Available online at www.sciencedirect.com
ScienceDirect
Journal of Economic Theory 146 (2011) 976–1008
JOURNAL OF Economic Theory
www.elsevier.com/locate/jet

Competition, human capital and income inequality with limited commitment ☆

Ramon Marimon [a,b,c], Vincenzo Quadrini [b,c,d,*]

[a] *European University Institute, UPF-Barcelona GSE, Spain*
[b] *CEPR, United Kingdom*
[c] *NBER, United States*
[d] *Department of Finance and Business Economics, Marshall School of Business, University of Southern California, 701 Exposition Boulevard, Los Angeles, CA 90089, United States*

Received 15 August 2009; final version received 28 August 2010; accepted 24 January 2011

Available online 2 February 2011

Abstract

We develop a dynamic model with two-sided limited commitment to study how barriers to competition, such as restrictions to *business start-up* and *non-competitive covenants*, affect the incentive to accumulate human capital. When contracts are not enforceable, high barriers lower the outside value of 'skilled workers' and reduce the incentive to accumulate human capital. In contrast, low barriers can result in over-accumulation of human capital. This can be socially optimal if there are positive spillovers. A calibration exercise shows that this mechanism can account for a sizable portion of cross-country income inequality.

JEL classification: J24; J41; O30

Keywords: Contract enforcement; Barriers to competition; Human capital; Economic growth

☆ We would like to thank an anonymous referee and the Associate Editor of *JET* for detailed comments and recommendations. We are also grateful for comments on earlier versions of the paper to Michele Boldrin, Francesco Caselli, Hugo Hopenhayn, Boyan Jovanovic, Narayana Kocherlachota, Omar Licandro, Stephen Parente, Nancy Stokey and participants at several seminars and conferences. Previous versions have circulated under the title "Competition, Innovation and Growth with Limited Commitment". Marimon acknowledges support from Ente Luigi Einaudi, Fundación BBVA and Ministerio de Educación y Ciencia (SEC2003-03474 and FEDER). Quadrini acknowledges support from the National Science Foundation (SES 0617937).
* Corresponding author at: Department of Finance and Business Economics, Marshall School of Business, University of Southern California, 701 Exposition Boulevard, Los Angeles, CA 90089, United States. Fax: +1 213 740 6650.
E-mail addresses: ramon.marimon@eui.eu (R. Marimon), quadrini@usc.edu (V. Quadrini).

0022-0531/$ – see front matter
doi:10.1016/j.jet.2011.01.001

"*Wages rise quickly and sometimes dramatically in response to increases in the market demand for certain type of labor, but these increases are a reaction to competition from other firms, not to internal pressure from employees.*"

Bewley [6, p. 407]

1. Introduction

As Bewley reminds us, labor market conditions 'external' to the firm play a crucial role in the determination of wages. Since wages determine the return on human capital, external conditions are also crucial for the incentive of workers to accumulate human capital. In this paper we show that 'external competitive' conditions are important if contracts are not enforceable for both employers and employees (double-sided limited commitment).

It is not difficult to see why in reality contracts are not fully enforceable for both employers and employees. On the one hand, without slavery or serfdom, workers are free to move to obtain the best return on their human capital. Together with the limited observability of workers' effort, this reduces the enforcement of contracts for workers. On the other hand, employers could renege on the compensation promised to workers for their effort to accumulate human capital. Under these circumstances, workers would be discouraged from accumulating skills unless their human capital can be easily redeployed outside the firm. Since this depends on the competitiveness of the labor market, competition plays a crucial role in affecting the accumulation of human capital. This mechanism, which was already informally described by Adam Smith but until now has not been extensively explored, is the central focus of this paper.

We use a dynamic general equilibrium model where contracts are not enforceable, neither for workers nor for firms (employers). We show that the way limited enforcement affects the accumulation of 'general' human capital depends on barriers to the mobility of skilled labor. In particular, high barriers discourage the accumulation of human capital while low barriers have a stimulating effect, both in new and incumbent firms. As a result, differences in 'barriers to competition' translate into significant differences in incomes and welfare across economies.

While this result vindicates the common wisdom that 'barriers to the external conditions of the firm' are 'barriers to riches', it also shows that this effect can be greatly amplified when contracts are not enforceable for either party. In fact, a key finding of the paper is that the limited enforcement of contracts matters for the accumulation of human capital only when the limited commitment is double-sided, that is, when both sides can renege on the contract. Instead, with the commitment of at least one party, barriers to the mobility of skilled labor have limited effects on the accumulation of human capital and aggregate output.

The central mechanism through which barriers to the mobility of skilled labor affect the accumulation of 'general' human capital is by reducing the outside opportunities of skilled workers, that is, the value of redeploying their skills outside the firm. With a lower outside value, workers do not have a credible mechanism for punishing the firm for reneging on the promised compensation. Anticipating this, the worker makes less effort to acquire skills, and therefore, there is a typical time-inconsistency problem. It is important to emphasize that the analysis focuses on the type of human capital that is not specific to an individual firm, and therefore, it can be transferred to other firms. Otherwise, the outside value of the worker would be independent of human capital.

Why do we need double-sided limited commitment? If the worker could commit to staying with the firm and providing effort (one-sided commitment from the worker), the contractual friction associated with the limited commitment of the firm could be resolved by paying the