Inequality, Autocracy and Sovereign Funds as determinants of Foreign Portfolio Equity Flows

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Motivation

- Cross Border Equity Flows (FPI) are determined by several factors – investment opportunities, yield differentials, geographic distance
- Incentives for Tax Evasion, in the international context -Tax havens vs. Tax Information Exchange Agreements; do country-specific tax policies alleviate/ameliorate/enhance FPI?
- Our question: Do other country specific characteristics influence FPI?

Income Inequality

- Acemoglu and Robinson (2002) theorize that inequality increases with capital industrialization.
- Individuals/Institutions engaged in foreign investment are more educated and of substantial means (Graham and Harvey, 2009).

H1: The relationship between a source country's Gini index, a measure of income inequality, and FPI is positive.

Autocracy

- On the one hand, autocratic countries, where one individual holds unlimited power, might attract more inflows because investors can directly negotiate beneficial terms and conditions with the key policy maker(s) who is (are) less concerned about public opinion (Wolf, 1951; O'Donnell, 1988).
  - Ledyaeva *et al*. (2013) find evidence of this behavior, especially for investors from more autocratic and corrupt source countries.

- On the other hand, greater levels of autocracy lower financial openness, measured as a country's total capital inflows and outflows relative to the country's GDP (Aizenman and Noy, 2009).
  - Jensen (2003) also finds that up to 70% more FDI flows into democratic countries than autocratic countries.

H2: The relationship between a source country's autocracy dummy, a measure of state and political control, and FPI is negative.

Autocracy and Income Inequality

- Alstadstaeter *et al.* (2017) find that autocracies (e.g., Saudi Arabia and Russia) and countries with a recent autocratic history (e.g., Argentina and Greece) hold very high levels of wealth abroad.
- If the investors belong to the kleptocratic elite, they would be better able to exploit society and invest those funds overseas the more autocratic their country is (Brada *et al.*, 2011).

H3: The interaction between the Gini index and the autocracy dummy is positively related to FPI flows.

Sovereign Wealth Funds (SWF)

- SWFs frequently invest abroad, the majority of taxes and royalties arising from resource sales (Kemme, 2012).
- Bernstein *et al.* (2013) show that the greater the political involvement in the management of the SWF, the greater the deviation from maximization of long-run returns.
- SWFs have combined assets of about USD 7.4 trillion, and most economies who have SWF are relatively small, which results in few sophisticated and wealthy investors. Most FPI would be routed through the SWF.

H4: The relationship between countries with SWFs and FPI is positive.

Sovereign Wealth Funds and Autocracy

- Some countries truly use SFWs as an investment for the benefit of future generations (Beck and Fidora, 2008; Truman, 2007; *inter alia*).
- Authoritarian regimes might use the funds to ameliorate social discontent or prevent possible revolutions against the country's political leadership (Ross, 2015; Bueno de Mesquita and Smith, 2010).
- In autocratic regimes resources must be used to maintain support of citizens now to avoid a collapse of the autocratic political regime, resulting in fewer resources available to invest abroad vis-à-vis democratic countries with SWFs.

H5: The interaction of the autocracy dummy and the SWF dummy is negatively related to FPI flows.

Sovereign Wealth Funds and Income Inequality

- Due to high income inequality, which is evidenced by high Gini Index, it leads to higher FPI flows.
- The intent of SWF managers might be to provide future income from the higher current FPI outflows. These future incomes are presumably for the benefit of "society as a whole" while currently there often is large income inequality.

H6: The interaction between the SWF dummy and the Gini index is positively related to FPI flows.

Tax Havens and Tax Evasion

- Hanlon *et al*. (2015), Kemme *et al*. (2017), and Johannesen and Zucman (2014), *inter alia*, find evidence of source-host tax differentials as a determinant of FPI flowing through tax havens for purposes of tax evasion.
- Specifically, they prefer countries with obstacles to the flow of information; tax havens without tax information exchange agreements and with different legal systems; but low levels of corruption.

Tax Havens and Income Inequality

- If more FPI comes from countries with higher income inequality (greater Gini index), then these funds originate from a select few investors with possibly enough "personal power" not to be concerned about taxes in their home country.
- However, if income is more equally distributed among a larger body of average citizens with less "personal power," they are likely to be more scrutinized by the tax authorities and have a greater incentive to shift their wealth into tax havens.

H7: The interaction between a country's Gini index and the tax haven dummy is negatively related to FPI flows.

Tax Havens and Autocracy

- If indeed autocratic regimes put stricter capital controls on equity outflows of their citizens (Li, 2006), it becomes harder for individuals to invest overseas.
- The motivation for sending funds to tax havens would more likely be based on risk diversification than tax savings and to maintain anonymity.

H8: The interaction between the source country autocratic dummy and the tax haven dummy is positively related to FPI flows.

Tax Havens and Sovereign Wealth Funds

- If FPI is originating mainly from the SWF, rather than individual investors, there would also be little incentive for tax evasion strategies.

H9: The interaction between the SWF dummy and the tax haven dummy is either negatively related to FPI or insignificant.

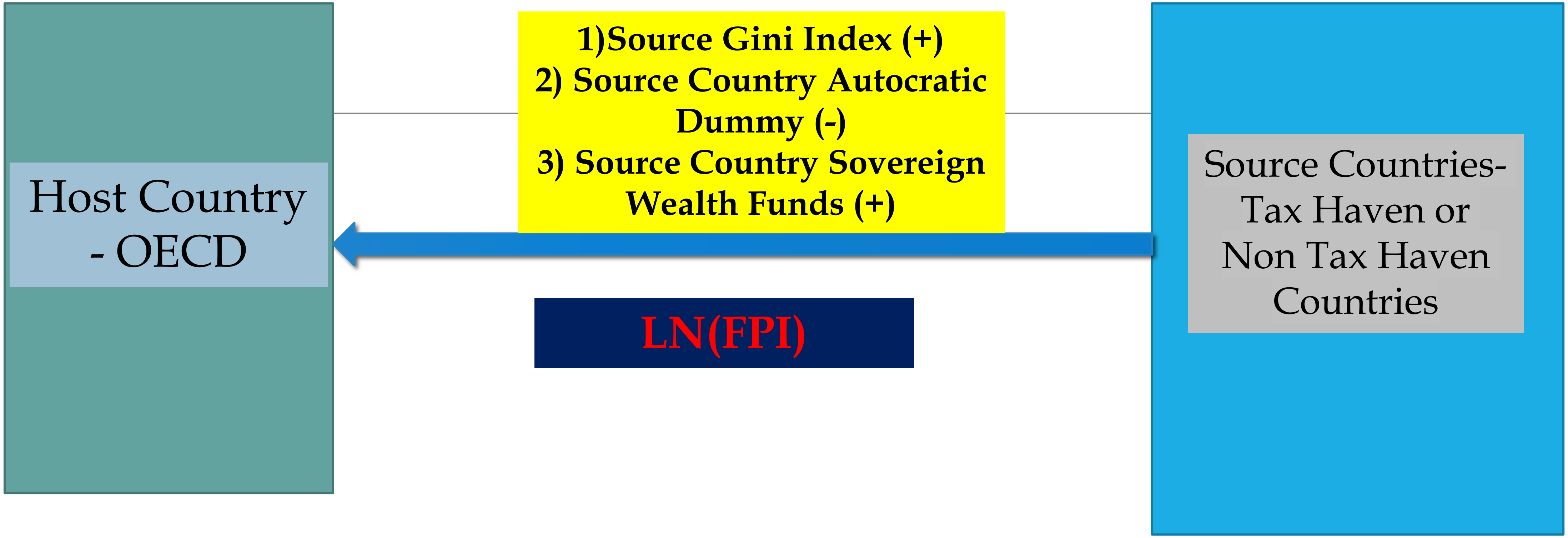
Data and Sources

Variable	Description	Source
Ln (Equity Flows)	Logarithm of equity flow from source country, which is the country of origin, to a host country, which is the intended destination. It is in millions of USD.	IMF-CPIS
Identical Language	Dummy variable taking the value 1 when both host and source countries share a common language, and 0 otherwise.	CEPII
Common Law	Dummy variable taking the value 1 when host country follows a common legal practices, and 0 otherwise	La Porta *et al.* (1998,)
Distance	Distance between two capital cities or two financial centers measured in km.	CEPII
Host GDP Per Capita ($)	The ratio of GDP in USD of the host country divided by the population of the host country	WorldBank
Source GDP per Capita	The ratio of GDP in USD of the source country divided by the population of the source country	WorldBank
Host Market Capitalization ($)	Market Capitalization of all the listed companies in USD	WorldBank
Sovereign Wealth Fund Dummy	Dummy Variable taking the value 1 when a source country has a sovereign wealth fund and 0 otherwise	Bagnall and Truman (2013)
Source Gini Index	This measure the income inequality in the source country with score from 0 -100 with a higher score indicating higher income inequality	WorldBank
Source Autocratic Dummy	Dummy variable taking the value 1 if autocratic scores greater than 3 or 0 otherwise	Center for Systemic Peace
Host Tax Haven	Dummy variable taking the value of 1 if country of reception of flows is considered as a tax haven, and 0 otherwise.	Hines and Rice (1994) and Harmful Tax Competition report (OECD, 1998)

Summary Statistics

Variable	N	Mean	Std Dev	Minimum	Maximum
Equity Flows ($ MN)	16639	6994.73	31205.94	1.00	758411.00
Sovereign Wealth Fund Dummy	16639	0.40	-	0.00	1.00
Withholding Taxes (%)	16639	16.46	6.72	0.00	47.00
Host Country Market Cap ($ BN)	16639	1675.81	3764.98	1.13	19947.28
Distance (KM)	16639	6023.84	4578.26	160.93	19516.56
Identical Language	16639	0.15	-	0.00	1.00
Common Law	16639	0.23	-	0.00	1.00
Host Country GDP Per Capita ($)	16639	42989.55	21117.88	3576.23	113738.73
Source Country GDP per Capita ($)	16639	24839.52	22906.83	130.91	112028.57
Host Tax Haven	16639	0.03	-	0.00	1.00
Source Autocratic Country Dummy	15033	0.10	-	0.00	1.00
Source Gini Index (%)	8689	35.56	8.41	23.70	64.80

Model



$$Log\ (FPI)_{ij,t} = \beta_1 \begin{pmatrix} Source\ Gini\ Index_j \\ Source\ Country Autocratic\ \ Dummy_j \\ Source\ \mathrm{Country}\ Sovereign\ Wealth\ Fund\ Dummy_{j,t} \end{pmatrix} + \beta_k X_{i,j,t} + Year\ Fixed\ Effects_t + \epsilon_{ij,t}$$

Baseline Model

Parameters	I	II	III	IV
Source Gini Index		**0.0856***** **(0.004)**		
Source Autocratic Country Dummy			**-0.9903***** **(0.072)**	
Sovereign Wealth Fund Dummy				**0.7370***** **(0.030)**
Host Tax Haven	**1.5436***** **(0.217)**	**1.3926***** **(0.215)**	**1.3811***** **(0.215)**	**1.5178***** **(0.220)**
Withholding Taxes (%)	-0.0331*** (0.004)	-0.0452*** (0.005)	-0.0456*** (0.005)	-0.0274*** (0.004)
Log(Source Country GDP per Capita)	0.8121*** (0.018)	1.4522*** (0.033)	1.0132*** (0.021)	0.7552*** (0.017)
Log(Host Country GDP per Capita)	1.3945*** (0.094)	1.4962*** (0.110)	1.5413*** (0.101)	1.3809*** (0.095)
Log(Host Country Market Cap)	0.4609*** (0.021)	0.5065*** (0.028)	0.4896*** (0.024)	0.4696*** (0.022)
Log(Distance)	-0.2058*** (0.025)	-0.4258*** (0.037)	-0.1551*** (0.027)	-0.3584*** (0.025)
Identical Language	0.7196*** (0.052)	1.0179*** (0.086)	0.8715*** (0.052)	0.7109*** (0.053)
Common Law	0.1381 (0.107)	0.2584* (0.148)	0.1446 (0.116)	0.2170** (0.107)
Year Fixed Effects	Yes	Yes	Yes	Yes
No of Observation	16639	8689	15033	16639
R Square	0.9847	0.9884	0.9869	0.9850

Baseline Model with Interactions

Parameters	I	II	III
Source Gini index	0.0811***		0.0659***
	(0.004)		(0.006)
Source Autocratic Country Dummy	-3.7428***	-1.0034***	
	(0.716)	(0.092)	
Sovereign Wealth Fund Dummy		0.9063***	0.0182
		(0.026)	(0.235)
Source Gini index * Source Autocratic Dummy	**0.1263******		
	(0.022)		
Source Autocratic Country Dummy * Sovereign Wealth Fund Dummy		**-0.3368******	
		(0.119)	
Source Gini Index * Sovereign Wealth Fund Dummy			**0.0135****
			(0.007)

Baseline Model with Tax Haven

Parameters	I	II	III
Source Gini index	0.0864*** (0.004)		
Sovereign Wealth Fund Dummy		0.7374*** (0.031)	
Source Autocratic Country Dummy			-1.0101*** (0.073)
Source Gini index * Host Tax Haven	**-0.0291**** **(0.015)**		
Sovereign Wealth Fund Dummy * Host Tax Haven		**-0.0141** **(0.105)**	
Source Autocratic Country Dummy * Host Tax Haven			**0.7826***** **(0.228)**
Host Tax Haven	2.4522*** (0.515)	1.5235*** (0.219)	1.3205*** (0.215)

Results

- Baseline Model results for models II, III and IV in Table 3 provide strong evidence to not reject H1, H2, and H4, indicating the importance of inequality, autocracy and sovereign wealth funds.
- Baseline Model with Interactions results for Model I in Table 4 provides strong evidence not to reject H3; Model II provides evidence not to reject H5; and Model III provides evidence not to reject H6.
- Models in Table 5 with results for tax haven interacted with inequality in Model I provides evidence that we do not reject H7, i.e., investors in countries that have high inequality utilize tax havens. Model III confirms H8, that investors from autocratic countries utilize tax havens; and Model II indicates countries with SWFs do not, i.e., the coefficient for H9 is insignificant.

Robustness Tests

- We rerun the models with different samples:
  - First, excluding years of recession during the global financial crisis, 2008-2009.
  - Second, because the US market capitalization is 40% of global market cap, we exclude the US from the OECD sample.
  - Third, as investors prefer to invest in markets with well-developed capital markets, we exclude thirteen OECD countries that are not considered developed capital market by MSCI Capital Market classifications, (i.e., emerging or frontier).
- In all cases the magnitudes and statistical significance of the coefficients for variables of interest are similar to the original, full sample results.

Conclusions

- We find that income inequality, political regime (autocracy vs. democracy) and existence of a sovereign wealth fund (SWF) are important determinants of cross-border equity flows.
- We also confirm that determinants commonly referenced in the literature hold as well and complement our findings.
- Source countries that have high income inequality and have a sovereign wealth fund, or are autocratic countries, experience higher equity outflows.
- On the other hand, source countries that have a sovereign wealth fund and also have an autocratic regime experience lower equity outflows.
- We also find countries with sovereign wealth funds or high-income inequality do not invest in tax havens, but autocratic countries invest in tax havens to maintain anonymity.