Contents lists available at ScienceDirect

European Economic Review

Bargaining frictions, labor income taxation, and economic performance

Stéphane Auray [a], Samuel Danthine [b,*]

[a] Universités Lille Nord de France (ULCO), MESHS (USR 3185), GREDI, Université de Sherbrooke and CIRPÉE, Canada
[b] Université du Québec à Montréal and CIRPÉE, Canada

ARTICLE INFO

ABSTRACT

This paper is an attempt to explain differences in economic performance between a subset of OECD countries. We classify countries in terms of their degree of rigidity in the labor market, and use a matching model with labor/leisure choice, bargaining frictions, and labor income taxation to capture these rigidity differences. Added flexibility improves economic performance in different ways depending on whether income taxation is high or low. Feeding income taxation rates estimated from the countries at hand, we find that the model is able to replicate the observed rigidity levels. The model is also shown to reproduce well cross-country differences in non-employment population ratios and the share of part-time jobs. In the absence of rigidity differences, taxation shows little promise to replicate cross-country differences, as it has insufficient quantitative effects on production and productivity. However, the interaction of rigidity and income taxation is crucial in explaining the empirical patterns of the non-employment rate and of the share of part-time jobs.

1. Introduction

It is arguable that the bulk of cross-country variations in economic performance in the OECD can be linked to differences in labor market organization. In this paper, we focus on two labor market features, rigidity in contracting and labor income taxation. We show that they are indeed of first order importance in explaining differences in economic performance amongst European countries as well as between European countries and the US. The indicators of economic performance we focus on are GDP per capita, GDP per hour, hours worked per capita, non-employment, and the proportion of part-time jobs. We frame our analysis in a matching model in which risk-averse workers and risk-neutral firms vary in productivity and face idiosyncratic shocks to productivity. Workers value leisure, and workers and firms bargain over wages and over the length of the work day. We show that four elements of our model are necessary to explain the observed cross-country differences: heterogeneity in productivity, bargaining over the length of the workday as well as the wages, bargaining frictions, and income taxes.

* Corresponding author.
  E-mail addresses: stephane.auray@gmail.com (S. Auray), danthine.samuel@gmail.com (S. Danthine).

These ingredients allow the model to replicate the features of economic performance well. The intuition behind the results is the following. Income taxation, all else equal, leads to a decrease in employment (and thus GDP per capita) and an increase in part-time work: pairs that would agree to a full-time contract at lower taxation levels may decide to work part-time when taxation increases. Similarly, pairs who would accept working part-time at lower taxation levels might decide not to work at all. Because of the heterogeneity in productivity, the effect of varying taxation is not the same, however, at all levels of unemployment. When unemployment is high, there are many relatively productive prospects searching. This increases the value of searching, leading searchers to be more picky in their acceptation of contracts. Hence only pairs with sufficiently high joint productivity match, and do so predominantly full-time. This dampens the effect of a high tax rate on part-time, and leads to a greater level of sorting. At higher employment levels, more and more high types are matched in equilibrium, thus lowering the quality of the pool of searchers and making searchers less picky with whom to accept. The share of part-time matches is much higher the lower the joint productivity of the pair. Differences in taxation then have great effects on part-time jobs. The level of rigidities affects part-time jobs and employment: higher rigidities decrease the value of a part-time match by lowering the probability that the pair can negotiate a full-time contract given the proper productivity shock. Higher rigidities thus come with lower employment, and, all else equal, a lower share of part-time work. Given this, different taxation levels will have different effects on part-time depending on the level of rigidities. In addition, an increase in unemployment can increase or decrease GDP per capita, depending on the level of sorting in the economy, level of sorting which of course is linked to the quality of the pool of searchers. Quantitatively, taxation has only a limited effect on GDP per capita and GDP per hour. However, it affects employment and the share of part-time in an important way that varies at different levels of rigidity. It is the interaction of income taxation with rigidities in bargaining that differentiates economies in the model. This is crucial if one wants to replicate cross-country differences within continental Europe, where countries differ only marginally in taxation levels, but hugely in terms of economic performance. Considering both bargaining frictions and labor income taxation therefore proves to be empirically relevant to explain differences in economic performance across countries.

This paper fits in a recent literature documenting and trying to explain differences across countries in economic performance. Rogerson (2006) stresses that a combination of technological change and government intervention is the best candidate to account for the long term changes in hours worked across countries. Prescott (2003) highlights the importance of labor income taxation to explain differences in employment and hours worked between Europe (seen as mainly France) and the US; Ljungqvist and Sargent (2007) argue that, in a model similar to Prescott's, adding unemployment insurance diminishes the bite of labor income taxation. In an empirical paper, Nickell (2004) claims that while taxes do explain part of the differences, they are far from making up the entire story. Pissarides (2007) argues that productivity growth plays a big role in the evolution of hours, and is the main reason for the healthy state of labor markets in Europe in the 1960s. In addition, he shows that while taxes play a role in explaining differences in hours, it is mostly a minor one. To contrast to this literature, this paper shows that, while labor income taxation is not enough to account for cross-country differences in economic performance, including the proportion of part-time jobs, adding bargaining rigidities on both wages and hours goes a long way in explaining these differences both qualitatively and quantitatively. In fact, given income taxation corresponding to different countries, we are able to back out rigidity parameters from our model that correspond nicely to what can be seen from the data. In addition, the model is able to replicate well non-employment rates and relative part-time shares.

Finally, a number of papers are related to ours with regards to the modelling assumptions. Gertler and Trigari (2009) introduce staggered bargaining in a matching model with the hope of resolving the unemployment volatility puzzle (as described in Pissarides, 2009). Blazquez and Jansen (2008) propose a matching model with heterogenous agents on both sides to assess whether the market equilibrium ends up being efficient (it does not). Ortega (2003) uses a model with ex post heterogeneous firms to show that the existence of a legal limits on hour choices can enhance efficiency with respect to *laissez-faire*. Nagypál (2005) uses potentially negative idiosyncratic shocks to the value of a job to workers in a search model and endogenous search effort to show that such a model can successfully replicate job-to-job transition data.

The paper is organized as follows. In Section 2, data on economic performance and labor market institutions are briefly presented for a set of countries. The model is described in Section 3. The economy is parameterized, and the effects of changes in the probability of recontracting and in the rate of taxation, as well as in other parameters, are presented and analyzed in Section 4. The model is then evaluated quantitatively. A final section concludes.

2. Economic performance and labor market institutions

Economic performance and labor market institutions are summarized for Belgium, France, Germany, the Netherlands, Spain, Italy, the UK and the US.[1] For many of the variables that we are interested in, it is not possible to just separate the sample using the US-Europe divide.

---

[1] All the data used for the purpose of this section are presented and discussed in details in Appendix A.