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Around the world with Irving Fisher



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ABSTRACT

This paper aims to show why Irving Fisher's own data on interest rates and inflation in New York, London, Paris, Berlin, Calcutta, and Tokyo during 1825–1927 suggested to him that nominal interest rates adjusted neither quickly nor fully to changes in inflation, not even in the long run. In Fisher's data, interest rates evolve less rapidly than inflation and change less than inflation over time. Even so, the "Fisher effect" is commonly defined as a point-for-point effect of inflation on nominal interest rates rather than what Fisher actually found: a persistent negative effect of increased inflation on real interest rates.

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1. Introduction

We use modern empirical methods to estimate the time series properties of nominal interest rates, real interest rates, and inflation and the relationship between these variables using Fisher's (1930) data on interest rates and inflation collected from six financial centers around the world. In particular, we explore the empirical validity of the so-called Fisher effect or hypothesis which states that inflation affects the nominal rate of interest one-for-one leaving the real rate of interest unchanged.¹

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¹ See, e.g., Romer (2012, p. 516): "The hypothesis that inflation affects the nominal rate one-for-one is known as the Fisher effect; it follows from the Fisher identity and the assumption that inflation does not affect the real rate." Blanchard, Amighini,

Fisher's (1930) data suggest, as we will show, that nominal interest rates do not mirror the movements in inflation, even in the long run. Fisher (1930, p. 413) recorded "a great unsteadiness in real interest when compared with money interest," and attributed this result to money illusion. Therefore, it is more fitting to define the Fisher hypothesis as referring to a theoretical possibility arising from the Fisher equation and the assumption of rational expectations, what Fisher called "foresight," rather than as referring to his empirical results.²

2. Historical context

Many writers continue to attribute to Fisher the idea that real interest rates are immune to changes in inflation and to suggest that Fisher thought it somehow natural for real interest rates to be so immune. For example, Okun (1981, p. 208) states: "As Fisher saw it, an extra 1 percentage point of expected inflation raises the nominal expected rate of return on real capital assets by 1 percentage point and induces a parallel increase of 1 percentage point in bond and bill yields to keep expected returns in balance." For another example, using quarterly U.S. data for 1954–1969, Feldstein and Eckstein (1970, p. 366) write: "The data thus confirm the two basic Fisherian hypotheses: (1) in the long run, the real rate of interest is (approximately) unaffected by the rate of inflation, but (2) in the short run, the real rate of interest falls as the rate of inflation increases."³

The Fisher effect – through which nominal interest rates react to changes in inflation point by point so as to leave real interest rates unchanged, at least in the long run – is a misnomer if described as an empirical relationship because, as will be shown here, Fisher's (1930) own data on interest rates and inflation that he collected from six financial centers around the world suggest that nominal interest rates do not come close to mirroring the movements in inflation, even in the long run. These results are consistent with those of Fisher himself. As Tobin (1987) and Dimand (1999), among others, point out, both Fisher's theory of interest and his reading of the historical record suggested to him that real interest rates varied inversely with inflation, and that the adjustment of nominal interest rates to changes in inflation took a very long time (Fisher, 1896). In Fisher's (1930, p. 43) words: "... when prices are rising, the rate of interest tends to be high but not so high as it should be to compensate for the rise; and when prices are falling, the rate of interest tends to be low, but not so low as it should be to compensate for the fall."⁴

We demonstrate that Irving Fisher has suffered similar treatment as David Ricardo when different authors attach his name to an empirical relationship, not just a theoretical proposition. Ricardian equivalence, as you know, refers to the idea that government budget deficits do not matter because taxpayers are indifferent between debt-financed and tax-financed government expenditure: they realize that current debt needs to be serviced through future taxation and plan their saving accordingly. However, the attribution of this proposition to David Ricardo is unfair to him because, even if he exposed the logic behind it, he found the proposition unconvincing.⁵ This short paper is intended to demonstrate anew that Ricardo is not alone, for Irving Fisher has suffered a similar treatment by his followers.

and Giavazzi (2010, p. 565) define the Fisher effect as "The proposition that, in the long run, an increase in nominal money growth is reflected in an identical increase in both the nominal interest rate and the inflation rate, leaving the real interest rate unchanged."

² See Thaler (1997) on Irving Fisher's contribution to behavioral economics.

³ Feldstein and Eckstein (1970) used quarterly U.S. data for 1954–1969.

⁴ Fisher (1930, p. 494) describes the relationship between interest rates and inflation also thus: "When the price level falls, the rate of interest *nominally* falls slightly, but *really* rises greatly and when the price level rises, the rate of interest *nominally* rises slightly, but *really* falls greatly." Here Fisher means the rate of change of the price level even if he says only "price level." Fisher (1907, p. 270) made a clear distinction between the two: "Falling prices are as different from low prices as a waterfall is from sea level."

⁵ To quote from Ricardo (1817, p. 254): "... it must not be inferred that I consider the system of borrowing as the best calculated to defray the extraordinary expenses of the State. It is a system which tends to make us less thrifty – to blind us to our real situation."

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