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Demography and the U.S. current account deficit

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Abstract

We examine whether aging in the trading partners of the U.S. has affected their demand for foreign (i.e., U.S.) assets enough to materially affect the U.S. current account balance. There is reason to think that demography may be at work in international capital flows because the standard life-cycle model of consumption behavior predicts that a household's age will influence its saving behavior. Moreover, simple national accounting identities link a country's current account balance to its savings–investment imbalance. Thus, differences in national age-profiles should affect the current account. To test this theory's plausibility and significance, I simulate a multi-region overlapping generations model that is calibrated to match the demographic differences among the major industrialized countries over the past 50 years. In the model, it is found that these differences can explain some of the observed long-term capital movements in the G-7. In particular, the model does a good job of predicting the size and timing of U.S. current account deficits.

JEL classification: F21; F47; J10

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1. Introduction

Large and persistent current account imbalances are a common feature of the modern global economy. Perhaps the most well-known example from recent experience are the

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American deficits of the last two decades. While economic theory has made much progress relating short-term aggregate fluctuations to international capital flows, the factors causing longer-term movements are less well understood.

In this paper, I examine whether demographic factors can contribute to our understanding of these long-term capital flows. The reason for suspecting the influence of demographics is that the life-cycle theory of consumption predicts that asset accumulation by households will be influenced by an agent's age. In particular, if the household's labor supply measured in efficiency units displays a hump-shaped pattern—low in the early years of a career, rising, then falling again near retirement age—then consumption smoothing implies that households should acquire savings during their productive middle age years to finance consumption in retirement. The optimal capital stock in each country will also be related to the age-efficiency profile of the agents in the economy. Yet the savings supplied by mature adults will be positive even when they supply little or no labor. In the words of Higgins (1998), "the demographic 'center of gravity' for investment demand should be earlier in the age distribution than that for the savings supply." Thus, regions that have a higher proportion of their population in the high savings years should, other things equal, tend to export their excess savings and thus run a current account surplus.

Of course, for a demographic transition to have any effect on the current account there must be heterogeneity in the population structures of the trading partners. While all industrialized nations have experienced population aging in the post-war era, they have done so at considerably different rates. The general pattern has been a baby boom after World War II followed by a baby bust that has persisted to this day. Nevertheless, the timing of this boom–bust cycle and the amplitude of these changes have varied across countries. An example of this variation can be seen by comparing the U.S. and Japan. The total fertility rate (TFR, the average number of children per woman in her lifetime) in Japan peaked around 1950 above 3.5. By the mid-1950s, Japanese TFR declined to about 2, and it has remained at or below that level since that time. U.S. TFR also reached a high above 3.5. But this peak did not occur until about 1960, 10 years after the Japanese peak. Moreover, the baby boom fizzled out more slowly in the U.S. than in Japan; TFR in the U.S. did not dip below 2 until the early-1970s. As a result, these two countries now have population structures with markedly different adult cohort sizes. For instance, in 2000 18% of the U.S. population was in the high saving ages between 45 and 60, while the same figure for Japan was 22%. Turning from demographics back to economics, we might expect the large proportion of Japanese in their prime saving years to have the effect of depressing asset returns in Japan to the point where Japanese look to hold their savings overseas, where the population is relatively more massed near the 'investment demand center of gravity'. Of course this process of sending savings overseas is synonymous with running current account surpluses. Whether the demographic differences are enough to generate current account imbalances of the magnitude observed in the data is a numerical question that I will seek to answer in the context of a simulated multi-region overlapping generations model.

To preview the findings of those simulations, I find that demographic factors alone can do a good job of accounting for the observed American and Japanese net foreign asset positions, though the model does not do as well in predicting the European net foreign asset position. Most of the deterioration in the North American net foreign asset position, in both the model and the data, takes place in the 1980s and 1990s. For the other countries