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Economic Research Note

US: Global dimensions of the low domestic r*

- **Global factors are almost surely depressing the neutral real interest rate in the US**
- **The size of the current account deficit gives clues as to how much these factors weigh on domestic rates**
- **We estimate the US neutral real interest rate, or r*, would be about 1.5%-point higher absent global forces**
- **But even without global influences, r* in the US would have come down meaningfully over the past 20 years**

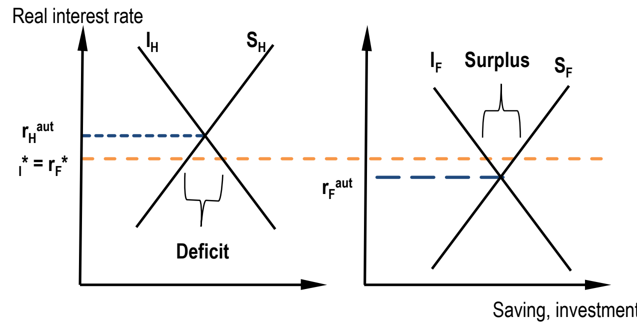
Low real interest rates are the preeminent macroeconomic challenge of our time, in our view. And they don't merely challenge US policymakers; most developed (and some developing) economies face the same quandary. This prevalence of low interest rates around the globe is not a coincidence, but is instead a feature of a global economy with open capital flows. Countries with high real interest rates should attract capital (run current account deficits) from countries with low real interest rates (that run current account surpluses). These flows should serve to level out differences in real interest rates across countries.

The US has run a current account deficit for almost all of the past three decades. By the logic above, this implies the hypothetical interest rate in the US that would have prevailed without global capital flows (the US autarky interest rate) is above the global real interest rate. This note provides an estimate of this counterfactual autarky interest rate. We conclude that global forces have pushed down the equilibrium real policy interest rate, or r*, in the US by about 1.5%-point in recent years. However, it would still appear that domestic factors have also been weighing on r*, at least since the Great Recession. Our inquiry is a variant of Bernanke's global saving glut narrative, albeit with an emphasis more squarely on prices (i.e. interest rates) than on quantities (saving, investment, and the current account).

Some theory and a few facts

We begin with the basic theory of global interest rate determination. Consider a world economy of two countries, H (home) and F (foreign). Without global trade and capital flows, each economy's interest rate is determined independently such that domestic saving (S) equals domestic investment (I). In Figure 1, these are indicated by the two dashed blue lines, which indicate the autarky interest rates in the home and foreign economies. When these two economies open up to global trade and capital flows, then savings will migrate to the economy offering the higher real interest rate, in Figure 1 the home economy. This migration of funds leads to a current account deficit in H and a current account surplus in F. It also serves to lower the interest rate in H and raise the interest rate in F until this arbitrage is eliminated and there is a single global interest rate, represented by the orange dashed line in Figure 1.

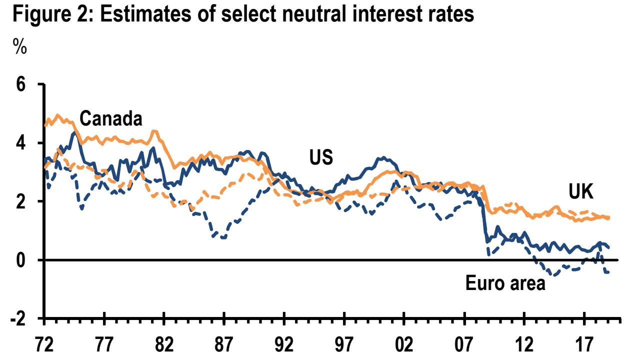
Figure 1: Current accounts and the global interest rate



Source: J.P. Morgan

Turning to the data, Figure 2 presents one popular estimate of the neutral policy interest rate in select countries. Over long periods these estimates broadly move together, as one would expect with generally open trade and capital flows. Estimates by another group of Fed researchers (Del Negro, Giannone, Giannoni and Tambalotti, link here) show an even tighter degree of co-movement between global rates, particularly in recent decades.

Figure 2: Estimates of select neutral interest rates



Source: NY Fed

Lastly, Figure 3 displays the US current account balance. Except for two quarters in 1991, the current account has been in deficit since 1982, with the most recent figure showing a deficit of 2.5% of GDP.

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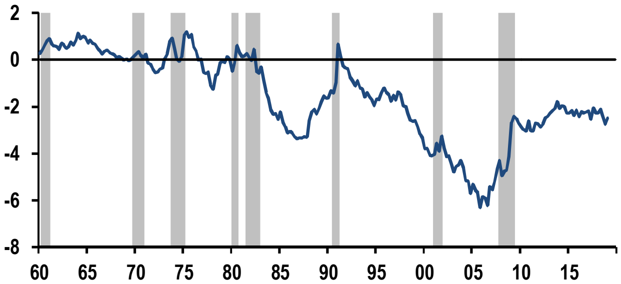
Figure 3: US current account balance

% of GDP



Source: BEA

Estimating the weight of the globe

Our goal is to use the information provided by the current account to gain an understanding of how much global forces are holding down the neutral interest rate in the US. The current account is the difference between national saving and national investment, both of which may depend on the global real interest rate *r:* $s(r) - i(r) = ca$.

(Here lower-case letters indicate variables scaled by output). In autarky, there are no global trade or capital flows and the current account always equals zero: $s(r^A) - i(r^A) = 0$.

A common macroeconomic assumption—supported by microeconomic evidence—is that the intertemporal elasticity of substitution is one, meaning interest rate income and substitution effects offset each other, and so saving does not respond to movements in interest rates. Using that assumption and subtracting the second equation from the first we get, $-i(r) + i(r^A) = ca$.

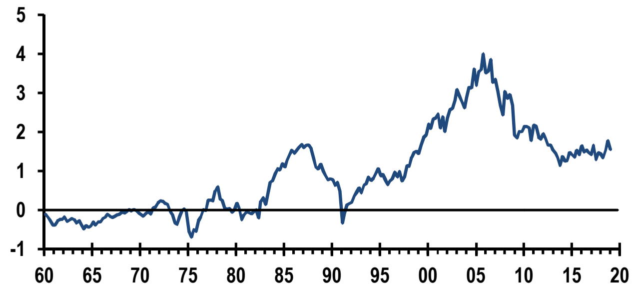
So when the current account is in surplus $i(r^A) > i(r)$ and $r^A < r$, and vice versa for a nation like the US that tends to run current account deficits.

We now need to specify $i(r)$. In the canonical growth model the steady state investment share of output is $i(r) = (g + \delta)\frac{\alpha}{r}$ for an economy growing at rate g, where capital depreciates at rate δ, and share α of income is paid to capital. We take estimates of these three time-varying parameters from the CBO, BEA and SF Fed, respectively, and use observed *i* to infer *r*. With open capital flows, we estimate the real return on capital recently has been around 11.9%. This is not far from other estimates. For example, the BEA estimates that for the most recent year, the return on capital for nonfinancial industries was 12.6%.

In autarky, national saving equals national investment. Since saving doesn't respond to the interest rate, the autarky rate is the one that forces the investment rate to equal the saving rate. If domestic investment is closed off to net global capital inflows, then the real return on capital increases. Figure 4 presents $r^A - r$, our estimate of the difference between the autarky real interest rate and the open economy real interest rate. In recent years, in the absence of global capital flows domestic interest rates would have been about 1.5%-points higher.

Figure 4: Autarky interest rate less open economy interest rate

%-points



Source: J.P. Morgan

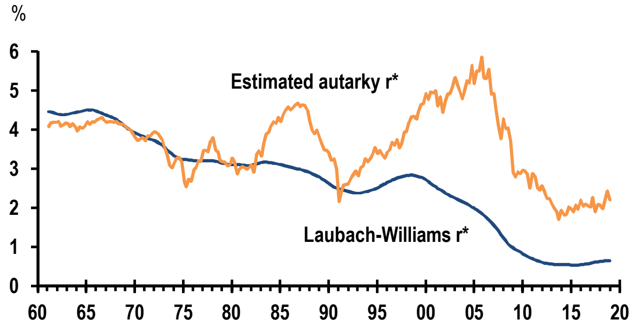
In the mid-2000s—when the current account deficit yawned to over 6% of GDP, the housing boom raged, and Bernanke was writing about the global saving glut—that figure reached almost 4%-points. This number sounds quite large, but recall at that time private investment would have needed to contract by 30% in order to be funded entirely by domestic saving.

The interest rate concept we have focused on so far has been the most basic one in neoclassical production economies: the marginal rate of return on invested capital. The difference between this interest rate and observable market interest rates such as the federal funds rate involves a number of factors, including risk, liquidity and duration considerations. In the terminology of Sichel and Wang[1] the relation between these interest rates can be written:
$r_{fed\ funds} = r - SPR$ where *SPR* is the spread variable that captures the difference between the return on capital and the federal funds rate.

If we hold this *SPR* variable constant and assume the Laubach-Williams estimate accurately characterizes the neutral real fed funds rate, r*, then the counterfactual autarky real policy rate is presented in Figure 5. This autarky policy rate now stands close to 2.0% and didn't move down convincingly until after the Great Recession.

[1] Sichel, Dan and J. Christina Wang (2017). "The Equilibrium Real Policy Rate through the Lens of Standard Growth Models." *Boston Fed Current Policy Perspectives paper No. 17-6.*

Figure 5: r*, with and without global influences



Source: J.P. Morgan, NY Fed

There are a number of caveats to our discussion. One is that our estimates assume free capital flows, whereas there could be frictions preventing interest rate arbitrage from occurring. While such frictions surely exist (e.g., the Feldstein-Horioka puzzle, home bias puzzle, etc.), by a number of estimates those frictions appear to have diminished in recent decades, consistent with the earlier observation about the coherence of global interest rates. Another caveat is that our exercise is one of comparative statics, and so ignores the dynamics of output as investment shares change. This is not only a modeling caveat but a policy caveat. De-globalization would raise r*, which would help the Fed avoid the zero lower bound in the future. But absent policies to raise national saving (which don't appear high on either party's current political agenda) such a policy would also reduce national investment, and thus the growth of productivity and income.

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