

WORKING PAPER

Executive Summary

MAY 2014, WP 2014-8

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INTEREST RATES AND ECONOMIC GROWTH: ARE THEY RELATED?

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The role of interest rates in the Old Age and Survivors and Disability Insurance (OASDI) Trust Funds' projections of their programs' future financial status has become more important as the OASDI program receives, temporarily, a significant inflow of interest income. In previous years, the program was projected as a pay-as-you-go pension system, and interest rates were not a very significant component. However, as interest rates become more important to the program's funding, it is worth considering their determinants and how they fit in with the other economic elements of projections made by the OASDI and other offices.

Real interest rates are often considered as a function of economic growth and the rate of saving, but that relationship is obtained with the assumptions of a closed economy and a fixed savings rate. Research prompted by very high interest rates in the 1980s examined short term (Barro and Sala-i-Martin, 1990) and long term (Orr et. al, 1995) real interest rates and adopted a more a more global perspective of capital markets. Spurred by a drop in interest rates in the early 2000s, later research went on to consider the relative importance of global and domestic factors in determining a given country's interest rate (Brzozza-Brzezina and Cuaresma, 2008). The goal of this paper is to evaluate the relationship between economic growth and real interest rates in light of the importance of global and other domestic factors in determining real interest rates.

The analysis considers annual variables for the G-7 countries and for a group of 19 OECD countries. Real rates of interest are constructed as the nominal interest rate minus expected inflation. Because of a lack of widespread data on expected inflation, the analysis considers a variety of methods to estimate the expected rate. Measures of long-term (10-year) expected inflation are constructed for all of the countries using the lag structure between actual and expected inflation obtained from a U.S. survey of inflation expectations. Short-term expectations are constructed using a Hodrick-Prescott filter of quarterly rates of change in each country's GDP price deflator. In recent years, real short-term interest rates have gone negative for many G-7 countries, and real-long term interest rates have often been close to zero.

The empirical analysis focuses on the distinction between domestic and international determinants of interest rates. In addition to economic growth, it considers the impact of global and other domestic variables on real interest rates. Global real interest rates and debt to GDP ratios are included in the analysis as GDP weighted averages of the G-7 countries. Also included in the analysis are the current account bal-

ance, labor force growth, share price indexes, government net lending and the national debt to GDP ratio. The data extend back to 1970 for some countries but start as late as 1975 for some G-7 countries and go through 2012. The panel set for the G-7 countries includes 303 observations over the period of 1971-2012 and the larger set of 19 countries includes 722 observations over the same period.

The empirical analysis finds that foreign interest rates and the domestic ratio of public debt to GDP are the most significant determinants of the real interest rate. There is weaker evidence of effects from variations in the rate of GDP growth and current account balances on interest rates.

The dominant role of foreign interest rates highlights the conclusion that it is inappropriate to continue to model, analyze, or forecast interest rates within a closed-economy framework. Capital markets, at least among the major advanced economies, are highly integrated; and while there is a marginal role for national influences, real interest rates are largely determined in a global market context.

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