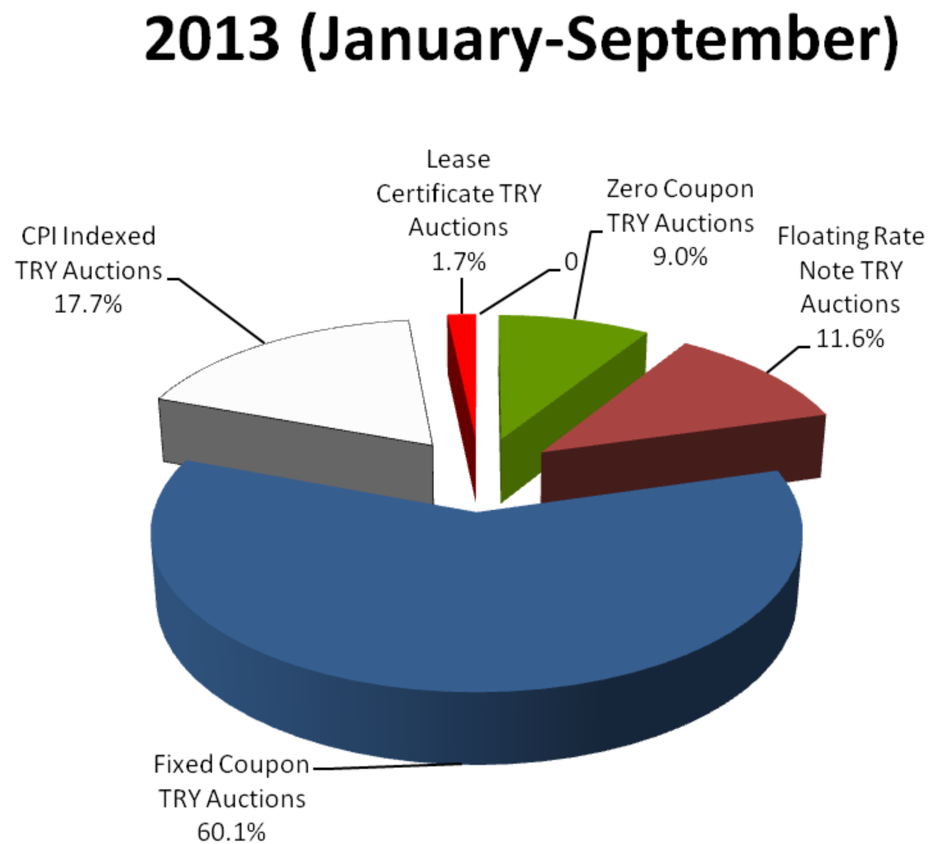
- **Full coverage** of financing requirement determined by cash and debt management operations
- **Consistency** among the short and medium/long-term objectives with long term concentration
- **Applicable set of instruments** fitting the market structure, be awaring of the market dynamics
- Aiming the **market development**
- Balancing **cost–risk** trade off
- Be **realistic** by avoiding strict assumptions
- **Simple** tools, understandable by both decision makers and market participants

Strategic Benchmarks

- **Reduce liquidity risk:**
  - To maintain a certain level of cash reserve
- **Reduce currency risk:**
  - To borrow mainly in TRY
- **Reduce interest rate risk:**
  - To use fixed rate instruments as the major source of domestic borrowing
  - To decrease the share of debt which has interest rate refixing period less than 12 months
- **Reduce refinancing risk:**
  - To increase the average maturity of domestic borrowing taking market conditions into consideration
  - To decrease the share of debt maturing within 12 months

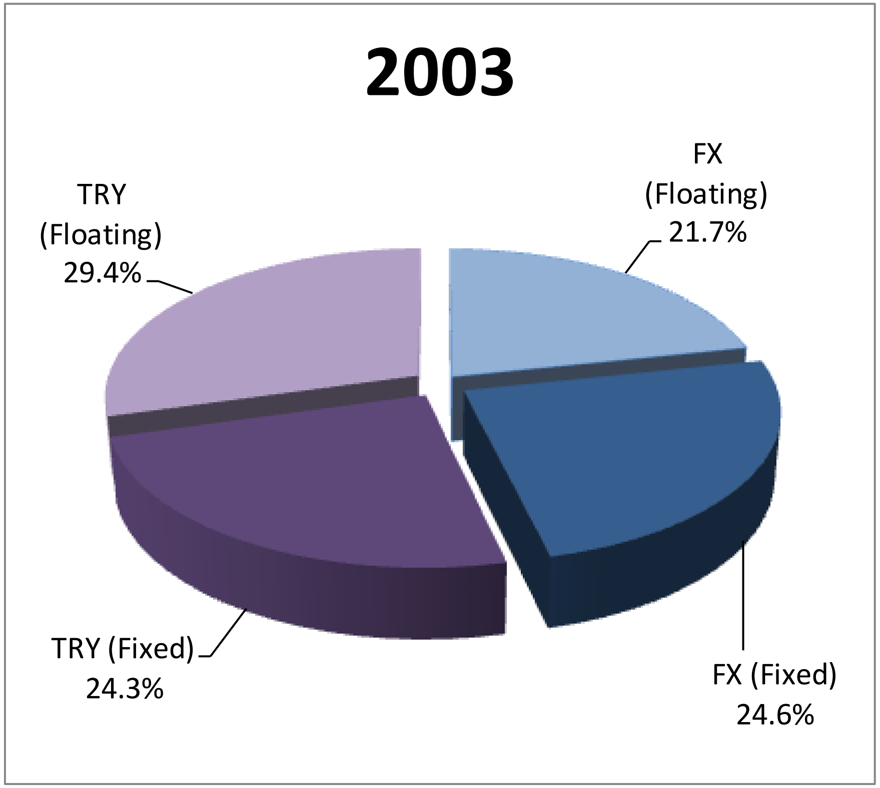
Composition of Central Government Domestic Borrowing

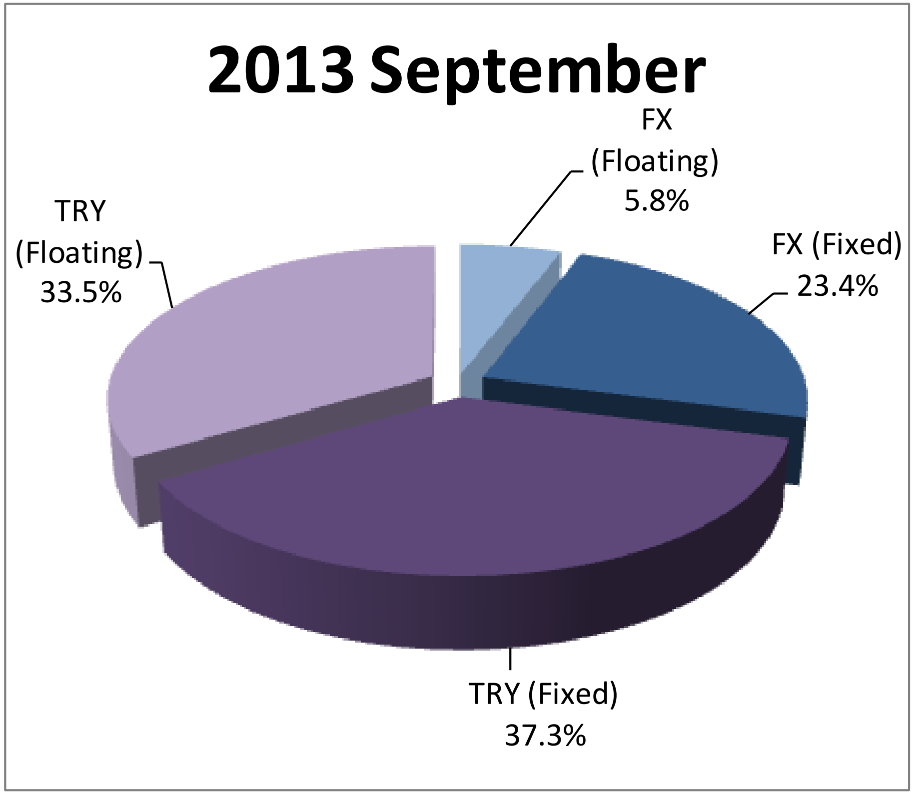




Source: Turkish Treasury

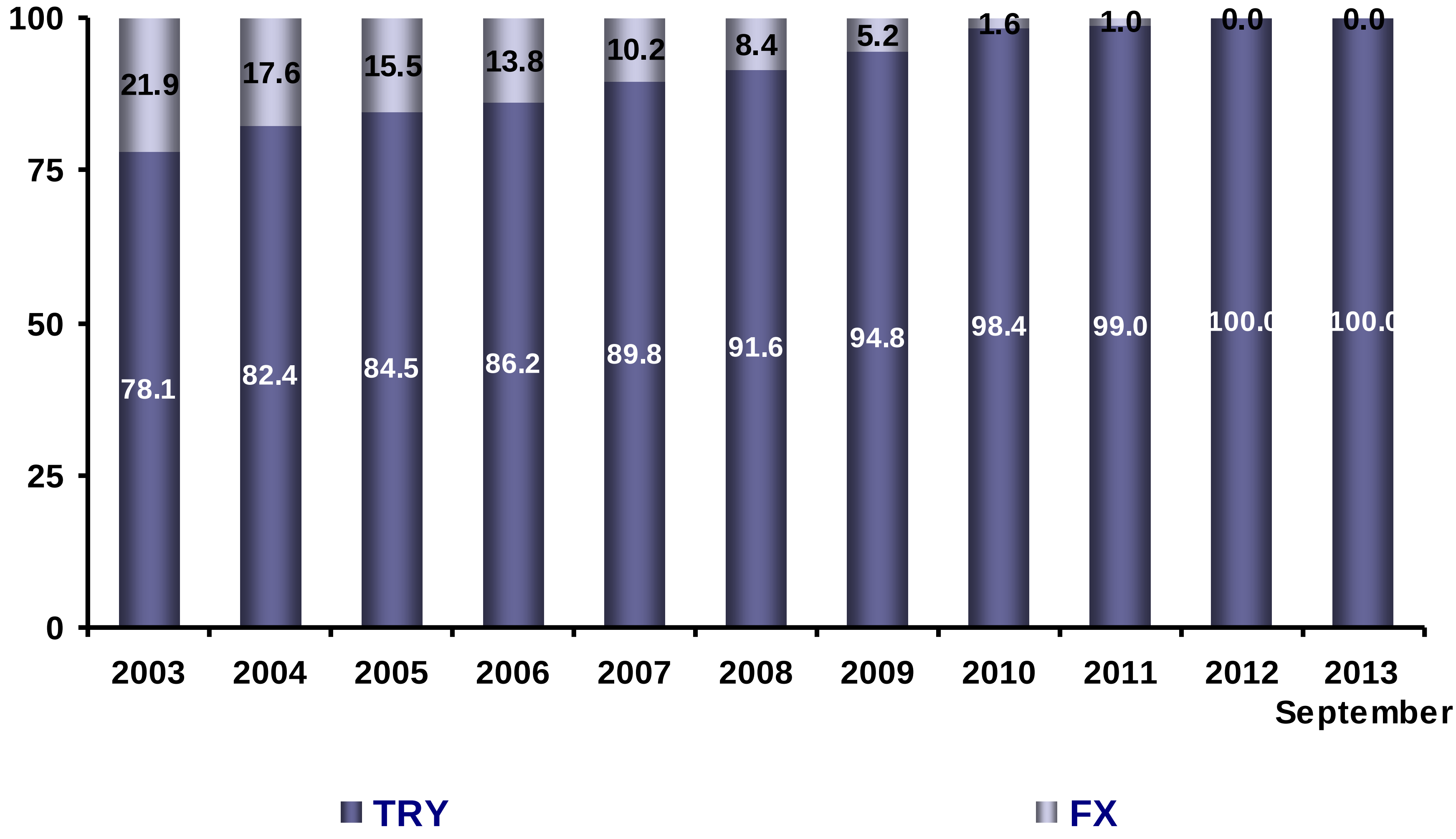
Composition of Central Government Debt Stock



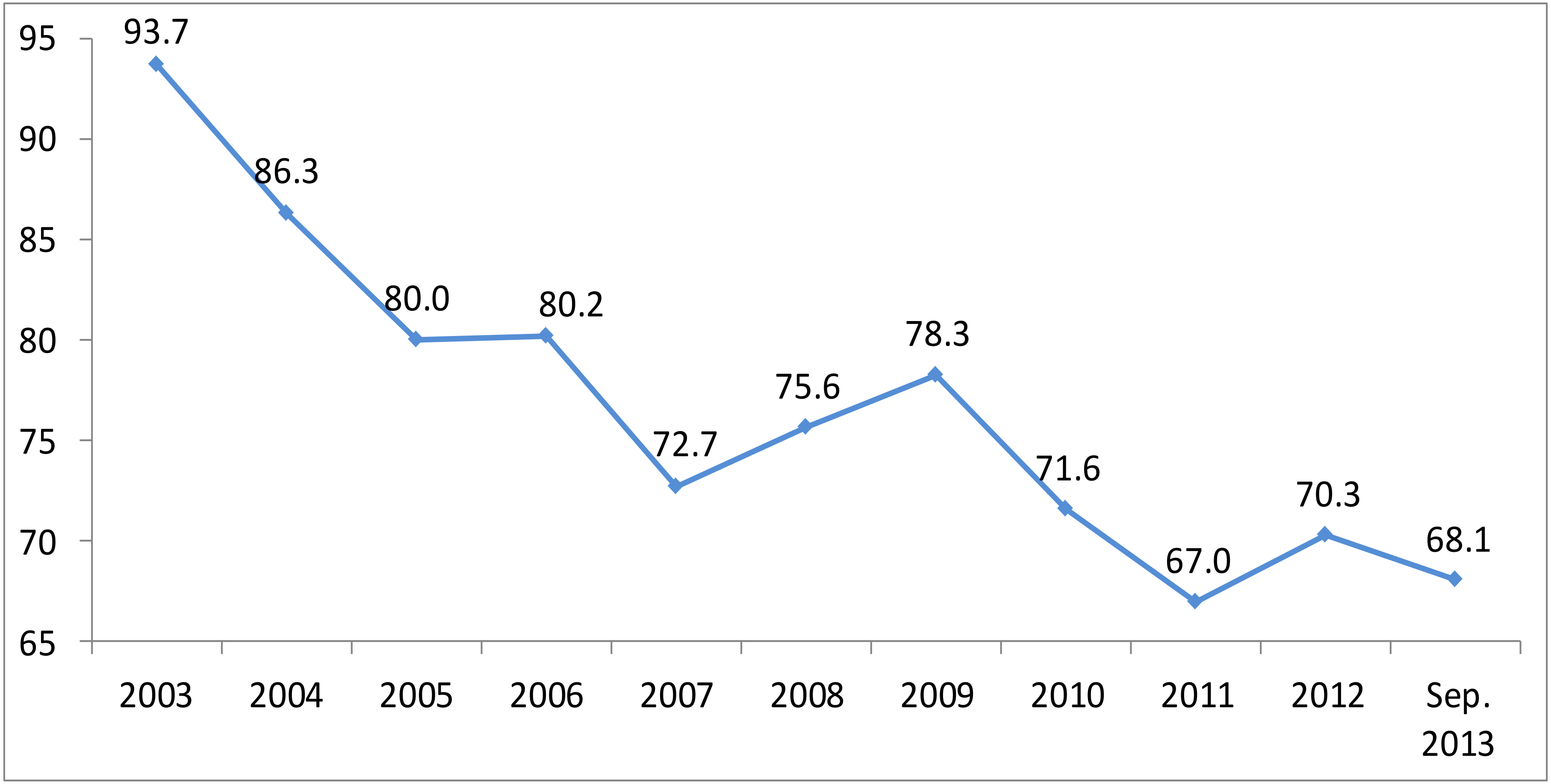


Source: Turkish Treasury

Currency Composition of Domestic Debt (%)

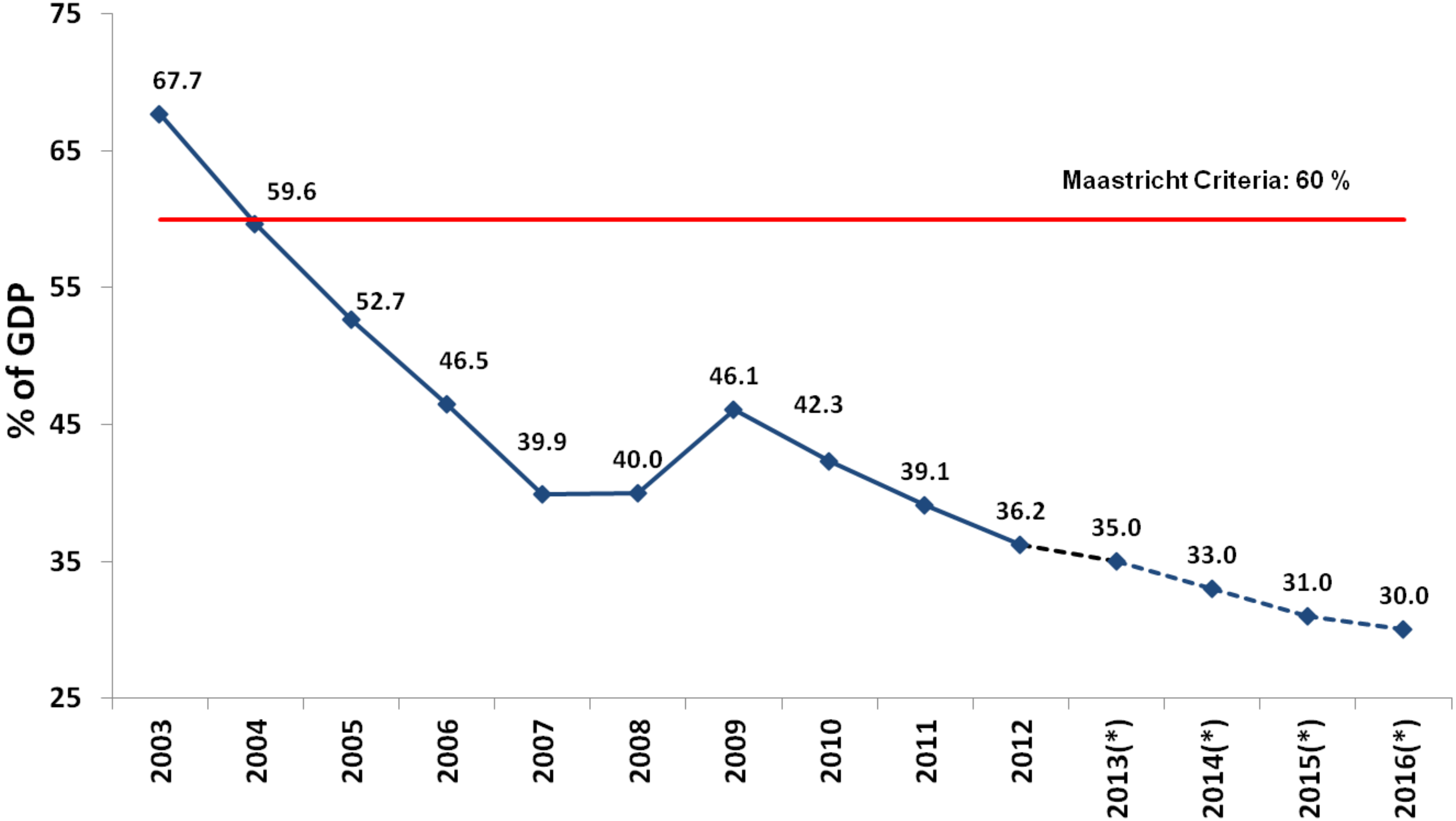


Percentage of TRY Debt Re-Fixed within 12 Months



Source: Turkish Treasury

General Government Debt (*)



(*) EU defined

(**) MTP 2014-2016 projections

Source: Turkish Treasury, MTP 2014-2016

Sensitivity of Gross Public Debt to Shocks

	2001	2012
Change in real exchange rate app/dep by 5 percentage points	+ / - 2.2 points	+ / - 0.5 points
Change in TL interest rate by*		
10 percent	+ / - 2.0 points	+ / - 0.2 points
25 percent	+ / - 5.0 Points	+ / - 0.5 points
Change in GDP growth rate by 2 percentage points	+ / - 1.5 points	+ / - 0.7 points
Change in Primary Surplus/GDP ratio by 1 percentage point	+ / - 1.0 points	+ / - 1.0 points

(*) Reflects percent change in TL interest rate in succeeding years.

Note: The effects of scenarios on "Gross Public Debt Stock/GDP" ratio measured by deviations from baseline scenarios (as defined by ESA standards) based on end-2001 and end-2012 stock realizations.

Source: Turkish Treasury

Final Remarks

Final Remarks

- By adopting risk based debt management approach, we cannot avoid a crisis, however, we can minimize its effects on debt management via increasing resilience
- In that framework, implementing debt management strategies is necessary but not sufficient for a prudent debt management
- Other elements of a prudent debt management are
  - Efficient co-operation and coordination with monetary and fiscal authorities
  - Close communication with investor base including non-banking institutions
  - Ensuring transparency and accountability principles