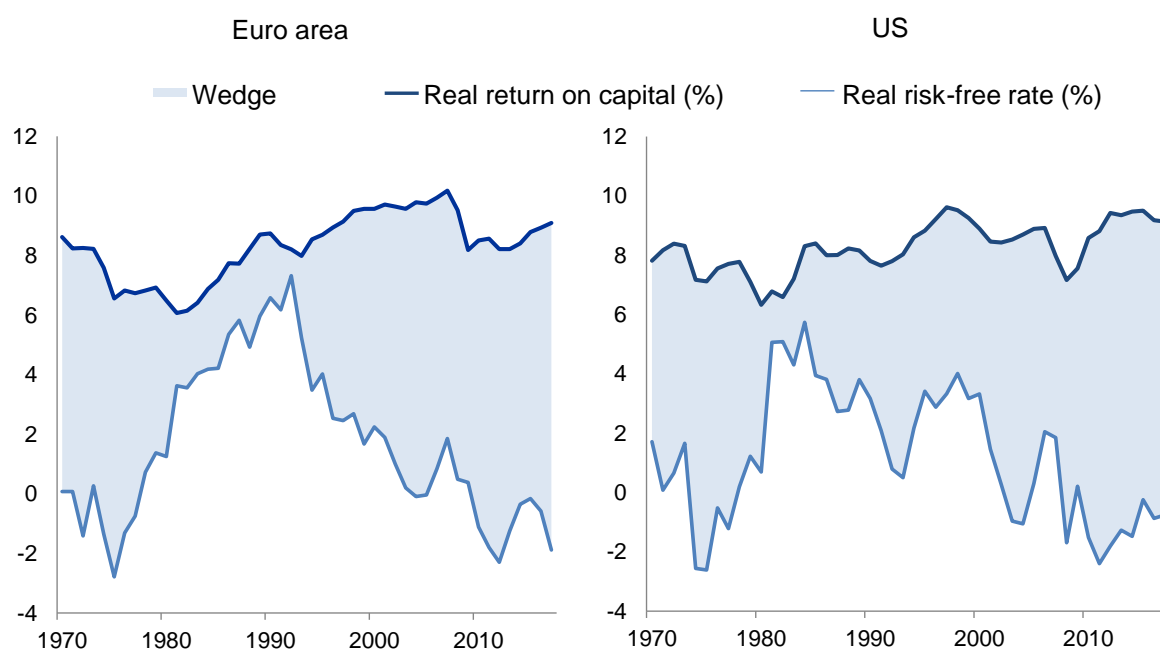


The wedge between the return on capital and risk-free rates

By John Hutchinson and Arthur Saint-Guilhem

For several decades, the wedge between the return on capital and risk-free rates has been growing in the euro area and the United States. We examine the drivers of this wedge and find that while the risk premium is the main driver, mark-ups also play a role. More recently, the contribution from mark-ups has decreased in the euro area and increased in the United States.

Chart 1: Growing wedge between the return on capital and risk-free rates in the euro area and the United States



Source: AMECO, FRED, AWM, and authors' calculations.

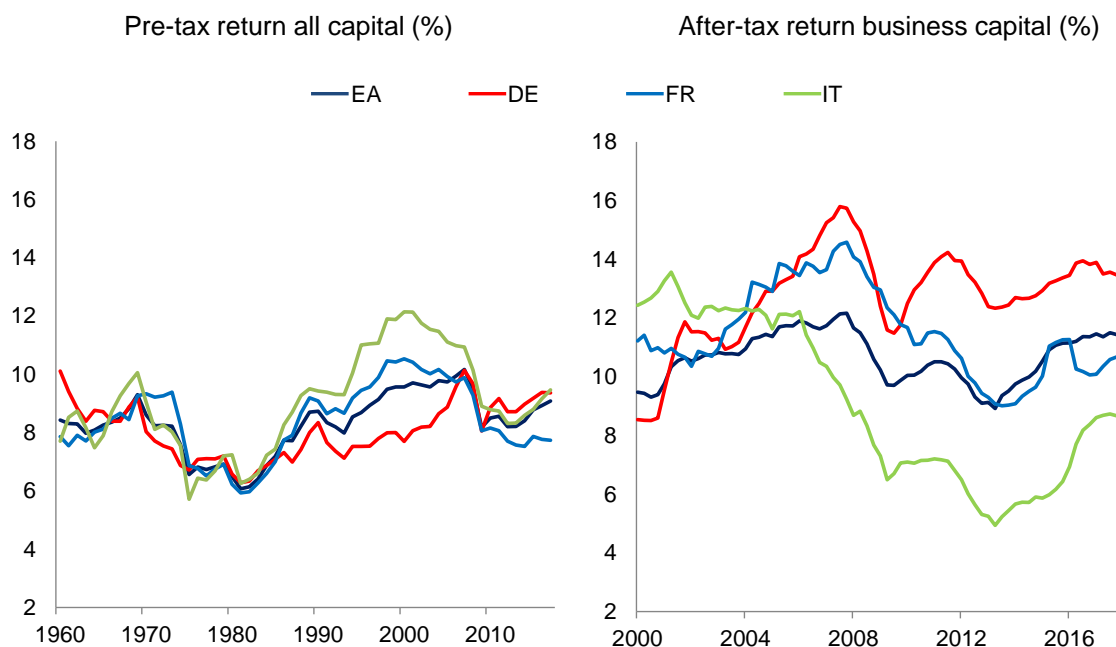
Note: Real return on capital is pre-tax return in EA; US return from [Gomme et al., 2011](#). Real rates are 3-month OIS and Treasury bills.

Over the last decades, the return on capital has remained broadly stable in the euro area and the United States

While the return on capital is a relatively straightforward concept, there is no consensus within the literature on how it should be estimated. Assumptions need to be made regarding financial assets and the housing sector when constructing the capital stock. Additional deliberations relate to calculating capital income and whether the total economy should be included or just the productive sectors. As a result, different approaches can be taken.

Our first approach estimates a very encompassing measure, namely the pre-tax real return on capital for the whole economy (Chart 2, LHS). Since the 1960s, this measure has moved within a relatively narrow range with a high degree of correlation across euro area countries.

Chart 2: Broadly stable real return on capital in euro area countries



Source: AMECO and Eurostat Quarterly Sector Accounts.

Our second approach takes a narrower perspective and calculates the after-tax real return on business capital, which is based on non-financial corporate sector earnings. It is arguably the most relevant measure from a macroeconomic perspective, as it is more directly linked to firms' investment decisions (Chart 2, RHS). While some caution is warranted when directly comparing the levels of the return on capital using different approaches, both approaches exhibit a similar evolution: for several decades the return on capital has remained broadly stable in the euro area with Italy experiencing somewhat more volatility. Although not shown here, this also holds for the United States.

Presently, there is some debate that the stock of intangible assets may be underestimated in the National Accounts, and that this could lead to overestimating the return on capital. A back of the envelope exercise assuming a 50% underestimation indicates that the impact on the return on capital would remain limited, namely less than 1 percentage point, which echoes the findings of [Fahri and Gourio, 2018](#).

A growing wedge between the return on capital and the risk-free rate...

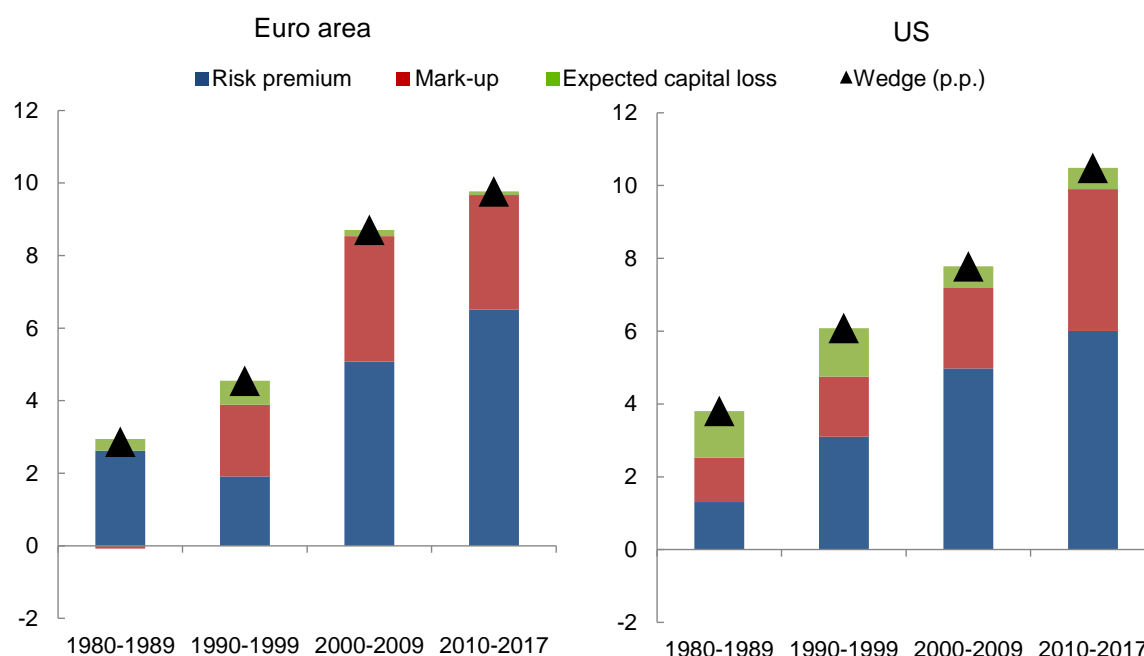
The relative stability of the return on capital contrasts with the secular decline of the return on safe assets, which has led to a wedge emerging between the two asset classes that is currently at its widest level (Chart 1). To date, there is only a small number of studies which have examined the factors behind this wedge ([Caballero, Farhi and Gourinchas, 2017](#); and [Marx, Mojon and Velde, 2018](#)).

...driven by growing risk premia and marks-up

In order to get a better handle on what is behind this wedge in the euro area, we employ the accounting framework proposed by [Caballero, Farhi and Gourinchas, 2017](#) which links the evolution of the wedge to developments in four key economic variables: the labour share, risk premia, expected capital loss and mark-ups. In the current exercise we adopt a Cobb Douglas production function instead of a CES production function, which implies that changes in the labour share are accounted for by changes in mark-ups and that capital augmenting technology does not play a role. While not reported, we have also used a CES production function and the main results outlined below still hold.

Using data for the euro area and the United States, we calibrate this framework to match the observed wedge between the pre-tax return on capital and the risk-free rate over 1980-2017. A number of interesting findings emerge (Chart 4). From around 2000, the wedge increased in both jurisdictions. In the euro area, this increase was driven for the most part by the risk premium (estimated as the return on physical capital that is in excess of the risk-free interest rate having taken into account depreciation and the relative price changes of investment goods over time) and to a lesser extent by mark-ups. In the United States, it was primarily due to the increase in the risk premium. Since the crisis, the increase in the wedge in the euro area reflects a larger contribution from the risk premium. In fact, the contribution from mark-ups – while remaining important – declined. This may to some extent reflect the impact of crisis-related structural reforms. This contrasts with the United States where the increase in the wedge largely reflects an increase in mark-ups. The latter is aligned with empirical studies showing an increase in mark-ups over the last 30 years in the United States ([De loecker and Eeckhout, 2017](#)).

Chart 3: Decomposition of the wedge between the return on capital and risk-free rates



Source: AMECO, FRED, AWM, and authors' calculations.

Cross checking with market based estimates for the return on equity we find that the equity risk premium has also increased in both jurisdictions and is an important driver of the gap between the return on equity and the risk-free rate, which echoes the findings of [Jordà et al, 2018](#).

One explanation for the marked increase in the risk premium around 2000 is that supply and demand factors – exacerbated by post-crisis regulatory changes – have progressively affected safe assets only, thereby pushing down the risk-free rate while leaving the return on risky assets unaffected. That being said, taking a somewhat broader perspective, the fact that the higher risk premium leads to a lower risk-free interest rate should be borne in mind when considering all the possible drivers of risk-free asset returns – particularly in the context of the “secular stagnation” debate.

Both authors are from the European Central Bank (ECB). The views expressed are those of the authors and do not necessarily reflect those of the ECB.