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Journal of Economic Theory 176 (2018) 552–618

JOURNAL OF Economic Theory

www.elsevier.com/locate/jet

Secular stagnation: Theory and remedies

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Received 20 May 2017; final version received 19 April 2018; accepted 23 April 2018
Available online 27 April 2018

Abstract

To investigate secular stagnation, I add two features to a standard Ramsey model with money: (i) Households have a preference for wealth; (ii) Wages are downward rigid. In this framework, there exists a frictionless neoclassical steady state equilibrium characterized by a low natural real interest rate. In addition, if wages are sufficiently rigid and the natural real interest rate sufficiently low, then there also exists a Keynesian secular stagnation steady state characterized by under-employment, low inflation, and a binding zero lower bound on the nominal interest rate. As wages become more flexible, the Keynesian steady state diverges away from the neoclassical steady state, until wages are so flexible that it ceases to exist. If monetary policy is excessively restrictive, then the secular stagnation steady state is the unique steady state equilibrium of the economy. The optimal policy response to secular stagnation is to move the economy to the neoclassical steady state. This can either be achieved by raising the central bank's inflation ceiling or by taxing wealth and subsidizing investment in physical capital. This optimal tax policy is revenue-neutral.
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JEL classification: E12; E31; E62; E63

Keywords: Keynesian economics; Liquidity trap; Monetary and fiscal policy; Secular stagnation

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[1] First draft: September 2015. I am grateful to the Editor, Laura Veldkamp, two anonymous referees, Gianluca Benigno, Raicho Bojilov, Daniel Cohen, Yannick Kalantzis, Anton Korinek, Etienne Lehmann, Olivier Loisel, Yoshiyasu Ono, Xavier Ragot, Alessandro Riboni, Gilles Saint-Paul, Larry Summers, and to seminar participants at EEA-ESEM 2016, OFCE, the Central Bank of Austria, the University of Cologne, the University of St Andrews, the University of Osaka workshop on wealth preferences and secular stagnation, and the Paris School of Economics workshop on Helicopter Money for useful comments and suggestions.

https://doi.org/10.1016/j.jet.2018.04.011
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1. Introduction

Keynes (1936) explained how an economy can be depressed due to a lack of demand. Indeed, if households' demand for consumption and firms' demand for investment are excessively low, then the economy fails to produce at full capacity. While the resulting depressions are usually seen as an extreme manifestation of a business cycle phenomenon, Hansen (1939) worried that it could be a permanent state of affairs. This is the "secular stagnation" hypothesis.

The experience of Japan over the past two decades should induce us to take the secular stagnation hypothesis seriously. Indeed, since the mid-1990s, the Japanese economy has been mired in near zero inflation and anemic GDP growth despite substantial monetary and fiscal accommodation. Over the past few years, there has been growing concerns that the forces of secular stagnation might also be at work in the U.S. and, even more severely, in the eurozone.

In this paper, I propose a theory of secular stagnation that builds on the Ramsey model with money and flexible prices, to which I add two features: a preference for wealth and a downward wage rigidity. The assumption that households derive utility from holding wealth raises their propensity to save. This translates into a new term within the standard consumption Euler equation: the ratio of the marginal utility of wealth to the marginal utility of consumption. A high ratio has exactly the same effect on consumption as a high real interest rate: it induces households to postpone consumption. Thus, the preference for wealth depresses aggregate demand.

To have a steady state equilibrium with constant consumption, an excessively high real interest rate must be offset by a sufficiently low ratio of the marginal utility of wealth to the marginal utility of consumption, i.e. by a depressed consumption level. Indeed, while a high real interest rate raises the propensity to save, a low consumption level increases the importance of consumption relative to wealth and therefore reduces the propensity to save. So, an increase in the steady state real interest rate reduces the steady state consumption level.[2] This naturally results in the coexistence of two steady state equilibria. A frictionless neoclassical equilibrium, where the real interest rate is determined by the demand and supply of savings; and a Keynesian secular stagnation equilibrium, where the real interest rate is jointly determined by the binding zero lower bound on the nominal interest rate and by the inflation rate resulting from the binding downward wage rigidity constraint. Thus, the neoclassical equilibrium is characterized by a low natural real interest rate, due to the high supply of savings. The secular stagnation equilibrium features a higher real interest rate, which depresses the demand for goods and, hence, the demand for labor. Hence, secular stagnation is characterized by a zero nominal interest rate, low inflation, and under-employment.

There are only two frictions in my economy: the zero lower bound on the nominal interest rate, due to the existence of fiat money, and the downward wage rigidity. However, the wage rigidity is not the fundamental cause of depressed demand. This is shown by the paradox of flexibility: in the secular stagnation steady state, as wages become more flexible, inflation falls, the real rate rises and, hence, aggregate demand becomes even more depressed. The fundamental role of the wage rigidity is to put a break on this deflationary spiral. This explains why the economy fails to converge back to full employment, *even as wages gradually adjust over time*.[3] It follows that the fundamental cause of secular stagnation is not excessively high wages but the very existence

[2] Without a preference for wealth, the standard consumption Euler equation implies an infinite elasticity of steady-state consumption with respect to the steady-state interest rate.

[3] This formalizes Tobin's (1993) insight that "*Keynesian macroeconomics neither asserts nor requires nominal wage and/or price rigidity. It does assert and require that markets not be instantaneously and continuously cleared by prices.*".

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