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DEMAND SHOCKS AND THE CYCLICAL BEHAVIOR OF THE REAL WAGE: SOME INTERNATIONAL EVIDENCE

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The focus of this investigation is on the cyclical response of the real wage to demand shocks. This response differentiates the empirical validity of major New Keynesian explanations of business cycles. The empirical evidence, across industrial countries, highlights a moderate positive correlation between nominal wage and price flexibility in response to various demand shocks. Nonetheless, higher price flexibility moderates the effect of demand shocks on real output, while higher nominal wage flexibility increases, or does not determine, the effects of demand shocks on real output across countries. An increase in the response of the real wage to demand shocks therefore exacerbates their real effect on output, as predicted by sticky-price models. Further, demand shocks do not determine the difference in wage variability. Nominal wage variability increases, in turn, output variability across countries. In contrast, demand shocks differentiate price variability. Price variability moderates, in turn, output variability across countries.

JEL classification codes: E31, E32, E24
Key words: business cycles, sticky-wage, sticky-price, asymmetry, real wage; cyclicality, growth, inflation.

I. Introduction

The study of business cycles has been at the heart of macroeconomic theory for decades. Theoretical efforts have focused on providing an adequate explanation for sources of economic fluctuations. New Keynesian models of the last three decades have emphasized rigidity that interferes with market forces and exacerbates the effects of demand fluctuations on the supply side of the economy. The form of rigidity is in sharp contrast between sticky-wage and sticky-price models.

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Sticky-wage models of the seventies and eighties emphasize the role of contractual agreements in the labor market.[1] Given the cost of negotiating contracts, agents opt to change nominal wages at specific intervals. Nominal wage rigidity exacerbates cyclical fluctuations in the face of demand shocks. Specifically, a positive disturbance to aggregate demand decreases the real wage, causing output to rise above its natural (full-equilibrium) level. Accordingly, nominal wage rigidity exacerbates the countercyclical response of the real wage, increasing output fluctuations in the face of demand shocks.

Sticky-price models of the eighties emphasize the speed of price adjustment in the product market to explain economic fluctuations.[2] Given the cost of adjusting prices, firms opt to change prices at specific intervals. Price rigidity exacerbates cyclical fluctuations in the face of demand shocks. Specifically, constraints on price adjustment prompt producers to expand the output produced in the face of positive demand shocks. Accordingly, price rigidity exacerbates the procyclical response of the real wage, increasing output fluctuations in the face of demand shocks.

Researchers have tested these theories. These studies have focused on cyclical fluctuations of the real wage.[3] The evidence appears conflicting and, therefore, does not lend support to a given explanation.[4]

More recent developments in theoretical and empirical studies of New Keynesian macro economics have employed stochastic general equilibrium models (see, e.g., Christiano, Eichenbaum, and Evans 2005, Erceg, Henderson, and Levin 2000, and Smets and Wouters 2003).[5]

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[1] Contracts may be explicit formal agreements as in Taylor (1980) or implicit informal agreements of the form specified in Malcomson (1984).

[2] See, for example, Ball, Mankiw and Romer (1988).

[3] The cyclical behavior of the real wage is also an important element of other competing explanations of business cycles. In real business-cycle models, see, for example, Long and Plosser (1983), both the demand shock and the real wage are endogenous with respect to supply-side shocks. Technological advances, for example, increase the real wage and stimulate aggregate demand. Therefore, the real wage correlates procyclically with demand shocks in the short-run.

[4] The empirical literature on the cyclical behavior of the real wage can be classified into aggregate and disaggregate studies. The former includes Neftci (1978), Sargent (1978), Geary and Kennan (1982), Sumner and Silver (1989), Cho and Cooley (1990), Cushing (1990), and Kandil (1996) and (2001). Disaggregate studies include Bils (1985), Barsky and Solon (1989), Keane, Moffit and Runkle (1989), Solon, Barsky, and Parker (1994), Kandil and Woods (1995), and (1997), and Kandil (1999) and (2002).

[5] The traditional approach of New Keynesian models assumes a non-contingent nominal adjustment at regular time intervals. In contrast, modern stochastic general equilibrium models rely on a microeconomic