Journal of Macroeconomics 000 (2015) 1–15

Contents lists available at ScienceDirect

Journal of Macroeconomics

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

A long-run, short-run, and politico-economic analysis of the welfare costs of inflation

Scott Dressler*

Villanova University, Economics, 800 Lancaster Ave Villanova, PA 19085, United States

ARTICLE INFO

Article history:
Received 26 May 2015
Accepted 27 October 2015
Available online xxx

JEL Classification:
E40
E50

Keywords:
Inflation
Welfare
Transitions
Voting

ABSTRACT

The long-run, short-run, and politico-economic welfare implications of inflation are assessed in a Bewley model of money demand. All agents produce and consume every period, and hold money to self-insure against idiosyncratic risk. The model is calibrated so the equilibrium monetary distribution shares features with US data. The long-run welfare costs of inflation are shown to be large because inflation reduces the ability of money to mitigate risk. However, the beneficial redistributive effect of inflation is magnified along the short-run transition and reduces the overall costs. These short-run benefits result in a majority-rule inflation rate above the Friedman Rule.

1. Introduction

Although central banks around the world maintain inflation targets above zero, the welfare implications of such policies are not completely understood. In particular, how important is the fact that liquid assets are unequally distributed across households? Consider the distribution of checking accounts across US households from the 2004 Survey of Consumer Finances (SCF) (see Fig. 1).[1] After normalizing average household liquid asset holdings to one, this distribution exhibits a great deal of inequality (Gini coefficient of 0.51), a majority holding below average balances (median of 0.44), as well as a significant portion holding zero liquid assets other than cash (almost 20 percent).[2] This paper quantitatively assesses a heterogeneous-agent environment where money is voluntarily held in order to smooth consumption in response to idiosyncratic uncertainty. The resulting monetary distribution is nondegenerate and shares features with SCF data. The welfare implications of inflation are assessed in the long-run by comparing the welfare implications across steady states with various inflation levels, but also in the short-run along the transition between inflation levels. In addition, the politico-economic impact of inflation is considered to determine how the prevailing (majority-vote) inflation rate differs from the social planner's choice (i.e. the Friedman Rule).

* Tel.: +1 6105195934.
E-mail address: scott.dressler@villanova.edu, scott.j.dressler@gmail.com

[1] The SCF is a triennial statistical survey of the balance sheet, pension, income and other demographic characteristics of families in the United States. The SCF also contains data on all transactions accounts (money market, checking, saving and call accounts). The characteristics of this distribution, the Gini coefficient and median-mean ratio in particular, are almost identical to the distribution described here. It should be noted that while this figure omits currency holdings, currency holdings make up only 12 percent of M1 on average between 1975 and 2014. This percentage is calculated taking into consideration a conservative portion of US currency held abroad. Finally, it should be noted that the SCF data is truncated at the 95th percentile to limit outliers.

[2] Recent estimates by Kaplan et al. (2014) suggest that roughly one-third of US households have little liquid wealth and are essentially living 'hand-to-mouth' even though some hold significant illiquid wealth.

http://dx.doi.org/10.1016/j.jmacro.2015.10.011
0164-0704/

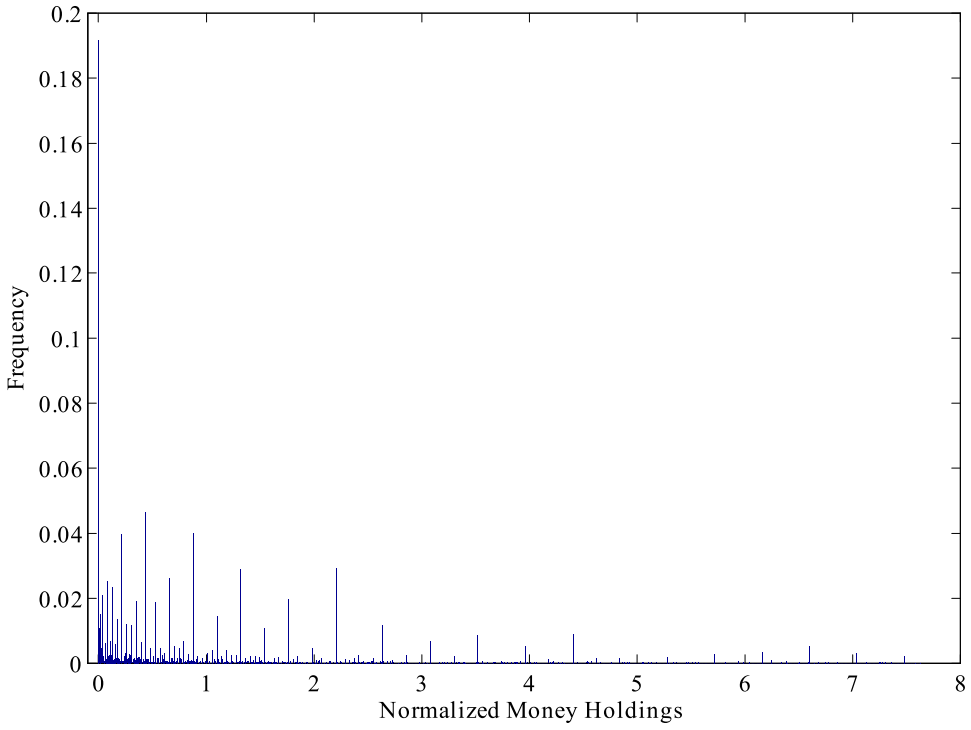

Fig. 1. Distribution of (normalized) checking accounts, 2004 SCF data.

In contrast to the literature focusing on money's role as a medium of exchange, this paper focuses on the role of a liquid store of value as in Bewley (1980, 1983).[3] While the literature considering the medium of exchange role has generally reported small welfare costs of inflation, the literature considering the store of value role report relatively large welfare costs because inflation erodes the buffer-stock insurance value of liquid assets.[4] For example, Wen (2015) finds a welfare cost of 10 percent inflation relative to zero in the range of 3–5 percent of consumption when calibrated to features of money demand and the variance of household consumption.[5] These costs are attributed to the increased portion of agents who are unable to self-insure against idiosyncratic risk because they choose to hold little or no liquid balances in response to higher inflation.

This paper extends Dressler (2011) in order to deliver a monetary distribution more in line with the SCF data.[6] As in Dressler (2011), agents trade multilaterally in a Walrasian market at a competitively determined price. The novel feature of the model presented here is that all households consume and produce every period while receiving noninsurable preference and production shocks. The ability of all households to produce reduces liquidity demand and results in some holding near-zero liquid assets as in the data. It should be noted that money is still essential and held for self-insurance in the event that a household would rather purchase more consumption than she wishes to produce. This precautionary motive for holding liquid assets is very prevalent in the SCF data.[7]

The welfare results from the model come down to the classic trade-off between the costs of inflation (i.e. the real balance effect) and the benefits (i.e. the redistributive effect), but more importantly at which time horizon does one effect dominate the other. With respect to the long-run results, the model predicts that 10 percent inflation costs 2.94 percent of average consumption relative to zero inflation. This result is in line with Wen (2015), and it is shown that this high cost is due to the fact that the real balance effect dominates in the long run. When including the short-run transition into the welfare calculation, the overall cost

[3] Examples of the large literature focusing on the medium of exchange role include representative-environments such as Cooley and Hansen (1989), Dotsey and Ireland (1996), Lucas (2000) and Henriksen and Kydland (2010), as well as search-theoretic environments such as Lagos and Wright (2005), Molico (2006) and Chiu and Molico (2011).

[4] While the representative-agent literature consistently reports welfare costs of 10 percent inflation relative to 0 percent to be around 1 percent of output, Lagos and Wright (2005) calculate the welfare cost to be between 3 and 5 percent of consumption depending on the bargaining power of the buyers and sellers within each pairwise match. Chiu and Molico (2011) remove the quasi-linearity assumption of Lagos and Wright and find that this welfare cost falls to 0.59 percent when assuming that buyers receive all the surplus from bargaining.

[5] Wen also considers a role for debt and shows that realistic credit limits can reduce these costs by about half. Nonetheless, this leaves welfare costs several times larger than previous estimations.

[6] Wen (2010) was among the first to use SCF data to calibrate his model, by matching the average Gini coefficient of the distribution of money demand across surveys.

[7] For example, the portion of families stating " liquidity" as their most important reason for holding transactions accounts has remained within the range of 31.2 and 35.2 percent between the years 2001 and 2010.

Please cite this article as: S. Dressler, A long-run, short-run, and politico-economic analysis of the welfare costs of inflation, Journal of Macroeconomics (2015), http://dx.doi.org/10.1016/j.jmacro.2015.10.011