



What keeps long-term U.S. interest rates so low?☆



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ABSTRACT

U.S. government indebtedness and fiscal deficits increased notably following the Global Financial Crisis. Yet long-term interest rates and U.S. Treasury yields have remained remarkably low. What keeps long-term interest rates so low? This paper relies on a simple model, based on John Maynard Keynes' view that the central bank's actions are the key drivers of long-term interest rates, to explain the behavior of long-term interest rates in the U.S. The empirical findings confirm that short-term interest rates are the most important determinants of long-term interest rates in the U.S. Contrary to conventional wisdom, higher government indebtedness has a negative effect on long-term interest rates, particularly on a long run basis. However, in the short run, higher government indebtedness has a positive effect on long-term interest rates. These are relevant for contemporary policy debates and macroeconomic theory.

1. Introduction

U.S. government indebtedness and fiscal deficits increased notably following the Global Financial Crisis. Yet long-term interest rates and U.S. Treasury yields have remained remarkably low. What keeps long-term interest rates so low despite higher government indebtedness and large fiscal deficits? This is an important research and a policy question. It is relevant to contemporary debates on the government debt and deficits, the macro implications of fiscal austerity, monetary transmission mechanism, quantitative easing and monetary policy. Since the onset of the Global Financial Crisis, the Federal Reserve has kept its policy target low, undertook large scale asset purchase programs, and provided forward guidance on the path of the policy rate. This paper examines why long-term interest rates have stayed low, both theoretically and empirically, drawing on a simple, yet intuitive, Keynesian framework.

Keynes (1930) holds that the central bank's actions are the main drivers of long-term interest rates. Following Keynes, a model of long-term interest rates and changes in long-term interest rates is constructed. Next, empirical evidence is provided here to show that the key drivers of long-term interest rates are short-term interest rates that the

central bank largely controls. The short-term interest rate, after controlling for changes in other crucial variables (such as the rate of inflation, and the rate of economic activity), is the main driver in setting the long-term interest rate, rather than the government fiscal balance or the government indebtedness ratio.

There is considerable amount of theoretical and empirical work on government bond yields and sovereign bond spreads. However, recent theoretical and empirical work on the determinants of government bonds yields and sovereign bond spreads, such as Baldacci and Kumar (2010), Banerji et al. (2014), Carfi and Musolino (2012), Gruber and Kamin (2012), Lam and Tokuoka (2013), Martineza et al. (2013), Paccagnini (2016), Poghosyan (2014), and Tokuoka (2012), do not consider the Keynesian perspective. Instead the existing models have focused on a wide range of variables and have often stressed government finance variables as the key drivers of interest rates, both on a long run and a short run basis. This paper's contribution lies in presenting a simple, intuitive, and coherent Keynesian model of government bond yields, providing the empirical evidence to support this model, and critically examining the role of government indebtedness on both long run and short run basis.

The paper is organized as follows. Section 2 describes some

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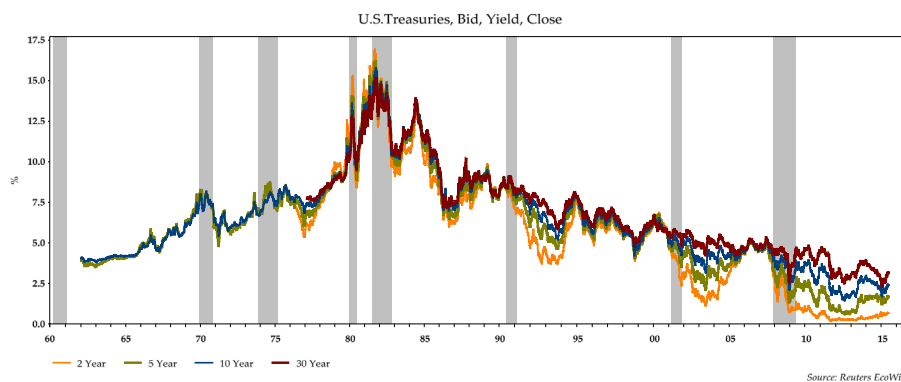


Fig. 1. The evolution of long-term Interest rates in the United States.

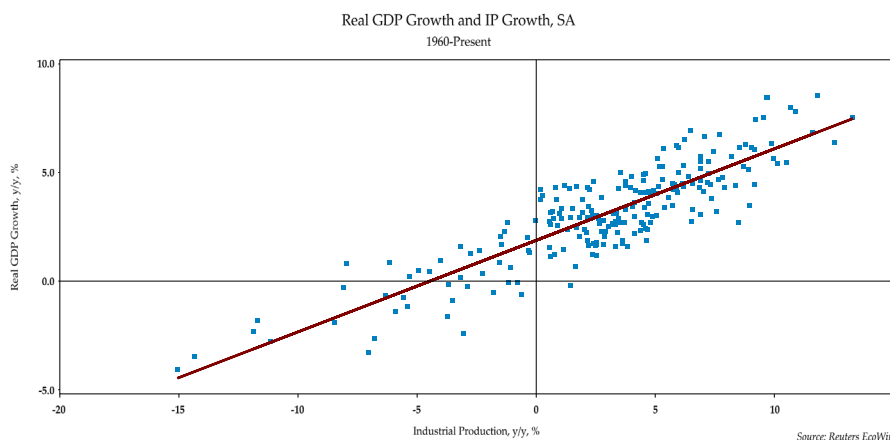


Fig. 2. The pace of industrial production is strongly correlated with real GDP growth.

important stylized facts about the evolution of short-term interest rates, long-term interest rates, and several relevant economic variables in the U.S. Section 3 describes Keynes's views on the main drivers of the long-term interest rate in an uncertain world. Section 4 presents a simple model of long-term interest rates and its changes based on Akram's (2014) and Akram and Das's (2014, 2016) interpretation of Keynes's views. Section 5 describes the data. Section 6 describes the empirical approach undertaken here, reports the findings of several models that are calibrated and interprets these findings from a Keynesian framework. Section 7 concludes.

2. The stylized facts

A look at the evolution of interest rates, inflation, economic activity, and government finance variables provides valuable insights. It can also give useful indicators about the drivers of long-term interest rates and the underlying relationships between the key variables. The shaded areas in the Figures below are recessions, as designated by the National Bureau of Economic Research (NBER).

Fig. 1 shows the evolution of long-term interest rates, as measured by the nominal yields of U.S. Treasury securities of selected tenors, in the U.S.¹ Long-term interest rates generally rose from the early 1960s to early 1980s. Two important features of the evolution of long-term interest rates are apparent from this figure. First, long-term interest rates rose sharply from the early 1960s to the early 1980s but have been on a declining trend since then from the early 1980s to the present. Second, interest rates generally tend to decline during or after a recession.

The evolution of short-term interest rates, as measured by the nominal yields of U.S. Treasury bills of 3 month and 6 month tenors, displays a similar pattern to that of the long-term interest rates. First, short-term interest rates generally rose from the early 1960s to early 1980s but have been on a declining trend since then from the early 1980s to the present. Second, short-term interest rates decline during recessions as the Fed becomes accommodative and usually lowers its policy rate(s) in response to an increased slack in the U.S. economy. Third, short-term interest rates tend to rise before the onset of a recession in response to the Fed's restrictive monetary policy and higher policy rate. Indeed, it is well known that a negatively sloped yield curve, measured by the difference in the nominal yields between a 10-year Treasury note and a three-month Treasury bill, is one of the most reliable and consistently correct forward indicators of the onset of a recession in the U.S.

The evolution of total Personal Consumption Expenditure (PCE) inflation and core Personal Consumption Expenditure (core PCE) inflation reveals certain patterns in these measures of inflation. First, total PCE inflation tends to be more volatile than core PCE inflation. Second, both total and core PCE inflation rose in the 1970s and sharply so from mid-1970s. Third, inflation began to decline after the two recessions in 1980s and finally began to moderate after the recession in the early 1990s. Total CPI and core CPI measures of inflation tend to be respectively higher than total PCE and core PCE measures of inflation. However, CPI measures of inflation also exhibit the same patterns as that of PCE measures of inflation.

Industrial production in the U.S. economy generally tends to grow, except sometimes before recessions and during recessions. Marked decreases in the growth of industrial production and its declines are very useful indicators of the likelihood of a recession and its onset. Fig. 2 reveals that the strong correlation between the growth of

¹ Additional figures are available in the working paper, Akram and Li (2016).

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