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The effects of dollar appreciation on sectoral labor market adjustments: Theory and evidence

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Abstract

We examine the extent to which exchange rate fluctuations affect sectoral employment and wages in the United States. We introduce a theoretical rational expectation model that decomposes movements in the exchange rate into anticipated and unanticipated components. The model demonstrates the effects of demand and supply channels on the response of the nominal wage and labor employment to changes in the exchange rate. The evidence indicates that the deflationary effect dominates on industrial nominal wage in manufacturing and transportation industries in the face of dollar appreciation. More importantly, there is evidence of a decrease in employment growth in several industries in response to dollar appreciation, which is statistically significant in construction and at the aggregate level. This evidence is consistent with a decrease in labor demand given the loss of competitiveness of U.S. products following dollar appreciation. There are negative effects of dollar appreciation on labor market conditions in the United States. Nonetheless, dollar appreciation is consistent with an increase in employment growth in the mining sector where the share of imports is the largest among U.S. industries.

Keywords: Dollar appreciation; Labor market; Wage

1. Introduction

Since the agreement to establish flexible exchange rates in the early 1970s, exchange rates of industrial countries, including the United States, have been highly fluctuating. Observed

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volatility in the exchange rate of the dollar has stimulated a debate in academia and policy arena over what the government response should be. Specifically, it was advocated that the dollar's appreciation may be responsible for the recession and increase in unemployment during the 1980s. The dollar appreciation decreases the price of foreign goods relative to home goods, decreasing the demand for home goods. In the labor market, the reduction in labor demand is likely to increase unemployment and moderate nominal wage inflation. Nonetheless, the dollar's appreciation, by pushing down the dollar's prices of intermediate imported goods, may increase the marginal product of labor and, hence, labor demand. This channel is likely to moderate the adverse effects of the dollar appreciation on employment and the nominal wage.

Concerns about the adverse effects on labor markets in the U.S. grew in the wake of the real appreciation of the dollar which appears to have been robust during the 1980s. To illustrate, Graph 1 depicts fluctuations in the nominal and real effective exchange rate of the U.S. dollar between 1970 and 2000. The most striking aspect of fluctuations is the spike centered at 1985. The exchange rate of the dollar appreciated sharply. This appreciation was followed by a severe depreciation after the so-called Plaza Agreement in September 1985.[1] Nonetheless, the apparent robustness of the dollar appreciation during the 1980s prompted calls that the government should intervene systematically in foreign exchange markets to stabilize the dollar and protect employment and output against the adverse effects created by exchange rate fluctuations.

At a disaggregate level, a number of recent studies have attempted to measure the effects of exchange rate fluctuations on economic conditions in industries of the United States. Specifically, empirical studies have considered the claim that sharp appreciation of the dollar after 1985 is responsible for the decline in tradable sectors like manufacturing, agriculture, and forestry products and the relative growth in non-tradable sectors such as services, construction, transportation, and public utilities. Along this line, Maskus (1990) examines the effects of exchange rate risk across major sectors of international trade. His results demonstrate that the exchange rate risk has a negative impact on trade. He also found that the agriculture sector is more sensitive to the exchange rate risk compared to the manufacturing sector.

Glick and Hutchison (1990) discuss that previous studies on the effect of the dollar appreciation on manufacturing fail to distinguish between exchange rate changes that are exogenous and changes that are endogenously determined by policy changes and other shocks. For example, a policy-induced exchange rate appreciation arising from a fiscal expansion or monetary contraction has unclear effects on aggregate and sectoral movement. Accordingly, the nature of the disturbance moving the exchange rate in any particular period is essential in analyzing effects on the sectoral allocation of resources. Glick and Hutchison report evidence that the contractionary effect of the dollar appreciation on sectoral output is unstable and sample specific.

Revenga (1992) investigates the impact of increased import competition on employment and wages, using data for a panel of U.S. manufacturing industries over the 1977–1987 period. This period captures the dollar's appreciation during the early 1980s and its subsequent depreciation. Changes in import prices have had large and significant effects on both employment and wages. Nonetheless, the impact of an adverse trade shock on average wages in a particular industry is quite small where most of the adjustment occurs through employment.

Campa and Goldberg (1997) discuss that changes in the exchange rate can significantly influence the profitability and performance of U.S. manufacturing industries.[2] To measure the