

TAX HAVENS: ORIGINS AND CONSEQUENCES*

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Abstract

This paper studies the economic consequences of tax havens. Using a novel dataset tracking offshore legal reforms in 48 tax havens since the 19th century, I document the emergence of a global market for tax haven services, shaped by demand and supply shocks, and technological innovations. Becoming a tax haven significantly boosts GDP, while non-haven countries adjust by shifting the tax burden away from capital taxation. Evaluating the trade-off between these forces, I find that tax havens have likely reduced global welfare. The results highlight how regulatory competition over mobile capital reshapes tax systems worldwide.

Keywords: Tax Havens, International Taxation, Tax Avoidance, Tax Evasion.

JEL codes: H26, H73, H87, F39, N40

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1 Introduction

Countries' economic development choices often generate cross-border spillovers. Such spillovers are particularly salient when governments engage in regulatory competition, strategically enacting regulatory standards to attract economic activity from abroad. In recent years, such unilateral policies have become increasingly prominent in several areas such as international taxation, environmental policy or trade policy. What are the long-term consequences of these policies for development? How do they affect other countries?

The rise of tax havens in the 20th century provides a particularly valuable setting to study these questions. The emergence of tax havens is one of the most important economic phenomena of the 20th century globalization. These are small countries that offer opacity and low levels of taxation to individuals and corporations. While no tax havens existed in the 19th century, almost 50 have emerged since, ranging from small islands in the Caribbean, Indian and Pacific Oceans to wealthy city-states such as Singapore and Hong Kong and developed countries such as Ireland, Switzerland, and the Netherlands.

A central concern raised by tax havens is their potential to reduce the tax revenues collected in non-haven countries on firms and individuals. They host more than \$1 trillion of shifted profits (Tørsløv et al., 2023, Gidron et al., 2026) and offshore assets equivalent to 10% of the world GDP (Alstadsæter et al., 2018). Because they facilitate tax evasion and tax avoidance, they also affect tax morale (Luttmer and Singhal, 2014), optimal tax policy (Piketty et al., 2014), and perceptions of tax policy (Stantcheva, 2021). Beyond these effects on public finance, they impact various socioeconomic outcomes such as income and wealth inequality, as well as elite rent capture.¹ In contrast, potential benefits may arise from increased investment and welfare gains through lower effective tax burdens (Desai et al., 2006, Hong and Smart, 2010, Hines, 2010). Despite an extensive literature, the question of whether tax havens are ultimately beneficial or harmful for global development remains unanswered. A key obstacle has been the lack of long-run variation in countries' tax haven status, which limits the ability to identify persistent effects on both tax havens and non-haven economies. Most empirical work has relied on short-run events or cross-sectional comparisons.

I address this gap by examining the emergence, evolution, and consequences of tax havens over the long run using a new dataset on tax havens' history and modern causal identification tools. I build on two main ideas. The first is that tax havens result from the building of an *offshore legal architecture*, i.e., legal, political

1. Tax havens affect inequalities and their measurement (Alstadsæter et al., 2019, Guyton et al., 2021), measurement of portfolio holdings (Coppola et al., 2021) and corporate control (Garcia-Bernardo et al., 2017, Fonseca et al., 2023). Additionally, elites use tax havens to capture revenues (Andersen et al., 2017; Andersen et al., 2022) or avoid sanctions (Kollewe, 2022), with detrimental consequences for perceptions of government and elites (Guriev et al., 2021). They also affect the measurement of macroeconomic aggregates (Zucman, 2013, Guvenen et al., 2022).

and economic institutions that allow them to provide offshore services. The concept of legal architecture is useful to illustrate that, beyond low tax rates, a country's enactment of a set of offshore regulations is a necessary condition for it to become a tax haven. An offshore legal architecture is composed of blocks, which I call *legal technologies*, that reflect tax havens' specialization. Legal technologies are a key input in the production function of offshore services: they are the legal tools, such as banking secrecy or tax-exempt trusts, that allow tax havens to supply these services in exchange for the payment of a low tax rate or a fee.² To become a tax haven, a country must introduce an offshore legal technology through a legal reform. Once a country becomes a tax haven, its legal architecture can be updated to attract more demand or to adapt to new regulations in non-haven countries.

Based on this idea, I collect data about reforms of the offshore legal architectures of 48 tax havens, identifying when these countries became tax havens (the *extensive margin* of offshore services supply) and when they updated their legal architecture (the *intensive margin* of supply). My primary sources are tax haven guidebooks written by tax lawyers. I complement these with a wealth of sources ranging from academic papers to advertising brochures from offshore service providers. This dataset is the first to provide a time-varying account of the emergence and evolution of tax havens while the literature generally relies on a constant tax haven indicator variable (Slemrod, 2008, Dharmapala and Hines, 2009). To observe more comprehensively the activity of tax havens, I supplement it with two datasets. First, I use the Offshore Leaks, an individual-level database that provides geographical information on the users and the location of more than 800,000 offshore entities, since the mid-20th century. This unique database allows to follow, over time, offshore activity in tax havens and in non-haven countries. In particular, I show that these reforms lead to a significant increase in offshore incorporation, providing independent validation that they represent consequential events in countries' offshore histories. Second, I collect novel country-by-country panel information about the price of offshore services from an offshore service provider.

The second main idea is that tax havens, as other forms of regulatory competition, can be studied through the lens of market forces. They are the key suppliers in the market for offshore services. On the other side of this market, demand for offshore services comes from tax evaders in non-haven countries who seek low tax rates, advantageous regulations, and secrecy. The market environment, such as supply, demand, and technological shocks therefore affect countries' incentives to become tax havens. Based on this idea, I study the context of the emergence of tax havens, a necessary first step to understand their consequences.

2. It is often assumed that provision of secrecy is not accompanied by tax revenue collection. However, users of offshore entities generally pay fees. Registering a trust in the Cayman Islands, for example, costs \$500 at registration and \$500 in annual fees. Hence, the offshore sector accounted for 33% of the Caymans' tax revenues in 2020 (Government of the Cayman Islands, 2021).

Using these new databases, I document new facts about the emergence and development of tax havens. Tax havens emerge in response to both demand-side shocks, such as the introduction of modern taxation in Europe and the Americas in the first half of the 20th century, and supply-side shocks, such as decolonization in the Caribbean in the 1960s. The resulting market is both horizontally differentiated, with jurisdictions offering a wide range of distinct legal technologies, and vertically differentiated, with substantial price variation even within legal technologies. Finally, I show that, despite the intangible nature of offshore services, gravity variables such as distance are strong determinants of their use, a pattern that I later exploit as a source of differential exposure to tax havens.

What are the consequences of the offshore strategy for development? I first show descriptively and with a generalized synthetic control method that a country's becoming a tax haven positively impacts its GDP per capita.³ The findings reveal growth gains of about 1 percentage point annually over 15 years for tax havens, resulting in a 16% long-term increase over the growth of their non-haven counterparts. Furthermore, I provide evidence that this result captures changes in the real economy as demonstrated by the transition of tax havens away from the agricultural sector. On the contrary, when faced with anti-tax-havens regulations from non-haven countries, targeted tax havens suffer GDP losses compared to comparable counterparts. These policies translate into higher costs of using a country as a tax haven and therefore higher observed prices of offshore services.

Then, I explore the impact of the exposure of non-haven countries to tax havens. I build on the above result that tax haven exposure is a function of geographical distance and I create a shift-share variable where exposure of non-haven countries to new tax haven reforms (the "shifts") depends on (a function of) distance with the tax havens (the "shares"). I show that this variable has convenient properties for econometric inference (Borusyak et al., 2025).

Because offshore reforms occur almost every year in the second half of the 20th century and may affect domestic tax systems with delay, I estimate their dynamic effects using local projections (Jordà and Taylor, 2025). This method estimates the response function to a shock using one estimation by time horizon and therefore provides a flexible way to capture the dynamic impact of offshore exposure. I follow here the empirical literature that studies the impact of shocks on macroeconomic variables in a comparative context (e.g. Acemoglu et al., 2019, Alesina et al., 2024). While nearby offshore reforms are not strictly random events, the empirical framework treats them as conditionally exogenous to a particular country's own economic trajectory once a rich set of controls is included. These controls account for political conditions, proxies for the demand for offshore services, neighbors economic conditions, and region-specific shocks. The timing and location of off-

3. This approach speaks to a recent literature that uses synthetic control methods to estimate the causal impact of historical events on country-level GDP (e.g., Abadie et al., 2015, Funke et al., 2023).

shore reforms in neighboring jurisdictions is then unlikely to be systematically correlated with unobserved determinants of the exposed country's outcomes. In robustness analyses, I also test the sensitivity of the estimates to particular offshore reforms and I exclude from the sample large colonial and economic power whose outcome might influence tax haven formation through supply and demand channels. Results hold in both cases.

I find that exposure to nearby tax havens, on average, does not significantly affect GDP and tax revenues in non-haven countries. However, it durably affects their tax structure. Countries exposed to tax havens face constraints on the taxation of capital and therefore shift the relative burden of taxation from capital to labor and consumption, with important implications for economic inequalities. I observe a decrease in the share of capital taxes in the tax mix by 2 percentage points for each increase of the offshore exposure by one standard deviation. This raises the taxation gap between capital and less mobile tax bases such as labor and consumption.

To make sense of the global implications of these results, I build a simple welfare accounting framework where I introduce welfare weights on capital income and labor income to account for the redistributive preferences of a global social planner. For tax havens to be welfare-enhancing, the welfare weight assigned to labor by the global planner must fall below a neutrality threshold. I compute this neutrality threshold using the empirical estimates of the previous sections. I find that under plausible distributive assumptions, this condition is not met, and the rise of tax havens is welfare-reducing at the world level. Only large efficiency effects of tax havens would compensate this welfare loss.

This paper contributes to several strands of research. First, it is related to the public finance literature studying the role of tax havens in the global economy. A key contribution is the construction of a novel dataset of offshore legal architecture reforms in tax havens. It allows to follow systematically the tax haven status of many countries across time and across several legal technologies, enabling the use of modern causal inference methods. This data is associated to two data sources which use is new or original. This paper contributes to the scarce literature that uses and analyzes micro-level data from leaked data (Omartian, 2017, Alstadsæter et al., 2019).⁴ The paper also uses an original database tracking the country-by-country evolution of offshore prices to discuss the offshore market.

Using these datasets, I am able to study in depth the development of tax havens in the long-run, complementary to theoretical papers that discuss the causes of tax havens (Kanbur and Keen, 1993, Hansen and Kessler, 2001, Slemrod and Wilson, 2009). The paper is also related to Dharmapala and Hines (2009), which studies the determinants of tax havens, highlighting the links between governance and tax

4. In addition, leaks from tax havens have been used by Bomare and Le Guern Herry (2022), Brounstein (2021), Johannesen et al. (2022) and Londoño-Vélez and Avila-Mahecha (2024) for matching with administrative wealth records.

haven status using cross-sectional data. My paper differs from theirs in that it emphasizes the role of market forces in tax havens' adoption of offshore architecture. In this paper, the demand for tax havens is identified by the geographic variation in offshore policies, emphasizing the importance of gravity links between high-tax countries and tax havens. This is related to a recent strand of research highlighting the role of distance as a determinant of offshore use (Leenders et al., 2023, Ferrari et al., 2024).

This new dataset also allows me to provide new historical evidence on the emergence of tax havens in the 20th century, thereby contributing to the global history of offshore policies (Ogle, 2017, 2020).⁵ I also discuss quantitatively the role of decolonization on tax havens, contributing to the broader literature about public finance in the colonial setting (Frankema and Waijenburg, 2014, Cogneau et al., 2018, Xu, 2019).

In addition, this paper participates to the understanding of the consequences of globalization for public finance and global welfare. My results demonstrate that exposure to tax havens has long-term consequences for non-havens' tax structure. This finding complements the papers studying the role of globalization and tax competition on countries' tax structure (Antràs et al., 2017, Egger et al., 2019, Bachas et al., 2022, Ferey et al., 2023, Thunecke, 2023, Bilicka et al., 2023). From the tax havens' point of view, I show causal evidence of how some countries took advantage of globalization and beggar-thy-neighbor policies to grow. This effect is in line with the results of Hines (2010), whose evidence suggests a positive impact of a country's being a tax haven on its GDP. Importantly, thanks to the new data and new empirical methods, this paper is able to study the question of the desirability of tax havens while previous answers have mostly been theoretical (Slemrod and Wilson, 2009, Hong and Smart, 2010), or descriptive (Hines, 2010).

Finally, my paper contributes to the broader literature about the links between institutions, taxation and development in the context of regulatory competition (Schumpeter, 1954, Besley and Persson, 2011, Martin and Prasad, 2014). In this vein, it is part of the literature that underscores the pivotal role of legal institutions in shaping economic outcomes (La Porta et al., 2008, Pistor, 2019) by insisting on the role of the legal architecture for understanding tax havens' dynamic. This paper not only demonstrates the impact of tax institutions on domestic development but also sheds light on the cross-border spillovers of a country's legal institutions under globalization (Aidt et al., 2021).

In the rest of the paper, I first provide institutional details and describe the construction of the data in Section 2. Section 3 presents three new facts about the development of tax havens and their determinants. In Section 4, I study the impact of becoming a tax haven on a country's development. Section 5 studies

5. It complements the approaches followed by historians and political scientists (e.g. Palan et al., 2009, Ogle, 2017, 2020, Hollis and McKenna, 2019, and Farquet, 2021 for global approaches, and Guex, 2021 on Switzerland, Rawlings, 2004 on Vanuatu and van Beurden and Jonker, 2021 on Curaçao.)

the consequences of exposure to tax havens on macroeconomic outcomes in non-haven countries. Section 6 discusses the policy implications of the results and concludes.

2 Data

This paper draws on multiple sources to build a comprehensive picture of the global offshore market. To analyze the development and functioning of tax havens, I combine novel information on offshore legal reforms, offshore activity, and offshore service prices. I begin by introducing the main dataset (the *History of Tax Havens Database*) which documents the evolution of offshore legal frameworks across tax havens throughout the 20th century. Next, I describe the data sources used to measure offshore activity both in tax havens and non-haven countries. I also introduce a new panel dataset on the prices of offshore services, which sheds light on market structure and differentiation. The section concludes with a description of auxiliary data, including historical variables, geographical information, and macroeconomic indicators, which are used to contextualize the emergence of tax havens and study their broader consequences.

Legal architecture of tax havens: context and assumptions The existence of specific laws is necessary for tax haven activity in a territory, as they provide stability and predictability to the users of offshore services. I build a new dataset that tracks the construction of this offshore legal architecture in current tax havens. It addresses the lack of quantitative and time-varying measures of tax haven activity, which reflects secrecy, limited statistical capacity, and difficulties comparing sources over time. Existing research has mainly focused on tax rates, but offshore rates often depend on specific legal structures and differ from statutory rates. Historical data on these rates and incorporation fees are also difficult to systematically collect and harmonize.

I define the offshore legal architecture of a tax haven as the set of laws enabling it to supply offshore services.⁶ Low or zero tax rates on specific income types are a necessary condition, although not sufficient, for a country to become a tax haven.⁷ Importantly, an offshore legal architecture also provides tools to ensure secrecy, flexibility, and disconnection between wealth owners and their assets. Without it, individuals cannot safely exploit a country's tax haven features without their evasion being detected by their origin country. This approach builds on the idea that legal systems are key determinants of economic outcomes (see Pistor, 2013, Deakin et al., 2017, or La Porta et al., 2008). My new dataset traces the development of this architecture and the rise of tax havens.

6. See Ogle (2017) for the origin of the expression in the context of tax havens.

7. The example of New Caledonia illustrates the importance of the legal architecture. Despite having no income tax, New Caledonia never developed offshore legal technologies due to France's reluctance, and thus never functioned as a tax haven (Rawlings, 2004).

Tax havens can use many legal technologies to build their legal architecture. For instance, one of the most prominent examples are international business companies (IBCs). IBCs can have only one founder, shareholder, and director, who can be the same person, and require no annual meetings. They are tax-free and require limited reporting and disclosure (e.g., financial statements are not necessary, and incorporation documents do not include the identity of the company's ultimate owners). The only condition for registering an IBC is that it cannot have any domestic activity. Banking secrecy, trusts, exempt corporations, and holdings are other examples of offshore legal technologies.

Legal technologies are introduced through reforms of the offshore architecture of tax havens. Many different types of such reforms are available to tax havens, and the menu of reforms implemented determines a haven's offshore specialization. Table 1 summarizes the different types of laws that I record. I classify them into five broad categories that follow their different possible uses. There are the legal technologies, such as trusts, that are used to directly circumvent personal taxation ("Personal"). Other types of technologies target firms to allow them to avoid corporate taxation ("Corporate"). However, in a world where a large share of income consists of business income or capital income, the frontier between personal and corporate taxation is porous and opens up opportunities for optimization and evasion (Alstadsæter and Jacob, 2016, Smith et al., 2019, Love, 2021). Some technologies widely implemented by tax havens are classified as "Dual", as they are equally used to circumvent corporate and personal taxation. This is, for instance, the case of IBCs, which are tax-exempt companies with limited administrative requirements and high secrecy. For offshore strategies to work efficiently, the tax avoider must maintain secrecy and hold her offshore revenues and wealth in a bank. Offshore banking, classified separately, is a key complement to other technologies: it enables firms and individuals to store offshore income while protecting secrecy. Finally, the "Other" category includes regulations that do not fall within the classic categories, illustrating the diversity of options available to countries to become tax havens.

In sum, my approach relies on the reforms implemented by tax havens to build and develop their offshore legal architecture. This is important because these non-price attributes are central to offshore competition. Although some price data are available, systematic collection remains challenging due to the sector's opacity. Therefore, this study primarily relies on legal architecture data, with price data used as a complement.

A potential limitation of this approach is that some offshore activity may not be tied to identifiable legal reforms, particularly in countries with long offshore histories or federal systems (see, for instance, the case of Switzerland, described in Guex, 2021). These cases concern few tax havens. An advantage of my approach which can alleviate biases related to these cases, is that it relies on reports written

Table 1 – Types of legal technologies

Category	Legal Technology	Description	Examples
Personal 38 reforms	- Trust laws (★)	Legal disconnection between asset use and ownership	<i>Turks and Caicos Islands' Trust Ordinance 1990</i>
	- Other (★)	Tax abolition, for example	<i>Monaco's abolition of personal income taxes 1869</i>
Corporate 37 reforms	- MNE	Attraction of MNE activities and profits	<i>Ireland's Export Profits Tax Relief 1956</i>
	- Holding	Special regimes for holding companies	<i>Luxembourg's Loi sur le régime fiscal des sociétés de participations financières (holding companies) 1929</i>
	- Offshore insurance and captives	Self-insurance allowing revenue transfers to tax havens	<i>Barbados's Exempt Insurance Act 1983</i>
	- Flag of convenience	Limited regulations and tax rates for ships registered in an offshore maritime registry	<i>Panama's Law/63 on Foreign Ship Registration</i>
Dual 65 reforms	- IBC	Tax-neutral companies with no domestic activities and limited legal requirements	<i>British Virgin Islands' International Business Companies Act 1984</i>
	- Other exempt companies	Similar to IBCs	<i>Jersey's Corporation Tax Law 1940</i>
Banking 38 reforms	- Offshore banking (★)	Unregulated banks with limited taxation and legal requirements	<i>Anguilla's Banking Ordinance 1991</i>
	- Bank secrecy (★)	Protects account holders from investigations	<i>Switzerland's Banking Act 1934</i>
Other 16 reforms	- Aggressive tax treaties (★)	Limitation of bilateral taxation, allowing conduit entities to benefit from treaties	<i>Netherlands Antilles's tax treaty with the Netherlands (Belastingregeling Koninkrijk) 1964</i>
	- Specific regulations (★)	Country-specific rules not classified elsewhere	<i>Bahamas's Hawksbill Creek Agreement 1955</i>

Note: This table classifies reforms by legal technology and broad category. The number displayed after the category name counts the number of reforms adopted in each category at the end of the sample period in 2000. The total exceeds the number of reforms recorded in the database as some reforms belong to several categories. Legal technologies highlighted with the symbol (★) are grouped together within a broad category to form a subcategory.

by tax lawyers advising potential users of tax havens. This allows me to focus on reforms perceived as the most relevant by practitioners. In this sense, omitted laws are unlikely to matter for the actual construction of a haven's offshore structure. A related limitation is that enacting a law does not guarantee the provision of offshore services. Importantly, in next section's *Fact 2*, I provide evidence that new offshore reforms do increase the supply of tax havens services.

Legal architecture of tax havens: construction The dataset covers reforms that made countries tax havens (the extensive margin of offshore services supply) and subsequent reforms that updated their legal architecture (the intensive margin of supply). Countries may update their legal architecture to reinforce existing legal technologies or create new opportunities for offshore users by introducing new technologies. The dataset contains information about the date of these reforms, and the type of legal technology that is introduced. A country-by-country description of how I construct the dataset is provided in the [online data documentation](#).

The dataset includes 48 jurisdictions representing tax havens of different types and sizes worldwide. They are mapped in Appendix Figure A.1. These countries today constitute the bulk of offshore services providers and closely match those on tax haven lists used in the literature as shown in Appendix Table A.1.⁸ The collection of offshore reforms stops in 2000, which marks the end of the expansion of tax havens and the beginning of a phase of regulation in high-tax countries (Sharman, 2019).

The construction of the dataset relies on a wealth of information provided by tax havens guides. These include *Tax Havens and their uses* (Doggart, 1975), the *Guide Chambost des Paradis Fiscaux* (Chambost, 2000) and the *Guide Mondial des Paradis Fiscaux* (Beauchamp, 1992).⁹ These books provide general information on tax havens, scrutinize their legal architecture and carefully describe their different possible uses.

For each country, I collect the key dates that the authors identify as important in the construction of the country's offshore legal architecture. I then compare these dates between the different sources to ensure that the identified dates are indeed perceived as significant. This alleviates potential bias that might arise from my relying on only one source and recovers complementary information about some regulations when the original text is insufficiently precise. To deal with these issues, I collect more information from external sources. As detailed in the online data documentation, more than 100 additional sources are used to systematically cross-check and confirm any date obtained in the main sources. Sometimes, they also reveal the existence of reforms not mentioned in the main sources and then complement the dataset with original information. These sources are other guides to tax havens (e.g. Starchild, 1994), academic papers on specific countries or regions (e.g. Fossen, 2002 on the Pacific tax havens), or books about tax havens (e.g. Palan et al., 2009). I also use information from various *Financial Secrecy Index* reports (Tax Justice Network, 2020). Finally, I use several documents written by offshore service providers to advise their clients or inform them of different offshore opportunities (e.g. the "Fact Sheets" of Trident Trust, one of the world's largest offshore providers). The final dataset includes 48 tax havens for which I observe 141 reforms.

Offshore activity Data on the legal architecture of tax havens reveal their institutional features but not actual offshore activity. To observe offshore activity, I use micro-level data from several leaks compiled in the Offshore Leaks Database,

8. I started with the list of tax havens from Dharmapala and Hines (2009). I added the Netherlands and Malaysia, which are considered tax havens but are not included on their list. I did not include Belgium because of conflicting information on its role as a tax haven. Watteyne (2023) argues that Belgium's history as a tax haven ended after WWI. I did not include U.S. states such as New Jersey or Delaware, either. These states have mainly been considered local tax havens (Dyrend et al., 2013).

9. These last two books are available in French only. André Beauchamp and Édouard Chambost are international tax lawyers specialized in the use of tax havens. Chambost wrote eight different editions of his book from 1977 to 2005, translated in 9 languages.

released by the International Consortium of Investigative Journalists (ICIJ, 2022a, ICIJ, 2022b). It aggregates data from several leaks from tax-advising firms between 2013 and 2021 providing micro-level information on more than 810,000 entities opened in various tax havens with details on their owners, their opening date and geographical ties. Panel (a) of appendix Table A.2 provides information on the different leaks that are part of the database.

The Offshore Leaks database is not a random sample, but it offers the most comprehensive publicly available micro-level evidence on offshore activity to date. It captures a wide diversity of service providers, jurisdictions, and periods, covering independent leaks from both large law firms and smaller intermediaries. For instance, the Panama Papers (2016) originate from Mossack Fonseca, a large Panamanian law firm with global reach, while the Pandora Papers (2021) include leaks from 14 different offshore service providers.¹⁰ The Paradise Papers include entities created by Appleby, which is considered one of the most important offshore provider in the world. This diversity of sources reduces the risk of systematic selection bias linked to a single firm or jurisdiction.

The ICIJ records offshore entities' country of registration and set-up date, and links them to officers, individuals or companies, with information on their address and role.¹¹ As officers are not necessarily beneficial owners, I follow the list of ownership roles provided by Chang et al. (2023) to identify ultimate owners, which I observe for 13% of entities.

I use the micro-level data to build three aggregated datasets, summarized in Table 2. I denote by i the non-haven source country (where the offshore user is located), j the tax haven, k the data source, and t the year. First, I construct a bilateral dataset counting links between source countries i and tax havens j , keeping the data source dimension k to control for potential biases (e.g., some leaks might over-represent certain jurisdictions). This allows me to estimate a gravity equation of tax haven use. Because I count links, the dataset can exceed the total number of entities in the leaks, but incomplete information on country location reduces usable observations. Second, I aggregate the data by tax haven j and year t , counting unique entities, allowing me to track offshore activity within tax havens. Third, I build a panel at the source country level, counting links in non-haven countries i at date t , to proxy offshore use in non-haven countries. Since this aggregation does not require bilateral location information, it yields more observations.

10. Panel (b) of Table A.2 in Appendix shows the distribution of entities in the Pandora Papers by provider. It shows the diversity of providers in terms of number of records, year of creation (from 1961 to 2008), place of creation, and jurisdictions of operations.

11. An entity can have several officers. The most common roles are *shareholder* (39% of links), *director* (27%), *secretary* (7%), and *Ultimate Beneficial Owner* (3%). The ICIJ assigns countries to addresses using automated matching and manual reviews (<https://offshoreleaks.icij.org/pages/faq>). Officers are linked to multiple countries in 8.6% of cases. I drop those linked to more than three countries (0.87% of cases) and otherwise retain all listed countries.

Appendix Table A.3 assesses the credibility of the data. It shows a strong positive correlation between the number of links from non-haven country i with tax haven j at date t and Bank for International Settlements (BIS) data on bilateral offshore deposits between 2003 and 2017. The BIS data are a standard benchmark for measuring cross-border offshore activity in contemporary periods (e.g., Johannesen and Zucman, 2014, Menkhoff and Miethe, 2019).¹²

Table 2 – Description of the Offshore Leaks data

	Bilateral (ijk)	Tax haven (jt)	Source country (it)
Data Source dimension (k)	Yes	No	No
# of observations	3797	5383	6248
# of tax havens (j)	39	39	–
# of source countries (i)	231	–	233
# of links/entities	561803	742259	916764
# of links with ultimate ownership	53265	–	64113

The price of offshore services I supplement the data on offshore legal reforms and offshore activity with a novel panel dataset of the price of offshore legal services. I collect panel data on offshore prices since 2014 from `incorporations.io`, the website of a Singapore-based company specializing in offshore incorporation services. The website presents country-by-country comparisons and lists a baseline incorporation price by legal technology, typically the minimum cost excluding optional services like nominee directors or offshore bank accounts. When several prices are available for a country at a particular date, I select the lowest one. Although the price data come from a single provider, the analysis relies on relative price differences across countries and over time rather than on the representativeness of absolute price levels. Moreover, to my knowledge, this is the only accessible source providing systematic and comparable information on offshore incorporation costs across jurisdictions and over time. I obtain an unbalanced panel of price data for 30 tax havens. Country fixed effects explain 77% of the variation while time fixed effects explain 8% of the variation. Appendix D shows a strong cross-sectional correlation with prices from alternative sources.

Additional data I complement the information on tax havens' legal architecture with data about each territory's history as a sovereign state (independent, non independent and/or colony), about the date of introduction of six different modern taxes to measure the extensive margin of taxation (from the Tax Introduction Dataset, Seelkopf et al., 2021),¹³ and tax structure since 1965 (total tax revenues,

12. Alstadsæter et al. (2018) also find a positive correlation between shell companies in the Panama Papers and their offshore wealth.

13. The authors distinguish modern from premodern taxes by the former's simple and broad tax bases, administrative complexity, and redistributive potential.

labor taxation, capital taxation) from Bachas et al. (2022). When constructing tax-revenue-to-output ratios from these data, I follow the authors' convention and use net domestic product (NDP) rather than gross domestic product (GDP). Macroeconomic data (GDP, GDP per capita) come from the Global Macro Database (Müller et al., 2025), and gravity data from Gurevich and Herman (n.d.). Appendix A provides a list of all the additional data sources used in this paper.

3 The emergence of tax havens

In this section, I show three defining features of tax havens that set up the context for the analysis of the historical consequences of tax havens.

Fact 1. Two waves of tax haven reforms. The number of tax havens and the number of reforms expanded sharply over the 20th century, following two waves that reflect both demand-side and supply-side forces. Figure 1 distinguishes first and follow-on reforms in Panel (a) and decomposes reforms by region in Panel (b). Panel (a) shows a steady increase in the number of tax havens throughout the twentieth century, with an acceleration of follow-on reforms in its second half. Panel (b) highlights striking regional differences in their expansion, with two different periods delineating the global history of tax havens. Before the 1960s, Europe and the Americas dominated the first wave of tax havens expansion, hosting nearly all known tax havens. After the 1960s, a second wave emerged with new havens appearing in the Caribbean, Asia, and Oceania, largely coinciding with the end of colonial rule and the liberalization of global financial flows associated with the end of the Bretton-Woods system. Africa, by contrast, remained marginal throughout the 20th century.

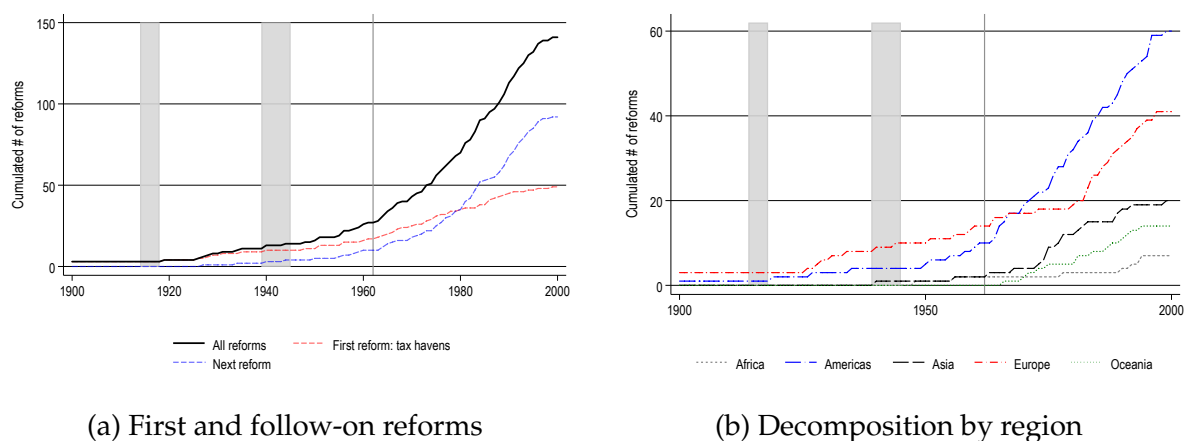


Figure 1 – The rise of tax havens in the 20th century

Note: This figure depicts the rise of tax havens in the 20th century. Panel (a) distinguishes first and follow-on reforms, while Panel (b) presents the regional decomposition. Data on tax havens' reforms come from my own data collection (see Section 2). Shaded areas indicate the World Wars, and the vertical line (1962) marks the beginning of the independence wave in the U.K.-dominated Caribbean region.

This regional evolution has been driven by both shifts in tax policies world-wide, generating demand for tax havens services, and geopolitical changes that boosted the supply of such services.

As Figure 2 shows, the rise in modern taxation correlates with the first wave of tax havens in Europe and America (see Figure A.3 for Asia, Africa, and Oceania). In Europe, the first modern income taxes are introduced at the end of the 19th century, with an acceleration around World War I. While the number of offshore reforms in Europe is limited at first, it increases steadily during the interwar period, right after the massive introduction of income taxation in the continent. The dynamic is similar in the Americas, where we observe a correlative increase in tax introduction and offshore reforms from the beginning of the 20th century.

These patterns highlight the role of demand: rising tax burdens created incentives for firms and individuals to seek offshore options. This trend was reinforced by the fact that personal income taxes were characterized by a high degree of progressivity, with top marginal tax rates often higher than 60% in the 1920s, while individuals at the top of the income distribution have a higher propensity to evade taxes (Alstadsæter et al., 2019, Leenders et al., 2023).

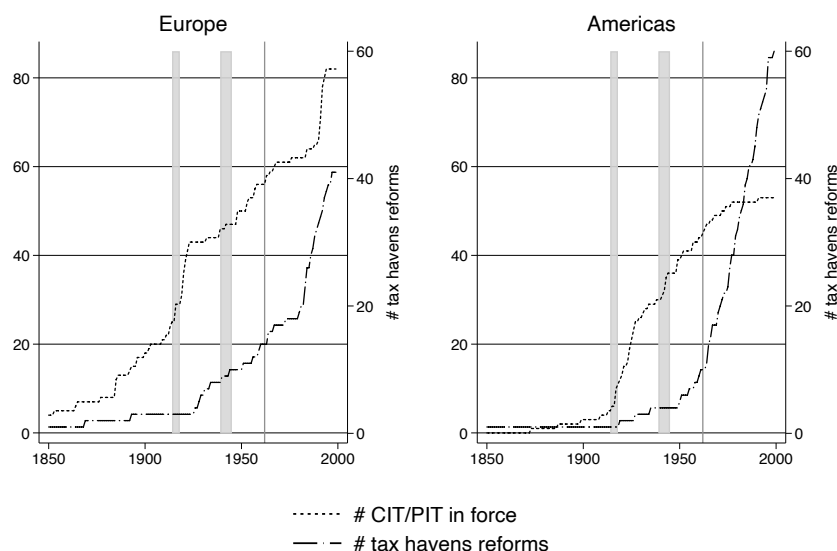


Figure 2 – The building of tax havens’ legal architecture and the rise of direct taxation.

Note: This figure plots the number of direct taxes (Corporate income taxes and Personal income taxes) introduced and the number of tax haven reforms for Europe and the Americas. Data on the introduction of taxes comes from Seelkopf et al. (2021). Data on tax havens’ reforms comes from own data collection detailed in section 2. Shaded areas indicate the world wars and the vertical line (1962), the beginning of the independence wave in the U.K.-dominated Caribbean area.

Conversely, the reforms at the end of the 20th century cannot be straightforwardly explained by rising taxation, suggesting a role of alternative factors. A factor well documented in historical studies is the association between the decolonization in the British Empire and the birth of new tax havens from the 1960s (see for instance Ogle, 2017, and Sævold, 2022). On the contrary, other colonial

powers such as France have been more reluctant to encourage this development choice (Rawlings, 2004). Newly independent countries might have found a convenient specialization in the tax haven industry, which was predicated on a resource available to all countries: sovereignty (Slemrod, 2008). The heterogeneity between colonial powers is explained in the literature by the diffusion of the common law system in the British Empire, the importance of London as a central financial place (Palan et al., 2009), or policy choices (Woker, 2024). In appendix E, I quantitatively confirm these analysis by showing that the number of offshore reforms passed by former U.K. colonies almost doubles 10 years after becoming independent, with respect to countries that become independent from another colonizer. This effect is substantial and suggests that decolonization served as a significant supply shock to the offshore market.

The two waves of reforms also involved changes in the legal technologies offered by tax havens. Appendix Figure A.4 shows the cumulative adoption curve of offshore legal technologies. During the interwar period, the inaugural reforms reflected diversification across various legal technologies, hinting at limited competition among tax havens. From the 1950s, exempt companies became increasingly prevalent, alongside the expansion of offshore banking and banking secrecy. Towards the end of the century, IBC legislation spread rapidly, particularly following the British Virgin Islands' reform of 1984 (Harrington, 2016). Since then, IBCs have been the legal technology that has experienced the most remarkable growth, emphasizing the key role of legal innovations in tax havens' development.¹⁴ These patterns suggest that tax havens compete through both horizontal and vertical differentiation of legal services.¹⁵

In sum, tax havens expanded through both the entry of new jurisdictions and the development of their offshore legal architecture. The two historical waves suggest a role for rising taxation and decolonization, while the spread of new legal technologies broadened the services offered by tax havens. This history provides variation in both entry and subsequent reforms, which I use below to study their economic consequences.

Fact 2. Offshore legal reforms significantly increase offshore activity.

Offshore reforms are legal acts. How do these acts affect the real economy? Do

14. The importance of IBCs is recognized by both scholars (e.g., Palan et al., 2009, Harrington, 2016) and professionals (e.g. Riegels, 2014, from the offshore law firm Harneys). In 2014, Appleby, a leading international law firm incorporated in Bermuda, recognized that “one would be hard-pressed to find an example of a similar law that has had such profound and positive implications for the jurisdiction in which it was promulgated” (Kirk, 2014). The chief of government of the BVI affirmed that it was the “most important law of the decade”, having a “dramatic positive effect [...] on the growth of the offshore sector elsewhere”.

15. Price data inform us on vertical differentiation trends, with prices going from \$500 to incorporate a company in Singapore to \$9200 in Bermuda. Countries with longer histories as tax havens also tend to charge higher prices (Appendix Figure A.2), consistent with vertical product differentiation (e.g., Gabszewicz and Thisse, 1979).

they trigger an increase in supply in affected countries? To proxy offshore services provision over time, I use the tax havens level panel of entities from the Offshore Leaks (ICIJ, 2022b). It counts the number of offshore entities located in a tax haven j at date t .

I run an event study to investigate whether a new reform in a country j at date t has any effect on the number of offshore entities located there. This exercise focuses on the implementation of reforms introducing IBCs because this is the type of legal technology most likely to be covered by Offshore Leaks. I compare tax havens that enact an IBC reform to those that never enacted an IBC reform. To keep zeroes in the estimation, I estimate the effect on the number of entities. I show in appendix G, that the result is robust to alternative strategies based on Chen and Roth (2024). I estimate the following equation:

$$Entities_{jt} = \sum_{k=-10}^{15} \zeta_k IBC_{jt}^k + u_j + u_t + v_{jt} \quad (1)$$

where $Entities_{jt}$ represents the number of entities in tax haven j at date t , IBC_{jt}^k is a dummy variable equal to one for treated countries k years before or after it introduces an IBC reform, u_j and u_t are country and time fixed effects, and v_{jt} is the error term. The equation is estimated using the estimator of de Chaisemartin and D'Haultfœuille (2024) to account for potential heterogeneous effects in a generalized difference-in-difference setting with different treatment dates.

In Figure 3, I find that following a reform adoption, the number of offshore entities recorded in Offshore Leaks increases by 700 after 10 years. This effect appears right after the reform and increases over time, while the pre-reform coefficients are close to zero and not statistically different from zero. This figure shows, using two independent data sources, that reforms of tax havens' legal architecture give rise to an increase in tax haven services provision in these countries. This result supports the consistency of the data. In Appendix G, I propose robustness tests that follow Chen and Roth (2024) and allow the estimation of an elasticity. I find that the offshore activity increases by 200% 10 years after the reform.

Finally, note that the observed increase in the number of reforms from the 1960s and the correlative rise in offshore incorporation in new tax havens might come at the expense of the tax havens already supplying the market (substitution) or could have expanded the size of the market (complementarity). I evaluate these alternatives in Appendix F and show, using the Swiss offshore market as a case study, that the arrival of new tax havens is not associated with a decline in the activity of old tax havens, suggesting limited substitution and an expansion of the market across time.

Fact 3. Geography shapes the demand for tax haven services. Fact 1 correlates the rise of taxation with the rise of tax haven reforms across time and space

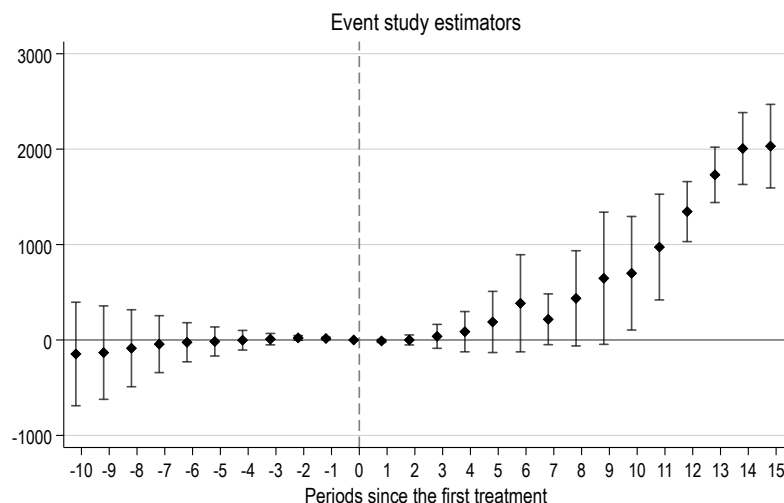


Figure 3 – Offshore reforms and tax havens’ offshore activity: Event study

Note: This figure plots coefficients from the estimation of equation 1 estimated using the estimator of de Chaisemartin and D’Haultfœuille (2024). The treated group is composed of tax havens introducing "International Business Companies" reforms. It studies how the number of offshore entities registered in a tax haven changes when the country enacts a new IBC reform. The dependent variable is winsorized at the 5th and 95th percentiles to limit the role of outliers. The control group corresponds to tax havens that have never enacted any IBC reform. 95% confidence intervals from clustered standard errors.

suggesting a geographical component of demand: the introduction of taxes in one country increases the demand for tax haven services in nearby countries. This boils down to assuming that the costs of tax haven use increase with geographical distance, which can be surprising at first sight given the non-physical nature of this activity. I show here that the use of offshore services follows a gravity structure.

Empirical support for the role of distance of offshore activity is found in the literature in the context of the use of tax havens by multinational firms (Hebous and Johannesen, 2021, Ferrari et al., 2024) and by individuals (e.g. Leenders et al., 2023).

Bilateral evasion costs, that justify the existence of a gravity structure for tax evasion, are diverse. First, tax evasion corresponds to the use of a particular type of services: offshore services. The literature has established that trade in services follows a gravity equation (Kimura and Lee, 2006). In addition, trust and coordination, which are highly correlated with bilateral distance, have been used to explain why the gravity equation holds for trade in goods and in services (Guiso et al., 2009). The exchange of offshore services strongly requires these two components given the opaque nature of the activity, suggesting that distance should be an important determinant of tax evasion. Even with 21st-century technologies, tax evasion implies communication and travel costs (see Harrington, 2016). Locating one’s assets in a tax haven means traveling there occasionally (for the evader or its lawyer), communicating with intermediaries in the tax haven, etc. All these costs will depend on geographical distance, but also on the linguistic distance between

two countries. Finally, bilateral evasion costs will also vary with the extent of compatibility between the regulations in the high-tax country and those in the offshore country, suggesting a role for the legal distance.

I employ the bilateral version of the Offshore Leaks data focusing on links between offshore entities in a tax haven j and entities or individuals in a non-haven country i . I estimate the following gravity equation to explain the number of links between a pair:

$$\#Links_{ijk} = \exp(\beta_1 \ln(Dist_{ij}) + \beta X_{ij} + v_{ik} + v_{jk}) \epsilon_{ijk} \quad (2)$$

where $\#Links_{ijk}$ is the number of links between non-haven country i and tax haven j as documented in the leak source k (see the list of sources in Appendix Table A.2). $Dist_{ij}$ is the geographic distance between i and j and X_{ij} includes bilateral gravity variables capturing colonial relationships, common legal origins, and common language (Gurevich et al., 2024). v_{ik} and v_{jk} are country $\times$ source fixed effects that account for any country-level and country $\times$ source-level shocks such as preferences and characteristics of the offshore providers exposed in a given leak. ϵ_{ijk} is the error term. Given the count nature of the data, and following the best practices in gravity equation estimations, the equation is estimated using a Poisson pseudo-maximum likelihood (PPML) estimator.

In Table 3, I find that distance plays an important role, with a 1% distance increase decreasing the number of ultimate ownership links between two countries by approximately 0.35%. A stronger relationship, with a distance elasticity around 1, is found when adding links not associated with ultimate ownership. This result supports the hypothesis that bilateral evasion costs increase with distance. These costs decrease with the legal similarities between the origin country and the tax haven. Indeed, two legal systems with the same origin might be more complementary when one wants to evade or avoid taxation. Language proximity also increases the bilateral use of tax havens, even after controlling for legal and colonial origins. The coefficient on the colonial origins variable is not significantly different from zero, reflecting the correlation between colonial history and legal history (Klerman et al., 2011). Finally, it is worth noting that the Offshore leaks contains information on offshore entities that necessitate few physical operations or substance. Therefore, the estimate likely represents a lower bound of the strength of gravity determinants of the use of tax havens.

Distance appears as a crucial factor influencing the demand received by tax havens. This observed pattern aligns with the concept of market access in the economic geography literature (Redding and Venables, 2004), according to which countries close to large markets are better positioned to serve demand, similarly to how tax havens benefit from proximity to countries implementing higher tax rates. Consequently, countries near large markets with high tax rates will be more likely to become tax havens, irrespective of their own size. This geographical variation

Table 3 – Gravity in Offshore Leaks data

	(1) # UBO links	(2) # UBO links	(3) # UBO links	(4) # Links
ln(Dist.)	-0.313*** (0.0777)	-0.457*** (0.0700)	-0.352*** (0.0845)	-0.944*** (0.0950)
Colonial link		-0.0384 (0.271)	-0.332 (0.310)	-0.128 (0.246)
Common legal origin		1.186*** (0.213)	1.167*** (0.218)	1.131*** (0.302)
Common language index			0.926*** (0.355)	1.144*** (0.428)
Observations	1,537	1,537	1,537	2,291
Origin-source + Destination-source FE	Yes	Yes	Yes	Yes

Note: This table estimates equation 2 using a PPML estimator. In columns (1) to (3), the dependent variable is the number of ultimate beneficial ownership (UBO) links and in column (4), the dependent variable is the total number of links. Robust standard errors clustered at the country-pair level in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

in tax haven use will be essential in the identification of the effect of tax havens on non-haven countries' outcomes.

4 Consequences of becoming a tax haven

I now turn to the macroeconomic consequences of tax havens, both on their economies (section 4) and on foreign economies (section 5). I will concentrate on GDP per capita and on the tax structure. The next two sections contribute to the debate about the desirability of tax havens (Slemrod and Wilson, 2009, Hong and Smart, 2010), using novel data and identifying variation. To investigate the effects of a country's becoming a tax haven on its development, I study the evolution of its GDP per capita. GDP per capita data comes from the Global Macro Database (Müller et al., 2025), which provides, to date, the largest sample of GDP per capita observations over the 20th century. I focus on the post-war period where 39 countries become tax havens. As tax havens are sometimes small countries or territories dependent of other countries, there might not exist historical GDP per capita data. I observe data for 29 of them the year they become tax havens. Table A.4 in Appendix lists countries included in each of the next exercises.

Becoming a tax haven is not a random treatment and no perfect strategy exists to capture the causal effects of tax havens on the economy. To address this challenge, I use different strategies to estimate the impact of becoming a tax haven on GDP per capita. I also provide several robustness tests to confirm the validity of the results.

The tax havens' growth gap I first look descriptively at the growth trends followed by a country when it becomes a tax haven. I compute the annualized growth gap for tax havens with respect to i) the contemporaneous (unweighted)

average growth rate (*global growth gap*), ii) the average annualized growth rate of the respective country in the 10 years before becoming a tax haven (*own growth gap*). The annualized growth gap is computed for periods of 5 years and 10 years after becoming a tax haven.

In Figure 4, I find that the average gap five years after becoming a tax haven is around 2.3 points of annual growth compared to the contemporaneous growth rate of other countries at the same time and 1.2 point compared to the own growth rate before becoming a tax haven. After 10 years, this difference is reduced respectively to 1.4 point of annual growth compared to other countries and 0.4 point of annual growth compared to the same country before becoming a tax haven. These descriptive statistics point to a growth premium from becoming a tax haven. The next analysis employs causal inference methods to formally test this relationship.

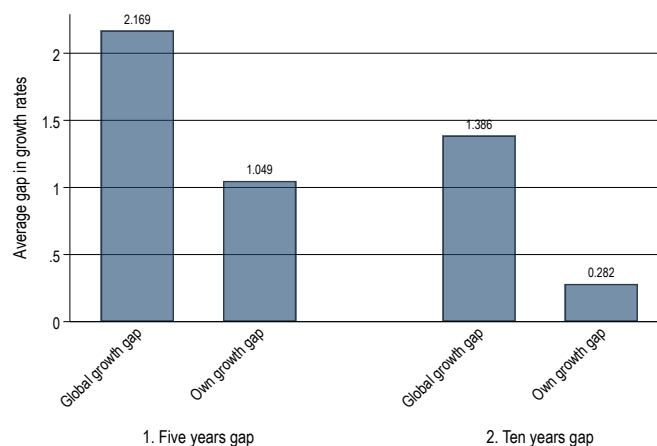


Figure 4 – Average havens' annual growth gap

Note: This figure shows the average annualized growth difference between tax havens and i) the contemporaneous global growth rate (*global growth gap*), ii) average annualized growth rate of the respective country in the 10 years before becoming a tax haven (*own growth gap*). This difference is taken for two period sizes: five years after a country becomes a tax haven and ten years after. The sample of tax havens included in the figures is given in Appendix Table A.4.

I use an interactive fixed effects (IFE) methodology, which extends beyond standard two-way fixed effects models by allowing for unobserved confounders that vary over time and across units (Gobillon and Magnac, 2016, Xu, 2017, Liu et al., 2022). Rather than assuming these confounders affect all units in the same way, the IFE approach models them semi-parametrically by interacting time-varying latent factors with unit-specific loadings. This allows the model to flexibly capture complex patterns in the data, especially when unobserved shocks or trends may influence units differently.

Intuitively, the method can be seen as constructing counterfactuals for treated units using information from pre-treatment outcomes and the structure of correlations across units. It resembles a reweighting strategy, where treated units are compared to a weighted combination of control units that best match their pre-treatment dynamics. In this sense, the method generalizes the synthetic control

approach (Abadie et al., 2015) to settings with multiple treated units and staggered treatment timing. It also includes formal procedures for inference on treatment effects (Liu et al., 2022). It is equivalent to matching, country by country, treated units with untreated units based on GDP per capita trends before the treatment.

More formally, I estimate a model of the following form:

$$Y_{it} = \alpha_i + \lambda_t + D_{it}\tau_{it} + \mu_i'f_t + \varepsilon_{it} \quad (3)$$

where Y_{it} is the outcome of interest for unit i at time t , α_i and λ_t are unit and time fixed effects, D_{it} is a binary treatment indicator, τ_{it} is the (possibly heterogeneous) treatment effect, and $\mu_i'f_t$ represents the interactive fixed effects, capturing unobserved time-varying confounders through unit-specific loadings μ_i and common factors f_t . The error term ε_{it} is assumed to be mean-zero and uncorrelated with treatment assignment, conditional on the factors.

Following Xu (2017) and Liu et al. (2022), causal effects are identified and estimated by first fitting the model to pre-treatment periods only, using both treated and control units to estimate the latent factors f_t and loadings μ_i . These estimated components are then used to estimate the counterfactual outcomes for treated units in post-treatment periods under the assumption that, absent treatment, their outcome dynamics would continue to follow the same factor structure. Treatment effects are subsequently obtained as the difference between actual outcomes and these predicted counterfactuals. This procedure avoids bias from post-treatment contamination (de Chaisemartin and D’Haultfœuille, 2020, Borusyak et al., 2024) and aims at ensuring that the estimated effects are attributable to the treatment intervention rather than to endogenous changes in unobserved confounders. I also check in appendix Figure A.6a that the results are robust to the aggregation of individual synthetic controls as in Funke et al. (2023).

Results The main results are displayed in Figure 5. Following the switch to the tax haven status, the average GDP per capita increases more than in counterfactual countries that do not switch, as shown in panel (a). This annual effects accumulates and after 15 years, I estimate a havens’ growth gap of 16%, which is equivalent to a gap of 1p.p. of annual growth, on average. The effect on GDP is very similar, as shown by Appendix Figure A.5. Twenty-two countries are included in the estimation sample from a diverse set of regions.

Panel (b) of Figure 5 shows the regional differences in driving this aggregate result. The main effects appears to be driven down by countries from the Americas and Oceania where the average effect is small and non significantly different from zero. The large standard errors in these cases reveal very diverse situations. To understand more precisely the origin of this heterogeneity, appendix Figure A.7 shows the correlation between the observed gap and the year where a country become a tax haven. Countries that enter later are more likely to gain less

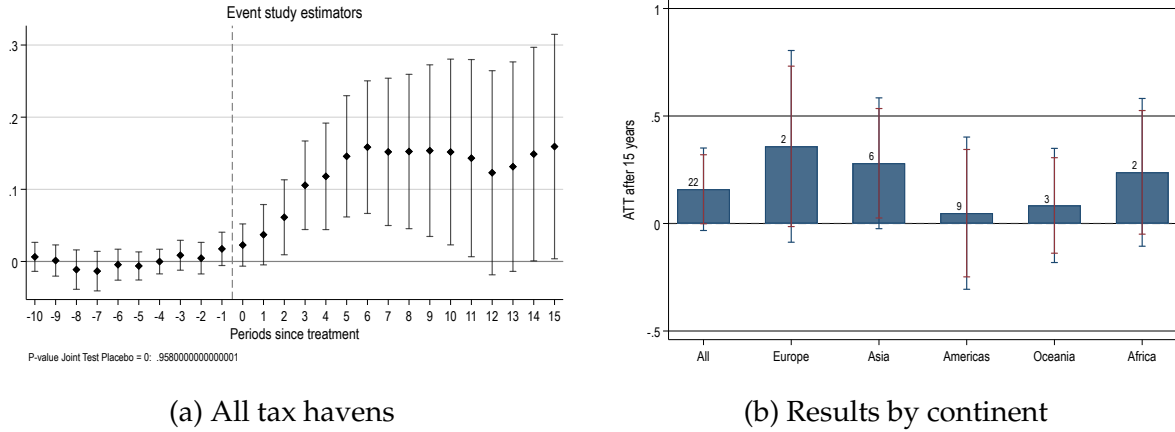


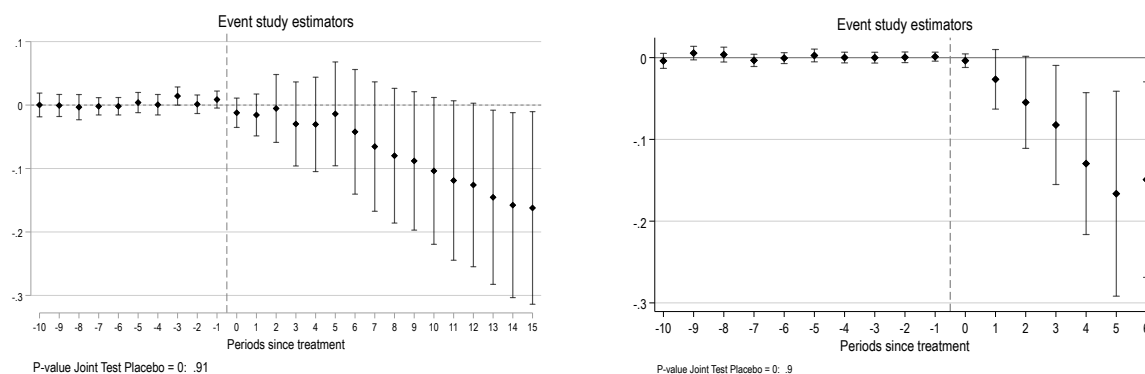
Figure 5 – Effect of becoming a tax haven on GDP per capita

Note: This figure plots coefficients from an event-study regression following equation 3 and estimated following Xu (2017) and Liu et al. (2022). In panel (a), the dependent variable is GDP per capita, and all countries are included in the regression. 90% confidence intervals from bootstrapped standard errors (500 replications). In panel (b), the dependent variable is GDP per capita but runs equation 3 including only tax havens of a given continent (and all other non-havens). 90% confidence intervals in red and 95% confidence intervals in blue (500 bootstrap replications). The number indicates the number of tax havens included in each estimation. The sample of tax havens included in the estimation is given in Appendix Table A.4.

from becoming a tax haven. This suggests that available rents decrease as new tax havens are entering the market, pushing the marginal gain of becoming a tax haven towards zero.

I perform two exercises to assess the robustness of these results. First, in Panel (a) of appendix Figure A.6, I replicate the exercise using individual synthetic control methods that I aggregate by taking the average across countries. I find an average increase in GDP per capita by about 24% after 10 years. Second, I perform a placebo experiment where I permute the offshore history of the countries in the sample. In Panel (b) of Figure A.6, I estimate the average treatment effect across 500 replications and find a flat path around treatment, demonstrating that the effect that I estimate is likely to be causal.

Does it reflect changes in the real economy? Two important questions remain. First, does the estimated effect on GDP per capita reflect changes in the real economy? The observed increase in GDP per capita could overstate improvements in domestic welfare or real activity if it results from measurement errors such as changes in national accounting linked to the growth of offshore finance, or if it primarily captures financial flows benefiting foreign residents. To assess whether the GDP effect corresponds to a deeper economic transformation, I examine the evolution of agricultural land, shown in panel (a) of Figure 6. In the absence of detailed historical data on other real economic indicators, the share of agricultural land serves as a useful proxy for structural change. A declining share typically reflects a shift away from agriculture toward industry and services, often associated with rising productivity and modernization (Lewis, 1954).



(a) Effect of becoming a tax haven on agricultural lands

(b) Effect of anti-tax haven policies on GDP per capita

Figure 6 – Effect of becoming a tax haven on macroeconomic outcomes: additional results

Note: This figure plots coefficients from event-study regressions following equation 3 and estimated following Xu (2017) and Liu et al. (2022). Panel (a) studies the impact of becoming a tax haven on the share of agricultural land (data source is FAO). The composition of the treated group is given in Appendix Table A.4. The control group is composed of all never-haven countries in the world. Panel (b) studies the impact of an anti tax haven policy (blacklisting by the European Commission). The composition of the treated group is given in Appendix Table A.5. The control group is composed of untreated tax havens. 95% confidence intervals from bootstrapped standard errors (500 repetitions). The p-value tests for the absence of pre-trends.

I find that becoming a tax haven is associated with a 17% decline in the share of agricultural land after 15 years, following a steadily decreasing trend. This pattern suggests that at least part of the increase in GDP per capita is linked to a broader structural transformation of the economy, rather than being purely a financial or statistical artifact.

What happens following anti-tax havens regulations? Second, what happens when the activities of a country as a tax haven are constrained, for instance following the actions of the OECD or the European Commission against tax avoidance and tax evasion? The recent development of multilateral cooperation to limit such activities is designed to deter and penalize jurisdictions that fail to meet international tax standards, such as transparency or anti-avoidance policies. Among these measures, I focus my empirical analysis on the establishment of a blacklist of non-cooperative countries for tax reasons by the European Commission in 2017.¹⁶ This policy has several advantages for a causal analysis. First, it targets a subset of tax havens in a staggered design, as jurisdictions are added to the list on successive

16. The European Commission began the publication of a list of non-cooperative countries for tax purposes in 2017. Member States must include blacklisted countries in their national lists and apply at least one of four “defensive measures” such as CFC rules, withholding taxes, non deductibility of costs or limitation of the participation exemption. The literature on the consequences of blacklisting on targeted countries suggests that blacklisting affects economic outcomes in targeted countries as well as their probability to become more compliant with international standards (Laffitte and Montagner, 2025).

rounds, while other policies might be adopted simultaneously by many countries at the same time, limiting the statistical variation available. Second, inclusion on the blacklist triggers sanctions that materially raise the cost of offshore services, such as higher taxes (through withholding taxes or CFC rules) or tighter reporting obligations.

I use the same interactive fixed effects design as for the previous exercise, comparing blacklisted tax havens to non-blacklisted ones and tracking the change in GDP per capita in these countries. Table A.5 in appendix shows the list of affected countries and the date they were first blacklisted.¹⁷ To avoid capturing an effect of Covid-19 on GDP per capita, I replace the 2020 observations with a linear interpolation between years 2019 and 2021. In panel (b) of Figure 6, I find that being blacklisted by the European Commission generates on average a decrease in GDP per capita by 15% after six years, equivalent to a 2.7 p.p penalty on annual growth. This effect is relatively large compared to the literature on tax blacklisting, but can be explained by the fact that blacklisting mainly targets small countries, highly specialized in the offshore industry, as opposed to larger, more diversified tax havens. Importantly, these results show that GDP per capita reacts negatively to negative shocks on tax haven activity. This result holds when using the raw GDP per capita data, uncorrected for Covid-19, as shown in Appendix Figure A.8a. Some blacklisted countries do not appear in my database of tax havens, due to the variety of tax havens definitions one can adopt. The result also holds when the sample is restricted to the definition of tax havens adopted in this paper (Appendix Figure A.8b), with a cumulated effect of -11%, or -1.9% annually, compared to untreated tax havens.

Finally, I explore whether this negative policy shock affects the prices of offshore services. In Appendix Table A.6, I find that, within countries, a decrease in the GDP per capita gap by one percentage point is associated with 0.4% higher prices. This result is consistent with blacklisting raising the cost of providing offshore services and offshore firms passing these higher costs through to consumers.

5 The effect of exposure to tax havens

A growing literature shows that tax havens erode the tax base of non-haven countries by facilitating profit shifting and tax avoidance (Alstadsæter et al., 2018, Tørsløv et al., 2023). These studies typically document direct effects on tax revenues but pay limited attention to broader fiscal consequences or the policy responses of affected countries (Keen and Konrad, 2013). This section examines how exposure to tax haven reforms influences non-haven countries' macroeconomic outcomes, namely, GDP per capita, total tax revenues, and tax structure.

17. Russia, that appeared in the European Commission list after the invasion of Ukraine, is dropped from the sample in all exercises since this decision was mainly political and associated with other packages of sanctions related to the invasion of Ukraine.

To capture differential exposure, I exploit reforms enacted in tax havens within a shift-share framework that leverages geographic proximity as a source of identifying variation.

Shift-share design Measuring the impact of tax haven activity on other countries poses a central empirical challenge: offshore reforms potentially affect all countries. To address this, I exploit the fact that the intensity of exposure varies with geographic proximity. The use of tax havens follows gravity patterns, and the cost of engaging with offshore jurisdictions rises with distance (see Fact 3). I construct s_{it} , the exposure to tax havens of country i at date t :

$$s_{it} = \sum_{j,j \neq i} \left(f(Dist_{ij}) \times \sum_{z=1900}^t Reforms_{jz} \right) \quad (4)$$

The main variable used in the analysis will be the shock in exposure generated by new offshore reforms. It corresponds to additional exposure received in year t by country i expressed as a share of past exposure. This accounts for the fact that a shock does not have the same impact when a country has never been exposed to tax havens or when this country is largely exposed:

$$\Delta s_{it} = \frac{s_{it} - s_{i,t-1}}{s_{i,t-1}} = \sum_{j,j \neq i} \underbrace{\frac{f(Dist_{ij})}{s_{i,t-1}}}_{\text{Shares}} \times \underbrace{Reforms_{jt}}_{\text{Shifts}} \quad (5)$$

Equation (5) builds a shift-share variable where the “shifts” is the number of offshore reforms implemented in tax havens (or origin countries) in year t , and the “shares” are an inverse function of geographic distance between non-haven (or destination) countries i and tax havens j weighted by the past exposure of country i . The identification therefore exploits the differential exposure of countries to the same offshore reforms because of their geography.

Recent advances in the shift-share literature emphasize that the choice of “shares” must reflect the economic mechanism linking exposure to outcomes, and that shares need not sum to one (Borusyak et al., 2025). In the context of geographic exposure to tax havens, shares normalized to sum to one are conceptually inappropriate. Unlike factor shares or trade shares, a share of distance between countries does not reflect any meaningful economic process. What matters is the absolute cost of accessing a haven, which declines with geographic distance in levels and depends on past exposure to tax havens. I use a power of distance as the main geographic weighting function: $f(Dist_{ij}) = Dist_{ij}^{\beta_1}$, with β_1 the coefficient estimated in equation 2. I chose this functional form because it allows the elasticity of exposure to distance to equal the one estimated using Offshore Leaks data. As robustness, I also use $f(Dist_{ij}) = \frac{1}{\ln(Dist_{ij})}$ to allow for a diminishing marginal effect of distance on exposure and captures the intuition that additional kilometers matter less when countries are already far apart. In all specifications, I include as

a control the sum of “shares” interacted with time fixed effects, to account for the fact that shares do not sum to one (Borusyak et al., 2025).

I follow a local projection approach (Jordà and Taylor, 2025) and estimate the following equations for horizons $h = -5, \dots, 10$:

$$\Delta Y_{i,t+h} = \beta_h \Delta s_{it} + \theta_h X_{it} + \sum_j \frac{f(Dist_{ij})}{s_{i,t-1}} \times \mu_{th} + \mu_{ih} + \mu_{rth} + v_{i,t+h} \quad (6)$$

where $\Delta Y_{i,t+h}$ is the change in the variable of interest, the log of GDP per capita, the share of tax revenues in GDP, or the tax structure, between horizon h and year $t - 1$. The tax structure will be proxied by the share of tax revenues coming from capital taxes, the tax falling on labor income out of domestic product (τ_L), the tax falling on capital income out of domestic product (τ_K) and their difference, that captures the relative taxation of labor vs. capital. Long-run data on tax revenues by tax base come from Bachas et al. (2022).¹⁸ X_{it} are a set of country-level and shock-level controls computed following equation (4). It includes control $\sum_j \frac{f(Dist_{ij})}{s_{i,t-1}} \times \mu_{th}$ controls for the sum of shares in a setting where it is not equal to 1. $\mu_{ih} + \mu_{rth}$ are country and region $\times$ year fixed effects. Estimated coefficients are standardized to reflect a change in exposure by one standard deviation. The estimation sample only includes countries that never become tax havens to avoid confounding the effect of foreign offshore reforms with the effect of domestic offshore reforms.

The identification strategy assumes that offshore reforms are exogenous to determinants of non-haven countries’ outcomes after conditioning on fixed effects and the control variables. The main concern is that offshore reforms respond to economic or political changes that also affect taxation in the countries most exposed to them. For example, a domestic tax change could stimulate demand for offshore services and encourage nearby havens to reform. The controls address potential confounding from macroeconomic developments, regional shocks, and policy diffusion. Country-level controls include GDP per capita, tax-to-GDP ratio, government political orientation, and trade openness. Region-by-year fixed effects absorb demand conditions and other potential shocks common to non-haven countries within a region. Exposure-weighted foreign controls (GDP per capita, tax-to-GDP ratios, and outcome in foreign countries) mitigate confounding from cross-border economic linkages and policy spillovers. They are computed using equation (4). Country-level controls also include lags of the outcome and of expo-

18. Capital taxes include corporate income taxes, wealth taxes and property taxes. Labor taxes include payroll taxes and social security payments to labor. Personal income taxes are allocated between labor and capital according to their respective share in personal income taxes computed by Bachas et al. (2022). Indirect taxes are neither allocated to labor nor to capital. I proceed to minimum corrections of the data. First, I linearly interpolate missing years for Israel (one missing year in 1991) and Togo (two missing years in 1981-1982). Second, I drop Kuwait from the sample since its tax structure is drastically affected by the nationalization of the oil sector in 1975, with tax revenues falling from 39% of NDP in 1972 to 2% in 1979.

sure (following Alesina et al., 2024). I assess this identification assumption using balance and pre-trend placebo tests, and examine sensitivity to excluding countries with substantial colonial or economic influence.

To ensure valid inference, standard errors are computed following the methodology of Borusyak et al. (2022), which provides an "exposure-robust" approach suited for shift-share designs. Specifically, standard errors are clustered at the level of the shock-sending country j , rather than at the level of the receiving country i .¹⁹ This accounts for the mechanical correlation in exposure across i countries with similar shares, which may lead to correlated errors in the presence of unobserved shocks (Adão et al., 2019). Clustering at the level where shocks are assigned ensures valid inference. In a robustness table, I also compute shock-level spatially clustered standard errors, where the correlation in the residuals between two shock-sending countries is assumed to be positive if the distance between them is lower than 3,500 km (approximately the average distance between two countries on the same continent).

Offshore shocks Table 4 shows descriptive statistics on shocks. There are 126 non-haven countries that, on average, receive a shock of 4% of their current offshore exposure per year. This corresponds to an average 0.06 offshore reforms per year in tax havens. The largest exposure weight, which corresponds to the contribution to total exposure of one single reform, is 1.7%. This corresponds to an effective number of reforms of 94 out of 101 reforms included in the sample.²⁰ This number illustrates the large dispersion of shocks, which is a necessary condition to identify effects in shift-share designs. Another necessary condition is that shocks are sufficiently mutually uncorrelated. The intra-class correlation coefficient (ICC) of shocks within countries is 0.02, indicating a low degree of serial correlation within countries. This supports the assumption that shocks are sufficiently independent to allow for credible identification of causal effects. In addition, Appendix Table A.7 realizes balance tests at the origin (tax haven) level and destination (non-haven) level over various economic and political variables. Destination exposure doesn't depend on any characteristic except the one-year GDP growth (two-year GDP growth appears non significant) while origin offshore reforms are unrelated with any of the political and economic characteristics tested. These balance tests support the exogeneity of offshore reforms.

Results Figure 7 shows the results of the local projection estimations. It shows the response to a one-standard-deviation increase in offshore exposure from the contemporaneous effect up to ten years ahead, and reports placebo estimates for up to five years before the exposure change. GDP per capita appears unaffected by

19. Borusyak et al. (2022) shows that a shift-share regression at the it level can be estimated in an equivalent way at the jt level using proper weights. I use their Stata command `ssaggregate` to do so.

20. Following Borusyak et al. (2022), I compute the effective number of reforms as the inverse of the Herfindahl index of the exposure weights

Table 4 – Description of offshore shocks

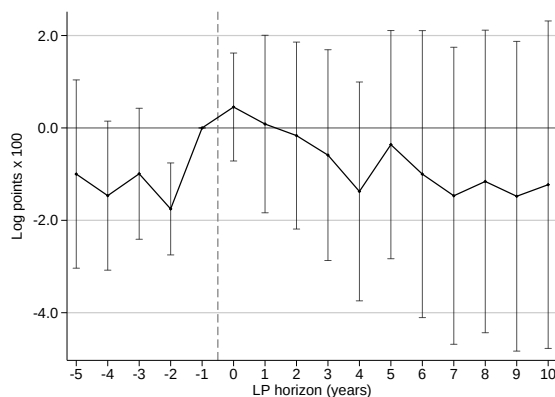
<i>Panel A: Exposure of non-haven countries</i>	
Mean exposure shock (% per year)	4.066
Observations	2,875
Number of countries	126
<i>Panel B: Shocks from tax havens</i>	
Exposure-weighted mean shock	0.0640
Effective number of source-year observations	1419.10
Largest reform-event weight (%)	1.687
Effective number of reforms (total number of reforms)	94.12 (101)
Within-haven intra-class correlation	0.021

Note: The destination shock is the annual percentage increase in accumulated distance-weighted reform exposure since 1900. Tax haven shocks use average-exposure weights from Borusyak and Hull (2023), where years without reforms are retained. The tax haven-year weight is normalized over all tax haven-year observations. The reform-event weight renormalizes those weights over years in which a reform occurs. The effective numbers are the corresponding inverse HHIs. The ICC is the tax haven random-effect variance divided by total residual shock variance after year fixed effects.

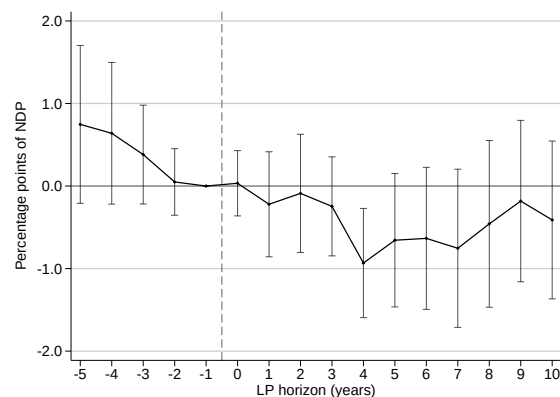
offshore reforms, suggesting the absence of direct links between growth and access to tax havens in our sample. Similarly total tax revenues do not react much to offshore reforms, even if point estimates suggest a small negative effect overall. If tax revenues are not robustly affected by offshore shocks, Panel (c) shows that they strongly affect the relative taxation of capital with respect to labor. An increase of offshore exposure by one standard deviation decreases the share of capital taxes in total tax revenues by about 2 percentage points on average. This effect is large, statistically significant, and persistent after 10 years. Panel (d) decomposes the effect of offshore exposure on the tax structure, mechanically summing to zero. It shows the average effect across the 10 years following the shock. The effect of offshore exposure on the share of capital taxes in the tax structure is mainly driven by changes in the revenues from the corporate income tax, followed by changes in the revenues from property and wealth taxes. Personal income tax and consumption tax shares in the tax mix increase in return. While the effect on capital taxation is large and statistically different from 0, the effects on labor taxation and consumption taxation are less precisely measured.

Overall, this figure demonstrates how the exposure to tax havens modifies tax structures within countries. Exposure to tax havens decreases the relative taxation of mobile tax bases and increases the relative tax burden of immobile tax bases. Accounting for government policy responses therefore matters to understand the effect of tax havens on the economy: non-haven countries tend to partly compensate for the detrimental effects of tax haven exposure by reshaping their tax structure. This constitutes a new channel through which globalization affected

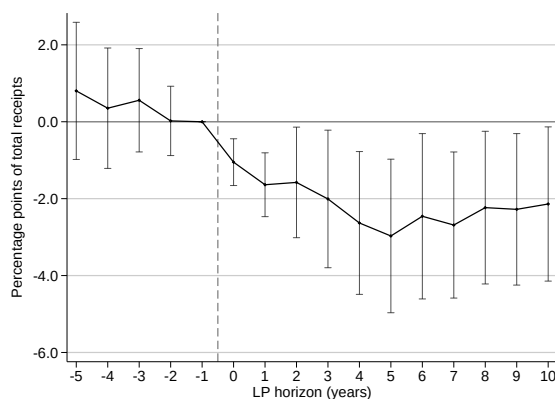
countries' tax structures since the second half of the 20th century (Egger et al., 2019, Bachas et al., 2022).



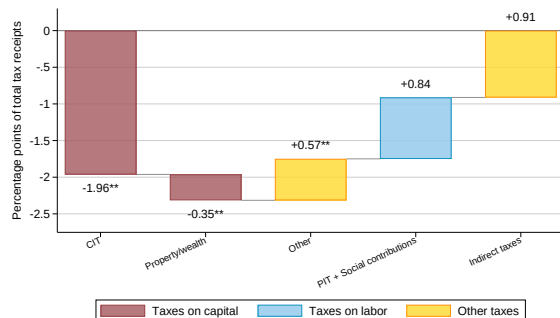
(a) GDP per capita



(b) Tax revenues over NDP



(c) Share of capital taxes in total taxes



(d) Decomposition of the change in tax revenue shares

Figure 7 – Effects of tax haven exposure

Note: This figure shows the effect of tax haven exposure on different outcome variables following the estimation of equation (6). No control variables are added here, see table 5 for robustness. In Panel (a), the outcome variable is GDP per capita, in Panel (b), it is tax revenues as a share of the Net Domestic Product, in Panel (c), it is the share of capital tax revenues in total tax revenues. Panel (d) decomposes the average effect on tax revenue shares by tax bases. 90% confidence intervals are displayed in panels (a) to (c).

Table 5, shows the average effect over 10 years across four different specifications: without controls (as reported in figure 7), with the full set of controls, excluding the main economic and colonial powers to reduce potential endogeneity, and with an alternative distance weight. Standard deviations in parentheses are computed using origin-level clusters while standard deviations in brackets account for spatial dependency (Colella et al., 2019).

First, exposure to offshore reforms is positively associated with offshore incorporation links recorded in the Offshore Leaks data. This finding supports the rel-

evance of the reform-based exposure measure as a proxy for variation in offshore activity.

In the next rows, I find that the results visualized in Figure 7 are robust across the different specifications. In particular, the negative effect of offshore exposure on capital taxation is partly compensated by increase in labor and consumption taxation, though it is not possible to conclude on the most affected tax base due to lack of statistical significance. The results on the tax structure confirm this and show that exposure to reforms in tax havens increases the labor-capital gap in taxation, as well as the taxation gap between mobile and immobile (labor and consumption) tax bases. There are no robustly significant effects on GDP per capita, tax revenues share in national income, and capital share in national income. In all cases, point estimates suggest a negative effect of offshore exposure on these variables.

Dropping large economic and colonial powers, whose domestic policies might impact tax havens behavior, doesn't change this conclusion. It reduces the threat of endogeneity through supply (e.g. decolonization) and demand (e.g. tax increase) channels. In addition, Figure A.9 in appendix reports the effect of offshore reforms on the share of capital taxes in total taxes where I sequentially leave one origin tax haven or destination non-haven country out from the sample. It intends to measure the sensitivity of estimates to specific country shocks. There is little variation that is driven by a specific tax haven or non-haven country. Estimates remain statistically significant at the 10% level across all estimations.

To quantify the magnitude of the effects, I residualize exposure using the same fixed effects as in equation 6 (country fixed effects, region-year fixed effects, and sum of share interacted with year fixed effects). This accounts for the fact that the estimation relies on within-country variation only (Mummolo and Peterson, 2018). I obtain $\tilde{\Delta s}_{it}$ that I accumulate country-by-country, $C_{it} = \sum_t \tilde{\Delta s}_{it}$. By definition, with country fixed effects, this sums to zero over the whole period. To approximate a typical shock, noted at the country-level over the whole period, I use the difference between the ninth decile of accumulated exposure and the first decile: $C_i^{d=9} - C_i^{d=1}$. I then apply the estimated average coefficient to the obtained country-level exposure and sum it over all countries.²¹ Using the coefficient on capital tax revenues over NDP in column (1) of Table 5, I estimate that the typical exposure to offshore shocks over the sample (1965-2000) caused a decrease in capital taxation of \$268bn over the world, or 12% of total capital taxes in 2000.

Welfare effects The results highlight a central trade-off associated with the offshore industry. Tax havens generate output gains concentrated in a small set of jurisdictions, while inducing potential revenue losses and a reallocation of the tax

21. This calibration is plausibly conservative in its assessment of the effect of offshore exposure on taxes on capital income for two reasons: i) it restricts the quantification to post-1970 changes in offshore exposure, and ii) it excludes exposure variation absorbed by the fixed effects.

Table 5 – Average responses to offshore-reform exposure over 10 years

	(1) Baseline	(2) Full controls	(3) Excl. large powers	(4) Inverse log
<i>Panel A: Offshore activity</i>				
Offshore incorporation per inhabitant	0.625* (0.332) [0.422]	0.388** (0.160) [0.171]	0.307* (0.179) [0.197]	1.149** (0.552) [0.638]
<i>Panel B: Macroeconomic variables</i>				
Log real GDP per capita	-0.753 (1.384) [1.518]	-1.875 (1.309) [1.504]	-2.178 (1.506) [1.716]	-7.249 (4.405) [4.926]
Total tax revenues / NDP	-0.414 (0.362) [0.387]	-0.494 (0.335) [0.384]	-0.560 (0.379) [0.439]	-1.545 (1.089) [1.235]
Capital income share of NDP	-0.674 (0.531) [0.602]	-0.979* (0.579) [0.662]	-0.959 (0.623) [0.732]	-3.725** (1.799) [2.044]
<i>Panel C: Tax revenues</i>				
Capital-tax revenues / NDP	-0.839*** (0.298) [0.307]	-0.795** (0.315) [0.332]	-0.830** (0.357) [0.382]	-2.665** (1.040) [1.070]
Labor-tax revenues / NDP	0.044 (0.229) [0.240]	0.007 (0.199) [0.209]	-0.096 (0.212) [0.214]	-0.246 (0.672) [0.728]
Consumption taxes / NDP	0.240 (0.261) [0.287]	0.225 (0.225) [0.244]	0.320 (0.260) [0.286]	1.227 (0.752) [0.793]
<i>Panel D: Tax structure</i>				
Capital-tax share of total tax revenues	-2.152** (0.891) [0.935]	-2.382** (0.994) [1.033]	-2.406** (1.133) [1.181]	-8.196** (3.116) [3.171]
Labor minus capital taxes / NDP	0.884** (0.394) [0.382]	0.792* (0.416) [0.414]	0.744 (0.472) [0.468]	2.413* (1.387) [1.365]
Immobile minus capital taxes / NDP	1.248** (0.517) [0.536]	1.106** (0.560) [0.577]	1.110* (0.647) [0.661]	3.825** (1.858) [1.901]
Country and region-year FE	Yes	Yes	Yes	Yes
Year-specific sum-of-shares slopes	Yes	Yes	Yes	Yes
Destination and origin controls	No	Yes	Yes	Yes
Outcome-growth and exposure lags	No	Yes	Yes	Yes

Notes: Each coefficient corresponds to the average effect of an increase of offshore exposure by one standard deviation over horizons 0 to 10 relative to horizon -1 . Each column corresponds to a different specification. Offshore incorporation links are measured per million inhabitants without multiplication by 100. The source counts officer-country/entity links dated by entity incorporation year, rather than unique entities; missing country-years count as zero recorded links. Taxes on immobile factors include indirect taxation and labor taxes. The full-control specification adds destination controls, distance-weighted origin controls, and two lags each of outcome growth and exposure. Column (3) excludes France, and the United Kingdom as colonial powers, and the five largest economies by GDP in 1970. Column (4) uses inverse-log distance to build exposure. Effects are per an increase in exposure by one standard deviation. Standard errors clustered by reform origin are in parentheses (Borusyak and Hull, 2023). Spatial standard errors computed assuming spatial dependency within a 3,500-km area and time dependency within a 20-year window are in square brackets (Colella et al., 2019). Significance stars use the reform-origin clustered standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

burden from capital to labor in the rest of the world. Whether this improves global welfare depends on how these gains are distributed across factors and how much welfare weight is placed on labor income.

To formalize this trade-off, I develop a simple welfare-accounting framework where a world planner puts a different welfare weight on labor and capital. I ask the question: what is the maximal welfare weight on labor consistent with tax havens being welfare-improving at the global level? The welfare effects of tax havens will be governed by four key forces: the magnitude of tax havens' gains, the share of tax havens' gains accruing to labor, the magnitude of the tax reallocation in non-haven countries, and the social weight placed on labor income. This exercise focuses on measurable channels and abstracts from modeling broader efficiency or dynamic channels in non-haven countries. Our results, where GDP is not statistically affected by tax havens' exposure suggest that these channels are not dominant. In addition, these channels may play in different ways. For instance, while tax evasion may distort the location of income and investment, tax competition may also reallocate capital toward higher-return uses, with ambiguous net effects.

The exercise compares world welfare before and after tax havens emerge. For simplicity, I use the term "tax havens" throughout to refer to jurisdictions that eventually become tax havens. I aggregate all tax havens into a single entity indexed by TH and index non-haven countries by $c = 1, \dots, n$. Let $\Pi_{L,i}^t$ and $\Pi_{K,i}^t$ denote labor and capital incomes in country i , with $t \in \{pre, post\}$ indicating pre- or post-tax values, and $s_{L,i}$ and $s_{K,i}$ denote pre-tax factor shares. GDP is the sum of factor incomes and is noted Y_i . Tax revenues collected from each factor are $T_{L,i}$ and $T_{K,i}$, and ΔX denotes the change in any variable X induced by tax havens emergence. I assume, conservatively, that tax revenues are redistributed lump-sum to labor and capital in proportion to their factor shares. I introduce welfare weights to allow for distributive preferences of the global planner. Labor is assigned a weight ω_L and the capital weight is normalized to one. World welfare is

$$\mathcal{W} = \mathcal{W}_{TH} + \mathcal{W}_N = \omega_L \Pi_{L,TH}^{post} + \Pi_{K,TH}^{post} + \sum_{i=1}^n (\omega_L \Pi_{L,i}^{post} + \Pi_{K,i}^{post}).$$

I assume that the GDP gains from becoming a tax haven, ΔY_{TH} , accrue to labor and capital in proportions ϕ_L and $\phi_K = 1 - \phi_L$.²² Therefore, in tax havens, welfare changes according to $\Delta \mathcal{W}_{TH} = \omega_L \phi_L \Delta Y_{TH} + \phi_K \Delta Y_{TH}$, under the assumption that factor taxation is not affected when the country becomes a tax haven.

22. Note that this specification includes potential gains from higher tax revenues or incorporation fees, as these are reflected in GDP. Since tax burden changes in tax havens cannot be measured at the factor level, I do not model it separately. Instead, ϕ_L and ϕ_K should be interpreted as inclusive of taxation and redistribution.

In non-haven countries, welfare can be rewritten to make taxation and redistribution appear:

$$\mathcal{W}_N = \sum_{i=1} \left[\omega_L (\Pi_{L,i}^{pre} - T_{L,i} + \underbrace{s_{L,i} (T_{L,i} + T_{K,i})}_{\text{Redistribution to labor}}) + (\Pi_{K,i}^{pre} - T_{K,i} + \underbrace{s_{K,i} (T_{L,i} + T_{K,i})}_{\text{Redistribution to capital}}) \right].$$

The welfare effects in non-haven countries combine changes in the composition of taxation, and changes in total tax revenues. Importantly, the welfare effect is unchanged if governments fully offset revenue losses through a tax that is levied and redistributed following factor income shares.

To isolate the fiscal-redistribution channel, I adopt a benchmark in which pre-tax factor incomes in non-haven countries remain unchanged ($\Delta \Pi_L^{pre} = \Delta \Pi_K^{pre} = 0$). This assumption is in line with the fact that the results in Table 5 do not identify robust changes in aggregate output and in the capital share. The change in non-haven welfare therefore reduces to $\Delta \mathcal{W}_N = (1 - \omega_L) \sum_i (s_K \Delta T_{L,i} - s_L \Delta T_{K,i})$. The welfare-neutral weight ω_L^* equates world welfare before and after tax havens entry, i.e., solves $\Delta \mathcal{W} = 0$. I find that

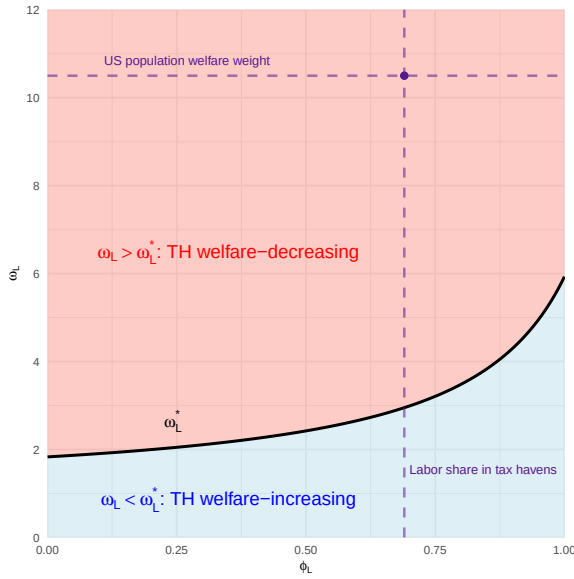
$$\omega_L^* = - \frac{\phi_K \Delta Y_{TH} + \sum_i (s_{K,i} \Delta T_{L,i} - s_{L,i} \Delta T_{K,i})}{\phi_L \Delta Y_{TH} - \sum_i (s_{K,i} \Delta T_{L,i} - s_{L,i} \Delta T_{K,i})}. \quad (7)$$

All terms on the right-hand side except ϕ_L and ϕ_K are observable. I calibrate them using values at the end of the sample period. In Figure A.5, I estimate that tax haven entry raises GDP by about 15%, which corresponds to $Y_{TH} = \$167bn$. For non-havens, combining estimated tax effects (Table 5, Panel C, column 1) with the P90–P10 range of cumulative residualized exposure over the sample period, Δe_i , I obtain $\sum_i (s_K \Delta T_{L,i} - s_L \Delta T_{K,i}) = \sum_i (s_{K,i} \times Y_i \times \Delta e_i \times \beta_L - s_{L,i} \times Y_i \times \Delta e_i \times \beta_K) = \$201bn$, with β_L, β_K , the average effect of offshore exposure on labor and capital taxation.²³

Figure 8 plots ω_L^* as a function of ϕ_L . ω_L^* lies between about two and six times the capital weight. Tax havens are welfare-improving when the actual ω_L lies below the curve, and welfare-reducing when it lies above. Thus, whether tax havens improve world welfare depends critically on both i) who benefits from the GDP gains generated by tax havens (ϕ_L) and, ii) the actual value of ω_L .

Regarding the first point, the distribution of gains across factors cannot be measured directly, as historical data on factor shares in tax havens are scarce. We follow a conservative benchmark and assume that the gains from becoming a tax haven are distributed according to local factor shares (69% to labor and 31% to

23. The estimation strategy identifies responses to differential offshore exposure rather than the full historical effect of tax haven emergence. I therefore calibrate non-haven fiscal effects using each country's P90–P10 range of cumulative residualized exposure over the sample period. This provides a benchmark for the magnitude of the fiscal effects, rather than reconstructing a counterfactual world without tax havens.



(a) Welfare change and parameters values

Distributive preference ($\phi_L = 0.69$)	Tax havens welfare effect (\$bn)
Lower bound U.S. preference $\omega_L = 2$ (Hendren, 2020)	+82 (0.14% of world GDP)
Revealed U.S. preference (purple dot) $\omega_L = 10.5$ (Capozza and Srinivasan, 2024)	-648 (-0.27% of world GDP)
Consumption weights $\omega_L = 25$ (Diamond and Saez, 2011)	-1893 (-0.34% of world GDP)

(b) Role of distributive preferences for welfare.

Figure 8 – Tax havens and welfare

Note: Figure (a) shows ω_L^* , the welfare weight on labor that makes tax havens welfare neutral according to the share of GDP gains in tax havens captured by labor, ϕ_L . Tax havens are welfare-improving when the actual ω_L lies below the curve (blue area), and welfare-reducing when it lies above (red area). The purple horizontal line denotes the U.S. welfare preference for labor following Capozza and Srinivasan (2024)'s estimate of U.S. welfare weight progressivity. The purple vertical line identifies the average labor share in tax havens. The purple dot identifies an economy where ω_L^* corresponds to U.S. population preferences and ϕ_L corresponds to the average labor share in tax havens. Table (b) shows the change in welfare according to the distributive preferences, setting ϕ_L to the labor share in tax havens. World GDP is welfare-adjusted and measured using 2000's nominal data. For a country i , $Welfare - adjusted\ GDP_i = GDP_i + (\omega_L - 1) * \Pi_{L,i}$.

capital). However, it is more plausible that these gains accrue disproportionately to domestic or foreign capital (Miethe, 2020, Harrington, 2016).²⁴ At this point, we find a neutrality threshold of about 2.9 for the welfare weight on labor.

Turning to the second point, I rely on Capozza and Srinivasan (2024) that elicit welfare weights for the U.S. population by asking survey respondents to compare the value of one dollar allocated to individuals at different points of the income distribution. Combining their estimate of the progressivity of welfare weights in the U.S. and the distribution of labor and capital income in the U.S. in 2000, I find that the relative welfare weight on labor is about 10.5.²⁵ This large welfare weights

24. The evolution of the capital share in tax havens is consistent with this view. Among the 16 countries classified as tax havens in 1980 with available factor-share data, the capital share increased from 26.3% to 35.6% (+9.3 p.p.) between 1980 and 2018, compared with an increase from 24.1% to 29.2% (+5.1 p.p.) in (above median per-capita income) non-haven countries. This suggests that GDP gains in tax havens tend to flow towards capital more than proportionally to factor shares.

25. Capozza and Srinivasan (2024) elicit preferences by comparing the social value of dollars given to people at different income levels. I apply their estimated preferences to representative labor- and capital-income recipients. Using the U.S. micro-files from Piketty et al. (2018) for 2000, I calculate the average income of the person receiving a randomly chosen dollar of each factor income: $\mu_L = 424746$ and $\mu_K = 11690380$. This gives $\omega_L = (\mu_L / \mu_K)^{-\nu} = 10.5$, with $\nu = 0.71$.

reflects the extreme concentration of capital income at the top of the income distribution (see, e.g., Piketty et al., 2018, or Bruil et al., 2022).

The U.S. elicited welfare weight on labor, shown in purple in Figure 8, indicates that ω_L exceeds the neutrality threshold for any value of ϕ_L . The purple dot identifies an economy with the U.S. welfare preferences and a distribution of gains to labor that follows the average labor share in tax havens. At this point, the emergence of tax havens reduced global welfare by 0.27% of welfare-adjusted world GDP in 2000. Additional channels not captured here would need to generate welfare gains of this magnitude to make tax havens neutral from a global welfare perspective.²⁶

Alternative distributive preferences can be derived from the tax system, as in Hendren (2020) and Le Grand et al. (2025). While the approach of Capozza and Srinivasan (2024) is more direct and avoids political economy biases, these benchmarks help interpret our results. Hendren (2020) bounds welfare weight ratios between any two individuals below 2, while Le Grand et al. (2025, Figure 2) estimate maximum ratios of 2.6 in the U.S. and 4.4 in France. Finally, if we assume that the social value of utility is logarithmic, then social marginal welfare weights are inversely proportional to consumption. In this setting, Diamond and Saez (2011) report that the marginal social value of income for the U.S. median earner is more than 25 of that of the top 1% of income. Interpreting capital income recipients as belonging to the upper tail of the distribution, this suggests welfare weights on labor relative to capital are at least as large as those considered in Figure 8. Under a lower bound of 2, tax havens are welfare-improving (+0.14% of welfare-adjusted world GDP). With a higher bound based on consumption weights, tax havens decrease welfare by about \$1893bn (-0.34% of welfare-adjusted world GDP). Overall, under most plausible distributive preferences and allocations of gains, tax havens appear to decrease world welfare.

6 Conclusion and discussion

This paper traces the emergence and consequences of tax havens by introducing a novel database documenting their legal development over the 20th century. It shows that legal reforms increase offshore activity, boost GDP in tax havens, and trigger changes in the tax structure of non-haven countries. Though, under plausible distributional assumptions, the gains in tax havens do not compensate for the welfare losses in other countries. These findings highlight that the long-run

26. It is worth noting that the omitted general-equilibrium efficiency effects of international tax competition need not be positive. The quantitative literature obtains mixed results. Calibrating their model to European economies in the early 1980s, Mendoza and Tesar (2005) find welfare gains from *coordinating* capital taxation of up to 0.26% of lifetime consumption. Wang (2020) finds that international corporate tax cooperation *increases* real income by about 1%. Conversely, Quadrini and Ríos-Rull (2024) find welfare gains of 0.55% from the increase in international tax competition induced by rising intangible capital and financial globalization.

consequences of tax havens' regulation extend beyond revenue recovery. They offer important insights for understanding the likely effects of current international efforts to regulate tax havens, such as the Common Reporting Standard (CRS) and the Global Minimum Tax (GMT), and more globally of the dynamics of regulatory competition.

The CRS, introduced by the OECD in 2014, aims to reduce banking secrecy through the automatic exchange of banking information. The GMT aims to put a floor to the effective tax rate a multinational company can pay. Both policies target core features of the legal architecture of tax havens and will directly raise the cost of using them, potentially increasing the price and reducing demand for their services.

In the paper, I show that anti-tax haven reforms significantly decrease GDP per capita in targeted havens. The growth benefits that tax havens historically captured from supplying secrecy and avoidance services for MNEs should soon decrease (Gómez-Cram and Olbert, 2023 provide suggestive evidence that this is already the case in the context of the GMT). This can explain why, in response to the CRS, some tax havens have deepened their offshore legal architecture by implementing "high-risk" citizenship-by-investment schemes to circumvent the policy (OECD, 2022, Langenmayr and Zyska, 2023).²⁷ An unintended consequence of regulations that must be kept in mind by policymakers may be increased competition between tax havens and heightened aggressiveness in their own regulations, which can diffuse quickly across countries, as seen in the case of the IBCs regulations in the 1980s and 1990s.

Tax havens also have significant spillovers: countries more exposed to nearby tax havens shifted their tax structure by increasing the tax burden on labor and consumption relative to capital. The CRS and the GMT might prevent such shifts by loosening the constraints on capital taxation in non-haven countries, potentially reversing some of the long-term pressures to increase labor taxation.

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27. These reforms generated substantial revenues. According to Eastern Caribbean Central Bank data, they represented in 2021, 9% of government revenues in Antigua and Barbuda (0% in 2014), 54% in Dominica (12% in 2014), and 51% in St. Kitts and Nevis (37% in 2014).

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Online Appendix

A Additional data sources

GDP, GDP per capita and population: Global Macro Database (Müller et al., 2025) **Agricultural Land (% of land area):** FAO data obtained through World Bank. **Colonial History:** I first associate each territory with a status relative to its sovereign history. Each country or territory can be either independent, non-independent and a colony, or non-independent and not a colony. This last status is created to deal with specific cases treated differently by different databases about colonial history. For instance, the islands of Jersey and Guernsey, despite being under the actual control of the United Kingdom, are generally not considered as colonies. However, for the purpose of this paper, it is important to highlight their link with the United Kingdom. I use information from the Colonial Dates Dataset (Becker, 2020), the Cepii Gravity Dataset (Head and Mayer, 2014) and the ICOW colonial dataset (Hensel, 2018). The data is then manually completed when information is missing for a given territory using worldstatesmen.org, rulers.org, and wikipedia.org. The main colonial variable used in this paper record the last ruler of a territory (including its current ruler if applicable). It includes countries not generally considered as colonies, such as the Channel Islands.

Tax introductions: Tax Introduction Dataset (Seelkopf et al., 2021).

Gravity data: U.S. International Trade Commission Gravity Portal (release 2.1), Gurevich and Herman (n.d.).

Swiss Market for haven's services: Zucman (2013)

Fee revenues in Cayman Islands: Government of the Cayman Islands (2021)

Citizenship by investment revenues: Statistics portal of the Eastern Caribbean Central Bank (<https://www.eccb-centralbank.org/statistics/fiscals/comparative-report/3>).

Ideology of the Head of State: Brambor et al. (2017), available at <https://heads-of-government.github.io/>.

B Supplementary tables

Table A.1 – Comparing different lists of tax havens.

Country	Lists	Country	Lists	Country	Lists	Country	Lists	Country	Lists	Country	Lists	Country	Lists
Bahamas	11	Vanuatu	10	Monaco	8	Samoa	6	Latvia	2	Campione	1	Nigeria	1
Bermuda	11	Gibraltar	9	Nauru	8	Seychelles	6	Madeira	2	Egypt	1	Northern Cyprus	1
Cayman	11	Hong Kong	9	St Kitts & Nevis	8	Lebanon	5	Netherlands	2	France	1	Palau	1
Guernsey	11	Singapore	9	Andorra	7	Niue	5	Philippines	2	Germany	1	Puerto Rico	1
Jersey	11	St Vincent & the Grenadines	9	Anguilla	7	Macau	4	South Africa	2	Guatemala	1	Russia	1
Malta	11	Switzerland	9	Bahrain	7	Malaysia	4	Tonga	2	Honduras	1	San Marino	1
Panama	11	Turks & Caicos Islands	9	Costa Rica	7	Montserrat	4	Uruguay	2	Iceland	1	Sao Tome e Principe	1
Barbados	10	Antigua & Barbuda	8	Marshall Islands	7	Maldives	3	US Virgin Islands	2	Indonesia	1	Sark	1
British Virgin Islands	10	Belize	8	Mauritius	7	United Kingdom	3	USA	2	Ingushetia	1	Somalia	1
Cyprus	10	Cook Islands	8	St. Lucia	7	Brunei	2	Alderney	1	Jordan	1	Sri Lanka	1
Isle of Man	10	Grenada	8	Aruba	6	Dubai	2	Anjouan	1	Marianas	1	Taipei	1
Liechtenstein	10	Ireland	8	Dominica	6	Hungary	2	Belgium	1	Melilla	1	Trieste	1
Netherlands Antilles	10	Luxembourg	8	Liberia	6	Israel	2	Botswana	1	Myanmar	1	Ukraine	1

Note: This table counts the number of tax havens lists in which each country is reported. Countries used in the sample of this paper are highlighted in **bold** font. The list of countries comes from table 1.4 of Palan et al. (2009). The eleven lists are the following: International Bureau of Fiscal Documentation (1977), Charles Irish (1982), Hines and Rice (1994), OECD (2000), IMF (2000), FSF (2000), FATF (2000,2002), TJN (2005), IMF (2007), STHAA (2007), Low-Tax.net (2008).

Table A.2 – Sources and providers in the Offshore Leaks Database

Panel (a): Offshore Leaks Sources

Leak	Date	Sources (Offshore Providers or Corporate Registries)
Pandora Papers	Dec 2021 – May 2022	See Panel (b)
Paradise Papers	Nov 2017 – Feb 2018	Appleby (Nov 2017); Corporate registries: Aruba, Bahamas, Barbados, Nevis (Dec 2017), Cook Islands, Malta, Samoa (Feb 2018)
Bahamas Leaks	Sep 2016	Bahamas corporate registry
Panama Papers	May 2016	Mossack Fonseca (Panama law firm)
Offshore Leaks	Jun 2013	Portcullis Trustnet, Commonwealth Trust Limited

Panel (b): Pandora Papers Service Providers

Provider	Records	Period	Founded	Jurisdictions
All About Offshore Limited	270,328	2002–2019	2007	Seychelles
Alemán, Cordero, Galindo & Lee	2,185,783	1970–2019	1985	Bahamas, Belize, British Virgin Islands, Cyprus, Dubai, Geneva
Alpha Consulting Limited	823,305	1996–2020	2008	Seychelles, UAE, Belize
Asiaciti Trust Asia Limited	1,800,650	1996–2019	1978	Singapore, Hong Kong, Cook Islands, Nevis, New Zealand, Panama
CCS Trust Limited	149,378	2001–2017	2005	Belize
CIL Trust International	459,476	1996–2019	1994	Belize, Seychelles
Commence Overseas Limited	8,661	2004–2017	1992	British Virgin Islands
Demetrios A. Demetriades LLC	469,184	1993–2021	1966	Cyprus
Fidelity Corporate Services Limited	213,733	1998–2019	2005	British Virgin Islands
Glenn D. Godfrey and Company LLP	189,907	1980–2019	2003	Belize
Il Shin	1,575,840	1996–2020	2004	Hong Kong, Vietnam, China
Overseas Management Company Inc	190,477	1997–2020	1961	Panama, Anguilla, Bahamas, Belize, BVI, Costa Rica
SFM Corporate Services	191,623	2000–2019	2006	Anguilla, Bahamas, Belize, BVI, Canada, Cayman Islands
Trident Trust Company Limited	3,375,331	1970–2019	1986	Bahamas, Barbados, BVI, Canada, Cayman Islands

Source: ICIJ (2022) ancillary documents available at <https://offshoreleaks.icij.org/pages/about> and <https://projects.icij.org/investigations/pandora-papers/charts/who-are-the-firms-at-the-heart-of-the-pandora-papers>

Table A.3 – Correlation between Offshore Leaks and BIS data.

	(1)	(2)	(3)	(4)
		ln(BIS Deposits)		
ln(# UBO links)	1.128*** (0.230)	0.627*** (0.180)	0.434** (0.171)	
ln(# links)				0.451*** (0.110)
ln(Dist.)			-0.723*** (0.191)	-0.750*** (0.135)
Observations	379	263	263	1,503
R-squared	0.146	0.902	0.921	0.812
Origin and Destination FE	No	Yes	Yes	Yes
Origin-source and Destination-source FE	No	Yes	Yes	Yes
Number origin countries	25	17	17	28
Number destination countries	18	11	11	21

Note: This table studies the correlation between the number of links from non-haven country i to tax haven j at date t in the Offshore Leaks database with BIS data on bilateral offshore deposits in country j from country i at date t , between 2003 and 2017. Data on BIS deposits comes from Menkhoff and Miethe (2019). In column (1), I add no fixed effects to the estimation. Columns (2) to (4), include it and jt fixed effects. Columns (1) to (3) are interested in beneficial ownership links only, while column (4) include all links measured from the Offshores Leaks. Robust standard errors clustered at the country-pair level in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A.4 – Sample composition

Country	Global gap	Own gap	Growth gap SCM	Agri. lands
Figure	4	4	5a	6a
Anguilla	✓	✓	✓	
Antigua and Barbuda	✓			✓
Bahrain	✓	✓	✓	✓
Belize	✓	✓	✓	✓
Barbados	✓	✓	✓	
Cook Islands	✓	✓		
Cyprus	✓	✓	✓	
Dominica	✓	✓	✓	✓
Grenada	✓	✓	✓	✓
Ireland	✓	✓	✓	
Jordan	✓	✓	✓	✓
Saint Kitts and Nevis	✓	✓	✓	✓
Lebanon	✓			
Liberia	✓			
Saint Lucia	✓	✓	✓	✓
Macao	✓		✓	
Marshall Islands	✓	✓	✓	✓
Malta	✓	✓	✓	✓
Montserrat	✓	✓	✓	
Mauritius	✓	✓	✓	✓
Malaysia	✓	✓	✓	✓
Nauru	✓			✓
Singapore	✓	✓	✓	✓
Seychelles	✓	✓	✓	✓
Turks and Caicos Islands	✓			✓
Tonga	✓	✓	✓	✓
St. Vincent and the Grenadines	✓	✓	✓	✓
U.S. Virgin Islands				✓
Vanuatu	✓			✓
Samoa	✓	✓	✓	✓
Total	29	22	22	21

Note: This table shows the tax havens included in the estimation samples of Figures 4, 5a, and 6a. The "Own gap" sample is shorter than the "Global gap" one because it necessitates observing GDP per capita 10 years before a country becomes a tax haven.

Table A.5 – Inclusion in the European Commission blacklist

Year	Countries Treated
2017	United Arab Emirates, American Samoa, Bahrain , Barbados , Grenada , Guam, South Korea, Saint Lucia , Macao , Marshall Islands , Mongolia, Namibia, Panama , Palau, Trinidad and Tobago, Tunisia, Samoa
2018	Bahamas , Saint Kitts and Nevis , United States Virgin Islands
2019	Aruba , Belize , Bermuda , Dominica , Fiji, Oman, Vanuatu
2020	Anguilla , Cayman Islands , Seychelles
2022	Turks and Caicos Islands
2023	Antigua and Barbuda , Costa Rica, <i>Russia</i> , British Virgin Islands

Note: This table shows the date each country is included in the European Commission blacklist. Russia, in *italic*, is excluded from the estimation sample. Countries in **bold** are the tax havens identified in this paper.

Table A.6 – The growth gap and the price of offshore services.

	(1) ln(price)	(2) ln(price)
Growth gap	-2.087*** (0.395) [1.021]	-0.404*** (0.121) [0.250]
Country fixed effects	No	Yes
Time fixed effects	Yes	Yes
Observations	68	68

Note: This table shows the link between the offshore growth gap (more negative for countries hit by a larger shock) estimated in Panel (b) of figure 6 and the log of the price for offshore services. Robust standard errors in parentheses. Bootstrapped standard errors in brackets (1000 replications) to account for the fact that the growth gap is an estimated variable. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Note: This table shows the link between the estimated change in GDP per capita following blacklisting and the log of the price of offshore services. The growth gap is estimated in Panel (b) of Figure 6, with more negative values indicating larger GDP losses. Robust standard errors are reported in parentheses. Bootstrapped standard errors are reported in brackets (1000 replications) to account for the fact that the growth gap is an estimated variable. Significance stars are based on robust standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A.7 – Balance test at non-haven destinations and tax-haven origins

	Destination countries (1)	Origin countries (2)
Panel A. Economic characteristics		
Lagged exports / GDP	0.0186 (0.0559)	0.0037 (0.0926)
Lagged imports / GDP	0.0298 (0.0434)	0.0944 (0.1147)
Lagged log real GDP per capita	0.0060 (0.0138)	-0.0179 (0.0323)
Lagged one-year log GDP per capita growth	0.3126*** (0.1164)	-0.1743 (0.2119)
Lagged two-year log GDP per capita growth	0.0474 (0.1067)	-0.1581 (0.1914)
Lagged total tax receipts / NDP	-0.0142 (0.0448)	0.0307 (0.0737)
Lagged change in total tax receipts / NDP	-0.0565 (0.1097)	-0.2604 (0.2387)
Panel B. Political characteristics		
Lagged left-party indicator	-0.0748 (0.0903)	-0.0926 (0.1071)
Lagged electoral-democracy index	0.0295 (0.0531)	0.0136 (0.0447)
Lagged right-party indicator	0.0182 (0.0893)	0.2128 (0.2145)

Notes: Each coefficient of the balance table corresponds to a regression. Column (1) tests characteristics of exposed non-haven destinations using the baseline sample. Regressions include destination and region-by-year fixed effects, as well as year-specific slopes in the sum of exposure shares. Standard errors are clustered at the origin country level. Column (2) tests the reforming haven's own predetermined characteristic. It retains only origins ever classified as tax havens. The characteristic is regressed on a binary variable equal to one in case of offshore reform. As data is missing for many tax havens, the balance tests of column (2) only cover 15 to 18 tax havens depending on the specifications. Standard errors are clustered by reform origin.

A world map showing the distribution of the genus *Pterodroma*. Red dots indicate recorded locations. The distribution is primarily in the Northern Hemisphere, with a high concentration in the North Atlantic and the Mediterranean. Other significant clusters are found in the North Pacific, the Indian Ocean, and the western Pacific. There are also scattered records in the Southern Hemisphere, including the South Atlantic, the Indian Ocean, and the western Pacific.

Note: This map depicts tax havens nowadays. This list of tax havens is discussed in section 2 and presented in appendix Table A.1.



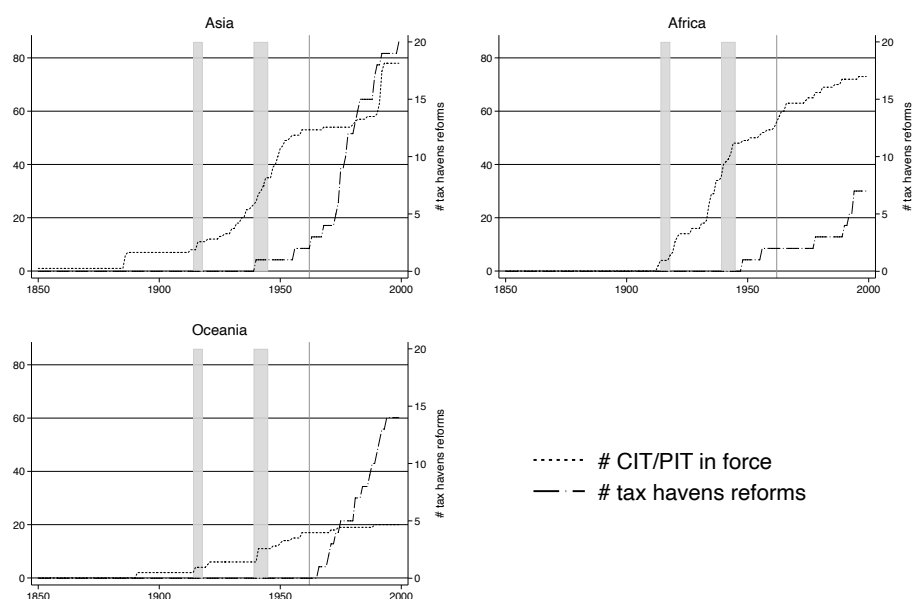


Figure A.3 – The building of tax havens’ legal architecture and the rise of direct taxation (other regions)

Note: This figure plots the number of direct taxes (Corporate income taxes and Personal income taxes) introduced and the number of tax havens reforms for Africa, Asia, and Oceania. Data on the introduction of taxes comes from Seelkopf et al. (2021). Data on tax havens’ reforms comes from own data collection detailed in section 2. Shaded areas indicate the world wars and the vertical line (1962), the beginning of the independence wave in the UK-dominated Caribbean area.

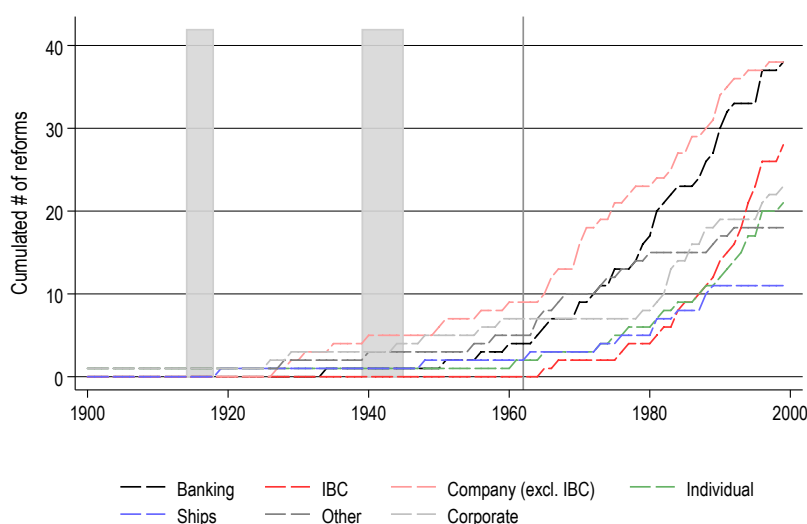


Figure A.4 – Rise of tax havens in the 20th century: decomposition by legal technology

Note: This figure depicts the rise of tax havens in the 20th century by legal technology. Data on tax havens’ reforms come from own data collection (see section 2). Shaded areas indicate the world wars and the vertical line (1962) the beginning of the independence wave in the U.K.-dominated Caribbean area.

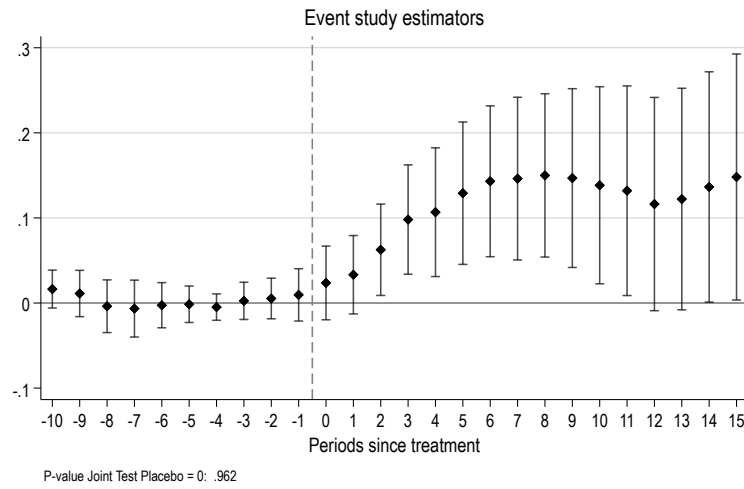
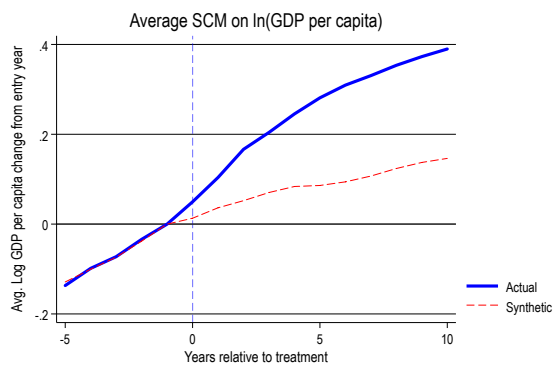
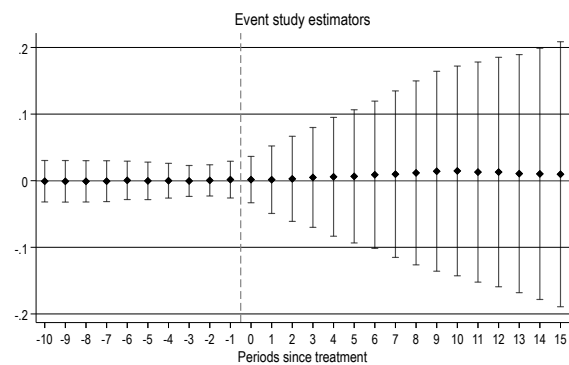


Figure A.5 – Effect of becoming a tax haven on GDP

Note: This figure plots coefficients from an event-study regression following equation 3 and estimated following Xu (2017) and Liu et al. (2022) using GDP as a dependent variable. 90% confidence intervals from bootstrapped standard errors (500 replications).



(a) Aggregated synthetic control methods



(b) Placebo test

Figure A.6 – Effect of becoming a tax haven on GDP per capita: Robustness

Note: This figure evaluates the robustness of the results of Figure 6b: Panel (a) aggregates the path of synthetic control methods ran for each country, Panel (b) randomly allocates the tax haven history of real tax havens to placebo countries and plots the average estimate of equation (3) across 500 replications.

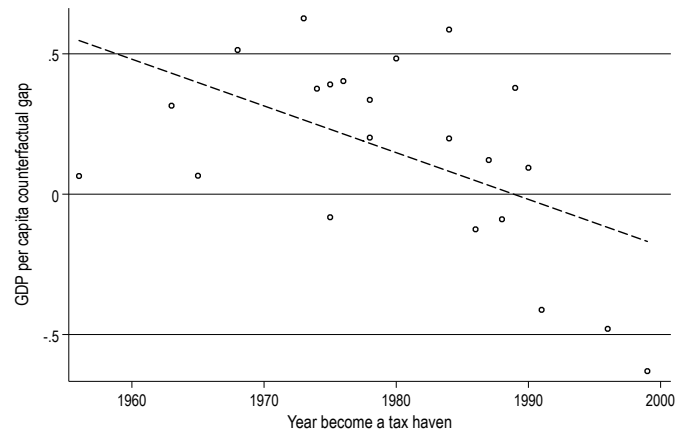
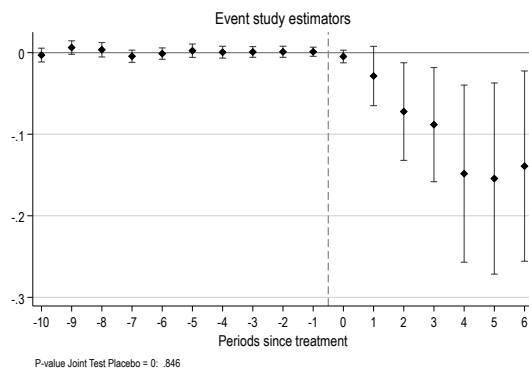
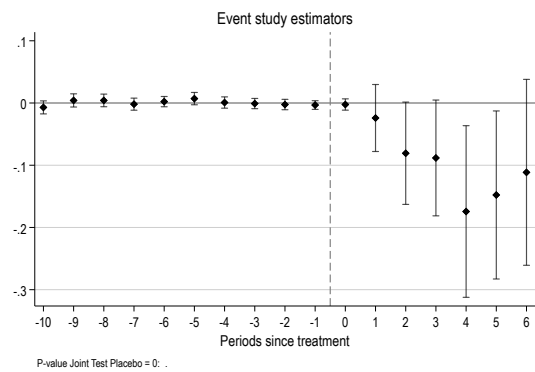


Figure A.7 – Determinants of the havens’ growth gap: the role of entry date

Note: This figure shows the correlation the havens’ growth gap, defined as the difference between the estimated counterfactual and the pbserved GDP per capita, and the date of entry as a tax haven.



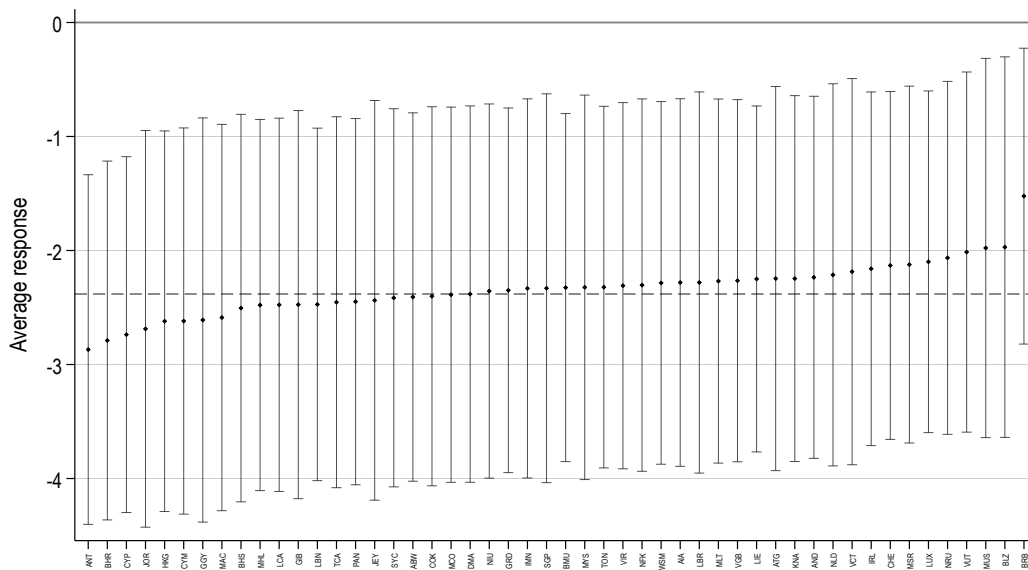
(a) Raw GDP per capita data



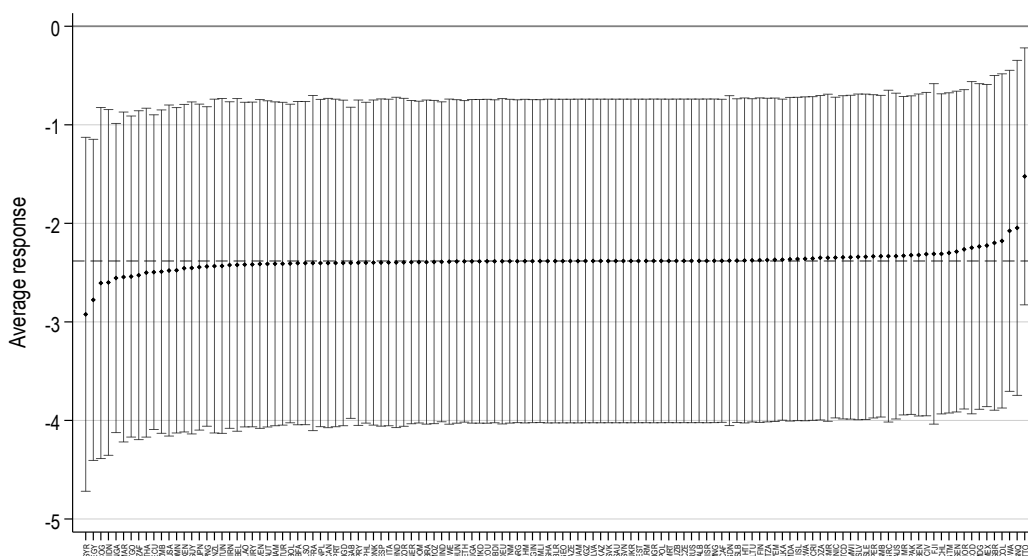
(b) Restricted sample

Figure A.8 – The effect of anti-tax haven policies

Note: This figure evaluates the robustness of the results of Figure 6b: Panel (a) uses raw GDP per capita data, not corrected to smooth the effect of Covid-19, Panel (b) restricts the estimation sample to countries identified as tax havens in this paper. The list of treated countries correspond to countries in bold in Appendix Tables A.5. The control group corresponds to never blacklisted tax havens.



(a) Leave one tax haven out



(b) Leave one non-haven out

Figure A.9 – Leave-one-out Robustness tests

Note: Each point reports the estimated average response of capital-tax receipts as a share of total tax receipts after excluding the indicated tax-haven reform shift (panel (a)), or excluding the indicated never-haven destination (panel (b)). The dependent variable is the mean of the eleven cumulative responses at horizons 0 through 10, each measured relative to year $(t - 1)$. The specification includes the full set of destination controls, distance-weighted origin controls, and two lags each of outcome growth and offshore exposure (as in column (2) of table 5). The dashed horizontal line is the corresponding full-sample estimate. Standard errors are clustered by reform-origin country. 90% confidence intervals.

D Alternative offshore price data sources

The offshore price data used in this paper has been gathered from the website incorporations.io, a company providing incorporation services. To my knowledge, this is the only provider for which we can find data in panel, from 2014. However, other websites provide contemporaneous offshore price data. This appendix shows the correlation between data from incorporations.io and two alternative sources, namely uniwide.com and offshorecompany.com. Prices have been extracted from these websites in August 2026.

Figure A.10 shows a positive and large cross-sectional correlation between prices reported by the three providers. In particular, the rank correlation is high in both comparisons, indicating that jurisdictions that are relatively expensive according to incorporations.io also tend to be relatively expensive according to the two alternative providers. The relatively high R^2 further indicates substantial common variation in prices across providers. In levels, incorporations.io tends to report lower prices, as reflected in OLS slopes below one. This difference is consistent with provider-specific pricing.

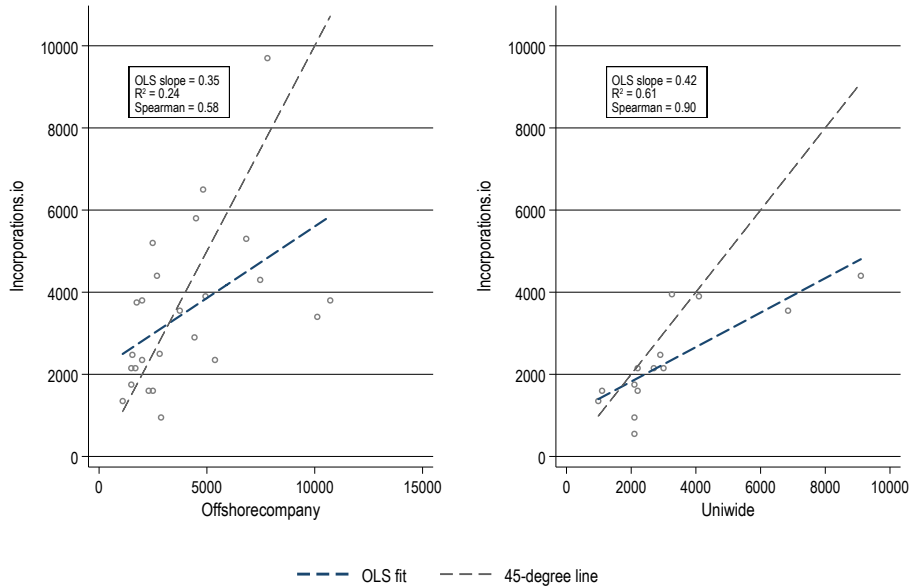


Figure A.10 – Comparison of offshore prices across sources

Note: This figure compares offshore prices collected from different website. Our main source, incorporations.io, is compared with uniwide.com and offshorecompany.com.

E Decolonization and Offshore Reforms

This Appendix section explores in the links between colonial empires, particularly the British one, and tax havens. This topic is extensively discussed in the literature on the history of tax havens. Ogle (2017) argues that the connection between the colonial and offshore worlds is linked to the United Kingdom’s lasting influence on its former colonies while other studies insist on the role of the common law system, originating in the UK and perceived to be more conducive of tax evasion and tax avoidance than civil law (see, for instance, Palan et al., 2009). In addition, some scholars have argued that the United Kingdom has encouraged these countries, at least indirectly, to become tax havens to reduce their need for development aid (Sagar et al., 2013, Ogle, 2017) although Sævold (2022) concludes that there was no strategic effort by the UK administration to create a network of tax havens. Nonetheless, other colonial powers such as France have been more reluctant to encourage this development choice (Rawlings, 2004, Woker, 2024). Finally, we can note that newly independent countries might have found a convenient specialization in the tax haven industry, which was predicated on a resource available to all countries: sovereignty (Slemrod, 2008).

The new data can help us explore these questions. I study the evolution of the offshore policies of countries following their independence from the UK. I estimate a dynamic difference-in-differences specification where the treated group is composed of countries experiencing decolonization and the control group of countries that become independent from another colonizer.

$$Reforms_{it} = \sum_{k=-7}^{15} \beta_k Independent\ from\ UK_{it}^k + \mu_i + \mu_t + \epsilon_{it} \quad (8)$$

where $Reforms_{it}$ cumulates the number of tax haven reforms made by country i at date t . $Independent\ from\ UK_{it}^k$ is a dummy variable equal to one for treated countries k years before or after they become independent from the UK. μ_i and μ_t are country and time fixed effects, and ϵ_{it} is the error term. The equation is estimated with the difference-in-differences estimator of de Chaisemartin and D’Haultfoeuille (2024) to account for potential effect heterogeneity in a difference-in-differences setting with different treatment dates.²⁸

A crucial identification assumption is the exogeneity of the decolonization process with regard to tax haven policies. In theory, a positive demand shock for tax haven services could simultaneously increase a country’s probability of becoming a tax haven and probability of becoming independent. In reality, however, the timing of decolonization appears exogenous to the probability that the decolonized country becomes a tax haven. First, the timing of independence is uncertain,

28. I estimate a linear generalized difference-in-difference model here because it allows more flexibility in the settings with different treatment timings. Alternatively, Wooldridge (2023) proposes a nonlinear estimator that includes many interaction effects, making it hard for the model to converge in certain cases.

depending mostly on local and regional conditions, wars for independence, pro-independence protests, and negotiations with the colonizer. Sævold (2022) emphasizes that offshore policies and decolonization policies were “ad-hoc” and not “strategically planned”.²⁹ Second, a country does not need to become independent for it to become a tax haven or implement offshore policies. Some territories became tax havens before independence (e.g., St. Vincent and the Grenadines), and some tax havens have never gained independence (e.g., the Cayman Islands). If the timing of independence were endogenous to the probability of a country’s becoming a tax haven, we would expect to observe nonparallel pretrends. As we will see below, this is not the case.

In Figure A.11, I find that the number of offshore reforms passed by former U.K. colonies increases by approximately 0.15 units 10 years after becoming independent, in comparison to the number passed by territories that gained independence from a different colonizer. This effect is substantial given that the average number of reforms passed by countries in the sample is 0.17 (with a maximum of six). The absence of significant pretrends and the exogeneity of decolonization suggest that this is a causal effect.

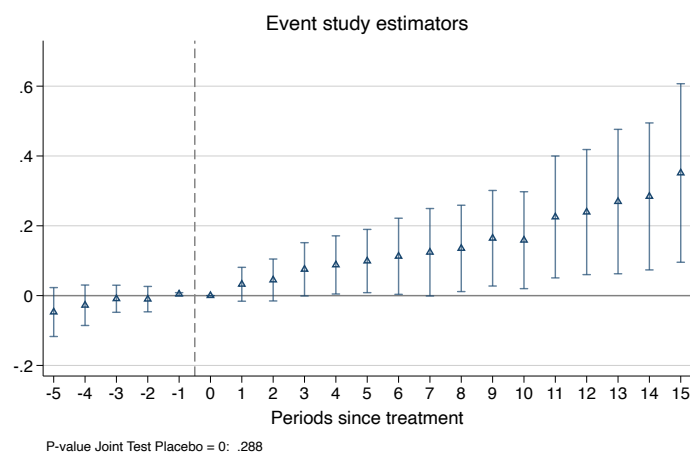


Figure A.11 – Tax havens and colonial empires: Event study

Note: This figure plots coefficients from an event-study regression following equation 8. I use the estimator proposed by de Chaisemartin and D’Haultfoeuille (2024). The treated group is composed of UK colonies becoming independent. The figure studies how the number of offshore reforms changes with a country’s independence. The control group corresponds to territories with a different colonizer. The average number of reforms in the sample is equal to 0.17. 95% confidence intervals with standard errors clustered at the country level.

To sum up, the shock of decolonization represents a sizable exogenous shock in U.K. colonies’ offshore history, explaining the significant increase in the number of reforms from the 1960s.

29. Sævold (2022) writes, “The extent to which tax havens eventually spread through the Empire was not foreseen from the outset” (p.243) and “These factors further emphasize that tax haven formation in a British context was closely entangled with processes of independence, characterized by the *ad hoc* decisions that led to more independence, and were not strategically planned by the UK administration – quite the contrary.” (p.252).

F The Swiss Market for Tax Evasion

This appendix studies whether the arrival of new tax havens substituted or complemented the already-existing tax havens.

The first challenge to answering this question is finding historical data about tax havens services' market size. To solve this issue, I use data from Zucman (2013) that collects fiduciary deposits in Switzerland by country of origin between 1976 and 2014 from the Swiss National Bank (SNB). Fiduciary deposits are deposits collected by Swiss banks and invested on behalf of their clients. As described by Zucman (2013), fiduciary deposits are used to avoid paying the 35% Swiss advance tax.³⁰ An interesting feature of this data is that the SNB records the origin of the last owner and does not see through conduit entities in tax havens. Consequently, it records investments made through tax havens from other places. Zucman (2013) argues that the majority of these investments are actually coming from European ultimate owners and are going to Switzerland through conduits in tax havens. Going through tax havens adds layers of secrecy between Swiss accounts and their actual owners. Assuming that the bulk of fiduciary deposits of tax havens corresponds to the use of sham corporations (such as IBCs for instance), an increase in the share of fiduciary deposits from tax havens corresponds to an increase in tax havens' market size for the Swiss market. The Swiss market is one of the largest ones for individuals' tax avoidance: according to Zucman (2013) it represented 34% of all offshore financial wealth in 2008 and it was probably even larger before this date (Alstadsæter et al., 2018). An increase in the share of fiduciary deposits from a given tax haven corresponds to an increase in market share from this tax haven in the Swiss offshore market.

Figure A.12 plots the market size of tax havens and decomposes it between countries that become tax havens before 1960 and countries that become tax havens after this date. This year represents the moment of the entry of new tax havens following decolonization (see Figure 3). These tax havens will develop their activity gradually during the end of the 20th century. We observe that the global size of the tax haven market in the Swiss place has been increasing over the period, especially since the beginning of the nineties. The share of the older tax havens has been oscillating around 30% of all deposits with a little upward trend since the nineties.

Importantly, the market share of new tax havens has constantly been increasing, reaching the level of old tax havens after 2010. This increase in the share of new tax havens is not associated with a sharp decrease in the share of old tax havens, indicating that substitution between new and old tax havens should have been limited. On the contrary, the total market share of tax havens in Switzerland, proxied by the thick black line, has constantly increased. We can conclude from

30. More precisely, any interest received on fiduciary deposits are considered as paid by foreigners. The bank acts as "fiduciary". This feature then creates a tax exemption. Fiduciary deposits represent one quarter of all foreign holdings in Switzerland in 2008.

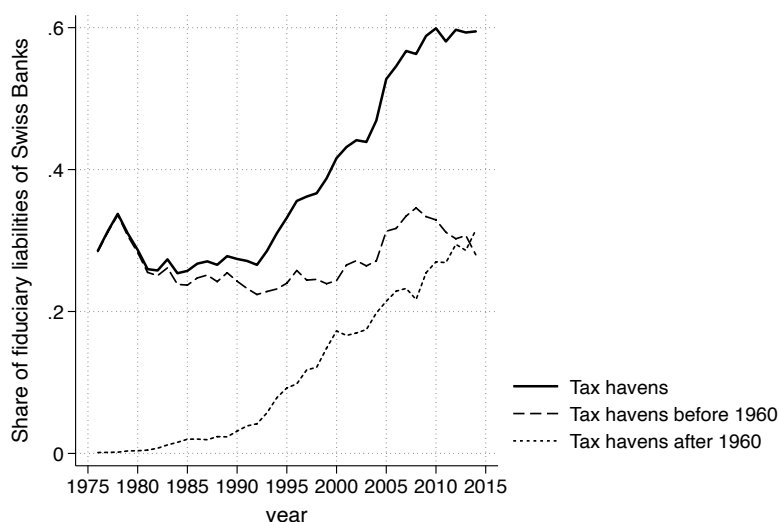


Figure A.12 – The Swiss Market for tax havens' services

Note: This figure plots the share of fiduciary liabilities of Swiss banks by the origin country of the direct owner. Fiduciary deposit data is from Zucman (2013) which collects fiduciary deposits in Swiss by origin from the Swiss National Bank (SNB). Fiduciary deposits are deposits collected by Swiss banks and invested on behalf of their clients. They are used to avoid paying some Swiss taxes. The SNB records the last owner's origin and does not see through conduit entities in tax havens. Data on tax havens' reforms comes from own data collection detailed in section 2. The category "Tax havens" includes all tax havens covered in the SNB dataset. This represents the market share of tax havens in Swiss fiduciary deposits. "Tax havens before 1960" includes entities that become tax havens before 1960: Andorra, Netherlands Antilles, Bahamas, Bermuda, Cayman Islands, Honk-Kong, Isle of Man, Ireland, Jersey, Lebanon, Liberia, Liechtenstein, Luxembourg, Monaco, Netherlands, and Panama. "Tax havens before 1960" includes entities that become tax havens after 1960: Aruba, Antigua and Barbuda, Bahrain, Belize, Barbados, Cyprus, Dominica, Guernsey, Gibraltar, Grenada, Jordan, Saint Kitts-and-Nevis, Saint Lucia, Macao, Marshall Islands, Malta, Mauritius, Malaysia, Nauru, Singapore, Seychelles, Turks and Caicos Islands, Tonga, Saint Vincent-and-the-Grenadines, Virgin British Islands, Vanuatu, and Western Samoa.

this graph that there is a positive correlation between the entry of new tax havens since the sixties and the increase in the market size of tax havens. In other words, the entry of new tax havens has contributed to the increase in the market size of tax havens. It must also be noted that the increase in the share of fiduciary deposits held in Switzerland is positively correlated with the increase in offshore entities recorded in the Offshore Leaks (see Table A.8).

Table A.8 – Offshore entities and fiduciary deposits.

	(1)	(2)	(3)
	ln(Fiduciary deposits)		
ln(Number entities)	0.392*** (0.129)	0.574*** (0.0728)	0.440*** (0.129)
Observations	743	287	404
R-squared	0.902	0.931	0.932
Sample		IBC reform	Other exempt reform
Country and year FE		Yes	Yes

This table display the results of the estimation of the following equation: $\ln(\text{Fiduciary deposits}_{it}) = \kappa_1 \ln(\text{Number entities}_{it}) + a_i + a_t + u_{it}$. *Fiduciary deposits_{it}* correspond to Swiss fiduciary deposits coming from country *i* at date *t*, *Number entities_{it}* corresponds to the number of offshore entities recorded in the Offshore Leaks in country *i* at date *t*, *a_i* are country fixed effects, *a_t* are year fixed effects and *u_{it}* are the residuals. "IBC reforms" stands for countries that have implemented IBC reforms. "Other exempt reform" stands for countries that have implemented other exempted company reforms. Robust standard errors clustered at the country level in parentheses.*** p<0.01, ** p<0.05, * p<0.1

G Supplement to Fact 2

From reforms to service provision To investigate whether the provision of tax havens services follows new reforms, I use tax haven level panel dataset of the Offshore Leaks database described in Section 2. Entities are seen as a proxy for the provision of offshore services. For this exercise, I concentrate only on reforms that aim at allowing for the registration of International Business Companies. This is the type of legal technology that corresponds best to the entities registered in the database. The cumulated number of entities in a country can be zero before a reform happens. This feature of the data prevents me from using a log transformation. Both the intensive and the extensive margin of the provision of offshore services bring important information for this exercise. In this robustness exercise, I follow Chen and Roth (2024) to transform my independent variable meaningfully. They propose to explicit the trade-off between the intensive margin and the extensive margin in the study of variables with zero values. The dependent variable is defined as follows:

$$m^x(Entities) = \ln(Entities) \times \mathbb{1}_{Entities>0} + (-x) \times \mathbb{1}_{Entities=0}$$

with x that calibrates the trade-off between the extensive and the intensive margin. In this setting, a change of the number of entities registered in a tax haven from 0 to 1 is worth a $100x$ increase in the number of entities. Different values of x are used to accommodate different trade-offs between the two margins.

I estimate the following event-study regression:

$$m^x(Entities)_{jt} = \sum_{k=-10}^{15} \zeta_k IBCj t^k + u_j + u_t + v_{ij} \quad (9)$$

where $Haven_{jt}^k$ is a dummy variable equal to one for treated countries k years before or after it becomes a tax haven. u_j and u_t are country and time fixed effects and v_{jt} is the error term. The control group corresponds to tax havens that have never enacted any International Business Company reform. The equation is estimated using the estimator of de Chaisemartin and D'Haultfœuille (2024) to account for potential heterogeneous effects in a generalized difference-in-difference setting with different treatment dates. Figure A.13 illustrates the impact of IBC reforms on offshore service provision. IBC reforms appear efficient in terms of entity incorporation. Following the reform adoption, the number of offshore entities recorded in the Offshore leaks data increases approximately by 200% after 10 years, and is very similar across the different specifications. The effect appears immediately after the reform and increases during the next years. Estimates before the treatment are very close to zero and not statistically significantly different from zero. This figure shows that tax-haven reforms, in the context of IBC incorporation at least, materialize into an increase in the provision of tax haven services.

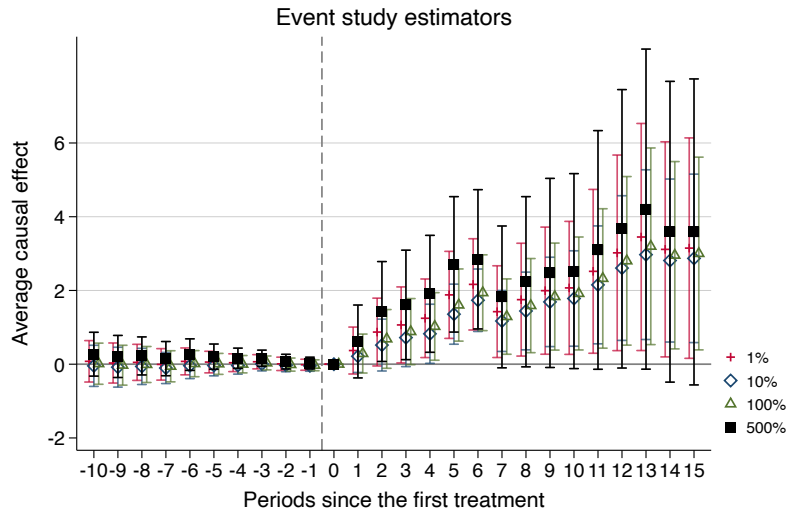


Figure A.13 – "International Business Companies" reforms and tax havens services: Event study

Note: This figure plots coefficients from four event-study regressions following equation 9 estimated using the estimator of de Chaisemartin and D'Haultfœuille (2024). The equation is estimated for different values of x , that calibrates the trade-off between the extensive and the intensive margin of the dependent variable. A change of the number of entities registered in a tax haven from 0 to 1 is worth a $100x$ increase in the number of entities. The treated group is composed of tax havens introducing "International Business Companies" reforms. It studies how the number of offshore entities registered in a tax haven changes when the country enacts a new IBC reform. The dependent variable has been transformed following Chen and Roth (2024) to keep zeros in the estimation. The control group corresponds to tax havens that have never enacted any exempt company reform. 95% confidence intervals from clustered standard errors.

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