Public Health Restrictions during the COVID-19 Pandemic and the Impact on International Tax Evasion

David M. Kemme
Department of Economics
Fogelman College of Business and Economics
University of Memphis
Memphis, TN, USA
Email: dmkemme@memphis.edu
Tel No: 901-678-5406

Bhavik Parikh[1]
Department of Accounting and Finance
Gerald Schwartz School of Business
St. Francis Xavier University
Antigonish, Nova Scotia, Canada
Email: bparikh@stfx.ca
Tel No: 902-867-4926

Tanja Steigner
School of Business
Emporia State University
Emporia, Kansas, USA
Email: tsteigne@emporia.edu
Tel No: 620-341-6932

[1] Corresponding Author

Public Health Restrictions during COVID-19 Pandemic and the Impact on International Tax Evasion

Abstract

The COVID-19 pandemic significantly impacts tax evasion via roundtripping that varies by level of economic development. Utilizing a comprehensive dataset covering the period from 2015 to 2020, we analyze foreign portfolio investment (FPI) flows to explore the interaction between tax savings, tax haven status, and the stringency of public health policies. We find a significant increase in roundtripping activities in non-developed market host countries during the pandemic, likely driven by economic distress and uncertainty. Conversely, we find a decline in roundtripping activities for developed market host countries attributed to stringent regulatory measures and enhanced international cooperation. The results underscore the differential impact of the pandemic on tax evasion behaviors, highlighting the importance of robust regulatory frameworks and global collaboration in mitigating such practices. This study contributes to the literature by providing empirical evidence on the role of regulatory and economic environments in shaping tax evasion strategies during global crises. Policy implications and recommendations for future research are discussed.

Keywords: Tax Evasion, Portfolio Flows, COVID-19 Pandemic, Public Health Restrictions
JEL Code: G15, F38, H26, I18

1. Introduction

Tax evasion, characterized by underpaying or avoiding taxes, is a pervasive global issue across various income classes, genders, and ethnicities. Academic research has revealed significant patterns in the movement of bank deposits, particularly highlighting shifts from tax haven countries that signed bilateral tax treaties to those without such agreements (Johannesen and Zucman, 2014). Further investigations by Hanlon et al. (2015) established roundtripping evidence via offshore shell corporations among US investors. Expanding this analysis on a broader international scale, Kemme et al. (2017, 2020, 2021) identified similar roundtripping concerning tax morale, inequality, autocracy, and sovereign wealth funds.

However, despite a growing body of research, a critical gap exists in understanding how a global crisis, such as the recent COVID-19 pandemic, influences tax evasion behavior. This paper aims to fill this gap by exploring the impact of tax evasion via roundtripping during the pandemic. This period presents a unique context for examination as investors must consider whether to use lockdown periods to expand their wealth preservation scheme or to repatriate their wealth back home for more immediate access due to the uncertainties. Both scenarios are plausible, and the answer is not straightforward. By addressing this gap, our study contributes to the existing literature and provides new insights for policymakers determined to mitigate tax evasion in times of global uncertainty.

Recent research found that taxpayers' attitudes, subjective norms, perceived behavioral control, and the government's competence, integrity, and benevolence influenced compliance during the COVID-19 pandemic. Consequently, studies recommend that policymakers focus on improving tax education, simplifying tax laws and procedures, enhancing trust in government institutions, and leveraging technological innovations to boost tax compliance (Adhikara et al.,

2022; Alm et al., 2020; Supriyati and Hapsari, 2021). For tax avoidance in Sub-Saharan Africa's mining sector, Albertin et al. (2021) recommended strengthening tax administration, increasing transparency and accountability, and fostering international cooperation to combat tax avoidance during the pandemic. Similarly, the increased financial constraints and uncertainty during COVID-19 led to reduced tax compliance in Malaysia (Abdullah et al., 2022). This period also saw an increase in tax elasticity, which reduced government revenue and welfare (Gillman, 2021). Furthermore, tax policy's ethical dimensions and fairness have been a topic of interest during the pandemic. Ostas (2020) advocates for policies that consider the impact on vulnerable groups and promote fairness and transparency in tax administration. Zhu et al. (2023) explored the impact of the pandemic on firms globally and their tax compliance. They found that many firms became financially distressed, and their tax avoidance activities increased during the pandemic, even for countries adopting International Financial Reporting Standards and having higher societal trust. Athira and Ramesh (2023) find that during the COVID-19 pandemic, firms engaged in higher levels of tax avoidance to avoid liquidity crunches.

The critical question remains whether tax evasion increased or decreased for individual investors during the pandemic. Levi and Smith (2021) argued that pandemics increase fraud and tax evasion opportunities. They recommended strengthening anti-fraud measures, enhancing tax administration, and improving transparency and accountability within government institutions to combat these risks during the pandemic. Similarly, Banga and Te Velde (2020) emphasized the pandemic's role in underscoring the need for strengthening digital taxation and reducing tax avoidance and evasion in the digital economy. On the other hand, Zamzam et al. (2022) explored the communication strategies of the tax authorities in Indonesia. They found that using social

media and other communication channels significantly improved taxpayer awareness and compliance.

Our analysis examines the phenomenon of roundtripping separately in subsamples of developed and emerging markets host countries. This approach is necessitated by the fundamental differences observed in their financial systems, regulatory environments, and responses to the pandemic. Developed markets are typically characterized by more sophisticated financial infrastructures, more robust regulatory frameworks, and higher levels of transparency, factors that may influence investor behavior differently when compared to emerging markets (La Porta et al. 1998; Alfaro et al. 2004). On the other hand, emerging markets often encounter challenges such as weaker regulatory enforcement, higher levels of corruption, and less stable economic conditions, which can significantly impact the extent and nature of tax evasion (Habib and Zurawicki 2002; Javorcik and Wei 2009). The decision to analyze these subsamples separately is aimed at capturing the heterogeneity in tax evasion behaviors across different economic contexts.

We find no significant change in tax evasion via roundtripping during the COVID-19 pandemic for the complete sample. However, our subsample analysis that divides the sample by MSCI Classification into Developed Markets and Emerging/Transition Markets reveals that tax evasion via roundtripping decreases during the pandemic for Developed Capital Markets.[2] For Emerging/Transition Capital Markets, we observed increased tax evasion via roundtripping during the pandemic. This suggests that countries with well-developed capital markets and generous COVID-19 bailout programs were more effective in reducing tax evasion. The

[2] For details, see below and https://www.msci.com/our-solutions/indexes/market-classification.

transparency and traceability of income sources through government support programs likely contributed to this reduction.

The paper is structured as follows: section 2 develops the hypotheses, followed by determinants of Foreign Portfolio Investment (FPI) flow and data in section 3. Section 4 discusses the results, and Section 5 provides concluding remarks.

2. Hypotheses Development

The COVID-19 pandemic has caused unprecedented economic and financial challenges, necessitating a reevaluation of investor behavior, including opportunities for tax evasion via roundtripping. The impact of COVID-19 and the associated government measures to control it varied by country, potentially affecting tax evasion differently. The magnitude and direction of tax evasion via roundtripping thus remain a crucial and open question.

According to OECD's *Tax Policy Reforms 2020*, several OECD countries modified their tax policies for businesses and individuals, including deferrals for tax filings and payment of taxes. For example, Canada and the UK suspended tax debt recovery and audit activity for all but high-risk cases. Poland postponed tax reform to ease the tax burdens on businesses. In the United States, the CARES ACT temporarily relaxed specific provisions of the Tax Cuts and Job Act (TCJA), such as increasing the interest expense deduction limitation from 30% to 50% of Adjusted Taxable Income. Thirty-five of the 38 OECD countries provided tax payment deferrals, 18 offered flexible tax debt repayment, and 13 enhanced tax refunds. The direct fiscal support measures for the economy amounted to 10.4% of GDP in Australia, 14.9% of GDP in Japan, and 6.8% of GDP in the US. While these policy changes offered immediate economic relief, they

may have also impacted international tax evasion patterns and opportunities. Thus, there is a need to reassess tax evasion during the pandemic period.

Along with fundamental differences among OECD countries, such as the overall development of financial systems and capital markets, the severity of the disease and differing policy responses are additional factors that may contribute to differences in the patterns of tax evasion among countries. The economic distress and uncertainty induced by the COVID-19 crisis may have intensified the incentive for roundtripping. According to Forbes and Rigobon (2002), investors often move their assets to perceived safe havens during crises. Consequently, the pandemic may have escalated roundtripping as investors sought to insulate their wealth from the instability and potential currency depreciation in their home countries. Supporting this notion, Desai et al. (2006) illustrate how firms can leverage intricate cross-border financial mechanisms to evade taxes and secure assets in jurisdictions with more favorable economic conditions.

Additionally, governments under fiscal strain due to extensive macroeconomic employment and stimulus policies may find it necessary to implement subsequent tax increases[3] to offset pandemic expenses. This scenario may create a greater incentive for taxpayers to engage in roundtripping for tax evasion. This observation aligns with empirical evidence from Johannesen and Zucman (2014), who found a correlation between the accumulation of offshore wealth and higher domestic tax rates. The unique challenges posed by the pandemic could amplify this trend. Thus, our first hypothesis is:

[3] See (Slemrod & Bakija, 2008).

Hypothesis 1: During COVID-19, there is an increase in roundtripping due to the pandemic, with variations in magnitude depending on the stringency of domestic public health policies to control the spread of COVID-19.

Conversely, the global pandemic response—characterized by increased regulatory vigilance—may have inhibited roundtripping activities. This hypothesis is anchored in the literature addressing the effects of regulatory stringency, positing that enhanced enforcement and compliance demands can significantly curtail illicit financial operations (Rose-Ackerman, 1999). Initiatives to bolster financial transparency and international collaborative efforts, such as the OECD's Automatic Exchange of Information (AEOI) standard, have likely been reinforced during the pandemic, aiming to thwart tax evasion and secure state revenues. Furthermore, due to establishment closures, travel bans, and business interruptions, the pandemic's negative effect on normal operations may have imposed new obstacles to roundtripping. This view is substantiated by Unger et al. (2006), who contend that robust regulatory infrastructures can diminish the scale of illicit financial activities. Therefore, the global amalgamation of rigorous enforcement and practical barriers may have collectively dampened roundtripping throughout the pandemic. Thus, our second hypothesis is:

Hypothesis 2: Roundtripping activities decreased during COVID-19 due to enhanced regulatory measures and practical barriers imposed by the pandemic, with variations depending on domestic public health policies.

Despite the widespread disarray caused by the COVID-19 pandemic, it is conceivable that roundtripping practices were unchanged. Financial persistence (Gennaioli et al., 2012) suggests that entrenched financial behaviors and systemic practices within the global financial

system are inherently resilient to external disruptions. As such, roundtripping may have continued unabated as investors and corporations adapted their tactics to uphold these operations. This hypothesis is informed by the resilience theory of illicit financial networks (Sharman, 2010), which indicates that these networks can rapidly adapt to shifting regulatory and economic conditions. Hence, despite potential alterations in tax evasion incentives and the introduction of more stringent regulatory measures, the structural nature of roundtripping in certain sectors of the economy may have ensured its perseverance during the pandemic years. Thus, our third hypothesis is:

Hypothesis 3: Roundtripping activities remained consistent during the pandemic, demonstrating the resilience of established financial behaviors and illicit financial networks.

To empirically address these questions, we develop and estimate models of investment flows based on Kemme et al. (2017, 2020, 2021), which has now been modified to measure roundtripping activity during the COVID period and the effects of public health policies. This approach allows us to determine the pandemic's broad impact on roundtripping behavior. Importantly, given the heterogeneity of the level of development of the financial system and capital markets of countries in our sample, we decomposed the full sample into sub-samples of countries with developed and less developed financial systems. The models in the next section include not only traditional determinants of roundtripping but also the effects of the public health responses of each country. We compare the roundtripping activity between countries vis-à-vis the relative stringency of their COVID containment policies. This comparative approach allows us to objectively assess how different public health policies during the pandemic may correlate with changes in roundtripping activities across nations.

3. **Determinants of FPI flows and data.**

We focus on the joint impact of tax savings, tax havens, and the COVID-19 pandemic on foreign portfolio investment (FPI) flows, specifically, equity flows and other determinants and standard control variables commonly used in the literature. Our dependent variable is the natural logarithm of FPI that a foreign source country sends each year to an OECD host country, denoted as *Log (Equity Flows)*. We collect the FPI inflow data from the IMF Co-ordinated Portfolio Flows Investment Survey (CPIS) Database. For a country pair to be a part of the sample, each country pair must have at least FPI flows of a minimum of 1 million USD.

Our key independent variables are tax haven status and change in tax savings. Following Hanlon et al. (2015) and Dharmapala (2009), source countries that are identified either in the Harmful Tax Competition Report (OECD, 1998) or by Hines and Rice (1994) are considered tax havens[4]. Forty of our source countries (20.91%) are considered tax havens, indicated by a *Source Tax Haven dummy* variable equal to one. As illustrated by Hanlon et al. (2015) and Kemme et al. (2017, 2020, 2021), we expect that tax haven status is positively related to FPI inflow for an OECD host country.

Clotfelter (1983), *inter alia*, investigates the relationship between tax rates and tax evasion, and his findings suggest that tax rates significantly affect the amount of tax evasion. We control for tax rates by including the percentage change of tax savings between every host country and source country pair each year *ΔTax Savings*. We subtract foreign investors' dividend

[4] It is important to note that alternative classification methods exist for varying purposes. For example, Jones *et al.* (2018) use a subcomponent of the Tax Justice Network's Financial Secrecy Index (FSI), the Secrecy Score, to identify tax havens. While secrecy is an important aspect of tax havens, our research focuses closely on tax rates. Hence, for this paper, we label a country as a tax haven if it is identified as such by either the OECD or Hines and Rice (1994).

withholding tax rate from the net dividend tax rates for domestic residents to obtain *Tax Savings*. The dividend withholding tax in the host country can be lower for foreign investors from source countries with which there are double taxation avoidance treaties. We collect tax information from the Deloitte International Tax Database and the KPMG Individual Tax Rate Survey.[5] *ΔTax Savings* by itself has been found to have no impact on *Log (Equity Flows)* between two non-tax shelter countries. Hence, we expect the coefficient on this variable to be not significantly different from zero.[6]

The final sample consists of 9996 observations of FPI flows sent from 191 source countries into 38 OECD host countries for the period 2015–2020. Table A1 in the Appendix lists the host countries, source countries, and source countries with tax haven status. We have 2208 country pairs in our dataset.

We use two indicators for the effect of the COVID-19 pandemic on roundtripping via tax havens. The first measure uses the year 2020 as the pandemic year, creating a dummy variable, *Pandemic Year Dummy*, which takes the value one for the year 2020 and zero otherwise**.** Our second variable is a measure of the public health policies of each country based on the COVID Stringency Index created by Mathieu et al. (2020) from *Our World in Data* datasets[7]. This index uses nine measures, each taking a value between zero and 100, to determine the stringency of the policy response: school closures, workplace closures, cancellation of public events, restrictions on public gatherings, public transport closures, stay-at-home requirements, public information campaigns, restrictions on internal movements, and international travel controls. The index on

[5] As noted in Kemme *et al.* (2017), we also compare similar tax rate data from other accounting firm publications and find that our tax rates are consistent across these publications.
[6] As Hanlon *et al.* (2015) and Kemme *et al.* (2017) have shown, an increase in tax savings triggers more FPI from tax haven source countries only because those are the countries via which the host country investors evade taxes. Therefore, there is no expectation that FPI flows will increase in general as tax savings increase.
[7] https://ourworldindata.org/covid-stringency-index

any given day is then calculated as the mean of the nine metrics. The index provides daily scores for each of the host countries for the year 2020. We take the average of the daily scores to get the yearly measurement and then create a dummy variable, *countries with strict restrictions*, which takes a value of one for host countries with a median score of greater than 60.6 and zero otherwise for the year 2020[8]. These are host countries that have faced severe lockdowns during the pandemic. Table A1 lists host countries with strict COVID-19 restrictions and host countries with moderate restrictions during the COVID-19 pandemic.

We also control for other well-established determinants of FPI flows with variables and specifications discussed in Kemme *et al.* (2017, 2020). La Porta *et al.*, 2000 and Globerman and Shapiro (2003) find that investor protection is more significant in common law than in civil law systems. To identify the legal system for countries in our sample, we use LaPorta et al. (1998) and construct a *Common Law Dummy* variable equal to one if the host country has a common law legal system and zero otherwise. We expect a positive coefficient for this variable, as countries with a common law legal system typically attract more equity flows due to better investor protection.

Furthermore, we consider the host country's economic size because large and developed markets generally receive more Foreign Portfolio Investment flows (Alfaro *et al.,* 2004; Amaya and Rowland, 2004). Therefore, we expect positive coefficients for the *Log (Host GDP)* variable. GDP data is obtained from the World Bank database.[9] Additionally, we include *Log (Host*

[8] COVID-19 Stringency Index is calculated daily. Since the Foreign Equity Portfolio Data is available on a yearly basis, we took the average of the daily data to get an annual Stringency Index measure for each of our host countries. Since our sample contains 38 host countries, we assign a value of one to countries classified as having Strict Restrictions (19 host countries) if their index score exceeds the median of 60.6. The remaining countries are assigned a value of zero, representing Moderate Restrictions (19 host countries).
[9] https://data.worldbank.org/

Country Market Capitalization) to reflect the depth and development of the host country's financial markets, expecting a positive relationship as per Aggarwal *et al.* (2012).

Following our initial analysis, we explore the heterogeneity of financial market development by dividing the total sample into countries with MSCI-developed and less-developed capital markets[10]. MSCI classifies a country's market as developed, emerging, or frontier based on specific criteria, including economic development, size and liquidity requirements, and market accessibility. To be classified as a Developed market by MSCI, a country must meet stringent criteria. First, the country's Gross National Income (GNI) per capita must exceed the World Bank's high-income threshold by at least 25% for the past three consecutive years, indicating a high level of economic development. Second, the market must demonstrate sufficient size and liquidity, with a minimum company market capitalization of $5 billion and an annualized traded value ratio of at least 20%. This ensures that the market can support significant investment activity. Lastly, market accessibility is a crucial factor. The country must show high openness to foreign ownership, ease of capital inflows and outflows, an efficient operational framework, a stable institutional environment, and unrestricted availability of investment instruments. These criteria collectively ensure that the market is conducive to international investment. Based on these standards, only 23 countries, including 21 OECD member countries, are currently classified as developed markets.

Habib and Zurawicki (2002) note that corruption poses a significant barrier to foreign investment, primarily due to operational inefficiencies and the desire to avoid actual or perceived misconduct. Javorcik and Wei (2009) find that increased corruption in Eastern European countries led to a 15-percentage point reduction in the probability of foreign investment. We use

[10] Identified in Table A1 of the Appendix.

the Corruption Perception Index provided by Transparency International to capture this impact of corruption. Each year, they score countries on the 'degree to which corruption is perceived to exist among public officials.' A higher score in this index represents less corruption. For example, in their 2016 report, Denmark scored 90 and was ranked as the least corrupt country, whereas Somalia scored 10 and was ranked as the most corrupt country. Gande and Parsley (2014) show that countries with a higher *Corruption Perception Index* (i.e., corruption is lower) are net recipients of capital flows. These flows increase when the perceived corruption in the source countries increases. Hence, we expect a positive relationship between *Log (Equity Flows)* and the *Corruption Perception Index*.

A country's exchange rate also influences FPI. Previous studies indicate that a weaker US dollar (implying a stronger foreign currency) is correlated positively with increases in FDI into the US.[11] In our analysis, we expect that *Log (Equity Flows)* is positively related to relatively stronger source country currencies. To capture this effect, we include the *Relative Exchange Rate* in our regressions, which is defined as the host country's bilateral exchange rate with respect to the US dollar, relative to the source country's bilateral exchange rate with respect to the US dollar. Exchange rate data are obtained from Thomson Reuters DataStream.[12]

The quality of a country's economic infrastructure, including power and communications, is essential for domestic and foreign investors when making international investment decisions. Portes and Reys (2005) employ telephone traffic as a proxy for overall information flows, which

[11] See Froot and Stein (1991), Klein and Rosengren (1994), and Dewenter (1995) for the US, and Johannesen (2014) for European countries.

[12] For control variables, we also looked at *Identical Language,* which is a dummy variable equal to one if the source and host country speak the same official language, and zero otherwise. Language data were obtained from Melitz and Toubal (2014). Since familiarity with the language in the host country increases foreign investments (Aggarwal *et al.,* 2012; *inter alia*), we expected a positive coefficient for this variable. However, the *Identical Language* variable remained statistically insignificant across all our model specifications, and we have omitted this variable in our reported models.

enhances international investment decision-making. We argue similarly that the advancement and widespread use of cellular services can influence the volume of investment transactions and the potential for tax evasion. Mobile subscriptions (*Mobile subscriptions per 100 persons*) is our proxy for improved communications. The World Bank database includes the number of postpaid subscriptions and active prepaid accounts (used during the last three months) that offer voice communications. We expect the coefficient sign to be positive. Table A2 of the Appendix provides variable names, descriptions, and sources for all variables.

Figure 1 depicts the *Foreign Portfolio Investment* (FPI) flows into OECD countries. For the full sample (Figure 1A), mean FPI flows from Source Tax Haven countries into the OECD increased from approximately $15 billion in 2016 to about $24 billion in 2020. We observe the same upward trend but lower magnitudes for Source Non-Tax Haven countries, ranging from about $9 billion to about $13 billion. When focusing on the MSCI Developed Host Country sub-sample (Figure 1B), the trend and significant differences in inflows from tax havens versus non-tax havens are consistent, with inflows from tax havens being notably higher. Specifically, FPI into OECD countries from Source Tax Haven countries rose from about $21 billion in 2016 to approximately $31 billion in 2020; for Non-Tax Haven countries, these values ranged from about $11 billion to about $16 billion. This graphic overview suggests that tax haven status plays a crucial role in attracting higher FPI, likely due to favorable tax policies and regulatory environments that are more attractive to foreign investors. Thus, tax haven status could encourage tax evasion via roundtripping, which is in line with prior literature.

We present summary statistics in Table 1, differentiating between the full sample and sub-samples. Table 1A reports summary statistics for the full sample, Table 1B for the MSCI Non-Developed Market Host Countries sub-sample, and Table 1C for the MSCI Developed Market

Host Countries sub-sample. For the full sample, the mean *Foreign Portfolio Investment* (FPI) between the host and source countries is USD 12.77 billion, with 25 percent of all flows originating from *Source Tax Haven* countries. The average *ΔTax Savings* is four percent. The average Host Country GDP is relatively high at USD 2.18 trillion for the recipient OECD countries. The mean *Host Market Capitalization* in the full sample is USD 2.6 trillion, with a maximum of USD 36.7 trillion for the US. The *Corruption Perception Index* score, which can range from 0 to 100, averages 71.6 (with higher scores indicating less corruption) and ranges from 28 to 90. The average *Mobile Subscription per 100 people* for the full sample is around 120.

The differences between MSCI Non-Developed Markets (Table 1B) and MSCI Developed Markets (Table 1C) are as expected. Developed capital market countries experience significantly larger mean Equity Flows ($16.3b vs. $4.5b), ΔTax Savings (0.055 vs. 0.001), Host Country GDP ($3.0t vs. $0.4t), and Market Cap ($3.6t vs. $0.2t). Also, there are notable differences in perceptions of corruption and mobile phone usage between countries with Developed and Non-Developed capital markets. For the MSCI Developed Market Host Countries sub-sample, the mean *Corruption Perception Index* is 75.9, indicating lower perceived corruption than in the full sample. The average *Mobile Subscription per 100 people* is lower at 118.13. In contrast, for the MSCI Non-Developed Capital Market Host Countries sub-sample, the mean *Corruption Perception Index* is 61.2, indicating higher perceived corruption. The average *Mobile Subscription per 100 people* is higher at 126.28. These statistics highlight differences in economic performance and infrastructure between developed and non-developed market host countries within the OECD that may significantly influence FPI flows.

Insert Table 1 around here

The Pearson Correlation Matrix for the independent variables is presented in Table A3 of the Appendix. All correlations are relatively small, and none are sufficient to cause multicollinearity in our regression analysis below. In Table 2, we conduct a difference in means t-test to compare the mean values of FPI between non-COVID and COVID years and between source countries classified as tax and non-tax havens. We also differentiated between the total sample and the sub-sample of developed markets (MSCI sample). The t-test results in Table 2 show that during the COVID year, there was a statistically significant increase in FPI flowing into non-tax haven source countries compared to previous years, at the ten percent significance level. Additionally, during the COVID year, significantly more FPI flowed into non-tax haven source countries with strict COVID restrictions compared to those with moderate restrictions, at the five percent significance level. Similar trends were observed for FPI flowing into tax haven source countries, although the differences were not statistically significant. Furthermore, more FPI flowed into countries with strict COVID restrictions compared to those with moderate restrictions, with statistical significance at the ten percent level.

Although these patterns were consistent in the MSCI-developed sub-sample, only the mean FPI flows from non-tax havens into countries with strict COVID restrictions were statistically larger than into those with moderate COVID restrictions, significant at the five percent level.

4. Model and Empirical Analysis

4.1. Model Specification

Our analysis estimates a gravity equation based on the portfolio optimization model developed by Portes and Reyes (2005). The dependent variable is the natural logarithm of equity

flows from the source to the host country, *Log (Equity Flows)*. To test our hypotheses regarding the impact of the COVID-19 pandemic on tax evasion via roundtripping in OECD host countries, we focus on the interaction between *Source Tax Haven*, *ΔTax Savings* (as defined in Section 3), and the *COVID-19 Pandemic*. Specifically, we use a dummy variable for the pandemic year in Equation 1 and a variable for public health policies in *countries with strict restrictions* in Equation 2. These interactions are captured in the basic regression model and variants as:

$$Log\ (Equity\ Flow)_{ij,t} = \beta_1\ Source\ Tax\ Haven + \beta_2\ Pandemic\ Year\ Dummy + \beta_3\ \Delta Tax\ Savings + \beta_4 Source\ Tax\ Haven * Pandemic\ year\ dummy + \beta_5 \Delta Tax\ Savings * Pandemic\ year\ dummy + \beta_6 \Delta Tax\ Savings * Source\ Tax\ Haven + \beta_7 \Delta Tax\ Savings * Source\ Tax\ Haven * Pandemic\ year\ dummy + \beta_k X_{i,j,t} + + Host\ Fixed\ Effects + \in_{ij,t} \quad (1)$$

and

$$Log\ (Equity\ Flow)_{ij,t} = \beta_1\ Source\ Tax\ Haven + \beta_2\ Country\ with\ strict\ restrictions + \beta_3\ \Delta Tax\ Savings + \beta_4 Source\ Tax\ Haven * Country\ with\ strict\ restrictions + \beta_5 \Delta Tax\ Savings * Country\ with\ strict\ restrictions + \beta_6 \Delta Tax\ Savings * Source\ Tax\ Haven + \beta_7 \Delta Tax\ Savings * Source\ Tax\ Haven * Country\ with\ strict\ restrictions + \beta_k X_{i,j,t} + Year\ Fixed\ Effects_t + Host\ Fixed\ Effects + \in_{ij,t} \quad (2)$$

From the discussion in Section 3, we expect that the coefficients β_1 and β_2 will be positively related to *Log (Equity Flow)* in both equations 1 and 2, while β_3 is expected to show no significant deviation from zero in both equations. Our primary focus lies on the interaction

terms Δ*Tax Savings * Source Tax Haven * Pandemic Year Dummy* in Equation 1 and Δ*Tax Savings * Source Tax Haven * Country with Strict Restrictions Dummy* in Equation 2.

In Equation 1, the interaction term with coefficient β_7 tests whether OECD investors are more inclined to engage in tax evasion via roundtripping during the pandemic (indicated by the Pandemic Year Dummy) compared to previous years. A positive and significant β_7 implies that roundtripping has become more prevalent during the pandemic, possibly due to reduced oversight from tax authorities. On the other hand, a negative and significant β_7 implies that roundtripping has reduced during the pandemic. Alternatively, a non-statistically significant β_7 suggests that OECD host countries do not see an increase in tax evasion during the pandemic compared to the prior non-pandemic period.

In Equation 2, the interaction term with coefficient β_7 investigates whether the strictness of the public health policy response affects the level of tax evasion. A positive (negative) and statistically significant coefficient indicates that stricter policy responses lead to higher (lower) levels of tax evasion via roundtripping by OECD investors.

In both equations, $X_{i,j,t}$ represents a matrix of the control variables, including *Relative Exchange Rate, Common Language Dummy, Common Law Dummy, Log (Host Country GDP), Log (Host Market Capitalization), Log (Corruption Perception Index), and* L*og (Mobile Subscriptions per 100),* as previously defined. Year-fixed effects are included to account for temporal variations, and host-country fixed effects capture heterogeneous country-specific effects not explained by the other independent variables in equations (1) and (2).

We estimate both equations using Ordinary Least Squares (OLS) with clustered standard errors by host country and year. This method yields unbiased and asymptotically consistent standard errors, ensuring appropriate test statistics for the coefficient.

4.2 Empirical Results and Findings

Table 3a presents the regression results for the full sample. Model I is the basic model, while Model IV incorporates additional determinants and control variables. Models II and V include the *Pandemic Year Dummy* variable, the *Pandemic Year Dummy* interacted with *Source Tax Haven* and with *ΔTax Savings,* and the triple interaction of *ΔTax Savings*Source Tax Haven* Pandemic Year Dummy*. Models III and VI include the *Country with Strict Restrictions Dummy* variable and the associated interactions, including the triple interaction of *ΔTax Savings*Source Tax Haven* Country with Strict Restrictions Dummy*, as well as the other determinants and control variables as defined in the previous section (discussed further below). All models include host country fixed effects, with Models II and V also including year-fixed effects.

Models I and IV, presented in Table 3a, are foundational and substantiate previous research, showing that factors such as source tax havens, relative exchange rates, and a common language positively affect FPI flows, with coefficients significant at the one percent level. Contrary to the previous literature, we find a negative coefficient of ΔTax Savings, which is also significant at the one percent level. Still, our analysis confirms that the interaction term *Source Tax Haven Dummy * ΔTax Savings* is positive and statistically significant across all models, indicating strong evidence of tax evasion through roundtripping for the full sample. Now, we ask if these relationships have changed due to the pandemic.

Models II and V show a statistically significant positive relationship between FDI flows and the *Pandemic Year Dummy*. However, the coefficients on the interaction terms *Source Tax Haven Dummy * ΔTax Savings * Pandemic Year Dummy* and Source *Tax Haven Dummy * ΔTax Savings * Country with Strict Restrictions Dummy* are not statistically significantly different from zero. Models IV and VI also include other determinants, but the pandemic interactions

remain statistically insignificant. Models III and VI include the country with strict restrictions variable, and it is not statistically significant. As such, our initial findings for the full sample suggest that while FPI increased in 2019, there was no significant change in roundtripping behavior during the COVID-19 pandemic. However, because the level of capital market development, as highlighted in the univariate analysis presented in Table 2, appears to be an important factor, we divided the sample into countries with developed and less developed capital markets.

We re-estimate several of the models for the two sub-samples, countries with developed and less developed capital markets, as classified by MSCI. The results are presented in Table 3a. The countries in each sub-sample are listed in Appendix Table A1, and these results are presented in Table 3b. Models I-III pertain to MSCI Non-Developed Market host countries, while Models IV-VI pertain to MSCI Developed Market host countries.

For the MSCI Non-developed host country economies, Models I, II, and III indicate no generally detectable tax evasion via roundtripping, as the coefficient on the interaction term *Source Tax Haven Dummy* * Δ*Tax Savings* was not statistically different from zero. However, in all three models, the Source Tax Haven is positive and statistically significant; in Model II, the *Pandemic Year Dummy* is positive and statistically significant. Importantly, and in line with our Hypothesis H1, in Model II for MSCI-developed capital market economies, we find a positive coefficient on *Source Tax Haven Dummy* * Δ*Tax Savings* * *Pandemic Year Dummy,* which is statistically significant at the ten percent level. Therefore, our results suggest that FPI flows from tax haven source countries into non-developed markets increased during the pandemic year. Further, in Models II and III, the coefficients on Δ*Tax Savings***Pandemic Year Dummy* and Δ*Tax Savings***Country with Strict Restrictions Dummy* are negative and statistically significant. This

indicates that during the pandemic year, the effects of tax savings on FPI flows are significantly less than the effect during pre-COVID years (Models II and III) and even more so for countries with strict restrictions (Model III) supporting Hypothesis 2 (H2), indicating that stringent regulatory measures during the pandemic reduced roundtripping activities in non-developed markets. Note also, though, in line with our Hypothesis H1, in Model II for MSCI-developed capital market economies, we find a positive coefficient on *Source Tax Haven Dummy * ΔTax Savings * Pandemic Year Dummy,* which is statistically significant at the ten percent level. Model II indicates that flows from tax havens were higher during the pandemic. However, we do not find these results for countries with strict COVID-19 restrictions.

Models IV, V, and VI report the results for host countries with MSCI-developed markets. We find consistent and highly significant evidence of tax evasion via roundtripping, as indicated by the positive coefficients for the interaction term *Source Tax Haven Dummy * ΔTax Savings*. Additionally, the coefficients for the interaction terms *Source Tax Haven Dummy * ΔTax Savings * Pandemic Year Dummy* and *Source Tax Haven Dummy * ΔTax Savings * Country with Strict Restrictions Dummy* are negative and statistically significant at the one percent level. These results suggest that FPI flows from tax havens to OECD countries with developed capital markets decreased during the pandemic, strongly supporting Hypothesis H2.

Summarizing our findings also addresses our third hypothesis. We find support for financial persistence (Gennaioli, et al., 2012) during the pandemic in the full sample, as roundtripping does not change during the pandemic year and in countries with strict Covid measures. However, when we differentiate between developed and less-developed financial markets, financial persistence does not hold. For less-developed markets, the significant increase in roundtripping activities suggests a behavior change, as these activities increased

rather than remained stable. For developed markets, the decrease in roundtripping activities due to stringent regulatory measures further indicates that we cannot support H3.

The coefficients for other determinants and control variables are consistent with prior studies. For example, in all models, the coefficient for *Source Tax Haven* (β_1) is positive and highly significant at the one percent level. Hence, significantly more FPI flows into the OECD from tax-haven countries than from other source countries. ΔTax Savings (β_3) is negative and statistically significant across all models in the full sample (Table 3a) and in all models for the Developed MSCI economies (Table 3b). The coefficient for the interaction term Source Tax Haven *ΔTax Savings, (β_6), our measure of roundtripping, is positive and statistically significant for the full sample for all Models (Table 3a) and for the MSCI Developed capital market economies (Table 3b). This finding is similar to Hanlon et al. (2015) and Kemme et al. (2017), implying that as foreign investors' tax savings increase, domestic investors are likely to engage in roundtripping their equity flows via tax haven to reduce overall taxes.

The *Pandemic Year Dummy* coefficient in Table 3b is positive and highly significant for the MSCI non-developed capital market sample (Model II) but not significantly different from zero for the developed capital market sample (Model V). This finding indicates that FPI flows generally increased during the pandemic in non-developed capital market economies. The technology to support working from home was more pronounced in the MSCI developed host countries, and the government programs to support households during the initial phase of the COVID-19 pandemic were implemented quickly, thus damping incentives to change behavior (Models IV, V, VI).

Additionally, the coefficients for the *Relative Exchange Rate* (host relative to source) remain positive and significant in all specifications. In line with prior studies, the estimated

coefficients for the *Common Language Dummy* are positive and highly significant across all models and samples. The *Common Law Dummy* is also positive and statistically significant for all models of the full sample and all models using the Non-developed MSCI countries (Table 3b). Thus, in the full sample higher foreign portfolio inflows are attracted to OECD host countries with a common law legal system and better investor protection. The coefficients for other control variables are statistically insignificant. In summary, the coefficient estimates for all other determinants are consistent with the findings of Kemme *et al.* (2017).

Insert Tables 3a and 3b about here

5. Summary and Conclusions

In conclusion, our study provides valuable insights into the impact of the COVID-19 pandemic on tax evasion through roundtripping, focusing on OECD host countries. By incorporating variables such as tax savings, tax havens, and the stringency of public health policies, we aimed to understand how the pandemic influenced roundtripping activities in light of the varying regulatory and economic environments across countries.

Our analysis revealed nuanced insights into the behavior of tax evaders during the pandemic. In non-developed market host countries, we observed an increase in roundtripping activities. Specifically, the positive and statistically significant interaction term *ΔTax Savings * Source Tax Haven * Pandemic Year Dummy* indicated that tax haven source countries increased their FPI flows into these markets during the pandemic year. This finding supports the hypothesis that economic distress and uncertainty induced by the COVID-19 crisis intensified the incentive for roundtripping, as investors sought to protect their wealth from instability and potential depreciation in their home countries.

Conversely, in developed market host countries, stringent regulatory measures appeared to mitigate the increase in roundtripping activities. The negative and statistically significant coefficients for the interaction terms *ΔTax Savings * Source Tax Haven * Pandemic Year Dummy* and *ΔTax Savings * Source Tax Haven * Country with Strict Restrictions Dummy* suggested that enhanced regulatory measures and practical barriers imposed by the pandemic curbed tax evasion. This finding supports the hypothesis that increased regulatory vigilance and international cooperation during the pandemic effectively reduced opportunities for roundtripping.

The findings underscore the multifaceted impact of the pandemic on roundtripping, significantly influenced by the regulatory environment and economic conditions of host countries. The pandemic created opportunities for increased tax evasion in non-developed markets, while stringent regulatory measures effectively mitigated these activities in developed markets. This differential impact emphasizes the importance of robust regulatory frameworks and international cooperation in combating tax evasion, especially during periods of economic crisis.

This study focuses on OECD countries and provides valuable insights, but it may not capture the entire global picture as non-OECD countries were also affected. While beyond the scope of this paper, they may be worth ananlyzing as well. Additionally, the study focuses on the acute phase of the pandemic, and long-term effects remain to be explored. Future research could explore the long-term effects of the pandemic on tax evasion and the effectiveness of different regulatory measures in various economic contexts. By deepening our understanding of these dynamics, policymakers can better design strategies to curb tax evasion and promote fair and transparent tax systems globally. The insights from this study provide a foundation for

developing targeted policies to address the challenges of tax evasion in an increasingly complex and interconnected global economy.

Figure 1: Foreign Portfolio Equity Flows (FPI) into OECD Countries

Figure 1A: Full Sample

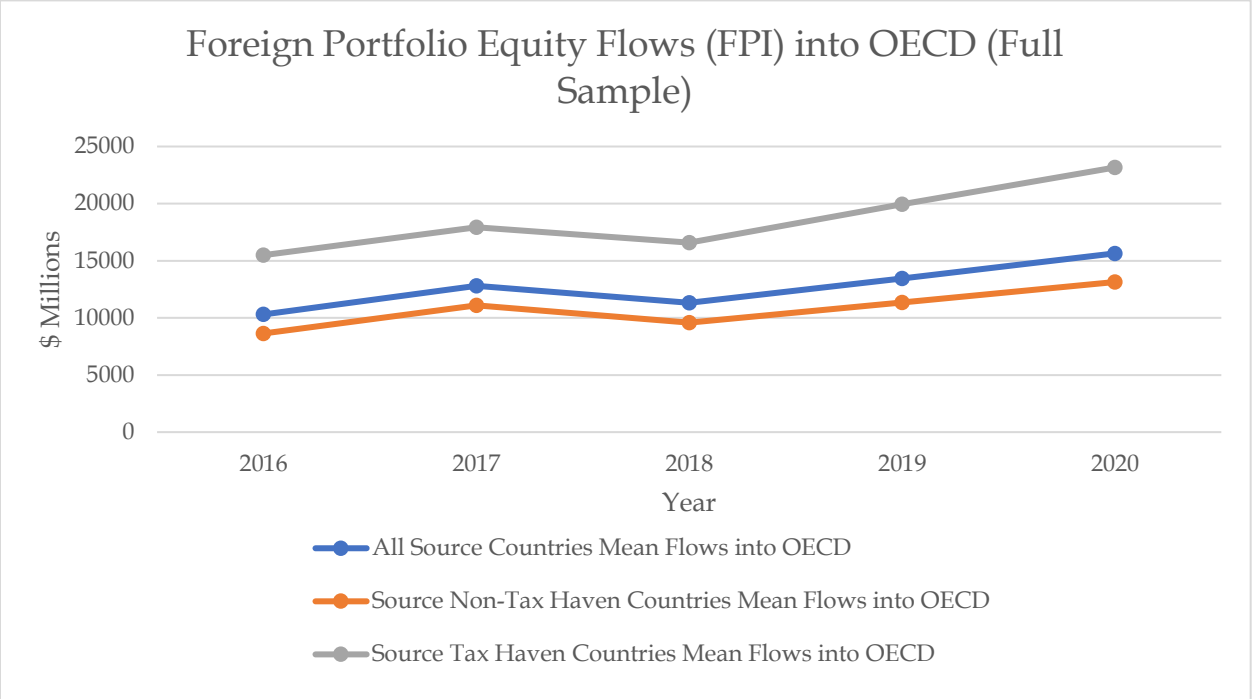

Figure 1B: MSCI Developed capital market Host Country Sample

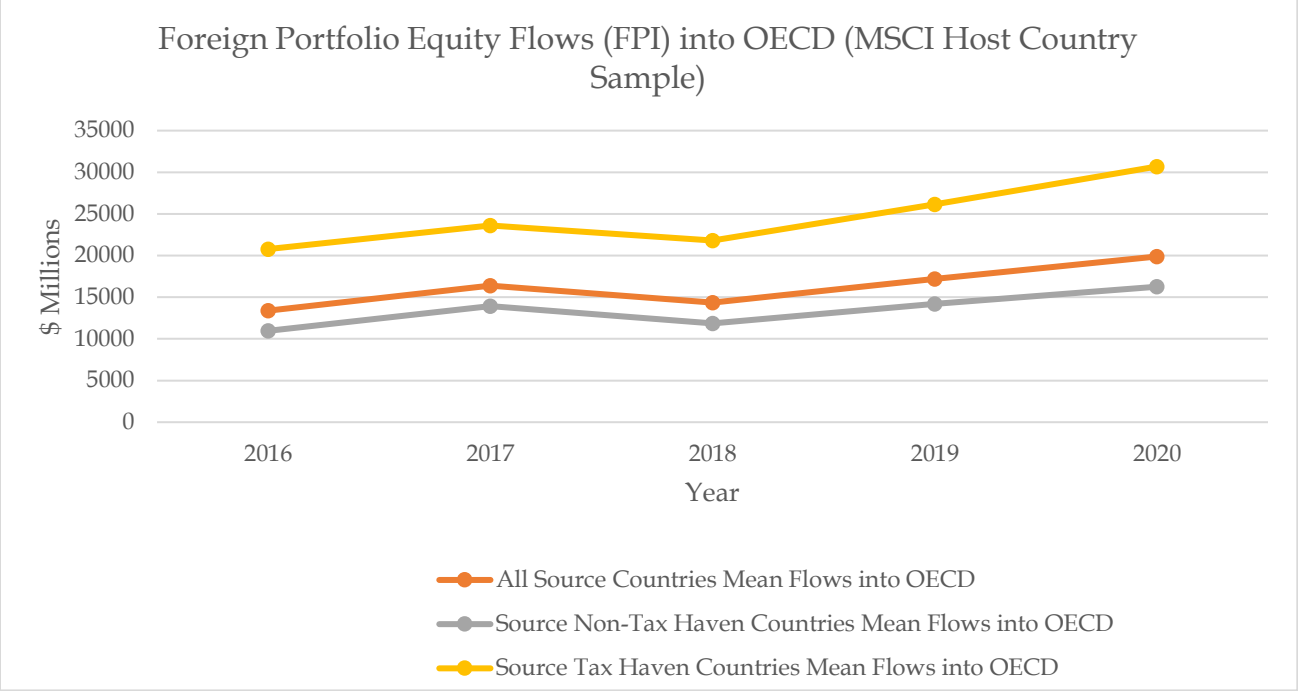

Table 1 Summary Statistics

This table provides summary statistics of the variables used in the study. Here, N reflects the number of observations. In Table 1A, summary statistics are provided for the full sample; in Table 1B, summary statistics are provided for Non-Developed Host Countries' Capital Markets; and in Table 1C, summary statistics are provided for Developed Host Countries' Capital Markets. All the variables are defined in Appendix A2, and the host country capital market classification is provided in Appendix A1.

1A Full Sample

Variable	N	Mean	Std Dev	Minimum	Maximum
Equity Flows ($ billions)	9996	12.767	69.204	1.00	1938.097
Source Tax Haven Dummy	9996	0.25	0.43	0.00	1.00
ΔTax Savings	9996	0.04	0.68	-15.56	10.50
Relative Exchange Rate	9996	73.99	347.46	0.000004	4736.99
Host Country GDP ($ billions)	9996	2177.40	4556.25	20.79	21372.60
Market Cap ($ billions)	9996	2568.58	6873.49	0.34	36737.70
Corruption Perception Index Score	9996	71.57	12.93	28.00	90.00
Mobile Subscription per 100 people	9996	120.60	14.36	84.52	178.59

1B MSCI Non-Developed Market Host Countries Sub-Sample

Variable	N	Mean	Std Dev	Minimum	Maximum
Equity Flows ($ billions)	3029	4.592	30.399	1.00	882.756
Source Tax Haven Dummy	3029	0.24	0.43	0.00	1.00
ΔTax Savings	3029	0.001	0.29	-3.50	5.00
Relative Exchange Rate	3029	234.30	601.06	0.00004	4736.99
Host Country GDP ($ billions)	3029	394.84	544.12	20.79	1724.85
Market Cap ($ billions)	3029	208.82	358.36	0.34	1229.97
Corruption Perception Index Score	3029	61.61	14.85	28.00	82.00
Mobile Subscription per 100 people	3029	126.28	13.96	90.59	178.59

1C MSCI Developed Market Host Countries Sub-Sample

Variable	N	Mean	Std Dev	Minimum	Maximum
Equity Flows ($ billions)	6967	16.321	80.176	1.00	1938.097
Source Tax Haven Dummy	6967	0.25	0.43	0.00	1.00
ΔTax Savings	6967	0.055	0.79	-15.55	10.50
Relative Exchange Rate	6967	4.303	19.39	0.000004	369.76
Host Country GDP ($ billions)	6967	2952.40	5260.71	188.83	21372.57
Market Cap ($ billions)	6967	3594.52	8016.13	49.52	36737.70
Corruption Perception Index Score	6967	75.90	9.06	47.00	90.00
Mobile Subscription per 100 people	6967	118.13	13.81	84.52	154.22

Table 2: Difference in Means T-Test

This table presents the difference in Means Student T-Test for our dependent variable Foreign Portfolio Equity Flows to compare the increase/decrease in flows to host countries from non-tax haven/tax haven source countries. All flows are reported in $ (USD) Million. Source Country Classification as Non-Tax Haven and Tax Haven in provided in Appendix A1. *, **, *** indicates statistical significance at 1%, 5%, and 10%, respectively.

Source Country	Time/Period Restrictions	Mean Foreign Portfolio Equity Flows (Full Sample)	Mean Foreign Portfolio Equity Flows (MSCI Sample)
Non-Tax Haven	Non-Covid Year	10215.5	12805.2
	Covid Year	13138.4	16260.7
	Difference	-2922.9*	-3455.5
Tax Haven	Non-Covid Year	17562.9	23192.6
	Covid Year	23161.5	30689.3
	Difference	-5598.6	-7496.7
Non-Tax Haven	Moderate COVID-Restrictions	8772.7	8584.3
	Strict COVID-Restrictions	16546.3	20388.2
	Difference	-7773.6**	-11803.9**
Tax Haven	Moderate COVID-Restrictions	12345.2	15971.6
	Strict COVID-Restrictions	32078.2	39427.9
	Difference	-19733.0*	-23456.3

Table 3a: Initial Analysis (Full Sample)

This table presents the OLS with Fixed Effects analysis as defined in Equations 1 and 2 in the article for the whole sample. Here, the dependent variable is LN (Equity Flows). Models I, II, and III present analyses without any control variables. Models IV, V, and VI present analyses with control variables. All the variables are defined in Appendix A2. *, **, *** indicates statistical significance at 1%, 5%, and 10%, respectively

Variable	I	II	III	IV	V	VI
Source Tax Haven Dummy	0.4129***	0.4320***	0.4176***	0.3600***	0.3802***	0.3635***
	(0.041)	(0.047)	(0.044)	(0.041)	(0.047)	(0.044)
ΔTax Savings	-0.3186***	-0.3141***	-0.3168***	-0.3186***	-0.3144***	-0.3175***
	(0.058)	(0.058)	(0.059)	(0.057)	(0.057)	(0.057)
Source Tax Haven Dummy * ΔTax Savings	0.1423***	0.1372***	0.1456***	0.1459***	0.1422***	0.1500***
	(0.038)	(0.040)	(0.041)	(0.037)	(0.038)	(0.039)
Pandemic Year Dummy		0.1574***			0.1533***	
		(0.041)			(0.039)	
Country with Strict Restrictions Dummy			-0.0461			-0.0644
			(0.067)			(0.067)
Source Tax Haven Dummy * Pandemic Year Dummy		-0.0818			-0.0872	
		(0.094)			(0.098)	
Source Tax Haven Dummy * Country with Strict Restrictions Dummy			-0.0199			-0.0097
			(0.121)			(0.120)
ΔTax Savings * Pandemic Year Dummy		-0.2303			-0.2081	
		(0.444)			(0.447)	
ΔTax Savings * Country with Strict Restrictions Dummy			-0.2072			-0.2103
			(0.445)			(0.439)
Source Tax Haven Dummy * ΔTax Savings * Pandemic Year Dummy		-0.1860			-0.2728	
		(0.553)			(0.485)	
Source Tax Haven Dummy * ΔTax Savings * Country with Strict Restrictions Dummy			-0.4215			-0.5137
			(0.4904)			(0.407)
Relative Exchange Rate				0.0006***	0.0006***	0.0006***
				(0.000)	(0.000)	(0.000)
Common Language Dummy				0.3934***	0.3931***	0.3929***
				(0.065)	(0.065)	(0.065)
Common Law Dummy				7.7100	16.4952**	11.1139
				(9.869)	(7.585)	(11.358)
Log (Host Country GDP)				0.2926	-0.0911	0.2437
				(0.308)	(0.236)	(0.335)
Log (Host Country Market Capitalization)				0.1114	0.2000	0.0684
				(0.117)	(0.130)	(0.132)
Log (Corruption Perception Index Score)				0.1682	0.0879	0.1952

				(0.489)	(0.486)	(0.481)
Log (Mobile Subscriptions per 100)				0.0476	0.1624	-0.0632
				(0.332)	(0.368)	(0.354)
Host Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	No	Yes	Yes	No	Yes
No of Observations	9996	9966	9966	9991	9991	9991
Adjusted R Square	0.9795	0.9795	0.9796	0.9796	0.9796	0.9796

Table 3b: MSCI Developed and Non-Developed Capital Market sub-samples

This table presents the OLS with Fixed Effects analysis as defined in Equations 1 and 2 in the article for the sub-sample of MSCI Developed Host Country Capital Markets and MSCI Non-Developed Host Country Capital Markets. Here, the dependent variable is LN (Equity Flows). Models I, II, and III present MSCI Non-Developed Host Country Capital Markets analyses with control variables. Models IV, V, and VI present analyses for MSCI Developed Host Country Capital Markets with control variables. All the variables are defined in Appendix A2. *, **, *** indicates statistical significance at 1%, 5%, and 10%, respectively

Variable	I. MSCI Non-Developed Host Country Sample	II. MSCI Non-Developed Host Country Sample	III. MSCI Non-Developed Host Country Sample	IV. MSCI Developed Host Country sub-sample	V. MSCI Developed Host Country sub-sample	VI. MSCI Developed Host Country sub-sample
Source Tax Haven Dummy	0.5272***	0.5666***	0.5141***	0.2658***	0.2746***	0.2681***
	(0.087)	(0.095)	(0.092)	(0.045)	(0.052)	(0.050)
ΔTax Savings	0.1109	0.1384	0.1571	-0.3564***	-0.3532***	-0.3559***
	(0.153)	(0.161)	(0.153)	(0.061)	(0.059)	(0.060)
Source Tax Haven Dummy * ΔTax Savings	0.0454	-0.04509	0.0240	0.1812***	0.1809***	0.1863***
	(0.219)	(0.246)	(0.242)	(0.035)	(0.037)	(0.039)
Pandemic Year Dummy		0.2416***			0.0859	
		(0.077)			(0.053)	
Country with Strict Restrictions Dummy			-0.0555			-0.1129
			(0.092)			(0.086)
Source Tax Haven Dummy * Pandemic Year Dummy		-0.2775			-0.0355	
		(0.253)			(0.104)	
Source Tax Haven Dummy * Country with Strict Restrictions Dummy			0.1871			-0.0043
			(0.347)			(0.137)
ΔTax Savings * Pandemic Year Dummy		-0.6269*			-0.2614	
		(0.338)			(0.714)	
ΔTax Savings * Country with Strict Restrictions Dummy			-0.6451*			-0.3296
			(0.368)			(0.677)
Source Tax Haven Dummy * ΔTax Savings * Pandemic Year Dummy		1.2424*			-0.8734***	
		(0.725)			(0.322)	
Source Tax Haven Dummy * ΔTax Savings * Country with Strict Restrictions Dummy			-0.0213			-0.8386***
			(0.598)			(0.307)
Relative Exchange Rate	0.0005***	0.0005***	0.0005***	0.0090***	0.0093***	0.0093***

	(0.000)	(0.000)	(0.000)	(0.003)	(0.003)	(0.003)
Common Language Dummy	0.4020***	0.4071***	0.4021***	0.3691***	0.3688***	0.3689***
	(0.094)	(0.095)	(0.095)	(0.085)	(0.085)	(0.085)
Common Law Dummy				-6.8525	12.5886	-11.3196
				(13.423)	(10.707)	(13.125)
Log (Host Country GDP)	-0.6528	-0.5656*	-1.1291**	0.5849	-0.1961	0.8289*
	(0.467)	(0.314)	(0.388)	(0.449)	(0.394)	(0.430)
Log (Host Country Market Capitalization)	0.2242	0.2375	0.1364	0.3313	0.4632**	0.2503
	(0.142)	(0.173)	(0.149)	(0.241)	(0.224)	(0.236)
Log (Corruption Perception Index Score)	-07514	-0.6593	-0.9606	0.2356	0.2008	0.3062
	(0.739)	(0.740)	(0.719)	(0.648)	(0.674)	(0.638)
Log (Mobile Subscriptions per 100)	1.0627*	1.0407*	0.9602*	-0.2456	-0.1476	-0.4033
	(0.558)	(0.603)	(0.563)	(0.393)	(0.435)	(0.429)
Host Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	No	Yes	Yes	No	Yes
No of Observations	3024	3024	3024	6967	6967	6967
Adjusted R Square	0.9823	0.9823	0.9823	0.9787	0.9788	0.9788

Appendix

Table A1: List of Host and Source Countries used in the study

Host Countries	Australia, Austria, Belgium, Canada, Chile, Colombia, Costa Rica, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, South Korea, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States
Source Countries	Afghanistan, Albania, Algeria, Andorra, Angola, Anguilla, Antigua and Barbuda, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belarus, Belize, Bermuda, Bolivia, Bonaire-St. Eustatius and Saba, Bosnia and Herzegovina, Botswana, Brazil, British Virgin Islands, Brunei Darussalam, Bulgaria, Burkina Faso, Cabo Verde, Cambodia, Canada, Cayman Islands, Chile, Hong Kong, Macao, China, Colombia, Democratic Republic of Congo, Republic of Congo, Cook Islands, Costa Rica, Croatia, Cuba, Curaçao, Cyprus, Czech Republic, Côte 'd'Ivoire, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Eswatini, Ethiopia, Falkland Islands, Faroe Islands, Finland, France, French Polynesia, Gabon, Georgia, Germany, Ghana, Gibraltar, Greece, Greenland, Grenada, Guadeloupe, French Guiana, Guinea, Guyana, Honduras, Iceland, India, Indonesia, Iran, Ireland, Isle of Man, Israel, Italy, Jamaica, Japan, Jersey, Jordan, Kazakhstan, Kenya, South Korea, Kuwait, Kyrgyz Republic, Laos, Latvia, Lebanon, Liberia, Libya, Liechtenstein, Lithuania, Luxembourg, Madagascar, Malawi, Malaysia, Mali, Malta, Marshall Islands, Mauritania, Mauritius, Mexico, Monaco, Mongolia, Montenegro, Montserrat, Morocco, Mozambique, Myanmar, Namibia, Nauru, Netherlands, New Caledonia, New Zealand, Nicaragua, Niger, Nigeria, North Macedonia, Norway, Oman, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Puerto Rico, Qatar, Romania, Russian Federation, Rwanda, Samoa, San Marino, Saudi Arabia, Senegal, Serbia, Seychelles, Sierra Leone, Singapore, Sint Maarten-Kingdom of the Netherlands, Slovakia, Slovenia, Somalia, South Africa, South Sudan, Spain, Sri Lanka, St. Vincent and the Grenadines, Sweden, Switzerland, Syria, Sao Tome and Principe, Taiwan, Tajikistan, Tanzania, Thailand, Timor-Leste, Togo, Tokelau, Tunisia, Turkey, Turks and Caicos Islands, Uganda, Ukraine, United Arab Emirates, United Kingdom , United States, United States Virgin Islands, Uruguay, Uzbekistan, Venezuela, Vietnam, Wallis and Futuna Islands, West Bank and Gaza, Zambia, Zimbabwe
Tax Haven Countries	Anguilla, Antigua and Barbuda, Bahamas, Barbados, Belize, Bermuda, Bonaire-St. Eustatius and Saba, British Virgin Islands, Cayman Islands, Hong Kong, Macao, Cook Islands, Costa Rica, Cyprus, Gibraltar, Grenada, Guernsey, Grenada, Ireland, Isle of Man, Jersey, Jordan, Latvia, Lebanon, Lebanon, Liberia, Liechtenstein, Luxembourg, Malta, Marshal Islands, Mauritius, Montserrat, Nauru, Panama, Samoa, San Marino, Seychelles, Singapore, St. Vincent and Grenadines, Switzerland, Turks and Caicos Islands
MSCI Developed Markets Host Countries	Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States
MSCI Non-Developed Markets Host Countries	Chile, Colombia, Costa Rica, Czech Republic, Estonia, Greece, Hungary, Iceland, South Korea, Latvia, Lithuania, Luxembourg, Mexico, Poland, Slovakia, Slovenia, Turkey
COVID Strict Rules Host Country	Australia, Belgium, Canada, Chile, Colombia, Costa Rica, France, Germany, Greece, Ireland, Israel, Italy, Mexico, Netherlands, Portugal, Slovenia, Spain, Turkey, United Kingdom, United States
COVID Non-Strict Rules Host Country	Austria, , Czech Republic, Denmark, Estonia, Finland, Hungary, Iceland, Japan, South Korea, Latvia, Lithuania, Luxembourg, New Zealand, Norway, Poland, Slovakia, Sweden, Switzerland

Table A2: Description of Variables and Sources

Variable	Description	Source
Log (Equity Flows)	The logarithm of equity flows from the source country, the country of origin, to the host country, the intended destination. It is in millions of USD.	IMF-CPIS
Source Tax Haven Dummy	The dummy variable takes the value of 1 if the country of origination of flows is considered a tax haven and 0 otherwise.	Hines and Rice (1994) and Harmful Tax Competition Report (OECD, 1998)
Pandemic Year Dummy	The dummy variable takes the value of 1 for the year 2020 and 0 otherwise.	WHO declaration of COVID-19 pandemic on March 11, 2020[13]
Country with Stringent Restrictions Dummy	The dummy variable takes value one if the COVID-19 Stringency Index is greater than the value 60.56 for the host country and 0 otherwise.	Our World in Data
ΔTax Savings	Difference between host country marginal personal income tax rate and host country foreign withholding interest income tax rate after accounting for existing/non-existing double taxation treaty.	Deloitte, KPMG, OECD
Common Language Dummy	The dummy variable takes the value of 1 when both host and source countries share a common language and 0 otherwise.	Melitz and Toubal (2014)
Common Law Dummy	The dummy variable takes the value 1 when the host country follows a common legal practice and 0 otherwise.	La Porta et al. (1998)
Log (Host Country GDP)	Logarithmic nominal GDP in USD of the host country	World Bank
Log (Host Market Capitalization)	Logarithmic market capitalization of all the listed companies in the host country in USD	World Bank
Relative Exchange Rate	The ratio of host country exchange rate with respect to 1 USD over source country exchange rate for 1 USD.	Thomson Reuters DataStream
Log (Corruption Perception Index)	It is a logarithmic measurement of corruption in a country. The measurement captures the perceived level of corruption in the public sector or misuse of public power for private benefit.	Transparency International
Log (Mobile Subscriptions per 100)	Mobile cellular telephone subscriptions are subscriptions to a public mobile telephone service that provide access to the PSTN using cellular technology. The indicator includes (and is split into) the number of postpaid subscriptions, and the number of active prepaid accounts (i.e. that have been used during the last three months).	World Bank

[13] https://ipac-canada.org/coronavirus-resources#:~:text=Pandemic%20Coronavirus%20(COVID%2D19)&text=On%20March%2011%2C%202020%20the,downgraded%20the%20COVID%2D19%20pandemic.

Table A3: Pearson Correlation Matrix

This table presents a Pearson Correlation between our dependent and independent variables. All variables are defined in Appendix A2. *, **, *** indicates statistical significance at 1%, 5%, and 10%, respectively.

Variable	Equity Flows($ Millions)	Source Tax Haven Dummy	ΔTax Savings	Relative Exchange Rate	Common Language Dummy	Common Law Dummy	Host Country GDP ($ Billions)	Market Capitalization ($ Billions)	Corruption Perception Index Score	Mobile Subscription per 100 people
Equity Flows($ Millions)	1									
Source Tax Haven Dummy	0.0493***	1								
ΔTax Savings	-0.0159	0.0647**	1							
Relative Exchange Rate	-0.0245***	0.0842***	0.0221**	1						
Common Language Dummy	0.0140	0.0461***	-0.0202**	-0.1671***	1					
Common Law Dummy	0.1370***	-0.0069	0.0065	-0.0985***	0.0282***	1				
Host Country GDP ($ Billions)	0.2423***	0.0065	0.0409***	-0.0590***	-0.0161	0.4829***	1			
Market Capitalization ($ Billions)	0.2443***	0.0065	0.0421***	-0.0590***	"-0.0099	"0.4993***	0.9869***	1		
Corruption Perception Index Score	0.0362***	-0.0175*	0.0099	-0.3052***	0.0918***	0.0896***	0.0022	0.0203**	1	
Mobile Subscription per 100 people	-0.0271***	0.0191***	-0.0479***	0.12127***	-0.0561***	-0.4255***	-0.1024***	-0.1169***	0.0756***	1

References

Abdullah, S. M. , Putera, N.S.F. M. S., Hassan, R. A. & Ya'cob, S. N. (2022). Malaysian Journal of Social Sciences and Humanities (MJSSH), 7(11). DOI: https://doi.org/10.47405/mjssh.v7i11.1925

Adhikara, M. F. A., Maslichah, M., Diana, N., & Basyir, M. (2022). Taxpayer compliance determinants: Perspective of theory of planned behavior and theory of attribution. International Journal of Business and Applied Social Science, 34-42. https://doi.org/10.33642/ijbass.v8n1p4

Aggarwal, R., Kearney, C., & Lucey, B. (2012). Gravity and culture in foreign portfolio investment. Journal of Banking & Finance, 36, 525–538.

Albertin, M. G., Yontcheva, B., Devlin, D., Devine, H., Gerard, M. M., Beer, S., Suljagic, I. J., & Thakoor, M. V. (2021). Tax avoidance in sub-Saharan Africa's mining sector. International Monetary Fund.

Alm, J., Blaufus, K., & Fochmann, M. (2021). Tax Policy Measures to Combat the SARS-CoV-2 Pandemic and Considerations to Improve Tax Compliance: A Behavioral Perspective. Tulane Economics Working Paper Series.

Alfaro, L., Chanda, A., Kalemli-Ozcan, S., and Sayek, S. , (2004). FDI and economic growth: The role of local financial markets. Journal of International Economics, 64, 89-112. https://doi.org/10.1016/j.jinteco.2003.12.001

Amaya, C.A., and Rowland, P., (2004). Determinants of investment flows into emerging markets. Working Paper No 313 Banco de la Republica de Colombia.

Athira, A., and Ramesh, V.K., (2023). COVID-19 and corporate tax avoidance: International evidence. International Business Review, 32, 102143, https://doi.org/10.1016/j.ibusrev.2023.102143

Banga. K., & te Velde, D. W. (2020). Covid-19 and disruption of the digital economy; evidence from low and middle-income countries. Digital Pathways at Oxford Paper Series; no. 7. Oxford, United Kingdom.

Clotfelter, C. T. (1983). Tax evasion and tax rates: An analysis of individual returns. The Review of Economics and Statistics, 65(3), 363–373.

Dewenter, K. L. (1995). Do exchange rate changes drive foreign direct investment? Journal of Business, 68, 405–433.

Dharmapala, D. (2009). What problems and opportunities are created by tax havens? Oxford Review of Economic Policy, 24, 661-679.

Forbes, K.J., and Rigobon R. (2002). No Contagion, Only Interdependence: Measuring Stock Market Comovements. Journal of Finance, 57(5), 2223-2261.

Froot, K. A., & Stein, J. C. (1991). Exchange rates and foreign direct investment: An imperfect capital markets approach. The Quarterly Journal of Economics, 106(4), 1191–1217.

Gande, A., & Parsley, D. (2014). Sovereign credit ratings, transparency and international portfolio flows. Hong Kong institute of monetary research working paper No. 12/2014.

Gennaioli, Nicola, Andrei Shleifer, and Robert W. Vishny. 2012. Neglected risks, financial innovation and financial fragility. Journal of Financial Economics 104(3): 452-468. dx.doi.org/10.1016/j.jfineco.2011.05.005

Gillman, M. Income tax evasion: tax elasticity, welfare, and revenue. Int Tax Public Finance 28, 533–566 (2021). https://doi.org/10.1007/s10797-020-09632-3

Globerman, S., & Shapiro, D. (2003). Governance infrastructure and US foreign direct investment. Journal of International Business Studies, 34(1), 19–39.
Habib, M., & Zurawicki, L. (2002). Corruption and foreign direct investment. Journal of
International Business Studies, 33(2), 291–307.

Habib, Mohsin, and Leon Zurawicki. 2002. "Corruption and Foreign Direct Investment." *Journal of International Business Studies* 33, no. 2 (June): 291-307. https://doi.org/10.1057/palgrave.jibs.8491017.

Hanlon, M., Maydew, E.L. and Thornock, J.R., 2015. Taking the long way home: USS tax evasion and offshore investments in USS equity and debt markets. The Journal of Finance, 70(1), pp.257-287.

Hines, J.J. and Rice, E., (1994). Fiscal Paradise: Foreign tax havens and American Business. The Quarterly Journal of Economics, 109, 149-182.

Javorcik, B., & Wei, S. J. (2009). Corruption and cross border investment in emerging markets: Firm-level evidence. Journal of International Money and Finance, 28, 605–624.

Javorcik, Beata S., and Shang-Jin Wei. 2009. "Corruption and Cross-border Investment in Emerging Markets: Firm-Level Evidence." *Journal of International Money and Finance* 28, no. 4 (June): 605-624. https://doi.org/10.1016/j.jimonfin.2009.01.003.

Johannesen, N. and Zucman, G., 2014. The end of bank secrecy? An evaluation of the G20 tax haven crackdown. American Economic Journal: Economic Policy, 6(1), pp.65-91.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (2000). Investor protection and corporate governance. Journal of Financial Economics, 58(1), 3–27.

Kemme, D.M., Parikh, B. and Steigner, T., 2017. Tax havens, tax evasion and tax information exchange agreements in the OECD. European Financial Management, 23(3), pp.519-542.

Kemme, D.M., Parikh, B. and Steigner, T., 2020. Tax morale and international tax evasion. Journal of World Business, 55(3), p.101052.

Kemme, D.M., Parikh, B. and Steigner, T., 2021. Inequality, autocracy, and sovereign funds as determinants of foreign portfolio equity flows. Journal of Financial Research, 44(2), pp.249-278.

Klein, M. W., & Rosengren, E. (1994). The real exchange rate and foreign direct investment in the United States: Relative wealth vs. relative wage effects. Journal of International Economics, 36, 373–389.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny. 1998. "Law and Finance." *Journal of Political Economy* 106, no. 6 (December): 1113-1155. https://doi.org/10.1086/250042.

Levi, M., & Smith, R. G. (2021). Fraud and pandemics. *Journal of Financial Crime*, 29(2), 413-432. https://doi.org/10.1108/jfc-06-2021-0137

Mathieu, E., Ritchie, H., Rodés-Guirao, L., Appel, C., Giattino, C., Hasell, J., Macdonald, B., Dattani, S., Beltekian, D., Ortiz-Ospina, E., and Roser, M., (2020) - "Coronavirus Pandemic (COVID-19)". Published online at OurWorldInData.org. Retrieved from: 'https://ourworldindata.org/coronavirus'

Melitz, J., & Toubal, F. (2014). Native language, spoken language, transition and trade. Journal of International Economics, 92(2), 351–363.

OECD (1998). Harmful tax competition: An emerging global issue. Paris: OECD Publishinghttps://doi.org/10.1787/9789264162945-en

OECD (2020), Tax Policy Reforms 2020: OECD and Selected Partner Economies, OECD Publishing, Paris, https://doi.org/10.1787/7af51916-en.

Ostas D.T. (2020). Ethics of Tax Interpretation. Journal of Business Ethics. 165, 83-94.

Portes, R, and H. Rey (2005) "The Determinants of Cross-Border Equity Flows," *Journal of International Economics*, 65: 269-296, 2005.

Supriyati, S. & Hapsari, I. (2021). Tax Avoidance, Tax Incentives and Tax Compliance During the Covid-19 Pandemic: Individual Knowledge Perspectives. Journal of Accounting and Strategic Finance, 4(2), 222-241. https://doi.org/10.33005/jasf.v4i2.174

Zamzam, A., Hastjarjo, S., & Slamet, Y. (2022). Communication strategy of directorate general of tax to increase tax revenue during the COVID-19 pandemic. KnE Social Sciences. https://doi.org/10.18502/kss.v7i5.10571

Zhu, J., Ho, K-C., Luo, S., and Peng, L. (2023). Pandemic and tax avoidance: Cross-country evidence. Economic Modelling, 124, 106300. https://doi.org/10.1016/j.econmod.2023.106300