Problem Set for

"Firms, Investors, and Global Capital Allocation"

1. **Understanding Problems with the Balance of Payments Data**

   (a) Theoretically, summing up every country's net foreign asset position, the total should be zero because for every debtor there is a credit. In reality, there is a large discrepancy with more liabilities at the world level than there are assets. Download the IIP data from the Stanford Initiative website or data.imf.org and sum up the net foreign asset positions across countries. How has the discrepancy changed over time?

   (b) Compare the official reported portfolio liabilities from the International Investment Position to the derived liabilities from Table 8 of IMF CPIS (or summing all entries in Table 1). The IIP says how much each country reports owing the rest of the world from portfolio securities, and Table 8 reports the sum of how much the rest of the world (those countries reporting in CPIS) reports of claims on the country. Which countries have the largest discrepancies? Focusing on Luxembourg, you should find that the foreign portfolio assets approximately agree in the IIP and CPIS. However, Luxembourg's reported external portfolio liabilities in the IIP vastly exceed the sum of reported portfolio investment in Luxembourg in CPIS.

2. **The Importance of Global Tax Havens**

   (a) From Residency to Nationality: Go to https://www.globalcapitalallocation.com/data and download "Reallocation Matrices (Residency to Nationality)" and Nationality-Basis External Portfolios (Restated TIC-CPIS)." Starting from the official CPIS data (Position_Residency in Country_Portfolios_Nationality) recover the tax-haven only nationality position (Position_Nationality_TH_Only) and the full

nationality position (Position_Nationality_Full). To do so, you will need to multiply the residency data by the reallocation matrix for each country, asset class, and year as described in Coppola et al (2020).

(b) For each country and asset class, report the top 10 investment destinations on a nationality and residency basis. Once the tax-haven investments have been reassigned, how does the list change? Which country's see the largest changes in the percentage value of their initial investment in CPIS (irrespective of the previous ranking)?

(c) The rise of China in tax havens: Summing across all nine countries, plot investment in China by residency tax-haven only nationality, and full nationality for debt and equity separately. What patterns emerge? Now, plot the country of residency of investments that are reallocated to China on a nationality basis. You should see a large portion coming from the Cayman Islands. Finally, do this same exercise for each of the nine investor countries.

3. **Home Currency Bias**

(a) The goal of this exercise is perform an aggregate version of Table 4 in Maggiori, Neiman and Schreger (2020, JPE) and examine the importance of home currency bias for global bond portfolios. Rather than running the regression at the security level as in the paper, the unit of observation here will be at the country-currency level. In order to perform this exercise, go to https://www.globalcapitalallocation.com/data and download "Global Fund Holdings Summary Statistics." You will need to use three of the files included in the zip:

i. Aggregate_Positions: This file has data on the asset composition of each country's investment around the world, as well as the total value of their investment holdings. Calculate the total market value of corporate bonds each investor country owns around the world.

ii. Bilateral_Country_Shares_corp_nationality_full: This file contains the share of each country's corporate bond investment in each other country (on a nationality basis)

iii. Bilateral_currency_Shares_corp_nationality_full: This files contains the share of each country's investment in each other country in a given currency (on a nationalitiy basis).

Use the shares in (ii) and (iii) to calculate the share of observed investment in securities issued by firms in each country (i) in currency c that are owned by investors in country j. In Maggiori, Neiman and Schreger, the dependent variable is the share of a given security owned by investors in a given country. Here, you need to calculate the share of total holdings (within the dataset) of all securities issued by firms in a country in a particular currency that are owned by each investor country,

$$s_{i,j,c} = \frac{X_{i,j,c}}{X_{j,c}}$$
$$X_{j,c} = \sum_i X_{i,j,c}$$

where X is the USD value of holdings. Then, run three regressions per country (using 2017 data)

$$s_{i,j,c} = \alpha_{j,0} + \gamma_{j,0}\mathbf{1}_{\{i=j\}} + \epsilon_{i,j,c}, \quad (1)$$
$$s_{i,j,c} = \alpha_{j,1} + \beta_{j,0}\mathbf{1}_{\{c=c(j)\}} + \epsilon_{i,j,c}, \quad (2)$$
$$s_{i,j,c} = \alpha_{j,2} + \gamma_{j,1}\mathbf{1}_{\{i=j\}} + \beta_{j,1}\mathbf{1}_{\{c=c(j)\}} + \epsilon_{i,j,c}. \quad (3)$$

where $c(j)$ indicates a country's local currency (i.e. $c(USA) = USD$). The first regression capture classic home country bias, the second controls only for currency, and the third regression looks at country and currency jointly.