Available online at www.sciencedirect.com
ScienceDirect
Journal of Policy Modeling 28 (2006) 825–835
Journal of Policy Modeling
www.elsevier.com/locate/jpm

Revealing Turkey's public debt burden: A transparent payments approach

Can Erbil [a,*], Ferhan Salman [b]

[a] *Department of Economics and IBS, Brandeis University, Sachar 215, MS 021, Waltham, MA 02454, USA*
[b] *Research and Monetary Policy Department, The Central Bank of Turkey, Turkey*

Received 13 June 2005; received in revised form 12 October 2005; accepted 3 March 2006

Abstract

We postulate a new method of measuring debt which we call the debt burden (DB). We claim that DB reveals the true debt obligations of the fiscal authority by taking the intertemporal debt obligations of the government into account. It is more accurate and more transparent than the currently used methods of assessing debt. DB is calculated on a daily basis and it clearly identifies debt risks. It is a superior policy making tool for the fiscal authority. DB also reveals the true stance of fiscal dominance and the associated policy tradeoffs faced by the monetary authority.

JEL classification: H63

Keywords: Debt burden; Risk; Fiscal dominance

1. Introduction

Is there a better approach to measure Turkey's total public debt burden? The common approach to determine Turkey's public debt has traditionally been in the form of revealing the stock of total debt or the approaching interest payments that the government needs to satisfy its current debt service agreements.

The debt service, which is close to our approach, is calculated on a monthly frequency, which fails to capture fluctuations and the information embodied in the volatility of shorter frequencies.

In this paper, we concentrate our analysis on daily changes of the total public debt burden, where we investigate intertemporal government debt obligations to assess future stresses on the

* Corresponding author. Tel.: +1 617 781 736 2238.
E-mail address: cerbil@brandeis.edu (C. Erbil).

0161-8938/$ – see front matter © 2006 Society for Policy Modeling. Published by Elsevier Inc. All rights reserved.
doi:10.1016/j.jpolmod.2006.03.002

fiscal authority and evaluate the sustainability of government debt. This innovation allows us to investigate episodes of differing volatilities in Turkey's recent fiscal history.

Our approach clearly reveals periods of financial distress in the years of 2000 and 2001. Although, the crisis of 2001 was presented as an outcome of political conflict, it was rather inherent in the accumulated debt burden for the period that involved the crises.[1]

We identify the available policy options. Government can decrease the cost of borrowing by smoothing its borrowing schedule. The benefits vary between US$ 4 and 6 billion which is equivalent to 1.8–2.7% of gross domestic product (GDP). We also propose that DB could serve as a good proxy to assess risk and provide the true characteristics of fiscal dominance and resulting tradeoffs associated with monetary policy.

The next section provides some background on conventional approaches and our approach to debt definitions and issues concerning Turkey's public debt including its sustainability. Section 3 describes the data which is followed by results and policy discussions in Section 4. Finally Section 5 concludes the paper. The two appendices that are provided at the end summarize the mechanical details of our methodology and the assumptions used.

2. Background

2.1. Conventional approach to burden of debt

Most governments engage in debt (both foreign and domestic) to finance current investment that is expected to generate return for future repayment. In essence, government debt has the same principles as any other types of borrowing. However, its consequences are different.

A high and unsustainable debt burden has significant negative effects on developing economies. On the contrary to its motivation debt may adversely affect private investments (overhang affect) and public investments (budget deficit due to interest payments) and eventually may slowdown economic growth. Some heavily indebted countries are "debt trapped", being forced to finance the repayment of their earlier period obligations with new borrowings.

When economists consider the burden of foreign debt, they usually think of the cost in terms of transfers from the debtor country to the rest of the world. The debt burden is then measured simply as the discounted flow of resources that the debtor country must provide to its creditors. The costs are not limited to the burden of the debt service, the deadweight loss due to debt overhang discourages domestic investment.

Literature indicated several direct and indirect channels through which a large level of foreign debt affects investment and output. The reduced incentives to invest, the high domestic real interest rates due to the impaired access to international credit, and the decrease in public investment is referred to as the "debt overhang effect".

Debt overhang theory is based on the premise, that if debt exceeds the country's repayment ability with some probability in the future, expected debt service is likely to be an increasing function of the country's output level. The debt overhang indicates that the accumulated debt, acting as a tax on future output, discourages productive investment plans of private sector and adjustment efforts on governments. The extent to which the debt overhang discourages private

[1] The political distress, in fact, had only a trigger effect on the crisis: during the National Security Council Meeting on 19 February 2001, the President of Turkey and the Prime Minister had an argument over the constitution, where the Turkish Constitution became "airborne". This event is now known as the "Constitution Incident" in recent Turkish political history.