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Journal of Macroeconomics 27 (2005) 31–51

Journal of MACROECONOMICS

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Self employment, education and credit constraints: A model of interdependent credit rationing decisions

John Fender *

Department of Economics, University of Birmingham, Edgbaston, Birmingham B15 2TT, UK

Received 9 May 2002; accepted 16 June 2003
Available online 1 January 2005

Abstract

An OLG model with occupational choice and endogenous credit constraints is developed. Heterogeneous agents decide whether to become educated when young; this requires borrowing. In the second period, middle-aged educated agents decide whether to become self employed in the following period, which again requires borrowing. Credit may be rationed because of a moral hazard problem in lending. In a macroeconomic framework with capital, we derive a number of comparative statics results; we consider the effects of changes that relax credit constraints on the real wage and the real interest rate and discuss issues relating to the interdependence of credit constraints.

JEL classification: E51; E62; H52.
Keywords: Education; Self employment; Credit rationing; Overlapping generations; Financial development

* Tel.: +44 121 41 46644; fax: +44 121 41 47377.
E-mail address: j.fender@bham.ac.uk

0164-0704/$ - see front matter
doi:10.1016/j.jmacro.2003.06.006

1. Introduction

There is now much evidence of the importance of financial factors for economic growth and development (for a review of the evidence see Levine, 1997); however, the process of financial liberalization and development is far from unproblematic, as certain East Asian economies have discovered in recent years. [1] One reason may be that credit markets are notoriously imperfect; it is thus important to analyse the role of credit market imperfections in a macroeconomic context and consider the effects of financial market development in such an environment, and it is intended that this paper should make a contribution in this area.

There is a large literature in economics on credit rationing, which occurs when investment projects with an expected return greater than the cost of funds are not financed. [2] The existence of such rationing is compatible with rational behavior by lenders, who may be unwilling to lend more than they do, even at a higher interest rate, because if they do so, there is a higher probability that borrowers default on loans. Two common explanations for increased default under these circumstances are adverse selection and moral hazard. Adverse selection means that the mix of borrowers becomes less favorable as interest rate rise; moral hazard means that the behavior of given borrowers changes in such a way as to reduce expected loan repayments after an increase in interest rates.

One factor in many borrowing decisions is the likelihood of being able to borrow again. There are many examples of this interdependence: a firm's return on borrowing to build a factory may depend crucially on whether it will be able, later on, to borrow to finance working capital. It might seem that the existence of credit constraints in one sector of the economy may exacerbate credit constraints in other areas; a related point is that: "Once the assumption of perfect capital markets is dropped, every lender must take into account not only the real characteristics of the firm or individual to whom he lends but also the constraints on [his] future borrowing" (Gale, 1982, p. 161). The main innovative feature of this paper is to build a macroeconomic model that incorporates this interdependence of lending decisions.

Our model has an overlapping generations (OLG) structure where agents live for three periods and population is constant. In the first period (youth) agents decide whether to attempt to borrow to finance education; if they do so and are successful they become educated; if not, they remain uneducated and receive the unskilled wage for all three periods. In the second period (middle age), an educated agent works at the skilled wage and can apply for a loan to finance an investment that enables him to become self-employed in the third period (old age). [3] If unsuccessful, he continues to work as an educated worker in his old age.

[1] For example, 'There is overwhelming evidence that financial liberalization increases the vulnerability of countries to crises.' (Furman and Stiglitz, 1998, p. 17).

[2] One survey of the literature on credit rationing is Jaffee and Stiglitz (1990).

[3] If readers are troubled by the idea of agents having to work in their old age, they might consider the third period as combining both the latter part of their working life and retirement. An alternative would have been to add a fourth period to represent retirement, but this would have merely added pointless complexity.