Journal of Economic Dynamics & Control 32 (2008) 3745–3759

Contents lists available at ScienceDirect

Journal of Economic Dynamics & Control

journal homepage: www.elsevier.com/locate/jedc

Endogenous debt constraints in a life-cycle model with an application to social security

David Andolfatto [a,b], Martin Gervais [c,*]

[a] Simon Fraser University, Canada
[b] Rimini Centre for Economic Analysis, Italy
[c] Economics Division, University of Southampton, Southampton SO17 1BJ, UK

ARTICLE INFO

Article history:
Received 2 August 2006
Accepted 27 March 2008
Available online 10 April 2008

JEL classification:
E21
E62
H55

Keywords:
Life-cycle
Debt constraints
Social security

ABSTRACT

This paper develops a simple life-cycle model that embeds a theory of debt restrictions based on the existence of inalienable property rights à la Kehoe and Levine [1993. Debt constrained asset markets. Review of Economic Studies 60(4), 865–888; 2001. Liquidity constrained markets versus debt constrained markets. Econometrica 69(3), 575–598]. In our environment, net debtors have the option of defaulting on unsecured debt at the cost of being subjected to wage garnishment and/or having some or all of their future assets seized by creditors. One advantage of our framework is that it encompasses two standard versions of the life-cycle model: one with perfect capital markets and one with a non-negative net-worth restriction. We study the impact of a payroll financed social security system to illustrate the role of endogenous debt constraints and compare our results to a model with exogenous debt constraints. Whereas the aggregate effects are similar under both types of constraints, the distributional consequences are found to be significantly different across debt regimes.

© 2008 Elsevier B.V. All rights reserved.

1. Introduction

This paper develops a simple life-cycle model that embeds a theory of debt restrictions based on the existence of inalienable property rights (Kehoe and Levine, 1993, 2001). In our environment, net

---

* Corresponding author. Tel.: +44 23 8059 3847.
E-mail addresses: dandolfa@sfu.ca (D. Andolfatto), gervais@soton.ac.uk (M. Gervais).

0165-1889/$ - see front matter © 2008 Elsevier B.V. All rights reserved.

doi:10.1016/j.jedc.2008.03.005

debtors (typically young individuals with bright futures) have the option of defaulting on unsecured debt at the cost of being subjected to wage garnishment and/or having some or all of their future assets seized by creditors. One advantage of our framework is that it encompasses two standard versions of the life-cycle model: one with perfect capital markets and one with a non-negative net-worth restriction.

Our environment differs in two important ways from typical models with ‘endogenous debt constraints’, such as Kehoe and Levine (1993, 2001), Kocherlakota (1996), Alvarez and Jermann (2000), and Krueger and Perri (2005). First, the income fluctuations which give rise to our debt constraint emanate purely from life-cycle considerations. Since these papers use the infinitely lived agent abstraction, individuals need to face other kinds of fluctuations in order for the default option to be meaningful. In our framework, debt constraints arise from the simple fact that young individuals with bright futures want to smooth their life-cycle consumption. But doing so potentially entails contracting large amounts of unsecured loans. Once in their peak earning years, these individuals may find defaulting on their loans an attractive option. Since rational creditors take these incentives into account in their supply of loans, individuals may find themselves debt constrained early in their life-cycle.

Second, whereas debt constraints in our environment arise from a default option, the default option does not correspond to autarky.[1] The default option in our framework is meant to capture in a crude way the main aspects of the bankruptcy law.[2] In essence, bankruptcy laws restrict the extent to which creditors can garnishee wage income and seize an individual’s assets (current and future). Upon default—which does not occur in equilibrium in the model—the rights to a fraction of an individual’s current and future assets and/or wage income that can be legally garnisheed are transferred to the creditors. The permanent nature of the punishment implies that creditors will refrain from lending to individuals with a history of default. A by-product of our theory, then, is that individuals face a non-negative net-worth restriction conditional on default—a familiar problem—rather than a lending constraint, which obtains when autarky is assumed following loan default. In our framework, the garnishment limits naturally translate into debt limits at the individual level: the more creditors can garnishee, the more credit is extended to individuals. In other words, harsher punishment upon default imply higher levels of debt, consistent with the work of Mateos-Planas and Seccia (2006).

Following the work of Bulow and Rogoff (1989) on sovereign debt, it is well known that the possibility of *savings* upon default in standard models implies that no credit will ever be extended. In other words, ‘merely denying credit is not a sufficient threat to create a loan market’ as Kehoe and Levine (2001) put it. The reason is simple: since no individual would ever pay back a loan during their last period of life, no credit will be extended to such an individual. But since it is known that default would occur in the last period of life, there is no point in extending credit the period before since individuals would default there as well, and so on. The reason why this does not occur in our economy is because of the long lasting effect of default: when an individual defaults, there is always some resources that creditors can garnishee in future periods. This feature is what makes credit markets operational from the first periods of individuals’ life.

Our framework offers a simple way of modeling debt constraints which respond endogenously to exogenous changes in the environment. As an application of our setup, we illustrate the role of endogenous debt constraints by studying the impact of introducing a payroll-tax financed social security system. We compare our results to those of the Hubbard and Judd (1987), who were among the first to examine the welfare implications of a social security system in the context of a life-cycle model with exogenous debt constraints. Because the U.S. social security system is financed primarily through a payroll tax, the burden of finance falls disproportionately on the young and middle-aged members of the population who are approaching, or are in, their peak earning years. The provision of social security is likely to reduce the desired private saving (increase desired borrowing) among

---

[1] In the typical framework, the penalty of defaulting is to be banned from future participation in the financial market forever. This type of setup implies not only that individual defaulters can no longer borrow, but also that they cannot lend.

[2] See Livshits et al. (2007) and Chatterjee et al. (2007) for detailed analyses of consumer bankruptcy.

Download English Version:

https://daneshyari.com/en/article/5099782

Download Persian Version:

https://daneshyari.com/article/5099782

Daneshyari.com