Review of Economic Dynamics 30 (2018) 86–105

Contents lists available at ScienceDirect

Review of Economic Dynamics

www.elsevier.com/locate/red

On the distribution of wealth and employment ☆

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ARTICLE INFO

Article history:
Received 12 April 2018
Available online 20 April 2018

JEL classification:
E24
E21
J22

Keywords:
Wealth distribution
Employment
Government transfers
Capital income taxation
Aggregate labor supply elasticity

ABSTRACT

In the United States, the employment rate is nearly flat across wealth quintiles with the exception of the first quintile. Correlations between wealth and employment are close to zero or moderately positive. However, incomplete markets models with a standard utility function counterfactually generate a strongly negative relationship between wealth and employment. Using a fairly standard incomplete markets model calibrated to match the distribution of wealth, I find that government transfers and capital income taxation increase the (non-targeted) correlations between wealth and employment substantially, bringing the model closer to the data. As the model's fit with the distribution of wealth and employment improves, I find that the precautionary motive of labor supply is mitigated, thereby raising aggregate labor supply elasticities substantially.

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1. Introduction

Several recent studies have shown that labor supply at the extensive margin is nearly flat across wealth quintiles in the United States.[1] In fact, I find that employment rates over wealth quintiles are nearly flat with the exception of the first quintile in the Survey of Consumer Finances (SCF) data set that has been recognized as one of the best data sets capturing a highly concentrated distribution of wealth.[2] Moreover, correlations between wealth and employment are close to zero or moderately positive. However, these empirical facts are in sharp contrast to standard incomplete markets models with

☆ I am grateful to the editor, Vincenzo Quadrini, and anonymous referees for valuable suggestions that improved the paper, and Timo Boppart, Patrick Pintus, and Arnau Valladares-Esteban for their constructive discussions. I also thank Klaus Adam, Florin Bilbiie, Michael Burda, Antoine Camous, Sebastian Findeisen, Jordi Gali, Tom Krebs, Dirk Krueger, Per Krusell, Dmitry Matveev, Kjetil Storesletten, Nicola Pavoni, Shuhei Takahashi, Michele Tertilt, and seminar participants at the GRIPS-Keio Macroeconomics & Policy Workshop, Kyoto University, the European Winter Meeting of the Econometric Society at Barcelona GSE, 8th ifo Conference on Macroeconomics and Survey Data, Sogang University, NorMac 2017, AMES in Hong Kong, Madrid Workshop in Quantitative Macroeconomics, Humboldt University of Berlin, T2M conference in Lisbon, the PSE/Banque de France/Fondation France-Japon-EHESS workshop and the University of Mannheim for helpful comments. Finally, I thank Youngsoo Jang for the help with the SIPP data. An earlier version of the paper was circulated under the title of "On the Distribution of Wealth and Labor Force Participation."

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[1] See e.g., Chang and Kim (2007) and Ferriere and Navarro (2016) for the evidence in the Panel Study of Income Dynamics; and Mustre-del-Rio (2015) for the evidence in the National Longitudinal Survey of Youth. Note that labor supply at the extensive margin may represent employment or labor force participation decisions. This paper focuses on the full-time employment margin, which is conceptually closer to labor supply in a class of macroeconomic models considered in this paper. The empirical pattern documented herein is similar for labor force participation decisions as well except for the first wealth quintile.

[2] See e.g., Díaz-Giménez et al. (2011), Kuhn and Ríos-Rull (2015) for recent reviews that describe various aspects of inequality in the U.S. using the SCF.

https://doi.org/10.1016/j.red.2018.04.001
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a standard household preference since these models predict that the employment rate falls sharply with wealth.[3] Does this discrepancy imply that the degree of wealth effects on extensive margin labor supply, implied by the utility function commonly assumed in the macroeconomic models, is not compatible with the data? Or, are there any missing factors in the standard model that are crucial for this discrepancy?

The main goal of this paper is to explore the role of institutional factors such as government transfers and capital income taxation in resolving this discrepancy while maintaining the standard utility function. To this end, I develop a fairly standard incomplete markets model in which consumption-savings and labor supply at the extensive margin are endogenous. The model economy is calibrated to match the highly concentrated distribution of wealth in the SCF data in the spirit of Castaneda et al. (2003) and Kindermann and Krueger (2016). Using the model economy, I show that government transfers and capital income taxation are quantitatively important in rendering the model much more consistent with the data in terms of non-targeted statistics about the cross-sectional relationship between wealth and employment. Specifically, the rank correlation between wealth and employment implied by the model increases from −0.50 in the standard version of the incomplete markets model to 0.14 in the baseline specification that incorporates both transfers and capital income taxation (much closer to 0.07 in the data). In other words, the model is able to reconcile the weakly positive correlations between wealth and employment with the standard utility function featuring reasonable income effects, in the presence of institutional features such as government transfers and capital income taxation.

The economic mechanisms behind the importance of transfers and capital income taxation in resolving the discrepancy are straightforward. A key reason why the standard version of the incomplete markets model predicts a strongly negative rank correlation between wealth and employment is that most of the wealth poor households counterfactually choose to work despite their low productivity. Note that households can self-insure against idiosyncratic productivity risk not only through savings (Imrohoroğlu, 1989; Huggett, 1993; Aiyagari, 1994) but also through labor supply (Pijoan-Mas, 2006; Heathcote et al., 2008, 2014). Transfers serve as an additional insurance instrument, particularly for those who lack wealth accumulation and thus rely heavily on labor supply for self-insurance. Therefore, the presence of government transfers significantly mitigates the strong precautionary motive of labor supply. As a result, the employment rate of the first wealth quintile becomes 59.8%, closer to 60.8% in the data. On the other hand, the strongly negative correlation between wealth and employment is also because the employment rate of the wealth rich is too low in the standard version of the incomplete markets model (42.2%) compared to the data (72.3%). As wealth (and thus capital income) is heavily concentrated among the wealth rich, the presence of capital income taxation disproportionately reduces their asset holdings, thereby promoting labor supply of these richer households through income effects (resulting in 71.2% in the baseline specification). Therefore, both transfers and capital taxation play a quantitatively significant role in mitigating the negative slope of employment rates according to wealth.

In light of the quantitative success in better accounting for the distribution of wealth and labor supply, I use the model to explore its implications for the aggregate labor supply elasticity.[4] Note that, in an incomplete markets model with endogenous labor supply at the extensive margin (e.g., Chang and Kim, 2006, 2007; and Alonso-Ortiz and Rogerson, 2010), it is the distribution of households, not a single utility function parameter, which shapes the aggregate employment response to wage changes. An important contribution has been made by Chang and Kim (2006) who investigate the endogenous distribution of wealth as a determinant of the aggregate labor supply elasticity. A contribution of this paper relative to this literature is to investigate the implications of the joint distribution of wealth *and labor supply* for the aggregate labor supply elasticity.

For this purpose, the model economy with different specifications is used to explore the implications for the aggregate labor supply elasticity. I consider two exercises. First, I study the effects of permanent labor income tax changes on labor supply, as in Krusell et al. (2008, 2010). The quantitative analysis reveals that the aggregate labor supply elasticity, induced by permanently higher labor taxes, is considerably larger when the model better replicates the distribution of wealth and labor supply (0.42 in the baseline specification vs. 0.24 in the standard version of the model). The much higher aggregate labor supply elasticity in the baseline model is largely driven by labor supply decisions of households with low productivity, whereas in the standard version of the model, these households are much less sensitive to after-tax wage changes due to the very strong precautionary motive of labor supply. The second exercise considers the aggregate labor supply elasticity, based on the equilibrium distribution of reservation as in Chang and Kim (2006).[5] I find that this aggregate labor supply elasticity is also substantially higher in the baseline model (1.74) than in the standard version of the model (1.09). These exercises highlight the importance of overturning the counterfactually negative relationship between wealth and employment, since the model would substantially understate the magnitude of aggregate labor supply elasticities.

The cross-sectional relationship between wealth and labor supply has received little attention in the literature. The flat (or weakly inverse U-shaped) employment rates across wealth quintiles in the U.S. I find using data from the SCF are broadly consistent with the existing evidence in Chang and Kim (2007), Mustre-del-Rio (2015) and Ferriere and Navarro

[3] Chang and Kim (2007), Mustre-del-Rio (2015) and Ferriere and Navarro (2016) show that the employment rate strongly declines with wealth quintiles in their model with log utility for consumption and separable disutility of work, the so-called KPR preference (King et al., 1988).

[4] The aggregate labor supply elasticity is central to various questions in macroeconomics and related areas, ranging from the efficiency costs of taxation to business cycle fluctuations. See e.g., King and Rebelo (1999), Keane (2011) and Keane and Rogerson (2012) for literature reviews.

[5] As found by Chang and Kim (2006), the elasticity obtained in this way roughly corresponds to Frisch elasticity for the hypothetical representative agent. As noted by Erosa et al. (2016), Frisch elasticity is not a well-defined concept in incomplete markets with household heterogeneity.

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