Redrawing the Map of Global Capital Flows

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What the paper does

A rich and careful re-assessment of bilateral external portfolios.

1. Uses 6 data sources with ownership information to 'crawl up the chain of corporate ownership' to the ultimate (non tax haven) owner for each possible CUSIP-6.

2. Together with Morningstar holdings data, constructs reallocation matrices for portfolio bonds and equity holdings (security level) for 9 countries (EU is one country).

3. Applies these reallocation matrices to restate bilateral portfolio positions using TIC (for US) and CPIS (IMF) data.

Key Findings

- Advanced Economies have larger holdings in large emerging economies (Brazil, Russia, China...)
- EM corporate bond liabilities are larger than sovereign bond liabilities (and since these are mostly in FX, FX exposure is larger than previously estimated)
- Significant round-tripping (i.e. US investment in US by way of CYM) and home bias in tax havens
- Equity reallocation particularly important for China (VIE), because of mis-measured valuation gains on equity liabilities.

These results have implications for measuring external exposure and returns, or understanding financial globalization.

Overall

The paper is clear, super careful and detailed. It is a pleasure to read and is bound to be widely cited.

Some of the results were known already, but the approach of the authors is more granular and systematic.

The authors also provide an important public good (website).

Part of a great research agenda by many of the same authors improving our knowledge of global portfolios. Congrats!

Small quibble: change the title to 'Redrawing the Map of External Bilateral Portfolios'. It is not about flows.

I have some minor comments on what they have done, but rather than nit-pick, let me frame the paper in a broader perspective.

A bit of Balance of Payment History

Let's start with the traditional SNA identity:

$$CA = S - I$$

This equation is at the heart of intl. macro models. It states that the dynamics of external account result from the forward looking decisions of firms, households (and governments).

With minor adjustments in definition, the Balance of Payment counterparts are

$$\begin{aligned} CA &= \text{Financial Account} \\ NFA_t &= NFA_{t-1} + \text{Financial Account} = NFA_{t-1} + CA \end{aligned}$$

Offers an integrated approach of domestic and external accounts. Proceeds from objects that have a well-defined meaning in SNA and are measured precisely.

CA is the relevant metric to assess external vulnerabilities: risk of sudden stops, excessive deficits, currency crashes... Who owns what and to whom does not matter per se.

First Crack in the Wall: Gross Flows and Positions

Obstfeld, Ely lecture (2012), Lane & Milesi-Ferretti, External Wealth of Nations (2001)

$$\text{Financial Account} = FA - FL, \text{ with } FA, FL >> CA$$

$$NFA_t = PA_t - PL_t = NFA_{t-1} + CA + V$$

$$PA = PA^{FDI} + PA^{Equ} + PA^{Debt} + PA^{Other}$$

$$PA^i = \sum_j \int_{\Omega^{ij}} PA^{ij}(\omega)\mathrm{d}\omega$$

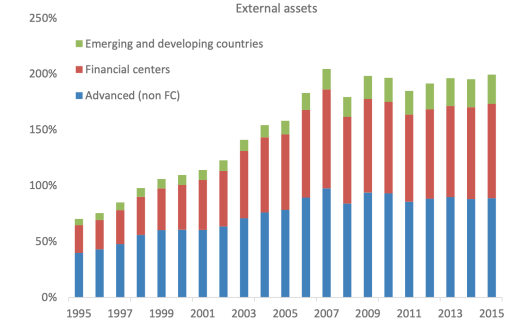
V represents the net capital gains (including FX) on the external position:

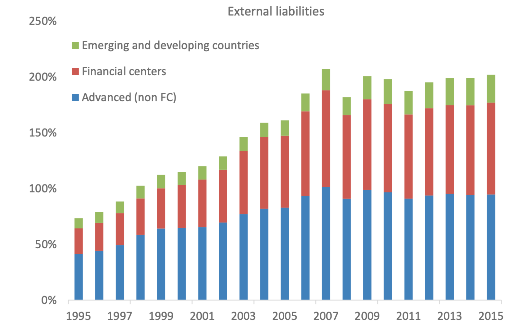
$$V = CGA - CGL$$

With large PA and PL, $|V| >> CA$ and $CGA, CGL >> V$.

With complex financial instruments within gross assets and liabilities, complex patterns of wealth transfers and of financial fragilities. Who owns what and to whom starts to matter.

Financial Globalization from Lane & Milesi Ferretti (2017)





Note the growth of PA and PL in offshore financial centers!

Asymmetry between AE and EM. Gourinchas, Rey and Sauzet (2019)

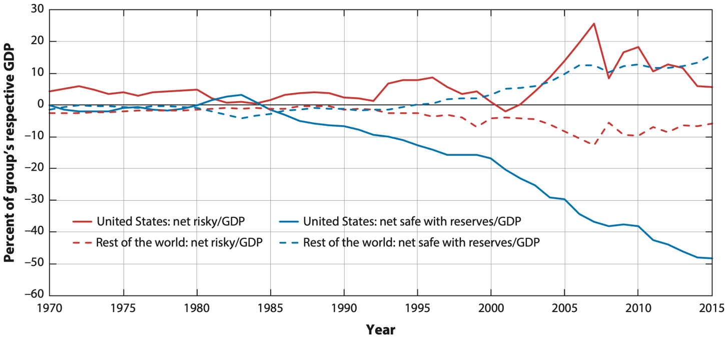


Figure 4

Net positions in risky assets and safe liabilities for the United States and the rest of the world. Data are from Lane & Milesi-Ferretti (2018) and cover 1970–2015 at an annual frequency. Net risky position is equal to portfolio equity assets + FDI assets − (portfolio equity liabilities + FDI liabilities). Net safe position is equal to reserve assets + debt assets − debt liabilities. Debt includes portfolio debt and other investment. Both positions are summed for all countries of each group, i.e., the United States and the rest of the world, and normalized by the GDP of the group in the given year. Abbreviation: FDI, foreign direct investment.

Asymmetric portfolios: AE and US long risky, 'short safe '. EMs are short risky and long safe.

What Accounts for this Rapid Financial Globalization

Two competing views:

1. Risk sharing? If so, perhaps all is well. Some (including myself) have argued that there is some truth to that view (Gourinchas, Rey & Govillot (2017), Farhi & Maggiori (2018))

2. Distortions? Tax avoidance, regulatory arbitrage, bailout guarantees, irrational exuberance...

Clearly the rise in cross-border positions with tax havens is not reassuring...

Measurement and Residency Principle

$$NA_t = NA_{t-1} + CA + V$$

CA is not sufficient. Measuring (external) wealth is difficult. Among a few well-know issues: (a) market valuation for non-market assets (FDI, loans); (b) off-balance sheet transactions (derivatives); (c) distortions to external accounts due to tax optimization or regulatory arbitrage.

Consider the residency principle. Critical concept to map the BoP into SNA. Residency status in SNA determines the limits of domestic production, while BoP measures transactions between residents and non-residents.

What is the residence of a corporation?
"Corporations and nonprofit institutions normally may be expected to have a center of economic interest in the economy in which they are legally constituted and registered." (BPM6)

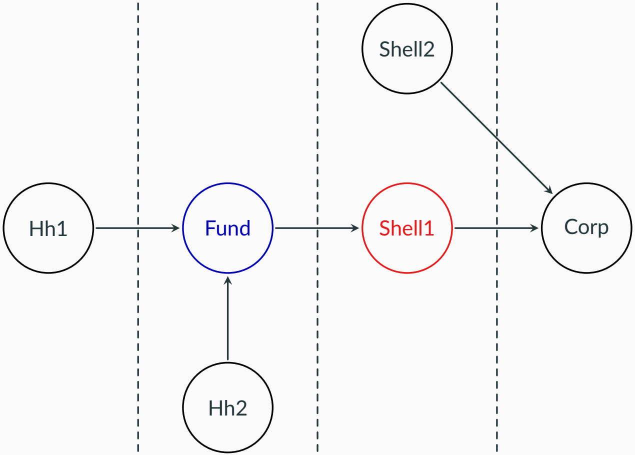
Residency and Offshore Financial Centers: A Well-Known Problem

As financial globalization proceeded, and investment via offshore financial centers proliferated, residency became increasingly disconnected from economic activity. Well known issue. Consider:

- Damgaard and Elkjae (2020) : almost 40% of global FDI is 'phantom' i.e. is located in offshore centers and does not correspond to any production activity.
- Hines 1997: Widespread transfer pricing and tax optimization by US multinationals (think Apple and Ireland). Explains the surplus of the investment balance account of the US. Mismeasured GDP and trade deficit (Guvenen et al (2019)).
- Lane and Milesi Ferretti (2017): while most cross border positions have stagnated since GFC, cross border FDI has kept increasing, mostly with offshore financial centers.
- Alstadsæter, Johannesen and Zucman (2018): 10% of global wealth is held in tax havens.

Because Residency $\neq$ Nationality, problems arise on both sides of the transactions: on the asset side (what do I own) and the liability side (who do I owe to). Double veil.

Double Veil. Paper pierces one of them



- Paper proposes to pierce the veil between Shell1 and Corp.
- This is good, but it does nothing about the veil between Hh1 and Fund: assumes investors are residents like Hh2.
- For instance, a KSA investor in a UK fund will be viewed as UK resident.
- Picture becomes incredibly complex and the pieces of the puzzle are hard to put together.

Three Comments

1. Bilateral Positions vs. Multilateral?
2. Beyond Tax Havens and the Failure of the Triple Coincidence
3. Other Assets (FDI, Bank Loans)?

Bilateral vs. Multilateral Balances?

When do we care about bilateral holdings?

- From an accounting point of view, it allows to track direct wealth transfers, risk sharing or spillovers between a pair of countries.
- But at the macro level, do we care about $N(N-1)/2$ bilateral balances, or N multilateral balances?
- Analogy: bilateral trade balances. While at some level it is interesting to know what the bilateral trade balance US-China is, from a macro perspective we care about overall trade balance, not bilateral balances.
- With gross flows and positions, bilateral balances can matter (risk concentration, network, right of offset) but it would be good if the authors would tell us more precisely why we should care.
- Notice that if we re-aggregate to the multilateral level, there is much less reallocation. E.g. equity investment in China is counted as equity investment in CYM. As long as they are valued correctly, it is OK. It remains an external equity position.

Tax Havens and the Failure of the Triple Coincidence

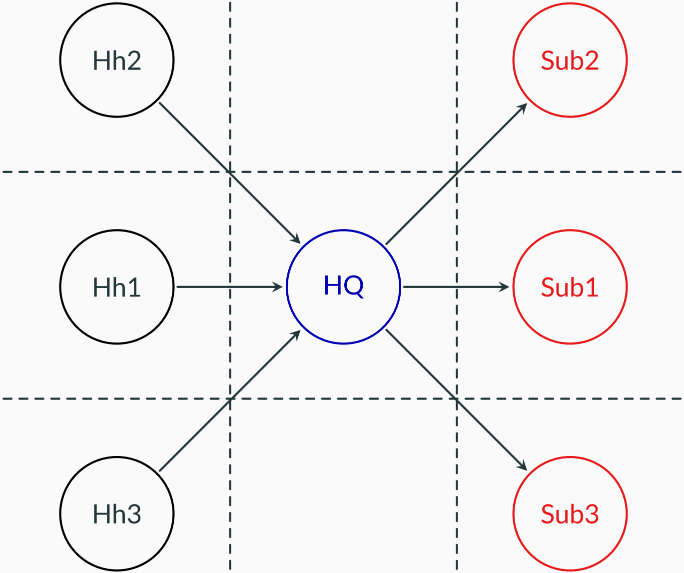
- At some level, tax havens are the low hanging fruit: they do not contribute to productive activity (a few mailboxes and corporate layer offices) [although some do more: HK, Netherlands, Ireland...]

- It makes complete sense to 'pierce that veil' and net them out.

- However, the paper also proposes to re-map to 'ultimate ownership' even outside of tax havens. Ex in paper: Toyota Motors North America.

- This brings up the question of the residency of global corporations.

Global Corporations: What does Residency Mean?



Hertz Global Holdings Inc. A U.S. Firm? A EU Firm?

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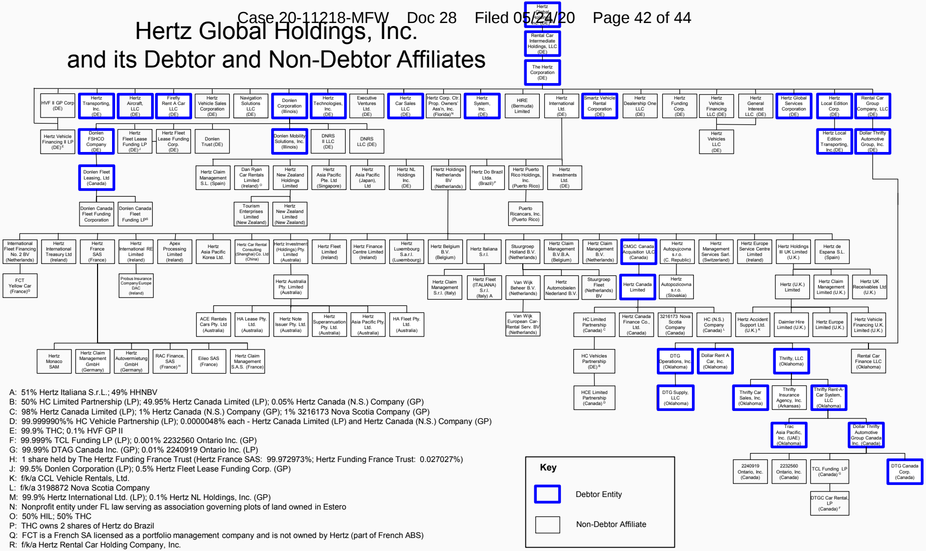
Hertz Global Holdings, Inc.
and its Debtor and Non-Debtor Affiliates



A: 51% Hertz Italiana S.r.L.; 49% HHNBV
B: 50% HC Limited Partnership (LP); 49.95% Hertz Canada Limited (LP); 0.05% Hertz Canada (N.S.) Company (GP)
C: 98% Hertz Canada Limited (LP); 1% Hertz Canada (N.S.) Company (GP); 1% 3216173 Nova Scotia Company (GP)
D: 99.999990%% HC Vehicle Partnership (LP); 0.0000048% each - Hertz Canada Limited (LP) and Hertz Canada (N.S.) Company (GP)
E: 99.9% THC; 0.1% HVF GP II
F: 99.999% TCL Funding LP (LP); 0.001% 2232560 Ontario Inc. (GP)
G: 99.99% DTAG Canada Inc. (GP); 0.01% 2240919 Ontario Inc. (LP)
H: 1 share held by The Hertz Funding France Trust (Hertz France SAS: 99.972973%; Hertz Funding France Trust: 0.027027%)
J: 99.5% Donlen Corporation (LP); 0.5% Hertz Fleet Lease Funding Corp. (GP)
K: f/k/a CCL Vehicle Rentals, Ltd.
L: f/k/a 3198872 Nova Scotia Company
M: 99.9% Hertz International Ltd. (LP); 0.1% Hertz NL Holdings, Inc. (GP)
N: Nonprofit entity under FL law serving as association governing plots of land owned in Estero
O: 50% HIL; 50% THC
P: THC owns 2 shares of Hertz do Brazil
Q: FCT is a French SA licensed as a portfolio management company and is not owned by Hertz (part of French ABS)
R: f/k/a Hertz Rental Car Holding Company, Inc.
S: 99% Donlen Fleet Leasing Ltd. (LP); 1% Donlen Canada Fleet Funding Corporation

Failure of the Triple Coincidence

- Avdjiev, McCauley and Shin (2015) : the boundaries of global firms don't dovetail anymore with the boundaries of macroeconomic decision units.
- Consider Petrobras, headquartered in Brazil. Suppose the Dutch subsidiary borrows EUR and channels the funds to the Chinese subsidiary for oil exploration. Regardless of where the headquarters are located, this is a EUR liability in NDL, against some assets in CHN.
- Highlights the importance of consolidated accounts, regardless of geography. But then how do we circle back to SNA concepts like domestic output and trade balance?

What about other types of assets

- Cross-border banking: large source of distortions in national accounts, related to off balance sheet transactions (e.g. ABCP conduits and round-tripping by EU banks before Global Financial Crisis). Cf. Acharya and Schnabl, 2010.

- Direct Investment: already discussed. 40% of global direct investment going via Tax Havens.

Conclusion

- It's a really impressive paper!
- Positive message: Tax Havens are a nuisance. Economic contribution so egregiously low that we can easily identify them. With painstaking effort, CNMS show us how we can 'patch the data'.
- Because their economic contribution is so low, conceptually consistent with the SNA framework.
- Much more challenging issues lie ahead: even in a world without tax havens, the mapping between ultimate asset owners (always a household) and the corresponding stream of income (always related to some production process in some specific location) overlaps less and less well with SNA and BoP concepts.
- Major concern for identifying financial vulnerabilities. Individual researcher efforts are welcome. But only true solution will have to come from centralized data collection and dissemination (BIS, IMF, CBs). The weakening of multilateralism makes this an ever distant prospect.