The US Net Income Puzzle[1]

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I. Introduction

       A longstanding puzzle is that the United States is a net borrower from the rest of the world, yet, on net, *receives* income on these net borrowings. These net cross-border investment income receipts reported in the U.S. balance of payments (BOP), the top line in Figure 1, have continued to grow more positive even while the net cross-border investment position, the bottom line, has grown more negative.
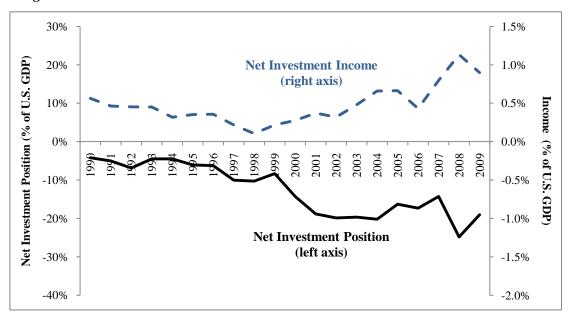
Figure 1: U.S. Cross-border Net Investment Income and Net Investment Position

Source: U.S. Bureau of Economic Analysis

       At 1 percent of GDP, the positive net income balance significantly narrows the U.S. current account deficit.   Moreover, the significance of the positive balance is even greater when we consider that one might expect a negative net position of 20 percent of GDP to generate a *negative* income balance on the order of 1 percent of GDP or more.

So what is going on? As a matter of arithmetic, if the reported net position is negative and the reported net income is positive, the U.S. must be earning a higher rate of return on its claims than it is paying on its liabilities. Figure 2 confirms this and shows that the asset class generating this favorable return differential is direct investment. The average income yield on all U.S. cross-border claims from 1990-2009 was 1.4 percentage points per year higher than that paid on all U.S. cross-border liabilities (the dark portion of the first two bars). The next bars show that the main driver of this difference is foreign direct investment (FDI); the average yield received on U.S. FDI claims is an astonishing 6.3 percentage points per year higher than that paid on FDI liabilities. In contrast, for portfolio equity and debt the average yields on claims and liabilities are nearly identical. The aggregate yield advantage is large enough to move the income balance in favor of U.S. claims despite the large net liability position.
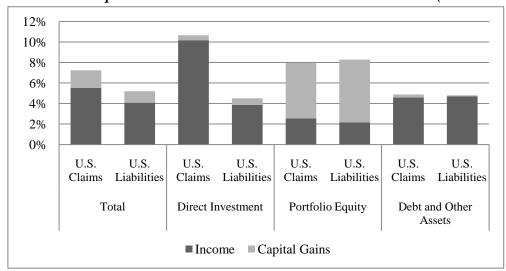
Figure 2: Income and Capital Gains Yields on U.S. Cross-Border Positions (1990-2009 Average)

Source: U.S. Bureau of Economic Analysis, Gohrband and Howell (2010)

Why is there such a large difference between the yield received on U.S. direct investment abroad (USDIA) and that paid on foreign direct investment in the United States (FDIUS)? Several older studies suggest the difference is caused by a USDIA yield that is unusually high, a FDIUS yield that is unusually low, or both. Other studies attribute this difference to mismeasurement (Hausmann and Sturzenegger 2006, Gros 2006). Which reasoning is correct, and what does it imply for future income streams?

In this paper we summarize ongoing work exploring the difference between USDIA and FDIUS yields. Our strategy is to compare U.S. FDI yields with yields on similar investments.[2] When there are differences between the yields we evaluate whether the magnitude can reasonably be explained by differences in the investments.

In sum, we find nothing particularly unusual about USDIA and FDIUS yields; rather, differences in these yields can be attributed to differences in taxes, risk and age. We find that U.S. multinational enterprises (MNEs) earn about the same on their USDIA as investors from other countries earn on their FDI outside of the United States. In addition, when one compares the yield on USDIA with the yield U.S. firms earn on their domestic operations (USIUS), we find that in recent years taxes and risk account for most of the difference between USDIA and USIUS yields, and that FDIUS has performed about as well as other investments in the United States. Earlier years in which FDIUS significantly underperformed USIUS followed significant increases in U.S. investments by foreign parents, and absent age effects the yield on FDIUS is at or above the USIUS yield. While there are some data gaps in some areas of the international accounts (Curcuru et. al. 2009), the U.S. DI returns as reported appear reasonable. In the conclusion we discuss implications of these

findings for the future of the U.S. external balance.

II. Existing Literature

Several papers have suggested that the low FDIUS earnings yields owe partly to the relatively young age of FDIUS affiliates (Lupo et al. 1978, Landefeld et al. 1992, Grubert et al. 1993, Laster and McCauley 1994, Grubert 1997, Mataloni 2000, McGrattan and Prescott 2010). Younger firms can have relatively high depreciation expenses or interest on debt used to finance acquisitions. Inexperience can also lead to relatively poor performance for younger firms.

The industry mix of FDIUS is dramatically different than USDIA and U.S. investment more generally, with a large share of USDIA classified as holding companies and a large share of FDIUS classified as manufacturing firms. However, Mataloni (2000) finds that the return on FDIUS assets was below that of U.S. operations across most industries.

Other work suggests that differing amounts of investment in intangible capital, such as patents, trademarks and organizational knowledge, is responsible for the FDIUS-USDIA yield gap. The value of intangible capital is excluded from BEA's preferred valuation method for DI, the current-cost method, because of measurement difficulties. Bridgeman (2008) estimates the stocks of intangible assets and finds that including them in the USDIA and FDIUS positions reduces the DI yield gap by three-fourths. McGrattan and Prescott (2010) capitalize USDIA's large research and development expenses, but still find the USDIA yield to be higher than can be explained by intangible capital and other factors in their model.[3]

Studies in the trade literature find that relatively more productive firms also engage in FDI, which contributes to higher yields relative to domestic-only firms (Helpman et al. 2004, Fillat and Garetto 2010). In these models the high return of USDIA relative to USIUS is compensation for the higher sunk costs and risks associated with FDI.

Early studies that explored whether the low FDIUS yield is the result of favorable intrafirm transfer pricing find little evidence of such transfer pricing based on propensity to import from the parent (Lester and McCauley 1994 and Mataloni 2000) or the relative profitability of fully-controlled FDIUS affiliates and those with only 25-50% foreign ownership (Grubert 1997). More recently, Bernard et al (2006) examines U.S. export transactions and finds that the average price charged to unrelated parties is 43% higher than that charged to related parties; this favorable pricing tends to lower the FDIUS yield and raise the USDIA yield.

A series of papers by Desai, Foley and Hines (DFH) shows that affiliate funding, dividend repatriations, and the location of MNE subsidiaries are heavily influenced by tax considerations. Because U.S. tax laws generally allow U.S. MNEs to defer U.S. taxes on foreign income until that income is repatriated, foreign operations in low-tax jurisdictions are disproportionately funded using reinvested earnings rather than new equity capital. In contrast, affiliates in relatively high-tax jurisdictions are funded using debt finance in order to exploit the tax deductibility of interest payments (Feldstein 1994 and DFH 2001, 2003, 2004)). Complementary work by Grubert (1998) finds that interest payments to USDIA parents are higher for affiliates in countries with higher statutory tax rates. DFH (2006) finds that large U.S. MNEs with heavy research and development spending and relatively large amounts of intra-firm trade are most likely to have affiliates located in tax havens. Mutti and Grubert (2009) describe MNE corporate structures designed to allow the firm to collect royalty payments on intellectual property in affiliates located in low-tax countries. Bosworth et al. (2008) estimates that the diversion of income to low-tax jurisdictions accounts for one-third of the difference in USDIA and USIUS yields.

Explanations for the low FDIUS yield also include a relatively low cost of capital in the home country (Grubert et al. 1993), or a willingness to forego U.S. profits in order to gain access to the U.S. market or scarce raw materials (Landefeld et al. 1992), and several high-profile U.S. investments by foreigners in the 1980's which had particularly poor results (Laster and McCauley 1994, Jorion 1996). Other explanations for the large DI yield gap include compensation for the additional risk of investing in countries with low sovereign credit ratings (Hung and Mascaro 2004), the erroneous inclusion of reinvested earnings

in income (Gros 2006), and increasing financial openness for the rest of the world (McGrattan and Prescott 2010).

III. USDIA and Direct Investment by Other Countries

Our first test of whether the yield on USDIA is reasonable or, as suggested in other literature, unusually high, is a comparison of USDIA yields with FDI yields earned by investors from other countries. Specifically, we compare the yield earned on USDIA in each country with the yield earned by all FDI in that country (ACDIA). We estimate the ACDIA yield for each country as the ratio of income payments associated with direct investment liabilities to the position; country-level USDIA yields are computed from BEA income and position data. This income includes all interest and affiliate earnings, and excludes direct royalty payments (but includes royalties earned by affiliates as part of common tax-minimizing structures).

We expect the USDIA and ACDIA yields to be similar to those that others earn as long as USDIA investment is similar to FDI investment by non-U.S. investors. Unfortunately, measuring FDI yields across countries is difficult because some countries do not report BOP data, and direct investment earnings and positions data are not reported on a consistent basis across countries that report it. Therefore we limit our comparison to the 8 countries that compute positions and earnings using the same method as the United States, shown in Table 1.[4]

Table 1: USDIA and ACDIA Average Earnings Yields for Selected Countries (percent)

Country	USDIA	ACDIA	Difference	Share of Position	Data Available
United Kingdom	6.8	8.6	-1.9	13.4	1983-2009
Canada	7.6	7.7	-0.1	7.4	1983-2009
Ireland	17.2	22.3	-5.2*	4.7	2002-2009
Australia	7.8	7.6	0.2	3.0	1987-2009
Hong Kong	12.7	8.7	4.0*	1.4	1998-2009
Sweden	6.7	8.5	-1.8	0.8	1983-2009
New Zealand	6.3	8.4	-2.1*	0.2	1983-2009
Finland	13.9	11.0	2.9*	0.1	1983-2009
Weighted Average Yields for 8 Countries:					
	7.5	8.6	-1.1	31.0	

* statistically significant at the 5% level. Source: Curcuru and Thomas (2011)

For 6 out of 8 countries reported in Table 1 the USDIA yield is lower than or not statistically different from that earned by other FDI. The last line constructs an aggregate yield for this sample using the USDIA position shares of the sample as the weight. The average of this weighted yield is lower for USDIA than ACDIA—7.5% for USDIA vs. 8.6% for ACDIA. (Note: the weighted-average USDIA earnings yield for these countries is lower than the aggregate USDIA yield because countries for which IMF BOP data are not available, such as Bermuda or the Cayman Islands, have a higher return than the sample countries.).[5] Further, Figure 3 shows that the time variation in these yields is very similar. We conclude that the yield on USDIA is similar to that earned on FDI from other countries, and is not unusually high as suggested in earlier literature.
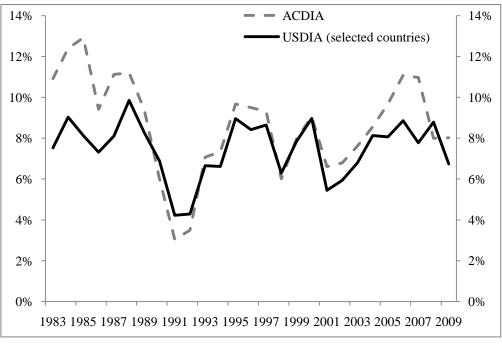
Figure 3: USDIA and ACDIA Earnings yields for Selected Countries

Source: Curcuru and Thomas (2011)

IV. Domestic Operations of U.S. Firms

We use the same strategy and compare USDIA and FDIUS yields with the earnings of U.S. domestic operations (USIUS). There are several ways these yields can be constructed using BOP and flow of funds data, and our preferred measures are shown in Figure 4.[6] By these measures, USDIA earns significantly more than either USIUS or FDIUS, and for much of the sample FDIUS is below USIUS.
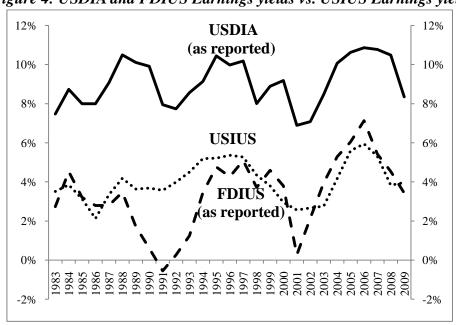
Figure 4: USDIA and FDIUS Earnings yields vs. USIUS Earnings yield

Source: Curcuru and Thomas (2011)

USDIA vs. USIUS

We expect differences between USDIA and USIUS yields if the investments involve different costs and risks. For example, FDI investments are subject to sunk costs and risks beyond those encountered domestically and only the most productive firms able to earn returns that compensate them for these additional costs and risks will undertake FDI investments.[7] In addition, some of the difference between USDIA and USIUS yields is the result of tax accounting in the BOP. U.S. taxes paid by U.S. parents on their foreign-generated income are not subtracted from cross-border income receipts in the U.S. BOP because the tax is paid by the U.S. parent firm and is therefore not a cross-border transaction. So, as implied in Bridgeman (2008), the USDIA yield computed using BOP data generally overstates the after-tax earnings of the U.S. parent firm.

To see if the difference between the USDIA and USIUS yields is consistent with differences in tax accounting and risk, we first estimate a USDIA after-tax return.[8] The total adjustment for the U.S. tax liability paid by the parent reduces the yield by 2 percent per year on average. This adjustment includes both the estimated U.S. tax liability generated by foreign affiliate earnings that have been repatriated each year, as well as the deferred tax liability on earnings that have been reinvested. Although U.S. taxes on reinvested earnings are not paid immediately, the potential U.S. tax liability is likely considered when firms decide whether the potential earnings generated by a FDI investment are high enough to justify the investment because of uncertainty about the amount of funds they will need to repatriate.[9]

Some of the remaining USDIA-USIUS yield gap of about 3 percent is likely compensation for the other risks associated with investing abroad. The risks faced by MNEs beyond those faced by domestic only firms include fluctuations in foreign demand, U.S. tax policy for foreign investments, foreign tax policy for foreign investment, expropriation by foreign governments, and dependence on the foreign labor and goods markets. To estimate the amount of compensation that might be required by investors because of higher risks associated with investing in different countries, we compute a weighted-average of the difference between foreign country and U.S. credit-default swaps (CDS) spreads on sovereign debt, where the weight is the USDIA position in each country.[10] Since CDS data is only available starting in 2004, for earlier years we follow Hung and Mascaro (2004) and use the difference between yields on Moody's Baa and AAA corporate debt as a proxy. The compensation for sovereign risk averages about 1 percentage point per year.

Taken together, the total compensation for taxes and risk is about 3 percentage points per year, out of the average 5 percentage points per year difference between unadjusted USDIA and USIUS yields. The remaining difference between USDIA (after-tax) and USUIS yields likely represents compensation for sunk costs of investing in a foreign country. Our results are consistent with the prediction in Fillat and Garetto (2010) that the yield of multinationals should be about 25% higher than that of domestic-only firms.

FDIUS vs. USIUS

Turning to the difference between FDIUS and USIUS yields, Figure 4 showed that since the late 1990's, the FDIUS yield is pretty close to the USIUS yield. Studies looking at the underperformance of FDIUS affiliates in earlier years find a link to their relatively young age (Lupo et al. 1978, Landefeld et al. 1992, Grubert et al. 1993, Laster and McCauley 1994, Grubert 1997, Mataloni 2000). Younger firms may underperform more experienced firms because of a number of factors including inexperience, high startup costs, or high interest expenses on debt used to fund acquisitions.

To try to get a clearer picture of what is behind the poor performance of FDIUS in some years, in Curcuru and Thomas (2011) we explore different proxies for firm age to see if any play a role in the difference between FDIUS and USIUS yields. Our proxies for firm age include outlays for new FDIUS, increases in U.S. affiliates' intercompany debt payables, and increases in parent equity. We hypothesize that if high debt payments are responsible for the weak performance then the relatively weak performance is linked to new debt flows; if a strong link to increases in equity is also identified, we attribute some of the poor performance to inexperience and start-up costs.

Our results suggest that new investment in general and, in particular, high debt loads are important

factors in the relatively poor performance of FDIUS. Age effects explained up to 75 percent of difference between the yield on FDIUS and USIUS. Absent the yield-depressing effect of new investment, the regression results imply that the yield on FDIUS would be near or above that on USIUS, consistent with research that shows only the most productive firms engage in FDI. The gap between our adjusted USDIA and FDIUS earnings yields, shown in Figure 5, is much narrower than that between the reported series. This narrower gap suggests that the underlying data are accurate, and that there is nothing particularly unusual about the yields.
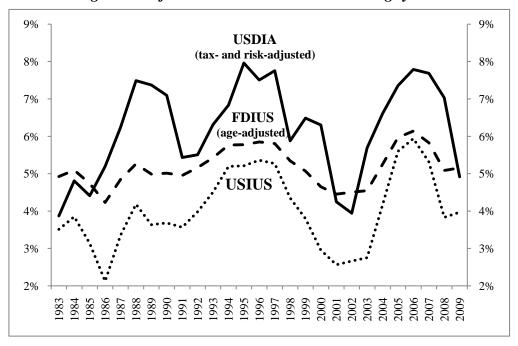
Figure 5: Adjusted USDIA and FDIUS Earnings yields

Source: Curcuru and Thomas (2011)

V. Conclusion

In this paper we showed that the USDIA yield makes sense compared with ACDIA and USIUS yields, and that in recent years the FDIUS yield is reasonable given USIUS yields and that firm age is responsible for the poor performance in earlier years. From this we draw two conclusions: First, unless there is a change in the factors underlying the FDI yield differential—the perception of investment in the U.S. as relatively safe, the relatively high U.S. tax rate, the relatively young FDIUS capital stock—the differential will likely persist. As such, we can expect the U.S. net investment income balance to look quite favorable relative to the net investment position for some time.   Second, the fact that the FDI yields seem reasonable in light of these factors lends some credibility to the underlying position and income data.   As such, while we concede there are still important outstanding measurement issues related to transfer pricing and intellectual property, we do not think they warrant a radical change in FDI measurement methodology as proposed by some.

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[2] This paper provides an overview of the results presented in Curcuru and Thomas (2011) and Curcuru, Thomas and Warnock (2011).

[3] In related work Hausmann and Sturznegger (2006) infers from the large net income receipts that USDIA intangible investment is much larger than FDIUS intangible investment, although Buiter (2006) challenges the methodology.

[4] USDIA earnings are measured using the Current Operating Performance Concept (COPC) recommended by the IMF, which includes reinvested earnings and intercompany debt payments, and excludes capital gains and losses, among other things.

[5] For an expanded selection of countries that includes countries that do not fully apply the COPC method, the weighted USDIA yield averages only 0.4% percentage points per year more than the ACDIA yield.

[6] We use the yield on net assets (including financial assets) on a financial accounting basis computed from flow of funds data as the USIUS yield. Several authors use the yield on tangible assets for U.S. firms as the benchmark for evaluating USDIA and FDIUS yields (Howenstine and Lawson 1991, Bosworth et al. 2008, and others). Yield on tangible assets excludes financial assets and liabilities and their associated costs, other than intercompany debt. Compared with this measure, USDIA yields appear abnormally-high, while FDIUS yields appear abnormally low. As discussed in Curcuru and Thomas (2011), however, the yield on tangible assets may be a poor choice for the benchmark U.S. yield because USDIA and FDIUS yields calculated from BOP data are not yields on tangible assets.

[7] See discussion in Helpman et al. (2004) and Fillat and Garretto (2010)

[8] The United States has a "worldwide taxation" policy which taxes income generated by U.S. MNEs regardless of where it is earned. To avoid double taxation, U.S. firms receive a credit for some foreign taxes paid against their U.S. tax liability.USIUS and FDIUS earnings are already net of U.S. taxes and do not require adjustment.

[9] See Curcuru and Thomas (2011) for the details of the calculations of tax-adjusted returns.

[10] See Curcuru and Thomas (2011) for additional details on the construction of the risk adjustment. Because of the extensive use of intermediate firms in low-income-tax and low-sovereign risk jurisdictions—about 30% USDIA in 2009— recent USDIA positions are not a good representation of where the activity of foreign affiliates actually occurs (Borga and Mataloni 2001). So we construct weights based on the positions in 1999 when the use of intermediate holding companies was more limited.