



How do politicians save? Buffer-stock management of unemployment insurance finance



Steven G. Craig^{a,*}, Wided Hemissi^b, Satadru Mukherjee^c, Bent E. Sørensen^a

^a Department of Economics, University of Houston, Houston, TX 77204, USA

^b Department of Management and Marketing, Texas A&M, Prairie View, TX 77446, USA

^c Department of Economics, University of Bristol, Bristol, BS 1TN, United Kingdom

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ABSTRACT

We fit an empirical structural model of forward looking government savings behavior to data from the U.S. state Unemployment Insurance (UI) programs 1976–2008. States increase benefits or lower taxes when Unemployment Trust fund balances are high, consistent with a desired target level of savings. This can be explained by the representative state program behaving like a Carroll (1992) buffer-stock consumer who trades off a desire to expend savings (impatience) against the fear of running out of funds (risk aversion). We calibrate the model to the data and find that statistics from model simulations match similar statistics produced from the data for reasonable levels of risk aversion and impatience.

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1. Introduction

Many local governments in the United States suffered fiscal stress and accumulated debt in the Great Recession. In some cases, deficits have been reversed, while in other cases, such as the state of Illinois or the city of Detroit, deficits appear to be structural. The study of dynamic public savings behavior is therefore a highly relevant topic for economic research. Several questions seem particularly relevant: are deficits and the risk of default an inherent tendency due to agency problems caused by public budgets being administered by politicians with uncertain, often brief, tenure? Are fiscal outcomes dependent on specific fiscal institutions? For example, are balanced budget rules, such as those imposed on almost all U.S. cities and states, needed to temper the desire of politicians to spend beyond tax revenues? Before such questions can be answered and policy proposals evaluated, it is important to know whether governments' forward looking behavior is consistent over time to the extent that it can be captured empirically by models of optimizing agents. We examine this issue in the specific setting of the Unemployment Insurance (UI) program in the United States.

On the one hand, it is easy to believe that politicians are more impatient than the general public when making budget decisions,

possibly to the extent that governments under-save such that the intertemporal budget constraint will only be satisfied via occasional budget crises. Politicians may not have different preferences than the voters, but rather their actions may be “as if” they were impatient. Politicians do not expect to be in office forever and may not worry about long term saving, or they may act strategically when expecting to be followed by politicians with other preferences.¹ On the other hand, politicians are often sensitive to public opinion and may want to avoid the embarrassment of budget crises. On net, it is hard to predict whether governments would maintain precautionary savings accounts consistent with the level of impatience and risk aversion of a typical voter, even if they had the means to do so, because we do not yet have an empirically successful structural model that explains dynamic planning by governments. In this paper, we attempt to redress this omission by proposing and testing a version of the Carroll (1992) buffer-stock model to explain government behavior. This model is attractive because it combines impatience and risk aversion in an explicitly optimizing framework.

In our discussion, we use the terms “governments” and “politicians” interchangeably, consistent with elected governments controlling the state-specific laws governing the unemployment

* Corresponding author. Fax: +1 7137433798.
E-mail address: scraig@uh.edu (S.G. Craig).

¹ See, for example, the model of Persson and Svensson (1989), where government regimes amass debt in an attempt to forestall the choices of the next regime.

systems. We do not know whether our results are externally valid in the sense that politicians are as risk averse and patient in other settings as they are in the unemployment system setting. The unemployment systems' finances are very transparent and the money amounts involved are not as large as, say, government pension savings and these, and likely many other, institutional features may influence the political decision making. We hope our work will stimulate work using the approach of the present paper to study governmental behavior in other institutional frameworks.

Our empirical model uses pooled data, collected by the common U.S. unemployment program, for the 48 mainland U.S. states as its "laboratory." We choose to study this program because it provides a unified framework with explicitly earmarked savings accounts for each state, which makes it easy to identify buffer stocks of savings. The joint program allows the individual states to choose the generosity of the program within the state as well as the level of earmarked taxes. The use of sub-national data circumvents some of the problems of applying structural models to national governments: samples of countries have small sizes and, with many and varied important actors, may not satisfy the homogeneity conditions for pooling. We choose to model the UI system, rather than U.S. state governments, because the latter have more complicated budgets involving capital accounts and, in particular, balanced budget constraints whose stringency varies across states.²

The setup of the unemployment system lines up well with the assumptions of the model, in that savings are credited with a fixed interest rate by the U.S. Treasury, which helps us avoid issues related to capital gains and losses that the buffer-stock model, in its current incarnation, ignores. Additionally, we are able to match the features of the UI system into other central attributes of the buffer-stock model; namely, we can define an "income" component and a "consumption" component of UI taxes and expenditures. We can do so even if all state governments insure unemployment among full time workers well attached to the labor market, because there is considerable variation between states in choices of whether and to what extent UI benefits are available to part time workers, or to workers that are less fully attached to the labor market (Craig and Palumbo, 1999).

Government savings behavior may be indeterminate and matter little for welfare if Ricardian equivalence holds, such that government saving is completely offset by household behavior. By studying state unemployment systems, we attack the dynamic budgeting problem in a setting where market failure in employment insurance mutes such potential issues.³

Jappelli et al. (2008) (hereafter JPP) devise an empirical test of the buffer-stock model, but do not find empirical support using savings data for individuals. We apply JPP's methodology to government UI behavior and find it has substantial explanatory power for the behavior of the state UI systems. We test the model by comparing the average level of savings, and the spending response to changes in the stock of savings, of the UI systems to the corresponding statistics predicted by a suitably calibrated version of the model. Our approach is two-pronged: first, we perform a regression analysis of how state governments adjust their savings in response to observed deviations from the desired savings level. Second, we simulate the buffer-stock model for a range of preference parameters. We calculate the predicted level of savings, and regres-

sions with the simulated data are used to derive the UI policy responsiveness to the level of savings. For suitable parameter values, we find that the simulation statistics closely match the actual empirical outcomes, and we conclude that government behavior can be well explained by buffer-stock behavior with quite risk averse, mildly impatient politicians.

We believe our work provides the first successful estimation of an explicitly optimizing model of government behavior towards saving over time. Having a well-fitted structural model of government behavior allows researchers to provide important input into the debate on whether governments need, or would use, more latitude to deal with business cycles (Fatas and Ilian, 2003). In the conclusion, we briefly speculate on how institutional settings may affect prudence and impatience of governments.

The remaining parts of the paper is laid out as follows. Section 2 discusses previous empirical work on optimal government savings while Section 3 outlines the institutional setting for UI and presents the panel data for the 48 contiguous U.S. states 1976–2008. Section 4 describes the buffer-stock model and explains how we map the UI institutional environment into the model. Section 5 presents the key results, which illustrate how states adjust their UI taxes and benefits in response to deviations of UI savings from the target level of savings. Finally, Section 6 summarizes the evidence and speculates whether the particular institutional setting studied is important for our empirical results.

2. Modeling government savings behavior

Past empirical work has attempted to fit government behavior to Hall's (1978) Permanent Income Hypothesis (PIH). This line of modeling considers the government to be an agent, who receives exogenous "labor income" (income excluding interest on assets) and derives utility from "government consumption," typically identified with government expenditure or government consumption. The literature has tested the strong prediction of the PIH model that consumption is a random walk (strictly speaking, a martingale) and rejected it. Campbell and Mankiw (1990) suggest an extension of the PIH model, labeled the "rule-of-thumb" consumer model, where a certain fraction of agents consume their current income (the rule-of-thumb consumers) while the remaining fraction behave as prescribed by the PIH. This model is somewhat ad hoc, because consumption of current income is not an outcome of intertemporal optimization, but governments may consume their current resources because they are constrained by explicit or implicit balance budget rules or they may be myopic. Holtz-Eakin et al. (1994) estimate the rule-of-thumb consumer model for aggregate U.S. state and local spending and find that state and local government spending follows available resources, in other words, the average state/local government is a rule-of-thumb consumer. However, the use of aggregated data may hide important variation across the many different state and local governments in the United States. For state governments, a number of papers have rejected the PIH model and some have extended the model to include rule-of-thumb consumers; see, e.g., Dahlberg and Lindstrom (1998). Borge and Tovmo (2009) estimate the rule-of-thumb model for Norwegian municipalities and find important variation which allows them to examine if entities that face tougher fiscal environments are more likely to display rule-of-thumb behavior – throwing light on whether such behavior is a reflection of constraints rather than behavioral myopia.

An alternative approach is to consider expenditure as exogenous and taxes as endogenous. Barro (1979) shows that, if government expenditures are exogenous and tax collection costs are increasing in tax rates, governments should (if they are efficient) smooth taxes over time and – for typical modeling choices – tax rates should behave like random walks. The Barro tax smoothing

² Many states have recently created "rainy day" fund accounts that allow some inter-temporal substitution in the current account by allowing state governments to transfer funds from one year to another without violating their balanced-budget rules (Knight and Levinson, 1999); nonetheless, the policy and investment options of the unemployment systems are simpler than those of state governments and we elect to fit the model to the simpler institutional framework.

³ See Rothschild and Stiglitz (1976) for the basic asymmetric information problem underlying UI. It is also possible that unemployed agents have a lower ability to borrow during recessions.

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