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Charles Vellutini, Georges Casamatta, Léa Bousquet, Grzegorz Poniatoski

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Estimating International Tax Evasion by Individuals



September 2019



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Abstract

This study provides estimates of offshore wealth held by individuals (for the world's main economies) and corresponding estimates of international tax evasion (for the EU and EU Member States). Following the literature, the methodology relies on public statistics published by international organisations. Several additions to the standard approach are proposed including (i) estimates of offshore wealth held indirectly through shell companies, based on the identification of "Type II" international financial centres (defined as jurisdictions providing shell companies and similar devices); (ii) the use of foreign direct investment data to improve on available statistics for cross-border deposits. Key results are as follows. The global offshore wealth is estimated at USD 7.8 trillion in 2016 (EUR 7.5 trillion) or 10.4% of global GDP, a considerable amount. This estimate is largely consistent with existing published valuations. The EU share is valued at USD 1.6 trillion (EUR 1.5 trillion), or 9.7% of GDP. The corresponding EU estimated revenue lost to international tax evasion is EUR 46 billion in 2016 (0.32% of GDP). Among Member states, there is a great deal of heterogeneity, both in monetary terms of the estimated offshore wealth (and the corresponding tax evasion) and in GDP percentages of the same.

Keywords: EU tax evasion, international tax evasion, offshore wealth.

JEL classification: H24, H26

Sommaire

Cette étude fournit des estimations de la richesse offshore détenue par les particuliers (pour les principales économies mondiales) et des estimations correspondantes de l'évasion fiscale internationale (pour l'UE et les États membres de l'UE). Conformément à la littérature, la méthodologie repose sur des statistiques publiques publiées par les organisations internationales. Plusieurs ajouts à l'approche standard sont proposés, notamment (i) des estimations des avoirs offshore détenus indirectement par le biais de sociétés écrans sur la base de l'identification de centres financiers internationaux de « Type II » (définis comme des pays fournisseurs de sociétés écrans) ; (ii) l'utilisation des données sur les investissements directs étrangers pour améliorer les statistiques disponibles sur les dépôts transfrontaliers. Les principaux résultats sont les suivants. La richesse offshore mondiale est estimée à 7 800 milliards USD en 2016 (7 500 milliards EUR), soit 10,4% du PIB mondial, un montant considérable. Cette estimation est cohérente avec les résultats de la littérature. La part de l'UE est évaluée à 1 600 milliards USD (1 500 milliards EUR), soit 9,7% du PIB. Les recettes fiscales perdues correspondantes de l'UE sont estimées à 46 milliards EUR en 2016 (0,32% du PIB). Parmi les États membres, il existe une grande hétérogénéité à la fois en termes monétaires de la richesse offshore estimée (et de l'évasion fiscale correspondante) et en pourcentage de PIB des mêmes grandeurs.

Mots clés : UE évasion fiscale, évasion fiscale internationale, richesse offshore.

Classification JEL : H24, H26

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Abbreviations and Acronyms

AEOI	Automatic Exchange of Information
BCG	Boston Consulting Group
BEPS	Base Erosion and Profit Shifting
BIS	Bank for International Settlements
CPIS	Coordinated Portfolio Investment Survey
CRA	Canada Revenue Agency
CSV	Comma-Separated Values
CRS	Common Reporting Standard
DAC	Directive on Administrative Cooperation
DG TAXUD	Directorate General for Taxation and Customs Union
DNB	De Nederlandsche Bank
DTA	Double Taxation Agreement
EC	European Commission
EOIR	Exchange of Information on Request
EU	European Union
EUSD	European Union Savings Directive
EWN	External Wealth of Nations
FATCA	Foreign Account Tax Compliance Act
FDI	Foreign Direct Investments
FFI	Foreign Financial Institution
HRMC	Her Majesty's Revenue and Custom
IBFD	International Bureau of Fiscal Documentation
ICIJ	International Consortium of Investigative Journalists
IFS	International Financial Statistics
IGA	Intergovernmental Agreements
IIP	International Investment Position
IMF	International Monetary Fund
IRS	Internal Revenue Service
MEO	Middle-Eastern Oil Exporters
MS	Member State
NGO	Non-Governmental Organisation
OECD	Organisation for Economic Co-operation and Development
IFC	International Financial Centre
QI	Qualified Intermediary
SEFER	Securities Held as Foreign Exchange Reserves
SNB	Swiss National Bank
SSIO	Securities Held by International Organisations
TEDB	Tax in Europe Database
TIC	Treasury International Capital
TIEA	Tax Information Exchange Agreement
TJN	Tax Justice Network
TOR	Terms of Reference
WDI	World Development Indicators

Preamble

This report (the 'Report') was prepared for the Study on Estimating International Tax Evasion by Individuals (the 'Assignment' or the 'Study'), based on the contract TAXUD/2015/DE/331 signed on 29 November 2017.

The Report is submitted to the European Commission (EC) Directorate General for Taxation and Customs Union (DG TAXUD) by ECOPA (lead firm) in association with CASE, both part of a grouping of consulting firms and research institutions led by Economisti Associati Srl.

It benefited from comments on previous versions from DG TAXUD, Member States and peer-reviewers Gabriel Zucman and Jan Loerprick. The authors are responsible for any remaining error.

Executive Summary

Scope

This Study provides estimates of offshore wealth¹ held by individuals (for the world's main economies) and corresponding estimates of international tax evasion (for the EU and EU Member States). These estimates are presented for the 2001-2016 period.

Methodology

Following the literature, the methodology includes three main steps:

1. *Estimation of global offshore financial wealth.* At the global level, values of international portfolio asset and liabilities² should balance, and they do not. This gap is the basis of an estimate of global offshore wealth.
2. *Breakdown by country of ownership and by international financial centre (IFC).* Data on international shares of offshore deposits is next used to allocate global offshore wealth to countries of ownership (the countries where the individual owners of offshore wealth reside). This step is implemented for all major economies. A breakdown of offshore wealth held in each individual IFC is also provided.
3. *Estimation of international tax evasion by Member State.* Based on the estimated offshore wealth by country of ownership, international tax evasion is estimated, assuming rates of non-compliance based on the literature (the share of offshore wealth corresponding to a tax evasion behaviour). This is provided for the EU and EU Member States.

The Study offers the following methodological improvements with respect to the literature:

- In Step 2 above, the “indirect” offshore wealth (defined as the wealth held through screening devices such as shell companies) is estimated for each country of ownership and added to the estimated “direct” offshore wealth (held by individuals in their own names). This is achieved by drawing a clear distinction between two types of IFCs (that are often treated equivalently in international lists of non-compliant jurisdictions): (i) wealth-receiving IFCs (“Type I”); and (ii) screening device-providing IFCs (“Type II”). Equipped with this distinction, the Study re-allocates holdings originating from Type II IFCs to the (estimated) ultimate owners.
- Also in Step 2, because international data on cross-border deposits does not discriminate between deposits held by households (which are used to distribute offshore wealth by country of ownership) and deposits held by corporations, the Study uses statistics on foreign direct investment (FDI) to correct the unwanted influence of corporate deposits on estimates. This is an improvement over the standard practice of assuming identical ratios of corporate/individual outgoing deposits.
- In Step 3, where most recent contributions have focused on tax evasion on the capital income generated by offshore holdings (dividends, interest, etc.), the Study also addresses foregone tax revenue on the original unreported income

¹ Offshore wealth is defined as holdings held by non-residents in a given jurisdiction.

² An international portfolio asset is a bond, stock or another type of security held by a resident of a given Country A in another Country B. An international portfolio liability is the corresponding liability recorded in Country B.

transferred offshore in the first place. As reported below, this component of foregone revenue turns out to be significantly larger than tax evasion on capital income and on the stock of wealth.

The Fight Against International Tax Evasion

The Study produces results that need to be interpreted in the context on the on-going fight against international tax evasion. Three episodes can be isolated:

- 2004/2005: Announcement and implementation of the EU Savings Directive (EUSD). This constituted the first major effort to exchange information between EU Member States and third countries automatically, including Switzerland.
- 2009/2010:
 - Global crackdown on international tax evasion (April 2009 London G20 Summit). The London Summit was the starting point of a worldwide systematic application of the Exchange of Information on Request (EOIR) Standard.
 - Adoption of Foreign Account Tax Compliance Act (FATCA) by the US Congress.
- 2014:
 - Adoption of the Common Reporting Standard (CRS) by the OECD Council and of the enhanced EU Directive on Administrative Cooperation (DAC2).
 - Implementation of FATCA.

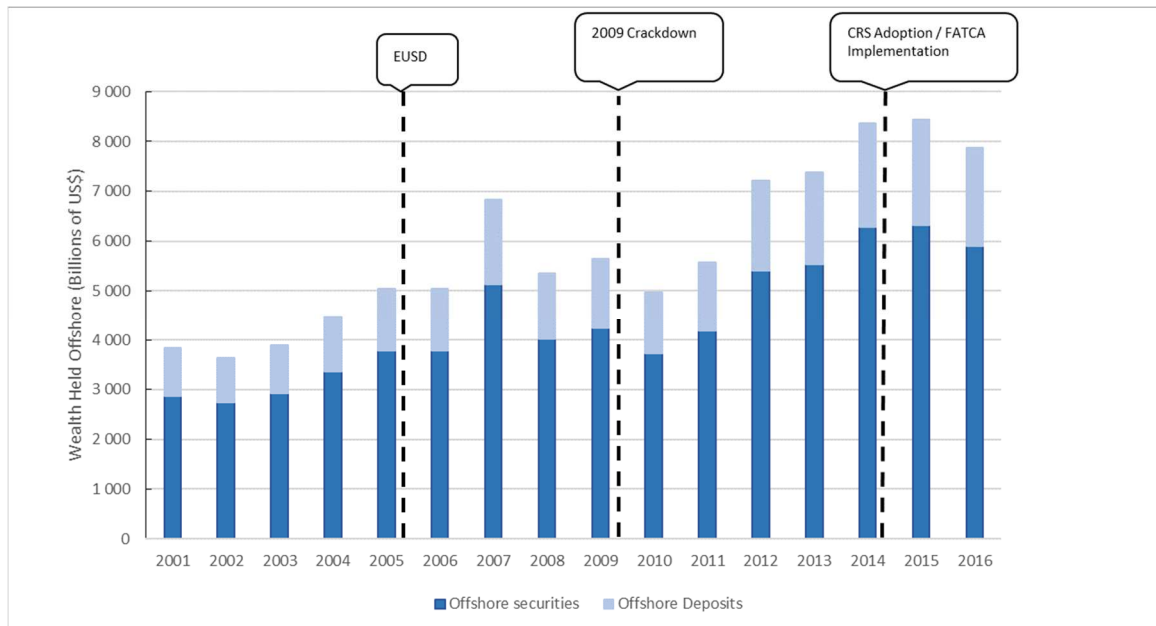
Findings

Global Offshore Wealth

A first finding is that estimated global offshore wealth is US\$ 7.8 trillion in 2016 (EUR 7.5 trillion), or 10.4% of global GDP, a considerable amount. This is broadly consistent with accepted results from the literature (US\$ 8.3 trillion from Zucman (2017) and US\$ 10.3 trillion from the BCG 2017 report, both estimates for 2016). The yearly average for the 2001-2016 period is US\$ 5.8 trillion (EUR 4.7 trillion).

Secondly, the 2009 crackdown coincides with a decrease of estimated global offshore wealth. However, this decrease is only temporary, as offshore wealth picks up again in 2012-2014, converging back to the values observed before the 2008 crisis. In 2015-2016, the Study's most recent years, we again report a decrease, which is consistent with a possible impact from the latest measures to fight tax evasion (the EU DAC2, implementation of FATCA, and the endorsement of the CRS by the G20).

Estimated Global Offshore Wealth (Billions of US\$)



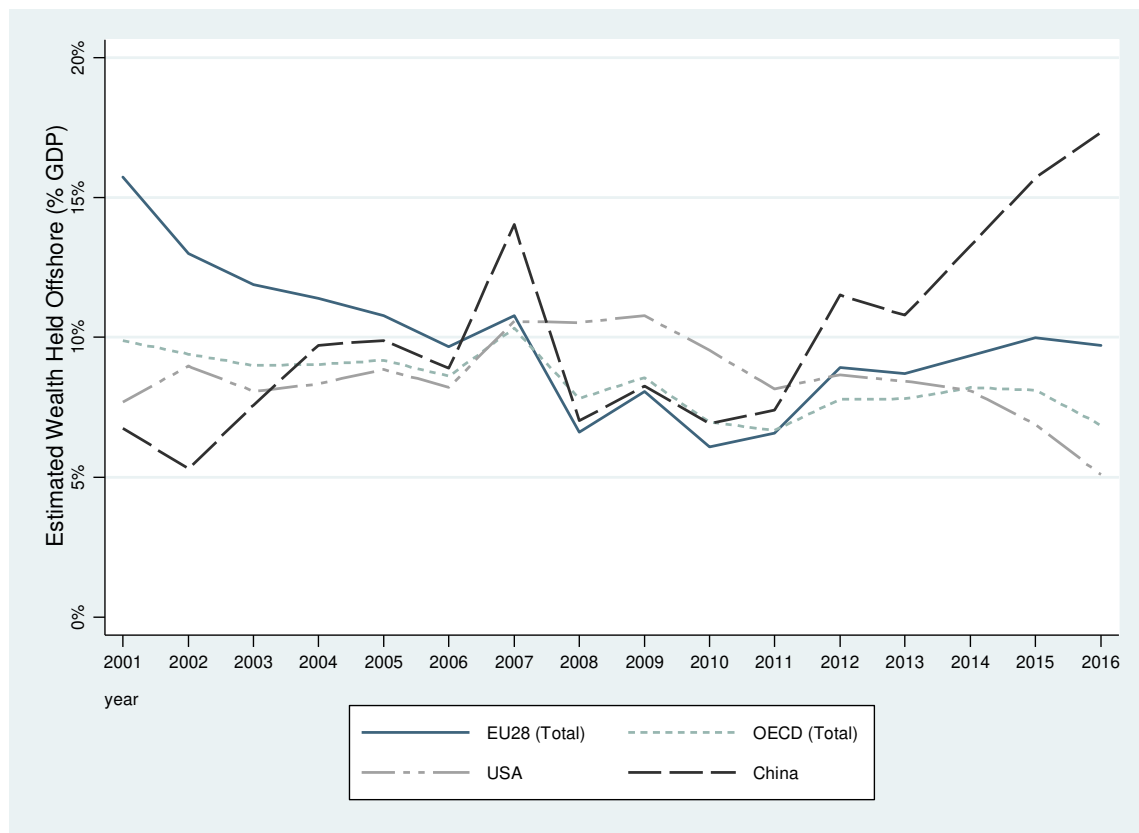
Sources: Own computations, World Bank Indicators for global GDP

Offshore Wealth Held by EU Residents

Offshore wealth held by EU residents is estimated at US\$ 1.6 trillion (EUR 1.5 trillion) in 2016 or an average of US\$ 1.5 trillion (EUR 1.2 trillion) over 2001-2016. While stable in dollar terms, as a ratio of GDP this is a marked decrease from 15.7% in 2001 to 9.7% in 2016.

However, this decline cannot be interpreted as evidence of impact from the 2005 EUSD. Between 2005 and 2007, estimated EU offshore wealth in fact went up in dollar terms (from US\$ 1.6 trillion in 2005 to US\$ 1.9 trillion in 2007). The decrease only began with the 2008 crisis (from 10.8% of GDP in 2007 to 6.6% in 2008). EU offshore wealth goes up again after 2011, to reach 9.7% of GDP and 20.5% of total offshore wealth in 2016.

Offshore Wealth as % of GDP, by Region



Sources: Own computations

Reduced Share of EU-held Offshore Wealth

Another important finding is that the increase in global offshore wealth over the last years of the study (2010-2016) is primarily driven by non-OECD countries, with an estimated contribution in dollar terms growing from US\$ 1.1 trillion in 2001 to US\$ 4.6 trillion in 2016.

Among non-OECD economies, the surge of China is especially strong, with a 21-fold increase of offshore wealth held by Chinese residents over the period (from US\$ 90 billion in 2001 to US\$ 1.9 trillion in 2016). In the final year of the study period (2016), China held by far the largest block of offshore wealth, although this result needs to be interpreted with caution as it may be influenced by the emergence of Hong Kong as a major centre for renminbi trading and not necessarily by non-compliant behaviour.

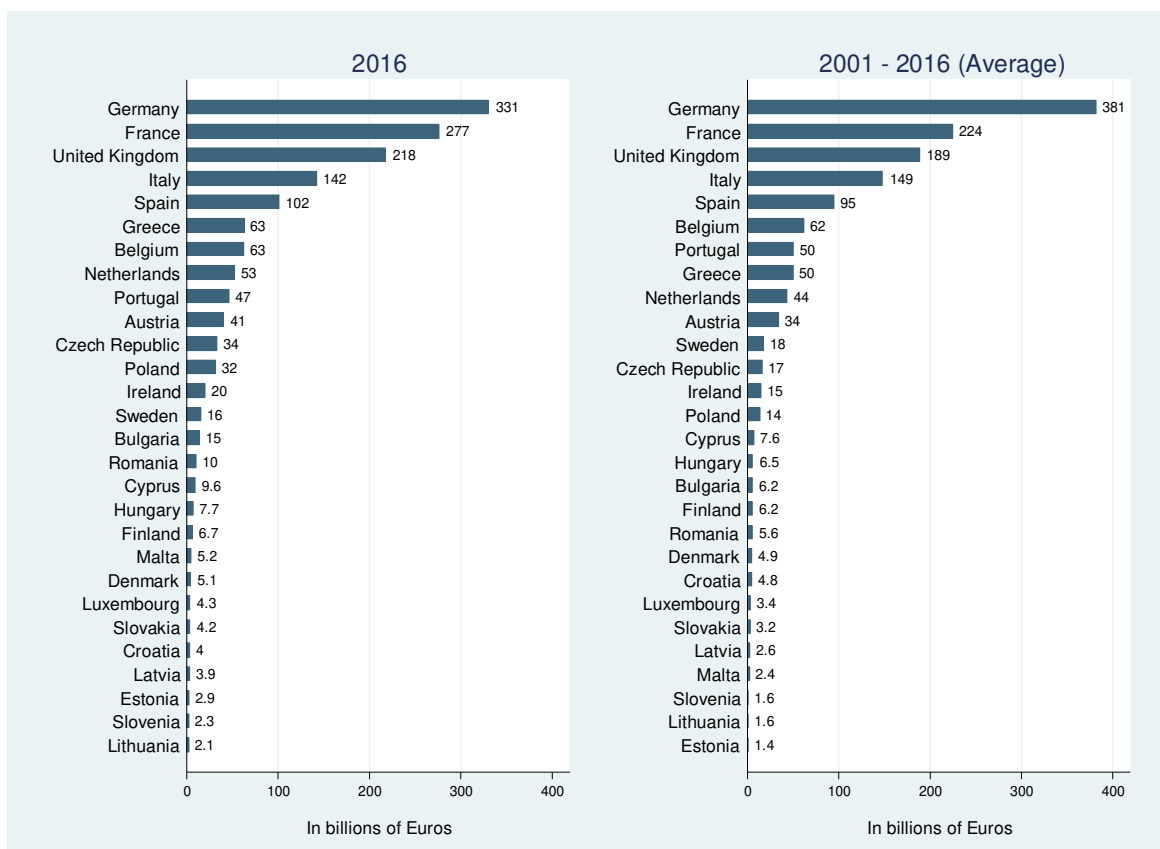
Indirect Offshore Wealth

Estimated offshore wealth held indirectly (through shell companies and other screening arrangements) by EU residents increases between 2004 and 2006. In 2004, it was 34.5% of their global offshore wealth; in 2006, this share goes up to 43.5%. Interestingly, indirect offshore wealth held by American and Chinese residents remained stable from 2004 to 2006. These facts are consistent with the EUSD having induced an increase of the indirect share of offshore wealth held by EU residents (without a reduction in its overall value, as noted).

Heterogeneity among Member States in terms of offshore wealth

Heterogeneity in monetary value. The figure below shows the ranking of Member States by estimated offshore wealth, in euro terms. These estimates include both the direct and the indirect (held through shell companies and the like) components of the offshore wealth. Member states with the largest offshore wealth are the EU largest economies. Germany, France, the UK, and Italy make up more than 65% of EU-28 offshore wealth on average over the study period. The last year in our period (2016, left-hand diagram below) also shows a high degree of concentration around the EU largest economies.

Member States: Estimated Offshore Wealth (Billions of Euros)



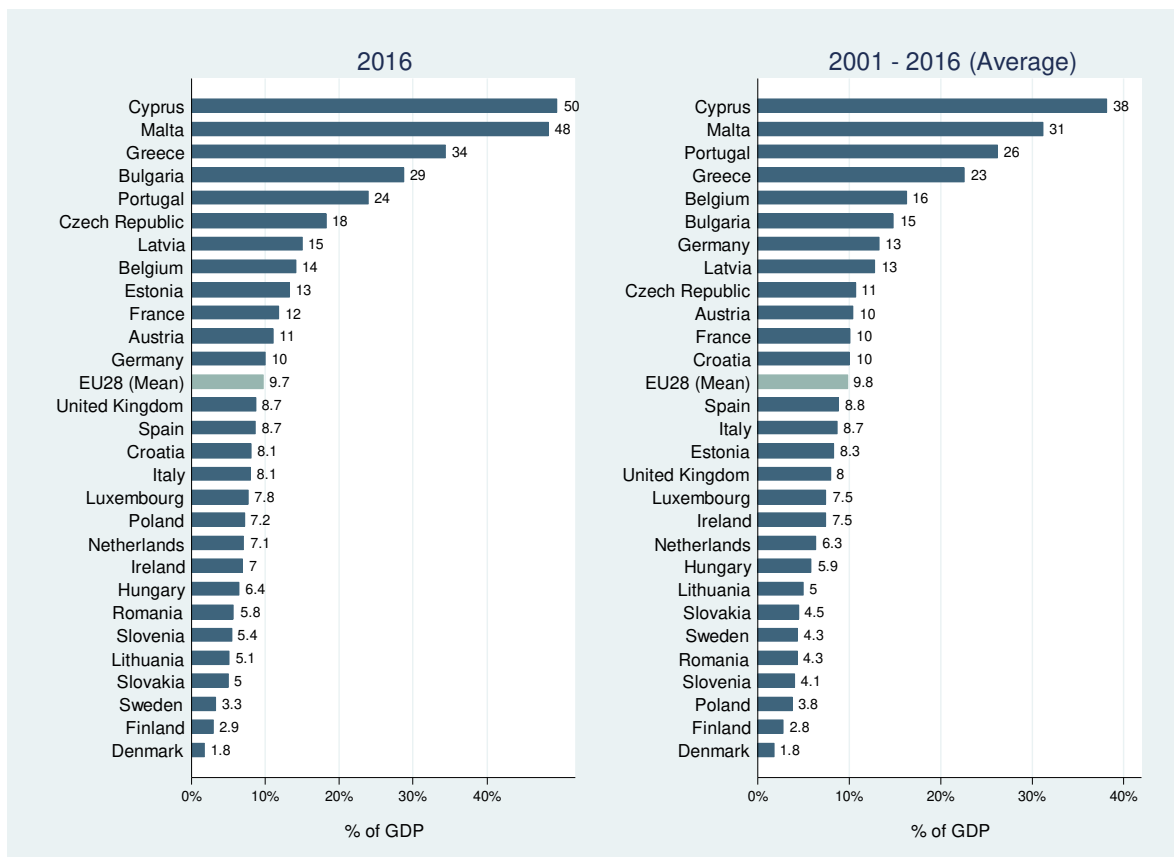
Sources: Own computations

Heterogeneity in GDP terms. As shares of GDP, the ranking is markedly different but also displays strong heterogeneity, as reported in the figure below. The largest economies (mainly Germany, France, UK, Italy and Spain) are close to the EU-28 mean.

Member States with the largest offshore wealth in GDP terms are Cyprus, Malta, Portugal and Greece, which are consistently above the EU-28 mean in each year of the study period and above 20% of GDP on average.

A third group of countries include Member States with estimated offshore wealth below 5% of GDP. In 2016 these include Denmark, Finland, Sweden and Slovakia and, on average over the period, Poland, Slovenia, Romania and Lithuania.

Member States: Estimated Offshore Wealth (% of GDP)

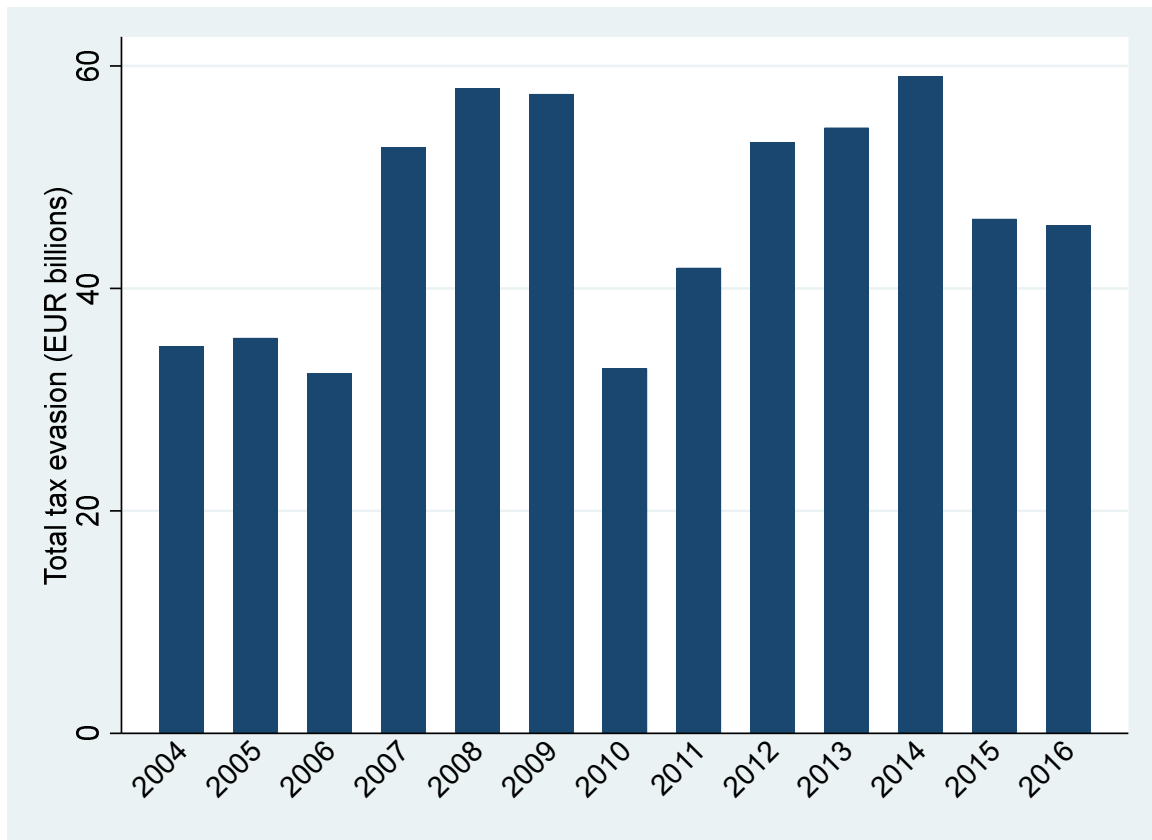


Sources: Own computations

Estimates of Revenue Lost to International Tax Evasion

The time series for the yearly revenue lost to international tax evasion for the EU-28 is shown below. Over the study period it averages to EUR 46 billion (0.46% of GDP) and it is also estimated at EUR 46 billion in 2016 (0.32% of GDP). As mentioned, these estimates assume (from the economic literature) a non-compliance rate of 75% and include three components of international tax evasion:

- On the stock of offshore wealth, tax evasion on
 - capital income and,
 - stock of wealth (in particular evasion of inheritance or wealth tax).
- On the original unreported income transferred offshore (in particular evasion on personal income tax).

EU-28: Total Revenue Lost to International Tax Evasion (Billions of Euros)

Sources: Own computations

Limitations of the Study

It is important to be aware of the limitations of the Study, which are mostly a result of the data available at this time. For these reasons, these estimates should be interpreted and used with caution:

- Important elements of wealth, namely life insurance contracts, cash money and real estate are not captured by our methodology as they are not reflected in the global discrepancy between portfolio assets and liabilities. As with other contributions in the literature implementing the same approach, our estimates should thus be interpreted as minima.
- While the Study has used FDI data to distinguish cross-borders corporate deposits from cross-borders deposits from individuals, specific data on the latter would increase the precision of the computations.
- Non-compliance rates (which are needed to produce estimates of tax evasion) are based on observed behaviour in selected countries, as reported in the literature. In addition, sensitivity tests on these rates have mostly confirmed our central assumptions. Nevertheless, more data from more countries on the non-compliance behaviour associated with offshore wealth would improve the robustness of results.
- Finally, new strategies adopted by tax evaders may stretch the ability of the methodology to capture hidden offshore holdings and related tax evasion. For

example, the growing practice of dual fiscal residencies (with investments made out of a fiscal residency of convenience) will not be captured by our approach, as they are reflected in international statistics and do not give rise to the anomalies we track here.

Résumé Exécutif

Portée de l'étude

Cette étude estime la richesse offshore³ détenue par les particuliers (pour les principales économies mondiales) et l'évasion fiscale internationale correspondante (pour l'UE et les États membres de l'UE). Ces estimations sont présentées pour la période 2001-2016.

Méthodologie

Conformément à la littérature récente, la méthodologie suit trois étapes principales :

1. *Estimation de la richesse financière offshore mondiale.* Au niveau mondial, les passifs et actifs de portefeuille transfrontaliers⁴ devraient s'équilibrer, or ce n'est pas le cas. Cet écart est interprété comme la base d'une estimation de la richesse offshore mondiale.
2. *Ventilation par pays d'origine et par centre financier international (CFI).* Les données sur les parts internationales de dépôts transfrontaliers sont utilisées pour allouer la richesse offshore mondiale à chaque pays d'origine (le pays où résident les propriétaires de la richesse offshore). Cette étape est mise en œuvre pour toutes les grandes économies. Une ventilation de la richesse offshore détenue dans chaque CFI est également fournie.
3. *Estimation de l'évasion fiscale internationale par État membre.* Sur la base de la richesse offshore estimée par pays d'origine, l'évasion fiscale internationale est estimée à l'aide de taux de non-conformité issus de la littérature (la part de la richesse offshore correspondant à un comportement d'évasion fiscale). Ce calcul est fait pour l'UE et les États membres de l'UE.

L'étude propose les améliorations méthodologiques suivantes par rapport à la littérature :

- À l'étape 2 ci-dessus, la richesse offshore « indirecte », définie comme la richesse détenue via des dispositifs masquant l'identité des détenteurs (par exemple les sociétés écran), est estimée pour chaque pays d'origine et est ajoutée à la richesse offshore « directe » (détenue en nom propre). Cette estimation est réalisée en établissant une distinction entre deux types de CFI (qui sont souvent traités de manière équivalente dans les listes internationales de juridictions non conformes) : (i) les CFI recevant la richesse offshore (« Type I ») ; et (ii) les CFI fournissant des dispositifs de type société écran (« Type II »). Sur la base de cette distinction, l'étude redistribue les avoirs provenant de CFI de Type II aux propriétaires réels estimés.
- Également à l'étape 2, parce que les données sur les dépôts transfrontaliers ne font pas de distinction entre les dépôts détenus par les ménages (qui sont utilisés pour répartir la richesse offshore par pays d'origine) et ceux détenus par des sociétés, l'étude utilise des statistiques sur l'investissement direct étranger (IDE) pour corriger l'influence des dépôts des sociétés parasitant les données. Il s'agit d'une amélioration par rapport à la pratique habituelle consistant à supposer des ratios dépôts des sociétés / dépôts des ménages identiques pour tous les pays d'origine.

³ La richesse offshore est définie comme les avoirs détenus par les non-résidents dans une juridiction donnée.

⁴ Un actif de portefeuille transfrontalier est un titre (action, obligation ou autre titre) détenu par le résident d'un pays quelconque A dans un autre pays B. Un passif de portefeuille transfrontalier est le passif correspondant enregistré dans le pays B.

- À l'étape 3, là où les contributions les plus récentes portent sur l'évasion fiscale des revenus du capital (dividendes, intérêts, etc.), l'étude aborde également les pertes de recettes fiscales sur les revenus non déclarés initialement transférés à l'étranger. Les résultats montrent que ce manque à gagner s'avère bien plus important que l'évasion fiscale sur les revenus du capital et sur le stock de la richesse offshore.

La lutte contre l'évasion fiscale internationale

L'étude produit des séries chronologiques de résultats qui doivent être interprétés dans le contexte de la lutte contre l'évasion fiscale internationale. Trois épisodes peuvent être distingués :

- 2004/2005 : Annonce et mise en œuvre de la Directive européenne sur la fiscalité de l'épargne (DEFE). Il s'agit du premier effort important visant à échanger automatiquement des informations entre les États membres de l'UE et des pays tiers, dont la Suisse.
- 2009/2010 :
 - Début d'un effort mondial contre l'évasion fiscale internationale avec le sommet du G20 de Londres (avril 2009), point de départ d'une mise en œuvre systématique à l'échelle mondiale de la norme EOIR (Exchange of Information on Request).
 - Adoption de la loi FATCA (Foreign Account Tax Compliance Act) par le Congrès américain.
- 2014 :
 - Adoption de la norme commune de déclaration (Common Reporting Standard, CRS) par le Conseil de l'OCDE et de la Directive européenne révisée sur la coopération administrative (DAC2).
 - Mise en œuvre de FATCA.

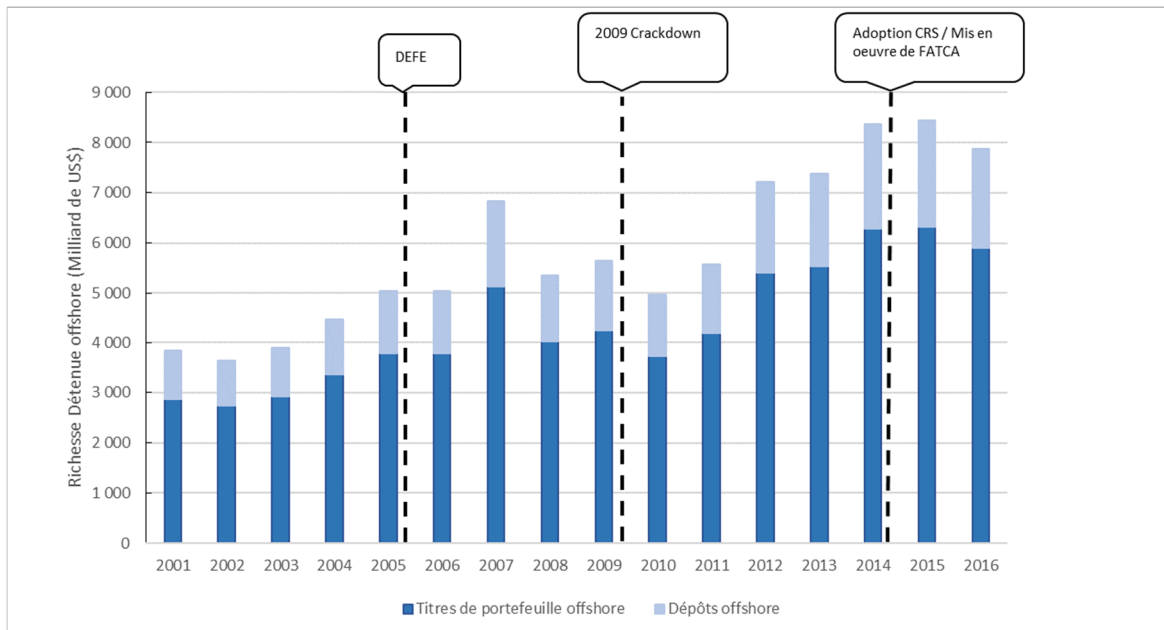
Résultats

Richesse offshore mondiale

Un premier résultat clé de l'étude est que la richesse offshore mondiale est estimée à 7 800 milliards USD en 2016 (7 500 milliards EUR), soit 10,4% du PIB mondial, un montant considérable. La moyenne annuelle pour la période 2001-2016 est de 5 800 milliards USD (4 700 milliards EUR). Ce résultat est conforme aux estimations de la littérature (8 300 milliards USD pour Zucman (2017) et 10 300 milliards USD pour le rapport 2017 du BCG, pour la même année 2016).

Deuxièmement, le début de l'effort de répression de la fraude de 2009 coïncide avec une diminution de la richesse offshore mondiale estimée. Cependant, cette baisse n'est que temporaire, la richesse offshore repartant à la hausse en 2012-2014 pour retrouver les valeurs d'avant la crise de 2008. En 2016, dernière année de l'étude, une diminution est de nouveau observée, ce qui est compatible avec un impact possible des dernières mesures de lutte contre l'évasion fiscale (DAC2 de l'UE, mise en œuvre de FATCA et approbation du CRS par le G20).

Richesse Offshore Estimée



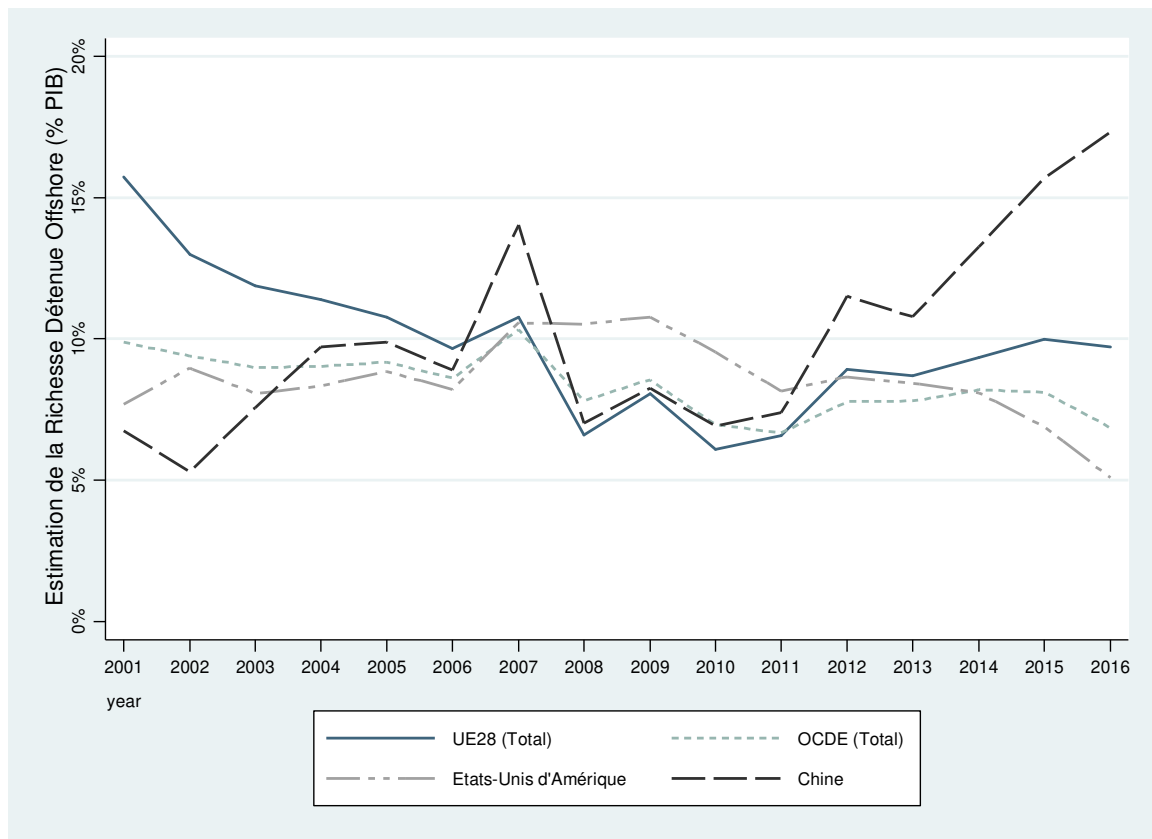
Sources : Calcul des auteurs, Indicateurs de la Banque mondiale pour PIB mondial

Richesse offshore détenue par les résidents de l'UE

La richesse offshore détenue par les résidents de l'UE est estimée à 1 600 milliards USD (1 500 milliards EUR) en 2016, pour une moyenne de 1 500 milliards USD (1 200 milliards EUR) sur la période 2001-2016. Bien que stable en valeur monétaire, en pourcentage du PIB la richesse offshore des résidents de l'UE diminue sensiblement, passant de 15,7% en 2001 à 9,7% en 2016.

Toutefois, ce déclin ne peut être interprété comme une preuve d'impact de la DEFE de 2005. Entre 2005 et 2007, la richesse offshore estimée de l'UE a en fait augmenté en dollars (passant de 1 600 milliards USD en 2005 à 1 900 milliards USD en 2007). La diminution n'a commencé qu'avec la crise de 2008 (de 10,8% du PIB en 2007 à 6,6% en 2008). La richesse offshore des résidents de l'UE augmente à nouveau après 2011 pour atteindre 9,7% du PIB en 2016.

Richesse Offshore en % du PIB par région



Sources : Calcul des auteurs, Indicateur de la Banque mondiale pour PIB mondial

Une part réduite de la richesse offshore détenue par l'UE

Un autre constat important est que l'augmentation de la richesse offshore mondiale au cours des dernières années de l'étude (2010-2016) est principalement due aux pays non membres de l'OCDE, avec une contribution passant de 1 100 milliards USD en 2001 à 4 600 milliards USD en 2016.

Parmi les économies non membres de l'OCDE, la montée de la Chine est particulièrement forte, avec des avoirs détenus offshore par des résidents chinois multipliés par 21 au cours de la période (de 90 milliards USD en 2001 à 1 900 milliards USD en 2016). Pour la dernière année de la période d'étude (2016), la Chine détenait de loin le plus gros bloc de richesse offshore. Ce résultat doit toutefois être interprété avec prudence, car il pourrait être influencé par la montée en puissance de Hong Kong comme place financière majeure sur le renminbi, et pas nécessairement par des activités d'évasion fiscale.

Richesse offshore indirecte

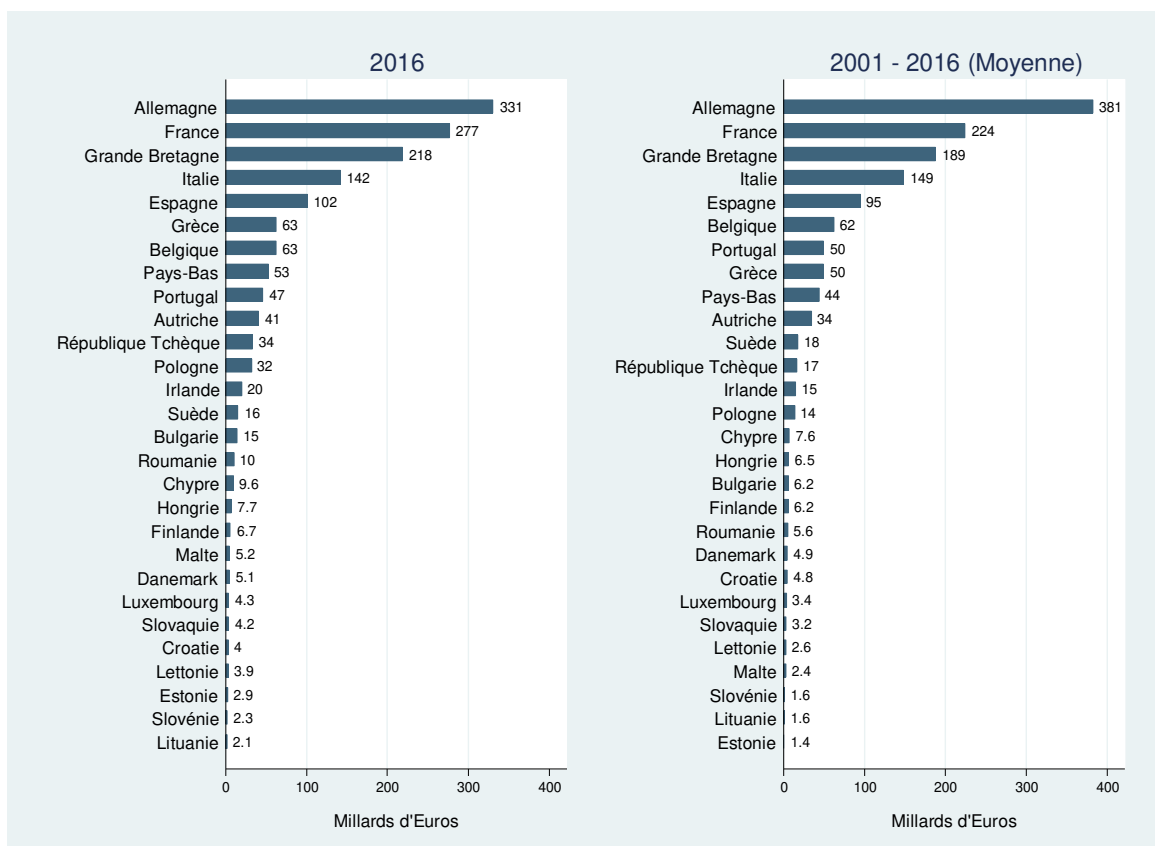
La richesse offshore estimée détenue indirectement (par le biais de sociétés écrans et d'autres entités de ce type) par les résidents de l'UE a augmenté entre 2004 et 2006. En 2004, cette part indirecte était de 34,5% de leur richesse offshore mondiale ; en 2006 elle atteint 43,5%. Il est intéressant de noter que sur la même période la richesse offshore indirecte détenue par les résidents américains et chinois est restée stable. Ces faits sont cohérents avec un effet de la DEFE sur une augmentation de la part indirecte

de la richesse offshore détenue par les résidents de l'UE (sans réduction de sa valeur totale, comme noté).

Hétérogénéité des États membres en termes de richesse offshore

Hétérogénéité en valeur monétaire. La figure ci-dessous montre le classement des États membres en fonction de la richesse offshore estimée, en euros. Ces estimations incluent à la fois les composantes directe et indirecte (détenue par des sociétés écran) de la richesse offshore. Les États membres dont les résidents possèdent la plus grande richesse offshore sont les plus grandes économies de l'UE. L'Allemagne, le Royaume-Uni et la France représentent plus que 50% de la richesse offshore de l'UE-28 en moyenne sur la période étudiée. La dernière année de notre période, (2016, diagramme de gauche de la figure ci-dessous) montre également un degré élevé de concentration dans les plus grandes économies de l'UE.

Etats Membres : Richesse Offshore Estimée (Milliards d'Euros)



Sources : Calcul des auteurs

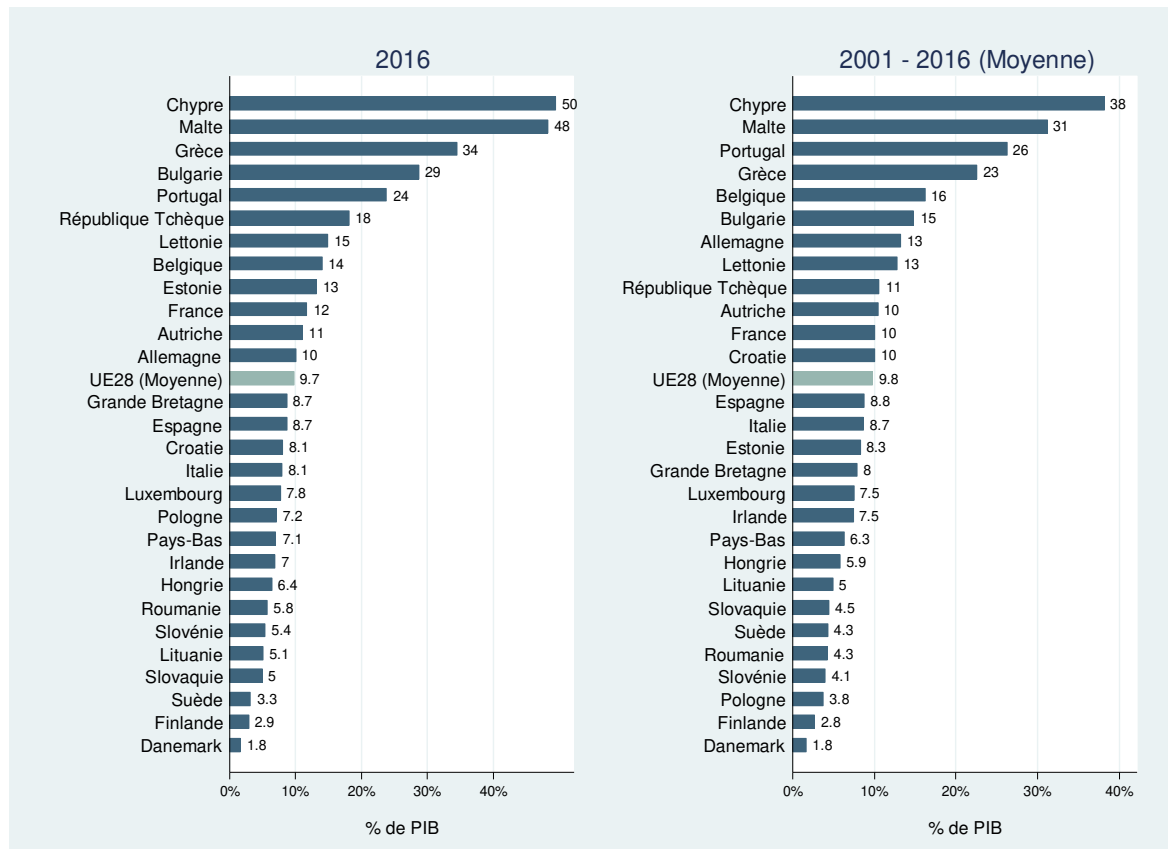
Hétérogénéité en termes de PIB. La figure ci-dessous montre le classement des États membres en fonction de la richesse offshore estimée en termes de PIB. Ce classement est sensiblement différent mais présente également une forte hétérogénéité. Les grandes économies (principalement l'Allemagne, la Grande Bretagne, la France, l'Italie et l'Espagne) sont proches de la moyenne de l'UE-28.

Les États membres qui enregistrent les richesses offshores les plus importantes en part de PIB sont Chypre, Malte, le Portugal et la Grèce, qui se situent systématiquement au-

dessus de la moyenne de l'UE-28 sur la période et au-dessus de 20% du PIB en moyenne.

Un troisième groupe de pays comprend les États membres dont la richesse offshore est estimée à moins de 5% du PIB. En 2016, c'est le cas du Danemark, de la Finlande, de la Suède et la Slovaquie. En moyenne sur la période, c'est également le cas pour la Pologne, la Slovénie, la Roumanie et la Lituanie.

Etats Membres : Richesse Offshore Estimée (% du PIB)



Sources : Calcul des auteurs

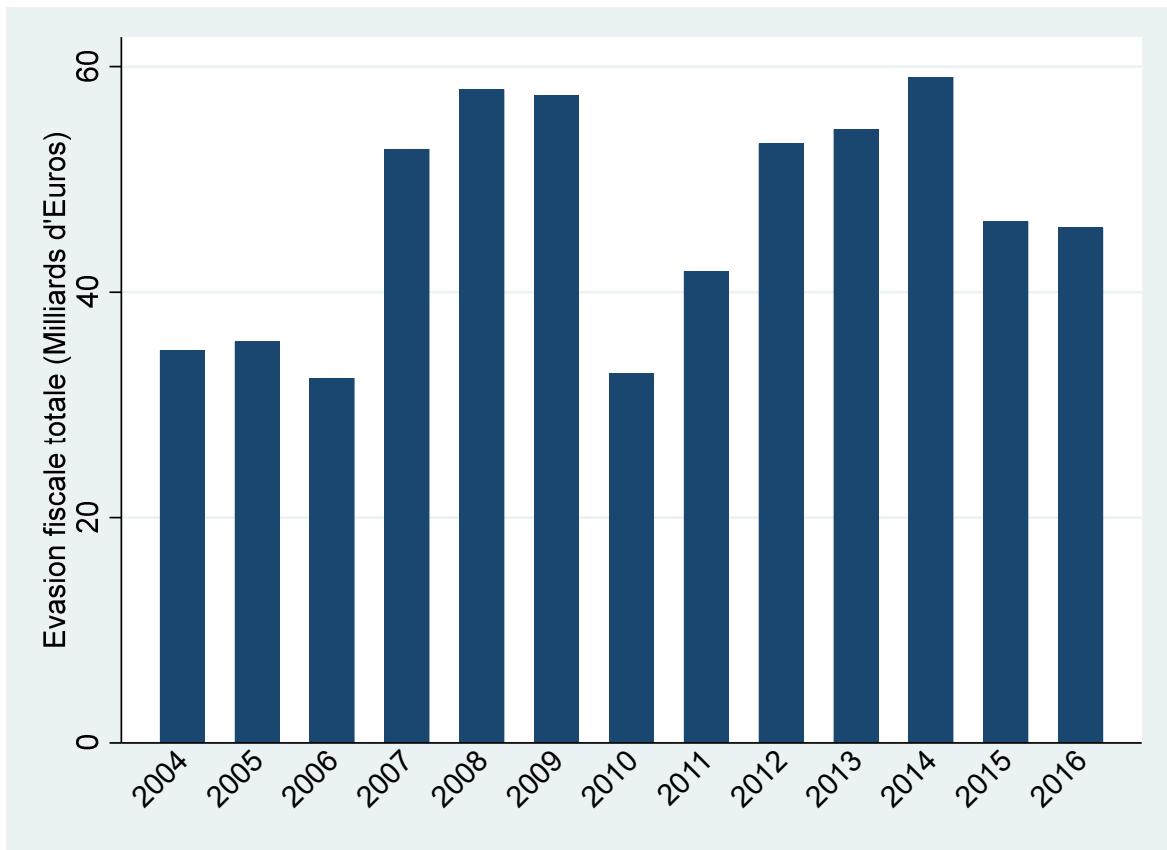
Estimation des recettes fiscales perdues du fait de l'évasion fiscale internationale

La série chronologique des pertes de recettes fiscales dues à l'évasion fiscale internationale pour l'UE-28 est rapportée ci-dessous. Elles s'élèvent en moyenne à 46 milliards EUR par an (0,46% du PIB) sur la période, et également à 46 milliards en 2016 (0,32% du PIB). Rappelons que ces estimations posent l'hypothèse (prise de la littérature) d'un taux de non-conformité de 75% et incluent trois composantes de l'évasion fiscale internationale :

- Sur le stock de richesse offshore, pertes fiscales sur
 - les revenus du capital,
 - les impôts assis sur le stock de richesse (fiscalité des successions, fiscalité sur la richesse).

- Sur le revenu d'origine estimé non déclaré (notamment imposition du revenu).

UE-28 : Pertes de Recettes sur Evasion Fiscale Internationale



Sources : Calcul des auteurs

Limites de l'étude

Il est important de connaître les limitations de l'étude, qui sont principalement fonctions des données actuellement disponibles :

- Notre méthodologie ne tient pas compte d'éléments importants de la richesse transfrontalière, à savoir les contrats d'assurance vie, les espèces et les biens immobiliers, car ils ne sont pas reflétés dans l'écart mondial entre les actifs et les passifs de portefeuille. Comme pour d'autres contributions de la littérature mettant en œuvre la même approche, nos estimations doivent donc être interprétées comme des minima.
- Bien que l'étude ait utilisé les données d'IDE pour mieux corriger les dépôts transfrontaliers des individus des dépôts des entreprises, des données directes sur ces premiers permettraient d'accroître la précision des calculs.
- Les taux de non-conformité (nécessaires pour produire des estimations de l'évasion fiscale) sont basés sur le comportement observé dans certains pays, comme indiqué dans la littérature. De plus, les tests de sensibilité sur ces taux ont en grande partie confirmé nos hypothèses et résultats centraux. Néanmoins, davantage de données provenant d'un plus grand nombre de pays sur la non-

conformité associée à la richesse offshore amélioreraient la robustesse des résultats.

- Enfin, les nouvelles stratégies adoptées par les fraudeurs fiscaux pourraient limiter la capacité de la méthodologie mise en œuvre dans le rapport à capturer les avoirs offshore cachés et à l'évasion fiscale associée. Par exemple, notre approche ne rend pas compte de la pratique croissante de la double résidence fiscale (avec des investissements faits depuis une résidence fiscale de complaisance), car elle est transcrite correctement dans les statistiques internationales et ne contribue donc pas aux écarts utilisés dans cette étude.

1 Introduction

1.1 Objective and Scope

Objective. The objective of the Study is to produce updated estimates of:

- Offshore wealth⁵ held by individuals in international financial centres (IFCs).
- The related international tax evasion on (i) capital income; (ii) wealth and wealth-transfer; and (iii) the income originally transferred offshore.

Scope. Estimates of offshore wealth are produced for each EU Member State, the EU and for OECD and non-OECD countries as aggregate blocks, and for large non-EU economies, namely the USA, Japan, Russia, Canada, Australia, China, India, South Korea and Brazil. These estimates include offshore wealth channelled through shell companies and other screening arrangements. A breakdown of offshore wealth held in each IFC is also produced.

Estimates of international tax evasion are produced for each Member State and the EU as a whole.

All estimates are produced over the 2001-2016 period.

It is also useful to clarify which issues are not addressed:

- The Study does not cover inequality and the distribution of international tax evasion among taxpayers, instead restricting its focus to aggregate estimates.
- The Study focuses on the measurement of international tax evasion by individuals as supported by IFCs. Tax evasion by individuals unrelated to IFCs (e.g. domestic tax evasion) is not addressed; nor is tax evasion or avoidance by corporations.

1.2 Structure of the Report

The structure of the Report is as follows:

- The next section is a review of the literature on international tax evasion, with a focus on individuals. It includes a synthesis of the recent international efforts to curb it and a review of the evaluation of these efforts.
- Main steps of the methodology and a discussion of data sources are presented next, with details in Appendices 1 and 2.
- Findings are presented in the last section.

⁵ Historically, “offshore” wealth has been defined as the wealth held in offshore banks, i.e. banks operating under special international banking licences and accepting funds solely from non-residents. Following the literature and the current use of the term, this report defines offshore wealth more broadly as the wealth held by non-residents in a given jurisdiction.

2 Literature Review

2.1 Basics of International Tax Evasion

Tax evasion refers to illegal actions by households or firms to reduce tax liability. The practice of tax evasion is harmful in several respects. Firstly, it deprives society of the resources needed to finance collective goods and welfare programs. Secondly, it generates efficiency costs.⁶ Thirdly and lastly, it contributes to the unpopularity of the tax system, as those who do not evade taxation may develop the perception that “only the little people pay taxes”.⁷

This Report focuses on the cross-border dimension of tax evasion by individuals. In an increasingly globalised world, it has become relatively easy for individual taxpayers to make and hold investments outside of their country of residence (Box 1). Large sums of money are kept offshore and go untaxed as taxpayers fail to comply with tax obligations in their home jurisdiction.⁸

Tax evasion may not be the main and only reason why individuals seek to hide their wealth in offshore accounts. Other motives include the concealment of the proceeds of crime or corruption and the hiding of wealth from public agencies, business associates, or family members – which also results in tax evasion. There are also legal and legitimate reasons to hold wealth offshore, including to facilitate international investment and as a protection against political and economic instability (Forstater 2018⁹) – and in those situations it is duly reported to tax authorities. As the literature shows (see below), however, illegal actions and tax evasion by individuals remain the main motive behind holding offshore funds.

The size of the problem is considerable. Most trusted estimates value assets held offshore at approximately 8% of global financial wealth, or 10% of the world’s annual GDP.

⁶ Joel Slemrod, ‘Tax Compliance and Enforcement’, 13 July 2017, <http://webuser.bus.umich.edu/jslemrod/JEL%20compliance%207-13-17.pdf>. As pointed out by Slemrod, “the most obvious are the resources taxpayers expend to implement and camouflage noncompliance, that third parties incur to implement withholding and provide information reports, and that the tax authority uses to administer the system and combat noncompliance”.

⁷ Joseph Guttentag and Reuven Avi-Yonah, ‘Closing the International Tax Gap’, *Book Chapters*, 1 January 2005, https://repository.law.umich.edu/book_chapters/70.

⁸ Most jurisdictions tax income of individuals on a residency basis. Tax residency criteria may vary across countries, but generally, physical presence in a given jurisdiction is the main criterion. (<https://www.ey.com/gl/en/services/tax/worldwide-personal-tax-and-immigration-guide---country-list>).

⁹ Maya Forstater, ‘Tax and Development: New Frontiers of Research and Action’, 2018.

Box 1. Mechanisms to Transfer Unreported Income to IFCs

Mechanisms commonly used to conceal income in IFCs are as follows:

- Physical transfer of cash across national borders. This mechanism is mostly used for financial centres near the taxpayer's home jurisdiction.
- Mis-invoicing of services and goods, through invoicing of fictitious services or royalties by anonymous shell companies.
- Payments to offshore bank accounts made by international clients for cross-border provisions of goods and services.

An **illustrative example** (adapted from Zucman¹⁰) of the way individuals evade taxation through offshore structures is as follows:

- A taxpayer T in country A, a highly qualified professional who owns the sole proprietorship P, creates an anonymous shell company in country S, which has lax regulations on disclosing the identities of company owners (referred to as a Type II IFC in this Study).
- Taxpayer T opens an account under the shell company's name in country B (referred to as Type I IFC in this Study), whose banks are not reliable about cooperating with foreign tax authorities.
- Proprietorship P then buys fictitious services from the shell company and, to pay for these services, wires money to the shell company's country B account.
- By paying for fictitious consulting, T fraudulently reduces the taxable income of P, and thus the amount of personal income tax T pays.
- And once the money has arrived in country B, it is invested in global financial markets and generates income that country A's tax authority can tax only if T reports it or if her country B bank informs the tax authority.
- In this way, T can evade income taxes in country A, both on her original concealed income and on the income generated by the wealth T holds offshore.

2.2 Measurement of International Tax Evasion

A key advance of the recent research on the topic has been to show that international statistics can be used to measure international tax evasion. As taxpayer-level data sources are typically not shared by the jurisdiction in which offshore wealth is held, a top-down approach is implemented in which the amount of wealth held offshore by individuals is, firstly, estimated at the global level based on macroeconomic data, and, secondly, broken down by country of ownership. Based on these estimated amounts of offshore wealth, it is possible to measure international tax evasion. We review this approach below.

Table 1 presents a summary of the main contributions.

¹⁰ <https://www.nytimes.com/interactive/2017/11/10/opinion/gabriel-zucman-paradise-papers-tax-evasion.html> .

Table 1. Recent Estimates of global Offshore Wealth and Tax Evasion

Study	Objective	Methodology	Estimates of global offshore financial wealth	Estimates of tax revenue loss	Limitations
BCG (2017)	Estimation of global offshore financial wealth.	Interviews with wealth managers.	US\$ 10.3 trillion in 2016.		Interview-based, limited use of international statistics.
Henry (2012)	- Estimation of global offshore financial wealth. - Computation of capital income tax evasion.	Extrapolation of cross-border deposits data provided by the BIS.	Between US\$ 21 and US\$ 32 trillion in 2010.	Global capital income tax evasion of US\$ 189 billion in 2010.	Includes money invested abroad by corporations.
Zucman (2017)	- Estimation of global offshore financial wealth; - Computation of the wealth related tax evasion.	Discrepancy between worldwide assets and liabilities aggregates.	US\$ 8.3 trillion in 2016.	Global wealth related tax evasion estimated at US\$ 163 billion in 2016.	- Information incomplete or missing for some countries; - Part of the financial wealth, e.g. life insurance products, not taken into account.
Alstadsæter et al. (2018)	Country-by-country estimation of offshore financial wealth.	Allocation of global offshore financial wealth between countries using SNB and BIS data.	10% of world GDP held in non-cooperative jurisdictions, ranging from a few percent in Scandinavia to more than 50% in Russia and Gulf countries.		- BIS data only for bank deposits in IFCs; - Assumptions needed about: distribution of deposits between households and corporations and treatment of shell companies.
Pellegrini et al. (2016)	- Country-by-country estimation of offshore financial wealth; - Computation of the capital income and origin income tax evasion.	- Allocation of global offshore financial wealth between countries using CPIS statistics; - Assumptions about the income concealed to tax administrations.	Between US\$ 6 and US\$ 7 trillion at end-2013.	Between \$20 billion and \$42 billion a year over the period 2001-2013 for capital income, and between \$2.1 trillion and \$2.8 trillion at end-2013 for origin income.	Major assumptions on: - The breakdown of offshore wealth's ownership by country; - The income originally concealed to tax administrations.

Study	Objective	Methodology	Estimates of global offshore financial wealth	Estimates of tax revenue loss	Limitations
IMF (2018)	- Country-by-country estimation of offshore financial wealth; - Computation of the wealth related tax evasion.	Allocation of global offshore financial wealth between countries using SNB data.	This study uses the Zucman (2015) ¹¹ estimate of global offshore financial wealth (US\$ 7.6 trillion at end 2013).	Median wealth related tax evasion estimated at 0.1% of GDP in 2016.	- Same as Alstadsæter et al. (2018) - Assumes a 100% non-compliance rate
Canada Revenue Agency (2018)	- Estimation of the Canadian offshore financial wealth; - Computation of the capital income tax evasion.	Allocation of global offshore financial wealth between countries using BIS data and CPIS statistics	Between US\$ 5.7 trillion and US\$ 8.2 trillion at end-year 2013.	Canada capital income tax evasion ranges from 0.04% of GDP to 0.2% of GDP in 2014.	- Same as Alstadsæter et al. (2018) and Pellegrini et al. (2016)

2.2.1 Global Offshore Wealth

Estimates Based on International Statistics

Zucman (2017)¹² estimates global household offshore financial wealth at US\$ 8.3 trillion in 2016. Pellegrini, Sanelli and Tosti (2016)¹³, using a similar method, produce estimates ranging from US\$ 6 to US\$ 7 trillion for 2013. In these two important contributions, and as first implemented in Zucman (2013)¹⁴, discrepancies in publicly available data on international investment positions are used to derive estimates of wealth held offshore by individuals. The fictitious example in Figure 1 illustrates how such discrepancies come about and how they can be exploited:

- A taxpayer in Country A conceals income in a bank account in an IFC (Country B) using any of the methods summarised in Box 1.
- She uses these funds to buy Company X's stocks in an amount of \$100, in Country C.
- Country C's statistics duly record a \$100 liability toward the rest of the world.
- Country B's statistics record nothing as the owner of the stocks is not a resident of that country.
- Country A's statistics record nothing either as they do not have information on the taxpayer's international assets.

¹¹ Which was later updated by Zucman (2017) as reported in this table.

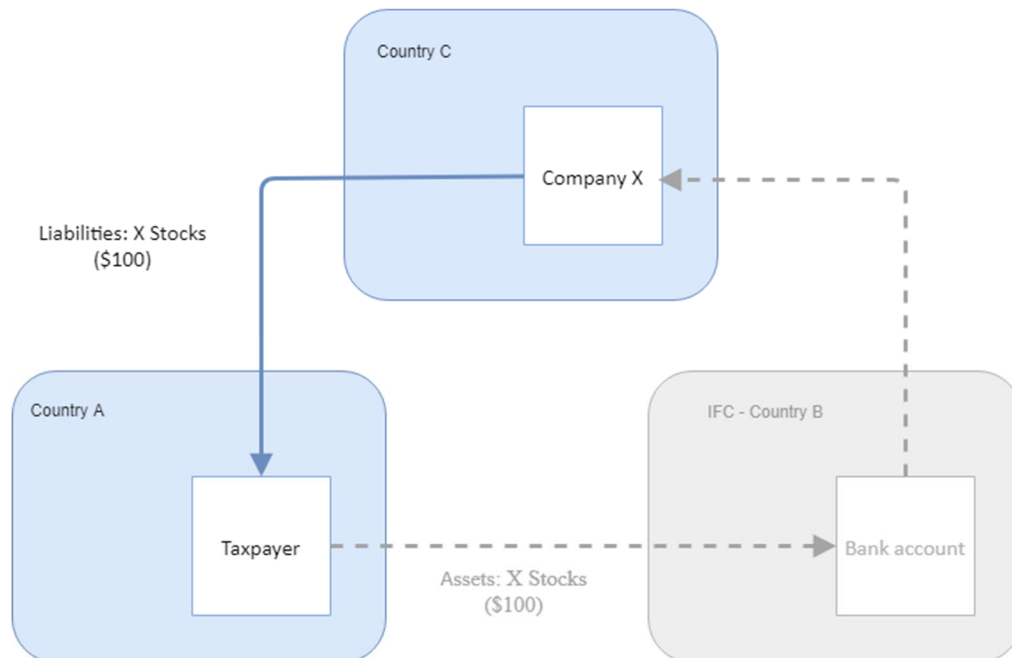
¹² Gabriel Zucman, *La Richesse cachée des nations*, La République des Idées (Le Seuil, 2017).

¹³ Valeria Pellegrini, Alessandra Sanelli, and Enrico Tosti, 'What Do External Statistics Tell Us about Undeclared Assets Held Abroad and Tax Evasion?' (Banca d'Italia, 2016).

¹⁴ Gabriel Zucman, 'The Missing Wealth of Nations: Are Europe and the U.S. Net Debtors or Net Creditors?', *The Quarterly Journal of Economics* 128, no. 3 (August 2013): 1321–64.

- At the global level, there is an anomalous \$100 excess of portfolio liabilities over portfolio assets.

Figure 1. Tracking Anomalies in International Investment Positions



Based on this principle, an estimation of global offshore wealth held by individuals is produced by Zucman (2017) in two steps:

- Computation of the global excess of portfolio liabilities over portfolio assets (including official reserves), which, as argued, is identifiable with the value of *portfolio wealth* held offshore by individuals.
- Inclusion of global offshore *deposits* based on assumptions on the deposits to total wealth ratio.

Importantly, offshore wealth estimated using this method only covers individuals. This is because corporations are direct reporters, in the sense that they provide information on their holdings (e.g. the securities on their balance sheet) to the balance of payments-compiling institution of their country.¹⁵ These holdings are thus correctly reported in international statistics and do not cause any discrepancy between portfolio assets and liabilities at the global level.

Note also that this method captures both the wealth owned by individuals in their own name and the wealth owned through shell companies and other screening means. In the example above, suppose that Country A's taxpayer creates a shell company and that this shell opens a bank account in Country B. The assets held by the shell company still do not belong to a resident of Country B. They are therefore not recorded in international statistics and generate the same imbalance.

On the other hand, wealth invested in life insurance contracts, which are registered in the insurers' books and thus do not cause any anomaly in the international statistics,

¹⁵ International Monetary Fund, ed., *BPM6 Compilation Guide* (Washington, DC: International Monetary Fund, 2014).

are not captured. Similarly, non-financial wealth such as real estate, artwork, cash money or cryptocurrencies (Noked 2018¹⁶) is not captured either. For this reason, Zucman (2017) regards his 2016 US\$ 8.3 trillion estimate as a likely minimum.

A recent report by the Canada Revenue Agency¹⁷ provides information on the relative importance of financial and non-financial offshore wealth, with a breakdown of offshore wealth declared by taxpayers: real estate may be up to 27% of the individuals' offshore wealth.¹⁸

Other frequently quoted estimates using international statistics include the following:

- In 2007, the OECD¹⁹ estimated that households kept a total of US\$ 5 to US\$ 7 trillion offshore, using data from the BIS, IMF and OECD.²⁰
- A study of the Tax Justice Network (TJN) by Henry (2012)²¹ using BIS data estimated that the global stock of cross-border deposits was approximately US\$ 7 trillion in 2010. Assuming that wealthy individuals maintain a ratio of deposits to total assets in the range of 3–4.5 on average, the resulting estimated global stock of offshore wealth lies between US\$ 21 and US\$ 32 trillion in 2010. This estimate has been criticised²² as it includes assets invested abroad by corporations. In most countries, the largest share of bank deposits is in fact owned by financial companies, insurance companies, investment funds, or nonfinancial companies – not individuals. This helps to explain why this estimate is well above other estimates from the literature.

Interview-Based Estimates

Other studies have based estimates on interviews with the financial profession:

- The Boston Consulting Group (BCG) publishes yearly estimates of the global wealth held offshore by individuals based on interviews with wealth managers, including a breakdown by region of origin and IFC destinations.²³ In 2016, global offshore wealth was estimated by the BCG at US\$ 10.3 trillion. While Zucman's estimates are significantly below those of the BCG, quite remarkably, the two sets of estimates follow close variations across time (Alstadsæter, Johannesen and Zucman 2018²⁴). At least part of the difference between these two estimates

¹⁶ Noam Noked, 'Tax Evasion and Incomplete Tax Transparency', *Laws* 7, no. 3 (23 August 2018): 31, <https://doi.org/10.3390/laws7030031>.

¹⁷ Canada Revenue Agency, 'International Tax Gap and Compliance Results for the Federal Personal Income Tax System', 2018.

¹⁸ Note, however, that this covers only the wealth held directly by individuals in their own name. The share of real estate is lower when considering the offshore wealth held indirectly by individuals through corporations, trusts and partnerships.

¹⁹ Jeffrey Owens, 'Offshore Tax Evasion: The Role of Exchange of Information', 2007.

²⁰ The detailed method used by the OECD is not provided.

²¹ James S. Henry, 'The Price of Offshore Revisited: New Estimates for Missing Global Private Wealth, Income, Inequality, and Lost Taxes' (Tax Justice Network Working Paper, 2012).

²² Zucman, *La Richesse cachée des nations*.

²³ Boston Consulting Group, 'Global Wealth 2017: Transforming the Client Experience', 2017.

²⁴ Annette Alstadsæter, Niels Johannesen, and Gabriel Zucman, 'Who Owns the Wealth in Tax Havens? Macro Evidence and Implications for Global Inequality', *Journal of Public Economics*, In Honor of Sir Tony Atkinson (1944-2017), 162 (1 June 2018): 89–100, <https://doi.org/10.1016/j.jpubeco.2018.01.008>.

comes from the fact that, contrarily to Zucman (2017), cash holdings as well as life insurance are included in the BCG's measurement of financial wealth.²⁵

- Computations by Deloitte following a similar approach lead to comparable figures, with an estimated global offshore wealth of US\$ 9.2 trillion for 2014.²⁶

2.2.2 Breakdown by Country of Ownership

Pellegrini, Sanelli and Tosti (2016) break down their estimate of global offshore wealth for five EU Member States (Italy, Germany, France, the Netherlands and Spain) over the 2001–2013 period. They proceed in two steps. They first compute the offshore *portfolio* wealth held by residents in each country. Two alternative hypotheses are considered:

- It is assumed that the offshore wealth held by any given country is proportional to its total foreign assets, as reported in the Coordinated Portfolio Investment Survey²⁷ (CPIS, see Appendix 2).
- The alternative hypothesis is that for any given country offshore wealth is proportional to its share in global GDP.

The second step is simply to add offshore *deposits*²⁸ to these estimates, obtaining the total offshore financial wealth.

As acknowledged by the authors, their hypotheses for the first step above assume that offshore portfolio wealth is determined by the “size” of countries, measured either by the volume of foreign assets or by GDP. They therefore ignore the fact that taxpayers may have varying propensity to evade taxes across countries due to a variety of factors such as the home tax burden, political instability, the extent of corruption, etc.

Their estimated offshore portfolio assets for the five countries, expressed as a percentage of reported assets, range from 3.6% to 23.1%.

Alstadsæter, Johannesen and Zucman (2018) take a different route for computing the breakdown by country of ownership. They make use of cross-border deposits, as opposed to portfolio assets, which are reported by the Swiss National Bank (SNB)²⁹ and the BIS, to infer the offshore wealth owned by each country. Therefore, in contrast with Pellegrini, Sanelli and Tosti (2016), they allow for heterogeneity in the propensity of taxpayers to evade taxes by country. The estimated offshore wealth by country reflects that heterogeneity. Additionally, assumptions are needed to address limitations in the BIS data,³⁰ namely that (i) individuals are not distinguished from corporations; (ii) the

²⁵ Estimates produced by the BCG cover private financial wealth, which includes cash and deposits, mutual funds, equities, debt securities, life insurance payments and pension entitlements.

²⁶ Deloitte, ‘The Deloitte Wealth Management Centre Ranking 2015: Capturing Value in a Shifting Environment’, 2015.

²⁷ International Monetary Fund, ‘Coordinated Portfolio Investment Survey (CPIS)’, n.d., <http://data.imf.org/?sk=B981B4E3-4E58-467E-9B90-9DE0C3367363>.

²⁸ As taken from Bank of International Settlements, see Appendix 2.

²⁹ Swiss National Bank, ‘SNB Data Portal’, n.d., <https://data.snb.ch/en>. See Appendix 2.

³⁰ These assumptions concern (i) the share of deposits that are held by individuals vs. corporations and (ii) the share of deposits that come from shell corporations. Pellegrini, Sanelli and Tosti (2016) are also led to make some assumptions to circumvent these limitations of the BIS data. They assume for example that the share of cross-border deposits by individuals – as opposed to corporations – is comprised between 1/3 and 2/3.

true country of ownership of wealth held through shell companies cannot be known; (iii) some IFCs do not report to the BIS.³¹

Their findings show that there is a great deal of heterogeneity in offshore wealth across countries. In 2007, wealth held offshore by taxpayers from Scandinavian countries, China, India and the USA was less than the world average (about 10% of global GDP), while it was around 15% in continental Europe. Some countries (Russia, some Latin American countries and Gulf countries) exhibited a much larger share, at more than 50% of GDP. In terms of shares of wealth held offshore, estimates from this study are broadly consistent with the breakdown from the BCG. The three regions of the world that hold the greatest share of their wealth offshore – around 25% each – are Latin America, the Middle East and Africa and Eastern Europe.

Two recent publications broadly follow the same approach:

- The IMF recently published estimates of the wealth sheltered in IFCs in 2016 in a sample of 178 countries (34 advanced economies, 83 emerging economies and 61 low-income economies).³² The offshore wealth held by residents of these countries was estimated by applying shares based on deposits data (following the method in Alstadsæter, Johannesen and Zucman 2018) to the global offshore wealth estimate of US\$ 7.6 trillion found in Zucman (2015).³³ The median offshore wealth in the full sample of countries is estimated to 10.29% of GDP, with a breakdown of 11.48% in advanced economies, 12.42% in emerging market economies and 6.49% in low income developing countries. These results emphasizing developing countries are in line with the estimates in Alstadsæter, Johannesen and Zucman (2018).
- A 2018 Canada Revenue Agency (CRA) report presents estimates of Canada's federal tax gap on capital income stemming from hidden offshore investments for the year 2014.³⁴ The CRA considered a global offshore wealth between Can\$ 6.3 trillion (US\$ 5.9 trillion) and Can\$ 9.1 trillion (US\$ 8.6 trillion) at year-end in 2013.³⁵ The Canadian share of this global stock was then estimated to range from 1.21% using comprehensive bilateral deposit data (the method in Alstadsæter, Johannesen and Zucman 2018) to 2.63% using Canadian-reported ownership of foreign securities (the method in Pellegrini, Sanelli and Tosti 2016). With these assumptions, the estimated stock of offshore wealth held by Canadian individuals ranges from Can\$ 75.9 billion to Can\$ 240.5 billion in 2013 (from US\$ 71.3 billion to US\$ 226.1 billion). This is slightly above the estimates found for Canada by Alstadsæter, Johannesen and Zucman (2018) in 2007 (US\$ 68 billion).

³¹ By construction of the BIS statistics, the BIS-reporting jurisdictions are the largest financial centres. The estimated coverage of the cross-border claims by the BIS Locational Banking statistics is at more than 90% (96% for 2016). The IFCs which are not included are therefore small.

³² International Monetary Fund, 'IMF Fiscal Monitor: Capitalizing on Good Times', April 2018, <https://www.imf.org/en/Publications/FM/Issues/2018/04/06/fiscal-monitor-april-2018>.

³³ Gabriel Zucman, *The Hidden Wealth of Nations - The Scourge of Tax Havens* (Chicago: University of Chicago Press, 2015).

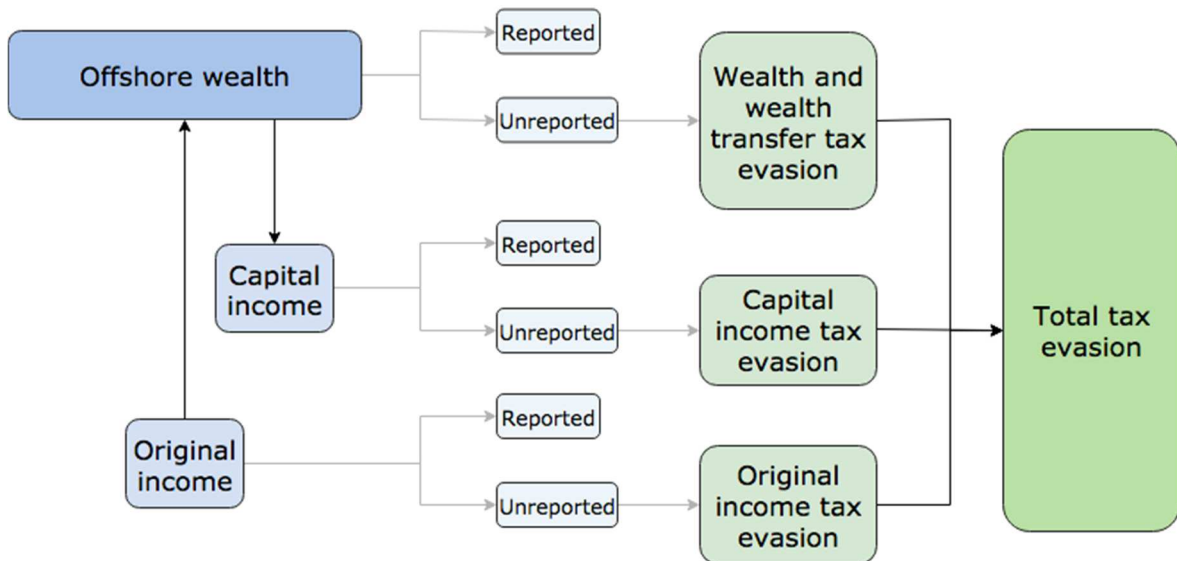
³⁴ Canada Revenue Agency, 'International Tax Gap and Compliance Results for the Federal Personal Income Tax System'.

³⁵ The year-end 2013 exchange rate of \$1.0636 Canadian dollars per one US dollar is used for converting US dollars in Canadian dollars.

2.2.3 International Tax Evasion

The general approach followed by the literature to deduct estimates of tax evasion from estimates of offshore wealth is shown in Figure 2, where the main building blocks are wealth and wealth-transfer tax evasion, capital income tax evasion and original income tax evasion. We use this figure to illustrate detailed approaches in the literature below.

Figure 2. Estimation of International Tax Evasion



Estimating Non-Compliance Rates

As mentioned, not all offshore wealth evades taxes: some taxpayers duly report their holdings in IFCs. To estimate international tax evasion, a rate of non-compliance thus needs to be applied to offshore wealth. The approaches to non-compliance approximation found in the literature are reviewed in this section. In the diagram above non-compliance rates are illustrated as the relationship between the “Reported” and “Unreported” blocks.

A *large* part of offshore wealth is not likely to be reported through tax returns, as the literature shows. Zucman (2017) generates estimates of non-compliance rates by studying the data published by the Swiss Federal Tax Administration.³⁶ Under the EU Savings Directive (EUSD),³⁷ tax evaders holding saving accounts in Switzerland were given two choices: either report their accounts to the fiscal authority of their home country or pay a withholding tax and keep their anonymity. Both the amounts of interest income taxes withheld and the interest income reported on a voluntary basis were published every year by the Swiss Federal Tax Administration. Based on the latest published data, Zucman (2017) estimates that about 25% of the holdings of Europeans

³⁶<https://www.estv.admin.ch/estv/fr/home/internationales-steuerrecht/fachinformationen/eu-zinsbesteuerung/orientierungen.html> .

³⁷ See page 45.

residents in Switzerland were taxed or reported under the EUSD, which leads to a non-compliance rate of 75%.³⁸

Other studies, also based on Swiss data, found even larger estimates of the non-compliance rate. Two US Senate reports³⁹ found that 90% of the wealth held by US citizens at UBS and Credit Suisse was unreported in 2008. Using data leaked from HSBC Switzerland (see Swiss Leaks in Appendix 2) as well as tax returns data from tax administrations, Alstadsæter, Johannesen and Zucman (2017)⁴⁰ establish that 90%–95% of the wealth owned by Danish and Norwegian households at HSBC Switzerland was not reported in 2007, either.

Roussille (2015)⁴¹, still based on Swiss data, calculates that the share of the European offshore wealth held in Switzerland as taxed or reported under the EUSD has gone up from 8% in 2006 to around 25% in 2013. However, Zucman (2017) argues that at least part of this increase is a mechanical consequence of the fact that the volume of assets held in Switzerland by European individuals in their own name (as opposed to funds channelled through screening entities) has decreased following the introduction of the EUSD.

Pellegrini, Sanelli and Tosti (2016) distinguish between portfolio securities and bank deposits. They use a rate of non-compliance of 90%⁴² for portfolio assets. As for cross-border deposits, they estimate (again based on Swiss Federal Tax Administration data) a lower rate of non-compliance, between 60 and 80%.

Finally it is worth noting that the increasing pressure from the international community in recent years (see below) may have convinced some taxpayers to repatriate their assets and/or report them, as suggested by the evolution of estimated non-compliance rates found in the literature just reported: non-compliance rate estimates based on data over the 2007–2008 period are around 90–95%, whereas a more estimates based on 2013 data is substantially lower (75%). This is consistent with anecdotal evidence from voluntary disclosure programmes (see section 2.3.4), as well as reporting of foreign accounts outside these programmes (see section 2.3.6). Johannesen et al. (2018) note a large increase in the reporting of offshore funds, both within and outside voluntary disclosure programmes.

Tax Evasion on the Unreported Stock of Wealth

As illustrated in Figure 2, wealth hidden in IFCs (thus adjusted for estimated rates of non-compliance) may escape taxation on various grounds. Firstly, offshore wealth generates capital income (interest, dividends, capital gains, etc.) that should be taxed in the taxpayer's home country. Secondly, the stock of financial wealth itself is subject to taxes in some countries, such as France, Norway and Spain. Similarly, wealth transfers (typically inheritances) are taxed in most countries. We review below how the literature has addressed these aspects.

³⁸ Details about the computation method can be found in the online Appendix of Gabriel Zucman, 'Taxing across Borders: Tracking Personal Wealth and Corporate Profits', *Journal of Economic Perspectives* 28, no. 4 (November 2014): 121–48, <https://doi.org/10.1257/jep.28.4.121>.

³⁹ United States Senate, 'Tax Haven Banks and U.S. Tax Compliance', 2008; United States Senate, 'Offshore Tax Evasion: The Effort to Collect Unpaid Taxes on Billions in Hidden Offshore Accounts', 2014.

⁴⁰ Annette Alstadsæter, Niels Johannesen, and Gabriel Zucman, 'Tax Evasion and Inequality', Working Paper (National Bureau of Economic Research, 2017), <https://doi.org/10.3386/w23772>.

⁴¹ Nina Roussille, 'Tax Evasion and the "Swiss Cheese" Regulation', 2015.

⁴² Quantitative assumptions behind this non-compliance rate are not provided by the authors, who cite a "judgemental basis".

Capital Income Tax Evasion

Applying a 75% non-compliance rate to the estimated US\$ 8.3 trillion global offshore wealth, Zucman (2017) values the total unreported wealth at US\$ 6.2 trillion in 2016. Next, based on the rates of return required from large diversified investment funds, he assumes that the average return on private capital – stocks, bonds, bank deposits and so on – is 6%. On that basis, and using the top tax rates,⁴³ tax evasion on the capital income earned on hidden offshore accounts is valued at US\$ 105 billion in 2016.

Henry (2012) finds an estimated capital income tax evasion of US\$ 189 billion per year by applying a 3% rate of return to the lower bound of his global offshore financial wealth estimate (US\$ 21 trillion) and then by assuming that this capital income is taxed at a 30% rate.

For their calculation of the capital income, Pellegrini, Sanelli and Tosti (2016) consider varying rates of return by category of assets – i.e. shares, bonds and bank deposits.⁴⁴ After determining the corresponding capital income, they calculate the amount of tax evasion on capital income by again applying top tax rates (for deposit interest, bond interest and dividends) in three groups of countries – Italy, OECD and non-OECD, using the statutory tax rates for Italy. For the rest of the world (OECD and non-OECD countries) they compute GDP-weighted average tax rates. They find that the yearly capital income tax evasion ranges on average from US\$ 20 to US\$ 42 billion over the period 2001-2013, depending on the assumptions retained for the rates of return and the rates of non-compliance.⁴⁵ This is significantly less than the estimates in Zucman (2017) and Henry (2012). The difference with Zucman's estimate is essentially due to the use of differing rates of return, given similar estimated amounts of unreported offshore wealth. In contrast, the gap with the TJN estimate (which uses a comparable rate of return – around 3%) is almost entirely due to larger estimates of offshore wealth (US\$ 21 trillion vs. US\$ 7 trillion).

The 2018 CRA study⁴⁶ uses varying non-compliance rate scenarios, assuming that 20-25% of the offshore wealth found in IFCs is reported for tax purposes (Zucman 2014, 2017), or, based on Pellegrini, Sanelli and Tosti (2016), specific non-compliance rates for bank deposits (20-40% reported) and portfolio securities (10% reported). They then apply a 1% rate of return on bank deposits (reflecting the low-interest rate environment in 2014), 4.6% on debt securities, 2% on dividend income and 8% on realized capital gains. Based on these assumptions, the unreported investment income earned in tax year 2014 on offshore wealth held by Canadian individuals (at year-end in 2013) was estimated to lie between Can\$ 4.1 billion and Can\$ 15.2 billion. The authors finally apply an effective tax rate of 20% on this unreported income to obtain an estimated tax gap ranging from Can\$ 0.8 billion to Can\$ 3.0 billion for 2014 (0.6% to 2.2% of personal income tax revenue and 0.04% to 0.2% of GDP).

Wealth-Transfers and Wealth Taxation

The two additional forms of wealth-related evasion are tax evasion on wealth transfers and tax evasion on the stock of wealth. Zucman (2017) assumes that 3% of the assets

⁴³ The choice of top tax rates arises from the presumption that international tax evasion is a practice almost entirely attributable to the richest individuals in society – see discussion below.

⁴⁴ These rates of return are computed using data from the European Central Bank and the IMF (Balance of Payment Statistics).

⁴⁵ Global estimated tax evasion is almost entirely due to tax evasion by residents of OECD countries. It is estimated for these countries to lie between US\$ 19.1 and US\$ 39 billion, whereas capital income tax evasion in non-OECD countries is estimated at US\$ 1.2 – US\$ 2.8 billion only.

⁴⁶ Canada Revenue Agency, 'International Tax Gap and Compliance Results for the Federal Personal Income Tax System'.

held in IFCs change hands each year and applies a worldwide average tax rate of 32% to these assets. This leads to an estimated revenue loss on inheritances taxes of US\$ 47 billion in 2016. The revenue loss on wealth taxes (such as France’s solidarity tax on wealth) is estimated by Zucman (2017) at about US\$ 11 billion for the same year.

Disparities Across Countries and Individuals

In total, the global loss in government revenue is estimated at US\$ 163 billion by Zucman (2017). This is about 1% of total revenue raised by governments worldwide in 2016, or 0.2% of the world GDP. This aggregate figure may appear modest, but it conceals substantial heterogeneity:

- Firstly, some economies are more affected by international tax evasion than others. Zucman (2017) provides a breakdown of this tax gap by regions. Europe has the largest tax revenue loss in absolute terms, at US\$ 58 billion. Offshore financial wealth held by Europeans is, however, “only” 11% of their net total financial wealth. The US have an even lower offshore wealth share of 4%, with a related tax evasion of US\$ 31 billion. This share is much larger in developing countries. It is 44% for Africa, implying tax evasion of US\$ 58 billion. It is also extremely high in Gulf countries (58%), but tax evasion is negligible in these countries as they have almost non-existent capital taxes.
- Secondly, this form of tax evasion benefits almost entirely the wealthiest. Using data from the HSBC Switzerland leak, as well as tax audits returns in Norway, Sweden and Denmark, Alstadsæter, Johannesen and Zucman (2017) show that the bulk of international tax evasion is attributable to the top 0.1% richest individuals. As reported by Zucman (2017) on the US, top 0.1% individuals paid US\$ 210 billion in taxes in 2016. The above-mentioned estimated US tax evasion – US\$ 31 billion – thus represents around 15% of their tax bill.

The 2018 IMF study⁴⁷ aggregates lost tax revenue on capital income, inheritances and wealth, assuming a 8% nominal rate of return on offshore assets, and, following Zucman (2015, 2017, a 3% mortality rate (the so-called economic flow of inheritance).⁴⁸ It is found that the median tax gap is a little more than 0.1% of GDP, with a breakdown of 0.24% in advanced economies, 0.13% in emerging market economies, and 0.07% in low income developing countries. Across the 178 countries covered by the study, the global median tax gap of 0.1% in GDP terms is lower than the average tax gap of 0.2% of GDP found in Zucman (2017).

Tax Evasion on Original Concealed Income

The unreported capital held offshore has its source in income that likely evades taxes in the home country in the first place (“Original income” in Figure 2). Despite being of central interest to government officials (Grinberg 2012⁴⁹), this component of tax evasion is especially difficult to estimate as it requires additional assumptions about the way offshore wealth was initially formed. Pellegrini, Sanelli and Tosti (2016) is the only recent contribution that covers that aspect. In that study, wealth transferred every year to offshore accounts is approximated by:

- Computing the difference between end-of-year and beginning-of-year offshore wealth.

⁴⁷ International Monetary Fund, ‘IMF Fiscal Monitor’.

⁴⁸ It is implicitly assumed in this study that the non-compliance rate is 100%.

⁴⁹ Itai Grinberg, ‘The Battle Over Taxing Offshore Accounts’, *UCLA Law Review*, 2012, <https://www.uclalawreview.org/the-battle-over-taxing-offshore-accounts/>.

- Subtracting from this number the capital income generated during the year.
- Adding the amounts withdrawn from offshore accounts.

Data on this last point being unavailable, one needs to make assumptions. The authors consider that “the whole amount of the undeclared assets held offshore at the end of 2013 represents earned income that escaped personal income tax when originally earned”. They therefore assume (i) that the entire wealth hidden in IFCs originally escaped taxation in the home country, and (ii) that capital income and the sums withdrawn every year net out each other. Under these assumptions, they compute the cumulative tax evasion on the originally concealed income up until 2013. They do not provide a breakdown of tax evasion on a yearly basis.

To compute tax evasion, they next apply top personal income tax rates, for Italy, OECD and non-OECD countries respectively. At the global level, their estimated personal income tax evasion on the original concealed income ranges from US\$ 2.1 to US\$ 2.8 trillion. Because this figure is an estimate of cumulative tax evasion at end 2013, it cannot be compared with the yearly tax evasion estimates discussed above.

2.3 The Fight Against International Tax Evasion

Fighting international tax evasion is sharing information. The starting point of the ongoing efforts to curb international tax evasion is the realization that when third parties (i.e. foreign banks, foreign tax authorities) report tax, revenue or financial information to home tax authorities, taxpayers have few opportunities to avoid detection of unreported income.⁵⁰ Conversely, in the absence of international information exchange, it is difficult if not impossible to detect international tax evasion through the traditional methods of tax audits.⁵¹

Fighting international tax evasion is thus all about information sharing. This section reviews the initiatives developed by the international community to promote information exchange and transparency. They are summarised in Figure 3. Three main episodes that marked a significant shift in the fight against international tax evasion should be highlighted:

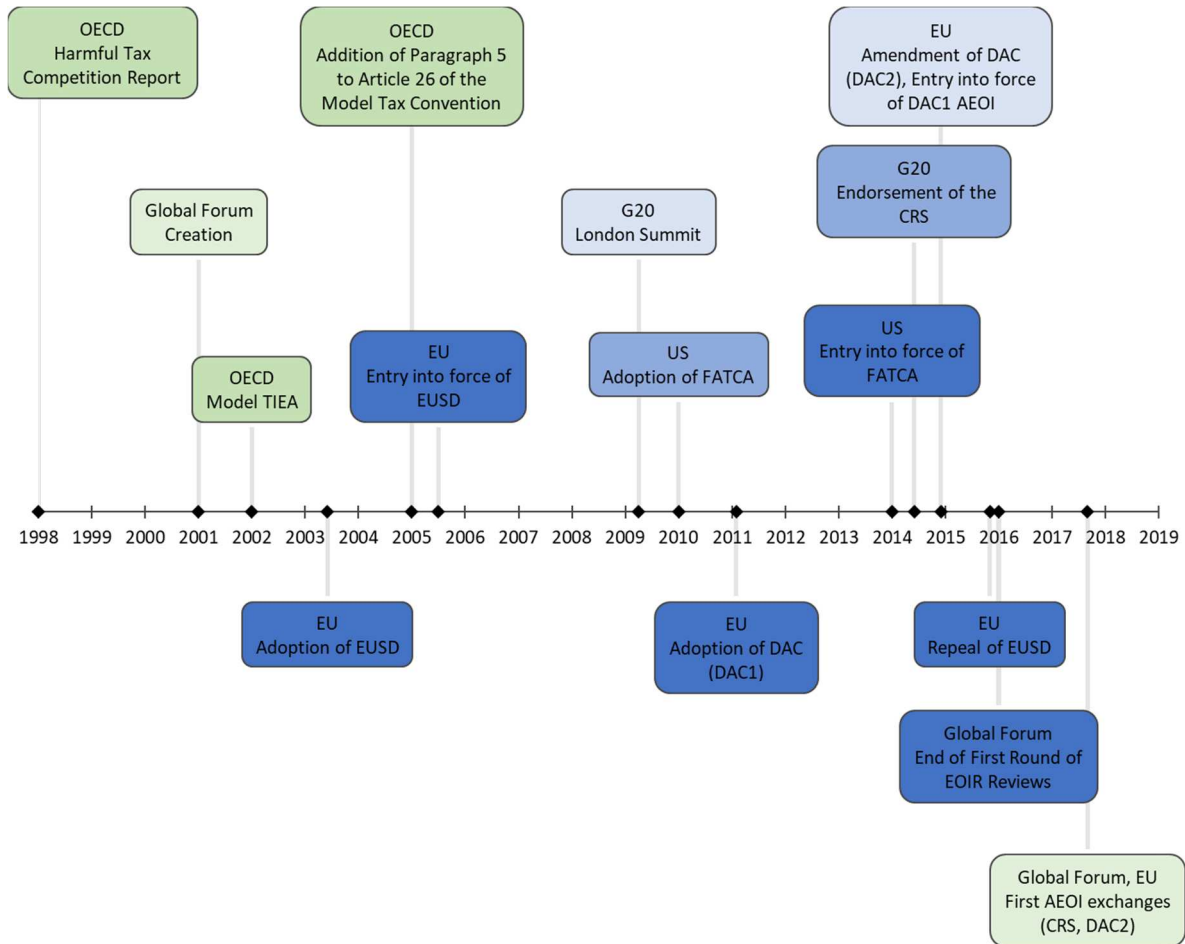
- 2004/2005: Announcement and implementation of the EUSD. This constituted the first major effort to automatically exchange information between EU Member States and third countries such as Switzerland.
- 2009/2010:
 - Global crackdown on international tax evasion (April 2009 London G20 Summit). The London Summit was the starting point of a worldwide systematic application of the Exchange of Information on Request (EOIR) Standard.
 - Adoption of Foreign Account Tax Compliance Act (FATCA) by the US Congress.
- 2014:
 - Adoption of the Common Reporting Standard (CRS) by the OECD Council and of the enhanced EU Directive on Administrative Cooperation

⁵⁰ Slemrod, ‘Tax Compliance and Enforcement’; Henrik Jacobsen Kleven et al., ‘Unwilling or Unable to Cheat? Evidence From a Tax Audit Experiment in Denmark’, *Econometrica* 79, no. 3 (1 May 2011): 651–92, <https://doi.org/10.3982/ECTA9113>.

⁵¹ Treasury Inspector General for Tax Administration, ‘A Combination of Legislative Actions and Increased IRS Capability and Capacity Are Required to Reduce the Multi-Billion Dollar U.S. International Tax Gap’, 2009.

- (DAC2).
- o Implementation of FATCA.

Figure 3. Timeline of International Initiatives Towards Information Exchange



2.3.1 The OECD

Double Taxation Agreements

The OECD has had a central role in coordinating and providing tools and standards for the fight against tax evasion, starting with Double Taxation Agreements (DTAs).⁵² In 1977, the OECD published the final version of the Double Taxation Convention on

⁵² A DTA is an agreement between the governments of two countries (a bilateral convention) or between more than two countries (a multilateral convention) with the objective of (i) Avoiding double taxation, which would otherwise arise from international transactions or if each country levied their own tax on the same income or asset; (ii) Allocating collected tax between the governments that are parties to the DTA; (iii) and Preventing the evasion of taxation on international transactions.

Income and Capital (hereinafter the “OECD Model Tax Convention”).⁵³ The Convention’s Article 26 on Exchange of Information has become a leading framework for international exchange of information in tax matters, as we detail below.

The OECD Harmful Tax Practices Project

In 1998, the OECD published a landmark report on Harmful Tax Competition, promoting internationally accepted criteria for IFCs and harmful tax regimes,⁵⁴ which were classified into two categories in a 2000 follow-up report on Harmful Tax Practices:⁵⁵ cooperative and non-cooperative. Among the criteria identifying non-cooperative jurisdictions, the lack of effective exchange of information was key.

This effort led to the creation of the Global Forum on Taxation in 2001, which would later become the Global Forum on Transparency and Exchange of Information for Tax Purposes (hereafter the “Global Forum”, see Box 2), and to the development of the international standard on Exchange of Information on Request (EOIR).

Exchange of Information on Request

Emergence of the EOIR Standard

Building on the work of the Global Forum, in 2002 the OECD issued the Model Agreement on Exchange of Information on Tax Matters, which is a model for bilateral Tax Information Exchange Agreements (hereafter the OECD “Model TIEA”).⁵⁶ It sets a framework for tax authorities to request and obtain information from their international counterparts on the offshore affairs of their taxpayers. TIEAs are intended to supplement DTAs or for use in countries for which a DTA is not an appropriate instrument, mainly because they have no or low taxes on income or profits.

In 2005, influenced by the work of the Global Forum and the adoption of the Model TIEA, the OECD Model Tax Convention (and its Commentary) was modified. A new Paragraph 5 in Article 26 was adopted, stating that a contracting state cannot “decline to supply information solely because the information is held by a bank, other financial institution, nominee or person acting in an agency or a fiduciary capacity or because it relates to ownership interests in a person”. This was a major improvement meant to override banking and trust secrecy.

The resulting EOIR Standard, as developed by the OECD and endorsed by the G8, the G20 and the United Nations, is primarily embodied in the above 2002 Model TIEA and the 2005 version of Article 26 of the Model Tax Convention and Commentary. It requires (1) information exchange upon request where it is “foreseeably relevant” to the administration and enforcement of the treaty partner’s domestic laws, (2) no restrictions on exchange caused by bank secrecy or domestic tax interest requirements, (3) availability of reliable information and power to obtain that information, (4) respect for taxpayers’ rights and (5) ensuring that information that is exchanged remains strictly confidential.

⁵³ OECD, *Model Tax Convention on Income and on Capital 2014 (Full Version)* (Paris: Organisation for Economic Co-operation and Development, 2015), <http://www.oecd-ilibrary.org/content/book/9789264239081-en>.

⁵⁴ OECD, *Harmful Tax Competition: An Emerging Global Issue* (Paris: Organisation for Economic Co-operation and Development, 1998), <http://www.oecd-ilibrary.org/content/book/9789264162945-en>.

⁵⁵ OECD, *Towards Global Tax Co-Operation: Progress in Identifying and Eliminating Harmful Tax Practices* (Paris: Organisation for Economic Co-operation and Development, 2000), <http://www.oecd-ilibrary.org/content/book/9789264184541-en>.

⁵⁶ <http://www.oecd.org/tax/exchange-of-tax-information/taxinformationexchangeagreementstieas.htm>

Box 2. The Global Forum

The Global Forum is the continuation of a forum created in the early 2000s in the context of the OECD's work on the risks to tax compliance posed by non-cooperative jurisdictions. The original members of the Global Forum consisted of OECD countries and jurisdictions that had agreed to implement transparency and exchange of information standards. The Global Forum was restructured in September 2009 in response to the G20 call to strengthen implementation of these standards.

The Global Forum now has 149 members – including all G20 and OECD countries, all international financial centres and many developing countries – and is the premier international body for ensuring the implementation of the internationally agreed standards of transparency and exchange of information in the tax area. It has adopted and promoted two standards, one that facilitates cross-border exchange of tax-relevant information on request (the EOIR Standard) and another that enables an automatic exchange of information on the financial accounts of non-residents (the AEOI Standard). When joining the Global Forum, a country commits to implementing these standards.

Through an in-depth peer review process, the restructured Global Forum monitors that its members fully implement the standards of transparency and exchange of information they have committed to. It also works to establish a level playing field, even among countries that have not joined the Global Forum yet.

The 2009 "Crackdown"

The economic crisis of 2008, as well as two major tax scandals,⁵⁷ gave further impetus to the push for global transparency. The 2009 London G20 Summit called attention to a document that the OECD published during the summit (2 April 2009) that listed countries that had not committed to (black list) or did not substantially implement (grey list) the EOIR Standard.⁵⁸ For the first time, an OECD grey list included OECD member countries: Austria, Belgium, Luxembourg and Switzerland. These four countries immediately reacted by announcing their willingness to apply the standard defined in Article 26 of the OECD Model Tax Convention through bilateral treaties. By September 2009, they had been moved to the white list.⁵⁹

Between the April summit and the end of 2009, the world's non-cooperative jurisdictions signed a total of more than 300 bilateral information exchange treaties, either in the form of a DTA with the 2005 extended Article 26 or of a TIEA.⁶⁰

Current Implementation Status

The EOIR standard is now virtually universally accepted. As of December 2017, out of the 132 ratings assigned through the Global Forum's internal review process, a single

⁵⁷ In 2007, files with clients' names from an accounting firm in Liechtenstein was transferred to Germany. These files contained a list of noncompliant German taxpayers. It provoked a major political crisis, resulting in the resignation of a top German politician. Shortly after, in 2008, the UBS scandal started in the US, with thousands of undeclared bank accounts of US taxpayers under investigation.

⁵⁸ <https://www.oecd.org/tax/exchange-of-tax-information/42497950.pdf> .

⁵⁹ To belong to the white list, a country had to sign a minimum of 12 DTAs, with an extended exchange of information clause corresponding to the OECD Model Tax Convention, or of 12 TIEAs.

⁶⁰ See <http://www.oecd.org/tax/exchange-of-tax-information/taxinformationexchangeagreementstieas.htm> for the full list of TIEAs signed to date.

jurisdiction, Trinidad and Tobago, was rated as “non-compliant” with the EOIR Standard. The world’s main IFCs – the Channel Islands, Hong Kong, Singapore, Switzerland and Panama – are rated as “largely compliant”.⁶¹

Regarding Switzerland specifically, the 2016 peer review report⁶² observed that “Switzerland has taken active steps to update its network of exchange of information agreements by signing new agreements and protocols to existing agreements that include the language of paragraphs 4 and 5 of Article 26 of the OECD Model Tax Convention”. As of 2016, Switzerland had signed 53 DTAs in accordance with the EOIR Standard, of which 46 were in force. It had also signed 10 TIEAs, 7 of which were in force. During the period under review (July 2012 to June 2015), Switzerland received more than 3000 EOIR requests from more than 50 treaty partners and has used its powers to collect the information requested. Furthermore, on 15 October 2013, Switzerland signed the Multilateral Convention on Mutual Administrative Assistance in Tax Matters (hereafter the “Multilateral Convention”), as amended in 2011.⁶³ Its entry into force on 1 January 2017 extended Switzerland’s information exchange network to as many as 102 countries and territories.

Automatic Exchange of Information

However, EOIR alone is not sufficient to combat international tax evasion. A major limitation of EOIR is that tax administrations are required to specifically name or otherwise identify the potentially evading taxpayer in order to know which jurisdiction to ask the information from, to know the financial institution in which a taxpayer may hold her account, and to have a credible suspicion of tax evasion, lest the request is denied as a “fishing expedition”.⁶⁴

Recognising its added value in bringing greater tax transparency, in 2014 the Automatic Exchange of Information (AEOI) Standard was developed by the OECD, with G20 support.⁶⁵ The AEOI Standard on Financial Account Information mainly consists of: (i) the Common Reporting Standard (CRS)⁶⁶ and (ii) a legal and operational basis for effective implementation.

⁶¹ OECD, ‘Global Forum on Transparency and Exchange of Information for Tax Purposes: Tax Transparency 2017, Report on Progress’, 2017.

⁶² OECD, *Global Forum on Transparency and Exchange of Information for Tax Purposes Peer Reviews: Switzerland 2016* (Paris: Organisation for Economic Co-operation and Development, 2016), <http://www.oecd-ilibrary.org/content/book/9789264258877-en>.

⁶³ OECD and Council of Europe, *The Multilateral Convention on Mutual Administrative Assistance in Tax Matters* (Paris: Organisation for Economic Co-operation and Development, 2011), <http://www.oecd-ilibrary.org/content/book/9789264115606-en>. The Multilateral Convention was developed jointly by the Council of Europe and the OECD and opened for signature by the Member States of both organisations on 25 January 1988. The Convention was amended to respond to the call of the G20 at its April 2009 London Summit to align it to the international standard on exchange (the OECD Model Tax Convention) and to open it to all countries. It was opened for signature on 1 June 2011.

⁶⁴ According to the revised commentary to Article 26 of the OECD Model Tax Convention released on 17 July 2012, a request for information relating to a group of unidentified taxpayers will be viewed as a “fishing expedition” unless the requesting State can provide the following to the requested State: (1) a detailed description of the group, (2) the specific facts and circumstances underlying the request, (3) an explanation of the applicable law, and (4) why there is reason to believe that the taxpayers in the group for whom information is requested have been non-compliant with that law.

⁶⁵ OECD, ‘Standard for Automatic Exchange of Financial Account Information in Tax Matters, Second Edition’, 2017, http://www.oecd-ilibrary.org/taxation/standard-for-automatic-exchange-of-financial-account-information-in-tax-matters-second-edition_9789264267992-en.

⁶⁶ The CRS is a common standard on the information to be reported by financial institutions and exchanged with home jurisdictions.

International Commitments to AEOI

The Global Forum adopted the AEOI Standard (including the CRS) shortly after its endorsement by the February 2014 G20 Summit and launched a commitment process. It required all Global Forum members – except developing countries without financial centres – to commence exchanges of information in 2017 or 2018, and for exchanges to take place with “all interested appropriate partners” (all those that are interested in receiving information and who meet the required standards of confidentiality and the proper use of data).

As of November 2017, 49 countries had committed to undertaking the first exchanges in 2017, and 53 countries in 2018. Further, three developing countries – Albania, Maldives and Nigeria – had committed to undertaking the first exchanges by 2019/2020.⁶⁷

Legal Implementation

Appendix 3 lists all countries that adopted the AEOI Standard and the date of the first intended information exchange. The Multilateral Convention above (as amended in 2011) as well as the EU’s Directive on Administrative Cooperation (DAC)⁶⁸ have been the main legal instruments used to operationalise AEOI. The Multilateral Convention provides a general legal framework under which automatic cross-border tax information exchange is established among a broad range of sovereign participants. The number of participants to the Multilateral Convention has been growing rapidly. In 2009, only 17 countries had signed the Convention. Today, 117 jurisdictions – including major financial centres such as the Cayman Islands and Singapore – participate.⁶⁹

All early adopters (jurisdictions starting exchanges in 2017) participate in the Multilateral Convention, although some also use other legal bases.⁷⁰ Most of the jurisdictions implementing AEOI in 2018 are also part of the Multilateral Convention. This is, importantly, the case for Singapore and Switzerland. A few countries (the Bahamas, Brunei, Hong Kong, Macau and Panama) have decided instead to use bilateral agreements.⁷¹

In addition, the implementation of the Standard requires a separate administrative agreement that links the CRS and the legal basis for the exchange between the competent authorities of the participating countries. This can be a multilateral agreement, such as the Multilateral Competent Authority Agreement, which relies on the Multilateral Convention, or a bilateral one. In the multilateral context, the Multilateral Convention is the general legal basis for a number of instruments of cooperation, and the Multilateral Competent Authority Agreement is the derived specific instrument allowing CRS automatic exchange in practice.

⁶⁷ <https://www.oecd.org/tax/transparency/AEOI-commitments.pdf>.

⁶⁸ The EU’s DAC is reviewed below.

⁶⁹ For information on jurisdictions covered by the Convention, signatories and ratifications, see http://www.oecd.org/tax/exchange-of-tax-information/Status_of_convention.pdf.

⁷⁰ The Multilateral Convention does not apply for exchanges in all cases, including for exchanges within the European Union and for exchanges between certain territories. Exchanges within the European Union are conducted under the EU’s DAC, which implements the AEOI Standard within the EU (see below); exchanges between Liechtenstein and Member States of the European Union are conducted under the European Union’s third country agreements delivering equivalent exchange specifications; and exchanges between Anguilla, Bermuda, the British Virgin Islands, the Cayman Islands, Gibraltar, Guernsey, the Isle of Man, Jersey, Montserrat, the Turks and Caicos Islands and the United Kingdom take place under bilateral arrangements as the Multilateral Convention cannot be used for exchanges between them.

⁷¹ China has agreed in principle to extend the Multilateral Convention to both Hong Kong and Macau.

2.3.2 The European Union

The EUSD

The objective of the 2003 EUSD⁷² was to establish effective taxation of the foreign interest income of individual residents in the EU. Importantly, it applied only to accounts held in the name of EU-based individual owners, not to those held through shell companies, trusts or foundations.⁷³

The EUSD required Member States to select one of two alternative regimes: (i) automatic information exchange; or (ii) a withholding tax. The first regime required banks to report the interest income earned by foreign EU households to the host tax authorities, who then automatically forwarded this information to the households' home tax authorities. The second regime required banks to levy a withholding tax on the interest income of foreign EU households at the rate of 15% in 2005 (raised to 20% in 2008 and 35% in 2011). Since the withholding tax effectively replaced taxation in the home country, 75% of the revenue from the tax was transferred to the households' respective home countries. In addition, under this second regime, households were given the choice of escaping the withholding tax regime by requesting that their interest income information be reported to their home tax authorities.

Most Member States adopted the information exchange regime. The three Member States that had supported bank secrecy – Austria, Belgium⁷⁴ and Luxembourg – as well as many of the dependent territories of the United Kingdom and the Netherlands, including the Channel Islands, elected instead the withholding tax regime.⁷⁵

Reflecting the global push for transparency reported above, Switzerland, as well as 4 smaller non-EU European IFCs (Andorra, Liechtenstein, Monaco and San Marino), also entered specific bilateral agreements with the EU to implement the same EUSD mechanism, opting for the withholding tax mechanism.

⁷² Council Directive 2003/48/EC on Taxation of Savings Income in the Form of Interest Payments, 2003. The Directive came into force in July 2005.

⁷³ In March 2014, the EU amended the EUSD, forcing financial institutions to identify ultimate beneficial owners of accounts, and use those identities as the basis for withholding tax or exchanging information with the investor's home tax authority. See Council Directive 2014/48/EU of 24 March 2014 amending Directive 2003/48/EC on taxation of savings income in the form of interest payments.

⁷⁴ Belgium later decided to discontinue applying the transitional withholding tax as from 1 January 2010 and exchange information as of that date.

⁷⁵ Quoting (with adequate editing) from the EU's and Luxembourg official websites:

Ten relevant Member States' dependent or associated territories (the Channel Islands of Jersey and Guernsey, the Isle of Man and the dependent or associated territories of the Netherlands and the United Kingdom in the Caribbean) took a commitment in the form of written agreements or arrangements with each of the 28 EU Member States in order to provide, starting on 1 July 2005 (1 January 2007 for Bulgaria and Romania, and from 1 July 2013 for Croatia), for the same measures as those in the Directive, i.e. applying a system of information reporting or, during the transitional period of the Directive, levying a withholding tax on the same terms as Luxembourg or Austria. Four of these territories (Aruba, Anguilla, the Cayman Islands and Montserrat) provided automatic exchange of information from the date of the start of application of the relevant agreements on 1 July 2005. The following UK dependent or associated territories also later moved to automatic exchange of information: Guernsey as from 1 July 2011; Isle of Man as from 1 July 2011; the British Virgin Islands as from 1 January 2012, and Turks and Caicos Islands as from 01 July 2012. Jersey moved to automatic exchange of information as from 01 January 2015. The dissolution of the Netherlands Antilles on 10 October 2010 resulted in two new constituent countries (Curaçao and Sint Maarten), which (Curaçao actually committed to switch to cooperation under the Global Standard from 1/1/2016) continued to levy a withholding tax on the same terms currently applied by Austria, and three special municipalities which are part of the Netherlands (Bonaire, Sint Eustatius and Saba) and provided automatic exchange of information.

Appendix 3 lists the countries that implemented the EUSD (specifying which chose the withholding tax regime).

The Directive on Administrative Cooperation

In February 2011, the EU adopted the DAC, which, *inter alia*, provides for the automatic information exchange among Member States for categories of income other than interest.⁷⁶ The DAC requires that, for taxable periods beginning with 1 January 2014, each Member State's competent authority automatically report to other Member States the information the communicating Member State holds on: income from employment; director's fees; pension income; life insurance products not covered by other EU legal instruments on information exchange and other such measures; income from immovable property.

The DAC was amended in December 2014 to comply with the CRS, and accordingly extended the cooperation between tax authorities to automatic exchange of financial information, namely dividends, interests, other capital incomes, gross proceeds as well as financial account balances – information on accounts held in banks.⁷⁷ As this new Directive, referred to as DAC2, is "generally broader in scope than Directive 2003/48/EC", the EUSD was repealed on 10 November 2015.⁷⁸ Automatic exchange of information of financial account data under DAC2 started in September 2017 on information related to tax year 2016. Agreements signed by the EU with Liechtenstein and San Marino allowed similar exchanges to take place between these non-EU countries and the EU Member States from the same date. Switzerland, Monaco and Andorra in turn started automatic exchanges with the EU Member States from 1 September 2018 on information related to tax year 2017, on a similar legal basis provided by agreements signed by these non-EU countries with the EU.

2.3.3 The US: FATCA

In 2010, following the UBS scandal and President Obama's campaign's commitment to crack down on international tax evasion, the US Congress enacted sections 1471 to 1474 of the Internal Revenue Code (generally known as FATCA).

Under FATCA, Foreign Financial Institutions (FFIs) are required to automatically report information on financial accounts of US persons⁷⁹ and foreign entities with significant US ownership (US accounts) directly to the Internal Revenue Service (IRS), beginning in 2014. FATCA imposes a withholding tax of 30% on payments from US sources to the FFIs that do not comply, including on payments to the FFI customers.

FATCA initially required that compliant FFIs directly report information to the IRS. It was complemented in 2012 by a series of Intergovernmental Agreements (IGAs), which implement FATCA compliance at the country level, as opposed to the FFI level.⁸⁰ As of

⁷⁶ Council Directive 2011/16/EU of 15 February 2011 on administrative cooperation in the field of taxation and repealing Directive 77/799/EE.

⁷⁷ Council Directive 2014/107/EU of 9 December 2014 amending Directive 2011/16/EU as regards mandatory automatic exchange of information in the field of taxation.

⁷⁸ Council Directive (EU) 2015/2060 of 10 November 2015 repealing Directive 2003/48/EC on taxation of savings income in the form of interest payments.

⁷⁹ A US person includes any citizen or resident of the United States.

⁸⁰ There are two IGA models. The Model 1 IGA is based on reporting by financial institutions to the tax authority of the country in which they are located, which in turn transmits information to the IRS on the FFI's behalf. The Model 2 IGA specifies that the participating country agrees to support FATCA, but the FFI must individually transmit information to the IRS.

2017, 113 countries had agreed to information exchange by signing an IGA.⁸¹ The list of these countries is detailed in Appendix 3. They include Switzerland, Panama, the Cayman Islands, Singapore, Hong Kong and all major IFCs.

2.3.4 Voluntary Disclosure Programmes

The above international initiatives to fight offshore tax evasion by individuals have been supported in many OECD countries by voluntary disclosure programmes. These programmes are opportunities offered by tax administrations to allow non-compliant taxpayers to settle their illegal tax affairs under specified terms. The rationale for such programmes is that they allow for a reduction in the administrative enforcement costs of audits, litigation and criminal proceedings, while generating tax revenue.

While these programmes have varied across countries in terms of waiving all or some of the tax, interest, penalties and/or waiving prosecution rights related to each voluntary disclosure case, they typically have not waived taxes due themselves.

A 2015 OECD survey⁸² covering 47 countries reveals that at the time, most of the surveyed countries operated a general voluntary disclosure programme. Some countries operated a temporary disclosure programme, either alone – e.g. Argentina – or in coexistence with a more general tax amnesty programme – e.g. United Kingdom. The general features of these programmes are as follows:

- As noted, the amount of tax due is generally not reduced. In some programmes, however, the tax is reduced and/or computed differently.
- Interest charges are sometimes reduced.
- Close to half of the countries reduced the monetary penalties to nil. Where penalties are not eliminated, they are often substantially reduced.
- The non-compliant taxpayer can avoid imprisonment through voluntary disclosure under such programmes, except in a few countries. In most countries, the voluntary disclosure is considered a mitigating circumstance.

Pellegrini, Sanelli and Tosti (2016) report data on offshore voluntary schemes obtained from national tax administrations in several countries – Italy, UK, Spain, Germany, France, the US and Australia.⁸³ In all countries but Italy, the amount of taxes recovered is quite modest, as it ranges between 0.04% and 0.12% of GDP. In Italy, the programme launched in 2009-2010 allowed for the recovery of €5.6 billion in taxes, or 0.35% of GDP, corresponding to the disclosure of around €100 billion of offshore assets. The success of this programme can certainly be attributed to the extremely favourable conditions offered to the Italian taxpayers.

Emerging countries such as Brazil, Indonesia, Mexico, Chile, Kenya and Turkey recently launched new programmes with specific provisions promoting asset repatriation. These initiatives have been reported to be largely successful.⁸⁴

Finally, the Canada Revenue Agency reports that, from 2011-2012 to 2016-2017, the number of completed offshore disclosures increased from 3,540 to 9,780 and the estimated unreported foreign income increased from Can\$ 309 million to Can\$ 909

⁸¹ <https://www.treasury.gov/resource-center/tax-policy/treaties/Pages/FATCA.aspx>.

⁸² OECD, 'Update on Voluntary Disclosure Programmes: A Pathway to Tax Compliance', August 2015.

⁸³ These voluntary disclosure schemes took place between 2004 and 2016. The oldest of these programmes was implemented in Germany between January 2004 and March 2005. More recent initiatives were in the UK or Italy. In Italy, UK, France and the US, several successive programmes were adopted.

⁸⁴ <http://www.bondsloans.com/news/article/1186/emerging-markets-show-positive-feedback-loop> .

million (Canada Revenue Agency 2018). Even though these figures remain modest, it is interesting to note a jump in voluntary disclosures between the fiscal years 2013-2014 and 2014-2015, which corresponds to the adoption of the CRS by the OECD.

2.3.5 Non-Cooperative Jurisdictions

As noted, the international initiative for more information exchange has included identifying and classifying jurisdictions as potentially non-cooperative, black-listing or grey-listing them. Researchers have also produced and used similar lists. We review these approaches below.

In its 1998 landmark report on Harmful Tax Competition⁸⁵, the OECD proposed the following non-cooperative jurisdiction criteria:

- No or nominal taxes.
- Lack of effective exchange of information for tax purposes and/or lack of transparency of the tax or regulatory regime, which may limit the availability of, or the access to, information needed for tax examinations or investigations by the investor's home tax authorities.
- Lack of a requirement that activities be substantial.

A progress report (June 2000) followed, listing 35 jurisdictions found to meet these criteria.⁸⁶

In April 2009, the OECD disclosed a list of 4 countries – Costa Rica, Malaysia, the Philippines and Uruguay – that had not committed to the internationally agreed EOIR standard.⁸⁷ A "grey" list of jurisdictions that had committed to the international standard, but had not yet substantially implemented it, was also published. For the first time, OECD countries – Austria, Belgium, Luxembourg and Switzerland – were included in that list.

Other closely related lists, also with a strong focus on information sharing, were developed independently by Johannesen and Zucman (2014), Alstadsæter, Johannesen and Zucman (2018), the IMF,⁸⁸ the Financial Stability Forum,⁸⁹ and the Financial Action Task Force.⁹⁰ The TJN recently released (2018) its latest ranking of jurisdictions according to a Financial Secrecy Index based on 20 secrecy indicators, such as banking secrecy, the existence of a trusts and foundations register and anti-money laundering measures.⁹¹

The EU also published (December 2017) a list of 17 "non-cooperative jurisdictions for tax purposes" as well as a "grey" list of 47 countries that made commitments to improve their standards as a result of the EU screening process. These two lists have frequently been amended since then. On 12 March 2019, the list of "non-cooperative jurisdictions

⁸⁵ OECD, *Harmful Tax Competition: An Emerging Global Issue*.

⁸⁶ OECD, *Towards Global Tax Co-Operation: Progress in Identifying and Eliminating Harmful Tax Practices*.

⁸⁷ <https://www.oecd.org/tax/exchange-of-tax-information/42497950.pdf> .

⁸⁸ International Monetary Fund, 'Offshore Financial Centers: IMF Background Paper', June 2000, <http://www.imf.org/external/np/mae/oshore/2000/eng/back.htm>.

⁸⁹ Financial Stability Forum, 'Report of the Working Group on Offshore Centres', 5 April 2000.

⁹⁰ [http://www.fatf-gafi.org/publications/high-riskandnon-cooperativejurisdictions/?hf=10&b=0&s=desc\(fatf_releasedate\)](http://www.fatf-gafi.org/publications/high-riskandnon-cooperativejurisdictions/?hf=10&b=0&s=desc(fatf_releasedate)).

⁹¹ <https://www.financialsecrecyindex.com/> .

for tax purposes” comprised 15 jurisdictions and the “grey” list 34 jurisdictions.⁹² Appendix 3 summarises countries that are currently included in the two lists. The criteria used by the EU are:

- Transparency: The country should comply with international standards on exchange of information.
- Fair tax competition: The country must have committed to implementing the OECD's Base Erosion and Profit Shifting (BEPS) minimum standards.
- Real economic activity: The country should ensure that a low level of corporate taxation does not encourage artificial offshore structures without real economic activity.

Finally, two approaches stand out against this background, both seeking to directly observe the actual behaviour of offshore wealth across jurisdictions. They seek to identify IFCs, not necessarily qualifying them as non-cooperative jurisdictions:

- An interesting 2007 IMF contribution⁹³ proposed a data-driven approach in which an IFC is characterized as “a country or jurisdiction that provides financial services to non-residents on a scale that is incommensurate with the size and the financing of its domestic economy”, using ratios of cross-country assets over GDP to single out IFCs.
- The interview-based BCG approach⁹⁴ taps expertise from wealth managers to identify prominent IFCs and allocate global offshore wealth among them, leading to 8 groups of country or countries in 2016: “Channel Islands and Dublin”, “Caribbean and Panama”, Luxembourg, Switzerland, Singapore, the United Kingdom, Hong Kong and the United States.

Appendix 3 compiles these lists for easier reference.

2.3.6 Evaluating Initiatives Against International Tax Evasion

Another strand of the literature on international tax evasion has taken an interest in evaluating the impact of the above initiatives. We review this literature below.

Evaluating the EUSD

A first evaluation of the EUSD is provided by Hemmelgarn and Nicodème (2009)⁹⁵, who reported no significant impact and suggested “several loopholes” that might have affected the incidence of the Directive. Likewise, in 2012, the European Commission⁹⁶ reported that the EUSD could be, and most likely was, circumvented in a number of ways. Firstly, transferring assets to one of the many countries that do not participate in the Directive (for example, Singapore) is a simple and effective way of escaping the

⁹² See <https://www.consilium.europa.eu/en/policies/eu-list-of-non-cooperative-jurisdictions/> and https://ec.europa.eu/taxation_customs/sites/taxation/files/eu_list_update_12_03_2019_en.pdf.

⁹³ Ahmed Zoromé, ‘Concept of Offshore Financial Centers: In Search of An Operational Definition’, *IMF Working Papers* 07, no. 87 (2007): 1, <https://doi.org/10.5089/9781451866513.001>.

⁹⁴ Boston Consulting Group, ‘Global Wealth 2017: Transforming the Client Experience’.

⁹⁵ Thomas Hemmelgarn and Gaëtan Nicodème, *Tax Co-Ordination in Europe: Assessing the First Years of the EU-Savings Taxation Directive*, June 2009, Taxation Papers 18 (Luxembourg: Office for Official Publ. of the Europ. Communities, 2009).

⁹⁶ EC, “Report from The Commission To The Council in accordance with Article 18 of Council Directive 2003/48/EC on taxation of savings income in the form of interest payments”, {SWD(2012) 16 final}, and accompanying document.

withholding tax. Secondly, since the EUSD applies on an immediate ownership basis, transferring the formal ownership of assets to a corporation or a trust generally suffices to fall outside its scope. Thirdly, investors may substitute interest-bearing assets with structured finance assets, including some life insurance products, the returns of which are not considered interest and therefore not subject to the EUSD.

A study by Klautke and Weichenreider (2010)⁹⁷ confirms the effectiveness of these loopholes. The authors argue that, given that certain types of bonds were exempted from the withholding tax, if working around the EUSD had been difficult for tax evaders in Europe, then they should have invested in those bonds that are exempt from the withholding tax, leading to a decrease in their rate of return. However, they observe no such differential return in their data. They conclude that the three loopholes are large enough to allow tax evaders to continue evasion at negligible additional cost.

These findings are corroborated by more recent studies that have the benefit of longer time series since the inception of the EUSD. Johannesen (2014)⁹⁸ uses BIS data on cross-border deposits⁹⁹ to assess the effect of the EUSD, focusing on Switzerland. The method employed relies on comparing the change in deposits held by EU residents to the change in deposits held by a control group of non-EU residents. The main findings are as follows:

- A large and robust causal effect of EUSD on deposits is evidenced. During the two quarters immediately before and after the implementation of the EUSD (1 July 2005), EU-owned Swiss bank deposits dropped by 30-40%.
- The EUSD caused a large increase in EU-owned bank deposits in Macao and Panama,¹⁰⁰ suggesting a massive shift of deposits out of Switzerland to escape the withholding tax.
- The EUSD caused a large increase in Swiss deposits recorded in the BIS statistics as belonging to Panama, a leading offshore provider in incorporation services. This is consistent with EU individuals transferring formal ownership of assets to obfuscating instruments in Panama.
- Finally, the effect on deposits is shown not to be affected by the tax rate on interest income in the EU Member States. Recognising that repatriation of funds should be negatively correlated with the tax rate in the home country, this suggests that the reduction in Swiss deposits was not driven by repatriation of funds.

In short, Johannesen (2014) has shown that EU residents have indeed exploited the first two of the above loopholes. Further, using data from the SNB,¹⁰¹ Roussille (2015) provides evidence that EU residents also shifted their portfolio from interest to dividend-yielding securities, exploiting the third loophole.

⁹⁷ Tina Klautke and Alfons J. Weichenrieder, 'Interest Income Tax Evasion, the EU Savings Directive and Capital Market Effects', *Fiscal Studies* 31, no. 1 (1 March 2010): 151–70, <https://doi.org/10.1111/j.1475-5890.2010.00110.x>.

⁹⁸ Niels Johannesen, 'Tax Evasion and Swiss Bank Deposits', *Journal of Public Economics* 111, no. Supplement C (1 March 2014): 46–62, <https://doi.org/10.1016/j.jpubeco.2013.12.003>.

⁹⁹ See BIS Locational Banking Statistics in Appendix 2.

¹⁰⁰ These were the only two offshore centres for which bilateral deposit data were available at the time of the study.

¹⁰¹ See Appendix 2.

Omartian (2017)¹⁰² extends the analysis in Johannesen (2014) using the Panama Papers data leak (see Offshore Leaks in Appendix 1). He finds that EU investors have increased their use of interposing entities – corporations, partnerships, foundations and trusts – to circumvent the information sharing and withholding tax provisions of the EUSD: the number of incorporations from investors in EUSD-participating countries increased by 73 percent in the months preceding the EUSD effective date.¹⁰³ Furthermore, it is shown that the creation of these offshore entities was facilitated by banks in IFCs covered by the EUSD, predominantly in Switzerland. This is determined by studying the proportion of entities created by banks¹⁰⁴ in the EUSD area around 1 July 2005, the date of the EUSD coming into entry.

Evaluating the 2009 Crackdown

Using BIS data, Johannesen and Zucman (2014)¹⁰⁵ analyse the consequences of the call by G20 countries in 2009 to sign bilateral tax agreements providing information exchange on request.

They find that treaties did have a significant impact on bank deposits in IFCs. For example, a treaty between France and Switzerland caused French residents to reduce their deposits in Switzerland. However, the global value of deposits has not been significantly affected by the crackdown: those IFCs that have signed few treaties have gained deposits at the expense of those that have signed many. Therefore, the treaties signed by IFCs have not triggered a significant repatriation of funds, but rather a relocation of deposits across jurisdictions. This finding, which is similar to the above deposit shift observed as a consequence of the EUSD, lends support to the theoretical work of Elsayyad and Konrad (2012)¹⁰⁶, who argue that a simultaneous and coordinated multilateral agreement should be preferred to a sequential approach when addressing international tax evasion.

Evaluating FATCA and Other US Initiatives

Hanlon, Maydew and Thornock (2015)¹⁰⁷ also find support for the deterrence effect of tax treaties. They analyse “round-tripping” tax evasion in US equity and debt markets, whereby US individuals route their US investments through entities in IFCs to appear as if they are foreign investors and thus escape taxes. They show that the signing of a TIEA between the US and an offshore financial centre has a negative and significant effect on foreign portfolio investments from this jurisdiction to the US. As only tax-evading US individuals should be affected by the signing of a treaty, they conclude that

¹⁰² Jim Omartian, ‘Do Banks Aid and Abet Asset Concealment: Evidence from the Panama Papers’, SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, 23 October 2017), <https://papers.ssrn.com/abstract=2836635>.

¹⁰³ See also Paul Caruana-Galizia and Matthew Caruana-Galizia, ‘Offshore Financial Activity and Tax Policy: Evidence from a Leaked Data Set’, *Journal of Public Policy* 36, no. 3 (September 2016): 457–88, <https://doi.org/10.1017/S0143814X16000027>. This Study derives similar results when analysing a smaller leak of offshore entity data released in 2013 by ICIJ.

¹⁰⁴ Data of the Panama Papers allows identification of which entities were created under the direction of a bank.

¹⁰⁵ Niels Johannesen and Gabriel Zucman, ‘The End of Bank Secrecy? An Evaluation of the G20 Tax Haven Crackdown’, *American Economic Journal: Economic Policy* 6, no. 1 (February 2014): 65–91, <https://doi.org/10.1257/pol.6.1.65>.

¹⁰⁶ May Elsayyad and Kai A. Konrad, ‘Fighting Multiple Tax Havens’, *Journal of International Economics* 86, no. 2 (1 March 2012): 295–305, <https://doi.org/10.1016/j.jinteco.2011.09.002>.

¹⁰⁷ Michelle Hanlon, Edward L. Maydew, and Jacob R. Thornock, ‘Taking the Long Way Home: US Tax Evasion and Offshore Investments in US Equity and Debt Markets’, *The Journal of Finance* 70, no. 1 (1 February 2015): 257–87, <https://doi.org/10.1111/jofi.12120>.

such a treaty is effective in discouraging evasion. The point raised by Johannesen and Zucman (2014) remains, however: US tax evaders still have the option to move their funds to a jurisdiction with no tax agreement with the US.

De Simone, Lester and Markle (2017)¹⁰⁸ provide an evaluation of FATCA using a methodology similar to that of Hanlon, Maydew and Thornock (2015). They document a statistically significant decrease in round-tripping from IFCs to the US. More generally, they show that foreign portfolio investments out of IFCs to all destination countries – not just the US – have significantly dropped since 2012.¹⁰⁹ Their results thus provide some evidence that FATCA is associated with individuals reducing investment assets held in financial accounts of IFCs. They however also point to empirical evidence suggesting that offshore investments in non-financial assets, such as real estate and artwork, have increased since FATCA was introduced.

Johannesen et al. (2017)¹¹⁰ report that the US efforts may have convinced part of US tax evaders to comply with the tax rules of their home country. Using comprehensive administrative data, the study documents some compliance effect of US enforcement initiatives in 2009, including but not limited to FATCA.¹¹¹ The authors find that the US enforcement initiatives caused approximately 60,000 individuals to disclose offshore accounts, representing a total wealth value of around US\$ 120 billion. Interestingly, most of these disclosures were made outside the voluntary disclosure programme launched by the US in 2009.¹¹² Therefore, the increase in tax compliance induced by US enforcement initiatives was larger than suggested by official estimates based solely on information about tax and penalty payments made under the voluntary disclosure programmes.

Conclusions from Recent Evaluations of the Initiatives Against International Tax Evasion

The above studies make it clear that enforcement efforts induced many owners of offshore accounts to deploy new evasion strategies, moving assets to uncooperative jurisdictions or adding layers of secrecy in the form of shell companies and other screening arrangements, rather than becoming compliant.

The only initiative for which some actual impact is reported is the set of US enforcement initiatives, including FATCA. However, this may simply be because the first automatic exchanges under the OECD CRS Standard and DAC2 took place in September 2017, meaning that the evaluation of that effort has only just begun.

¹⁰⁸ Lisa De Simone, Rebecca Lester, and Kevin Markle, 'Transparency and Tax Evasion: Evidence from the Foreign Account Tax Compliance Act (FATCA)', June 2018.

¹⁰⁹ They consider 2012 as the real "launch" of the FATCA program for two reasons. Firstly, on 8 February 2012, the US Treasury released proposed regulations that outlined in detail the process for account identification, information reporting, and withholding under FATCA. Secondly, the Treasury also released on the same day a joint statement with five European countries that had agreed to automatic information exchange, signaling that foreign countries would indeed partner with the US to provide the requisite data.

¹¹⁰ Niels Johannesen et al., 'Taxing Hidden Wealth: The Consequences of U.S. Enforcement Initiatives on Evasive Foreign Accounts', Working Paper (National Bureau of Economic Research, March 2018), <https://doi.org/10.3386/w24366>.

¹¹¹ They consider 2009 as the starting date of the US initiatives for curbing international tax evasion as it corresponds to three main events. Firstly, the US government took the fight against international tax evasion to court, with the prosecution of the Swiss bank UBS. Secondly, in the wake of the G20 crackdown, the US started to sign bilateral tax agreements, notably with Switzerland, Luxembourg, Liechtenstein, Malta, Monaco and Panama. Finally, 2009 is the year FATCA was proposed in Congress.

¹¹² Individuals who start disclosing their foreign accounts without participating in the voluntary disclosure program are referred to as "quiet disclosures", whereby former tax evaders avoid the penalties in the voluntary disclosure program but do not obtain protection against later criminal charges.

3 Methodology

3.1 Overview: Three-Step Approach

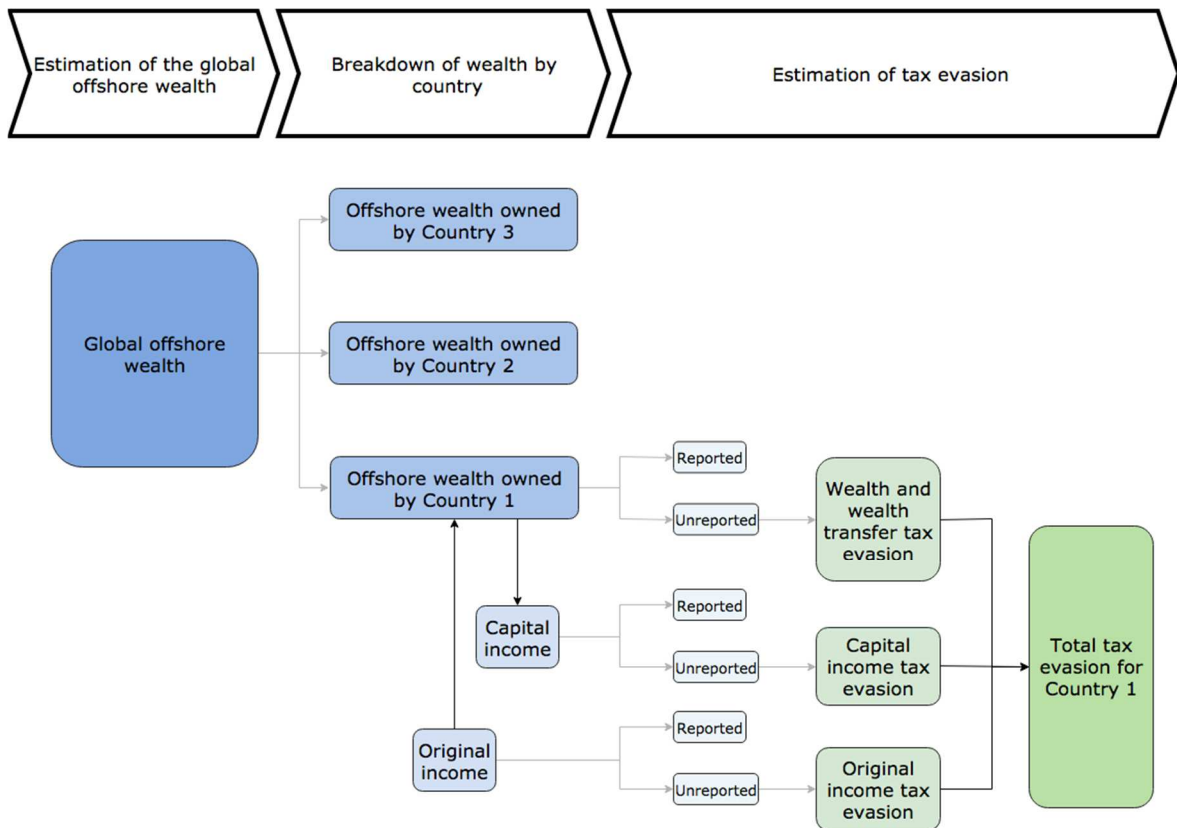
The Study's methodology¹¹³ builds on the literature above, and especially Zucman (2013), Pellegrini, Sanelli and Tosti (2016) and Alstadsæter, Johannesen and Zucman (2018). As reported, these contributions have strong theoretical foundations and follow a clear empirical strategy. The Study's main assumptions are summarised in Table 17 in Appendix 1 for easier reference.

The methodology includes three main steps (Figure 4):

- **Estimation of global offshore financial wealth.** This is possible because at the global level, international portfolio liabilities and assets should balance – and they do not. This gap is interpreted as the basis for an estimate of global offshore wealth.
- **Breakdown by country of ownership and by IFC.** Data on offshore deposits is next used to allocate estimated global offshore wealth to each individual country of ownership. This step is implemented for all major economies. A breakdown of offshore wealth held in each individual IFC is also provided.
- **Estimation of international tax evasion by Member State.** Based on the estimated offshore wealth by country of ownership, revenue lost to tax evasion is estimated for, respectively, taxation of the stock of offshore wealth itself, taxation of the related capital income and taxation of the original income (transferred offshore in the first place). This is provided for the EU and the 28 Member States.

¹¹³ Appendix 1 provides a step-by-step detailed description.

Figure 4. Three-Step Approach



3.2 Step 1: Estimation of Global Offshore Financial Wealth

We assume that the financial wealth held offshore by households is comprised of (i) portfolio assets; (ii) deposits. Real estate assets, artwork, life insurance contracts, cash money and cryptocurrencies are not included in our estimates.

Because a key data source, the CPIS (see below), started in 2001, the target period for all estimates is 2001-2016.

3.2.1 Estimation of Global Excess of Portfolio Liabilities over Portfolio Assets

Global offshore portfolio wealth held by individuals is estimated as the global excess of international portfolio liability positions over international portfolio asset positions.

The estimation of both the portfolio assets and liabilities of each country mainly relies on three databases: the IMF's CPIS, the IMF's IIP and the EWN database (see Section 4). However, as reported in Appendix 2, data gaps remain even after combining these three sources. Some countries (namely the Cayman Islands, China, and Middle-Eastern Oil Exporters countries) are entirely missing and, for other countries, some years are missing. Special corrective strategies therefore need to be implemented to fill these gaps. They are documented in Appendix 1.

3.2.2 Estimation of Offshore Deposits

To produce estimates of offshore deposits held in IFCs (as opposed to portfolio wealth), we follow the literature in using assumptions on the ratio of deposits to total offshore wealth. Based on observed statistics, especially SNB data, the literature¹¹⁴ typically assumes that 25% of financial wealth is held in the form of deposits and 75% in the form of portfolio wealth. We follow that approach, while performing sensitivity tests around this central scenario.

3.3 Step 2: Breakdown by Country of Ownership and by IFC

3.3.1 Using Data on Cross-Border Deposits

Breakdown by country of ownership. Following the literature (Alstadsæter, Johannesen and Zucman 2018), offshore wealth by country of ownership is estimated using ownership shares of cross-border *deposits* held by individuals in IFCs as proxies. This estimation method allows for heterogeneity in the propensity of taxpayers to evade taxes by country as measured by the volume of offshore wealth held by each country's residents.

This central assumption of the literature reflects the fact that individuals will tend to have the same optimising return/risk behaviour with respect to their offshore financial wealth and will therefore split wealth into portfolio assets and deposits in the same proportions. In practice, many international investors receive the same advice from the same type of wealth managers in IFCs regardless of their country of residency (Zucman 2015).

The data on cross-border deposits originates from the BIS locational banking statistics. The BIS data, however, has an important limitation: it does not distinguish between cross-border deposits from individuals and those from corporations. The corrective strategy implemented in this Study relies on outgoing foreign direct investment (FDI) data, on the assumption that a country with a large outgoing FDI stock (relative to GDP) is assumed to have a large proportion of outgoing corporate deposits, and vice versa. In practice, we apply a transformation of the ratio of FDI to GDP to the outgoing cross-border deposits of each country (see Appendix 1). It should be noted that the use of outgoing FDI data is an improvement over the literature, which typically assumes that the outward cross-border corporation/individuals deposit ratio is identical across countries.

Another critical point is that the use of shell companies and other screening arrangements prevents the direct estimation of ownership shares of offshore wealth. This is because most shell companies or other similar mechanisms are typically located in an IFC which is not the country of residency of the true ultimate owners. In this situation, deposits are (incorrectly for our purposes) recorded as originating from that IFC. Steps for addressing wealth channelled through shell companies – referred to as indirect offshore wealth – are detailed in Section 3.3.4 below.

Breakdown by IFC. Offshore wealth in each IFC is estimated as follows:

- Offshore financial wealth in Switzerland is directly observed in the SNB data. As detailed in Appendix 2, the SNB provides good quality data both for holding of foreign securities by non-Swiss residents through Swiss account and for cross-border fiduciary deposits for which it is safe to assume that this unique kind of deposit is only used by individuals.

¹¹⁴ Zucman, 'The Missing Wealth of Nations'.

- For other IFCs, the BIS cross-border deposits¹¹⁵ data is used to determine which share of the remaining offshore wealth (global offshore wealth minus offshore financial wealth held in Switzerland) is held in each IFC.

3.3.2 Defining two types of IFCs

Two different types of IFCs are defined as follows:

- A Type I IFC is defined as a wealth-receiving IFC. A Type I IFC (Country B in Figure 1 above) is a country in which a large number of non-residents own a bank account and hold offshore wealth invested in a third country (Country C in Figure 1).
- A Type II IFC is defined as an IFC that provides shell companies and other screening means, resulting in international deposit statistics incorrectly assigned to residents of that IFC.

Distinguishing Type II from Type I IFCs, a clarification not explicitly made in the literature, is especially useful for handling the issue of indirect offshore wealth, as exposed below.

3.3.3 Approach to Identifying IFCs

These two types of IFCs need to be identified. A specific data-based approach to IFC identification has been used, building on the 2007 IMF study¹¹⁶. It assumes that:

- Type I IFCs have an abnormally high ratio of incoming foreign deposits to GDP (referred to as the Type I deposit ratio). The identification of Type I IFC is carried out using a simple clustering algorithm. For each year, we use a k-means procedure to partition jurisdictions into Type I IFCs and non-Type I IFCs using the Type I deposit ratio (see Appendix 1, Box 4).
- Type II IFCs have an abnormally high ratio of outgoing deposits held abroad to GDP (referred to as the Type II deposit ratio). In addition, we introduce the notion that a jurisdiction can be *partly* Type II by computing Type II weights which measure the share of wealth held on behalf of non-residents (the Type II component) relative to the share of wealth held by that jurisdiction's residents.¹¹⁷ Type II weights can be viewed as the excess of outgoing deposits that could not be explained by standard economic activity. They are estimated as a function of the global share of outgoing deposits of a given country and its global GDP, i.e., as a function of Type II deposit ratios. This function is specified so that a country with an outgoing deposit share equal to or lower than its GDP share does not provide shell companies at all – its Type II weight is nil (see Appendix 1).

¹¹⁵ As explained in detail in Appendix 1, FDI data is not used to estimate the offshore wealth held by Type I IFC.

¹¹⁶ Zoromé, 'Concept of Offshore Financial Centers'.

¹¹⁷ This is important to avoid unrealistic "all or nothing" effects where a jurisdiction wholly classified as Type II would have no own offshore wealth and consequently no own tax evasion.

To compute Type I deposit ratios and Type II deposit ratios, we use bilateral cross-border non-bank deposits from the BIS Locational Banking statistics, i.e., deposits owned by non-residents¹¹⁸. For Type II deposit ratios we also use FDI data, as noted.¹¹⁹

Additionally, the two ratios are allowed to vary across time, reflecting the changing behaviour of offshore investors and/or the changing conditions of IFCs.

3.3.4 Estimation of Indirect Offshore Wealth

As stated above, addressing wealth channelled through shell companies is needed so that offshore wealth held by residents of Type II IFC is not overestimated, and, conversely, that so offshore wealth held by other countries is not underestimated. Key steps for this procedure are as follows (see Box 5 in Appendix 1 for details).

Firstly, indirect deposits are estimated applying estimated Type II weights to the deposits originating from each Type II IFC.

Secondly, indirect offshore deposits are reallocated to non-Type II countries using data on cross-border deposits dating back from before the entry into force of EUSD. The EUSD is in effect the first major effort to fight tax evasion using information sharing on foreign bank account owners. Remember that the EUSD covered only a limited set of countries (the EU Member States and participating third European countries). Using this information, the assumptions for this estimation are as follows:

- Before the entry into force of the EUSD, it is assumed that residents from all countries have the same behaviour regarding the use of shell companies. The ownership of indirect deposits is assumed to be proportional to direct deposits ownership.¹²⁰
- After the entry into force of the EUSD, it is assumed that countries not affected by the EUSD did not change their behaviour with respect to shell companies (and we assume that their indirect deposits maintain the same dynamic as their direct deposits, which are observed). As for countries under the EUSD scope, we assume that they did change their behaviour¹²¹ and their indirect deposits are estimated as a residual of total indirect deposits after deducting indirect deposits from countries not affected by EUSD.

3.4 Step 3: Estimation of International Tax Evasion

Non-compliance rates. As mentioned, assets held in Type I IFCs are not necessarily associated with tax evasion. We have reported that the literature (US Senate 2008, 2014; Roussille 2015; Alstadsæter, Johannesen and Zucman 2017; Zucman 2017)

¹¹⁸ This is because the criterion for inclusion of assets in BIS cross-border statistics is residency and not citizenship. Residence is defined by the BIS as “the Country with which an entity has the strongest connection, expressed as the location from which it engages in economic activities and transactions on a significant scale. Each entity is a resident of one and only one country”. Deposits from individuals who own an “investment passport” or a “golden visa” in an IFC might not be included, as those individuals are also residents of that jurisdiction.

¹¹⁹ This FDI correction is not used to compute Type I deposit ratios, for technical reasons explained in Appendix 1.

¹²⁰ Admittedly, this could depend on the motive for transferring money offshore. Criminals wishing to conceal the proceeds of their illegal activity may tend to rely more heavily on the use of anonymous shell corporations. As a consequence, countries plagued with criminality and corruption may have exhibited a larger share of indirect deposits.

¹²¹ It is assumed that changes in behaviour began after the entry into force of the EUSD in 2005 and not its announcement in 2003. This assumption has been tested and our results are robust to this hypothesis.

shows that approximately 75-95% of the wealth held in Type I IFCs is likely to evade taxes. A sensitivity analysis has been performed with the rate of non-compliance made to vary from 60% to 90% around the central value of 75%, which corresponds to the estimate by Zucman (2017) based on 2013 data. We have also reported that a dynamic may be detected toward lower non-compliance rates in recent years, possibly related to an impact of international actions against offshore tax evasion. A further sensitivity analysis has accordingly been implemented, in which the non-compliance rate is 90% until 2008 and is then linearly reduced to 60% in 2016.

Computation of tax evasion. For each Member State, the estimated time series of offshore wealth is used to derive tax evasion on, respectively:

- Taxes on concealed offshore wealth,¹²² which can be decomposed as:
 - Taxes on capital income, which are taxes on the revenue produced by the offshore investment (interests, dividends, capital gains). Such capital income is calculated using rates of return based on average rates of return in mutual funds.
 - Taxes on wealth and wealth transfer, which cover inheritance taxes.
- Personal income tax on the original concealed income that was initially transferred offshore to form the hidden wealth. Assuming that the interest and dividends generated by offshore investments are withdrawn every year, these capital inflows are simply estimated as the increment in offshore wealth from year to year.

All tax evasion estimates are computed and reported on a yearly basis.¹²³

Top tax rates in each Member State are used to compute revenue losses to tax evasion. This assumption is based on the evidence that international tax evasion is practiced by the richest individuals (Alstadsæter, Johannesen and Zucman 2017). It is also assumed that legal mechanisms for tax reliefs and allowances are not implemented. In that sense, revenue losses to tax evasion estimates should be viewed as maxima – as opposed to the estimates of offshore wealth, which are, as noted, minima.

¹²² See page 34 and Figure 2.

¹²³ By construction, these estimates do not incorporate tax evasion on unreported income earned in the years before 2001, the starting year for the Study.

4 Data

4.1 Data Used for Estimating Offshore Wealth

The methodology above for Steps 1 and 2 relies on two types of publicly available international statistics: statistics on international portfolio securities and on foreign deposits. We review these sources in turn.¹²⁴

Data on international portfolio securities. Because offshore portfolio wealth is estimated as the gap between the recorded portfolio liabilities and the recorded portfolio assets, comprehensive global data on international portfolio liabilities and assets is needed. Three databases provide reliable global data on portfolio securities: the IMF's CPIS, the IMF's International Investment Position (IIP)¹²⁵ and the External Wealth of Nations Mark II database (EWN)¹²⁶. However, important limitations remain:

- These sources do not cover all countries: some jurisdictions do not report to international institutions. Portfolio assets and liabilities for these missing countries nevertheless need to be estimated so that the gap between global portfolio liabilities and global portfolio assets truly represents global offshore wealth.¹²⁷
- Portfolio liabilities as recorded in international statistics (mostly in IIP) are not recorded bilaterally but rather for each country as liabilities against the rest of the world. This restricts the usefulness of the international statistics on portfolio securities to the estimation of the global offshore wealth and makes the data unusable for estimating offshore wealth breakdown by country of ownership.
- While offshore wealth held in Switzerland can be estimated using SNB data on portfolio securities held in custody in Swiss bank accounts on behalf of non-Swiss residents, for other Type I IFCs, this data does not exist.

Data on foreign deposits. To address these limitations, we use international statistics on cross-border deposits. The BIS Locational Banking statistics database provide these statistics. This data also has some limitations, however, making additional assumptions necessary:

- Deposits reported in BIS data do not distinguish individuals from corporations.¹²⁸ However, the BIS provides a decomposition between deposits owned by banks and "nonbanks" and a breakdown between "non-financial nonbanks" and "financial nonbanks".¹²⁹ This is available for incoming deposits in most BIS-reporting jurisdictions and for outgoing deposits for all jurisdictions.

¹²⁴ Appendix 2 provides a more detailed description of data.

¹²⁵ International Monetary Fund, 'Balance of Payments and International Investment Position Statistics (BOP/IIP)', n.d., <http://data.imf.org/?sk=7A51304B-6426-40C0-83DD-CA473CA1FD52&sid=1440014571113>.

¹²⁶ Philip R. Lane and Gian Maria Milesi-Ferretti, 'The External Wealth of Nations Mark II: Revised and Extended Estimates of Foreign Assets and Liabilities, 1970–2004', *Journal of International Economics* 73, no. 2 (1 November 2007): 223–50, <https://doi.org/10.1016/j.jinteco.2007.02.003>.

¹²⁷ Examples of data availability on portfolio assets in IIP, CPIS, EWN are presented in Table 18 and full coverage is given in Table 20 of Appendix 2.

¹²⁸ As explained above (page 55), we apply a corrective strategy based on FDI statistics to distinguish deposits belonging to individuals from corporate deposits.

¹²⁹ The BIS definition of a Bank is "an entity whose business is to receive deposits, or close substitutes for deposits, from the public and to grant credits for its own account"; of a financial nonbank: "Financial institution, other than a bank, engaged primarily in the provision of financial services and activity auxiliary to

- Not all IFCs authorise the BIS to disclose bilateral deposit information. Under a confidentiality agreement, the authors have obtained data on bilateral deposits from the BIS for an aggregate group of jurisdictions that include Hong Kong SAR, Macao SAR, Singapore, the Bahamas, Bermuda, the Cayman Islands, Curacao, the Netherlands Antilles, Panama, Guernsey, Isle of Man, Jersey and Bahrain.
- Finally, the data is affected by the widespread use of shell companies incorporated in financial centres. This issue is addressed in Section 3.3.4 above.

4.2 Data Used for Estimating International Tax Evasion

Tax Systems in EU Member States

The primary source of data on the rates and characteristics of the tax systems in each Member State is the EC's Tax in Europe Database (TEDB)¹³⁰. Because information is missing for some Member States and periods before 2010 (including a gap between 2001 and 2006), the TEDB is combined with country profiles from IBFD¹³¹ and OECD data on Personal and Corporate Income Tax¹³². Using data from multiple sources was useful in cross-checking information.

Tax rates were set for all Member States and all years covered by the Study. The rates assumed for the last year of the analysis, i.e. 2016, are shown in Table 15 (Appendix 1).

Rates of Return on Capital

Rates of return on portfolio securities were calculated from data on 14,000 mutual funds (from the websites www.swissfunddata.ch and www.morningstar.co.uk), filtering out mutual funds with a short lifespan. The estimated rates of return were compared for robustness with the MSCI World Index (which captures equity investments in large and mid-cap funds across 24 equity markets) – see Figure 5. The correlation coefficient of the average rate of return calculated from mutual funds data with the MSCI World Index is 0.70.

Rates of return on deposits were obtained from World Bank data¹³³ on (nominal) deposit interest rates in Switzerland. This country is the only large IFC for which a full dataset on deposit rates of return was available.

financial intermediation, such as fund management". (Source: BIS glossary: <https://www.bis.org/statistics/glossary.htm?m=6%7C346%7C648>).

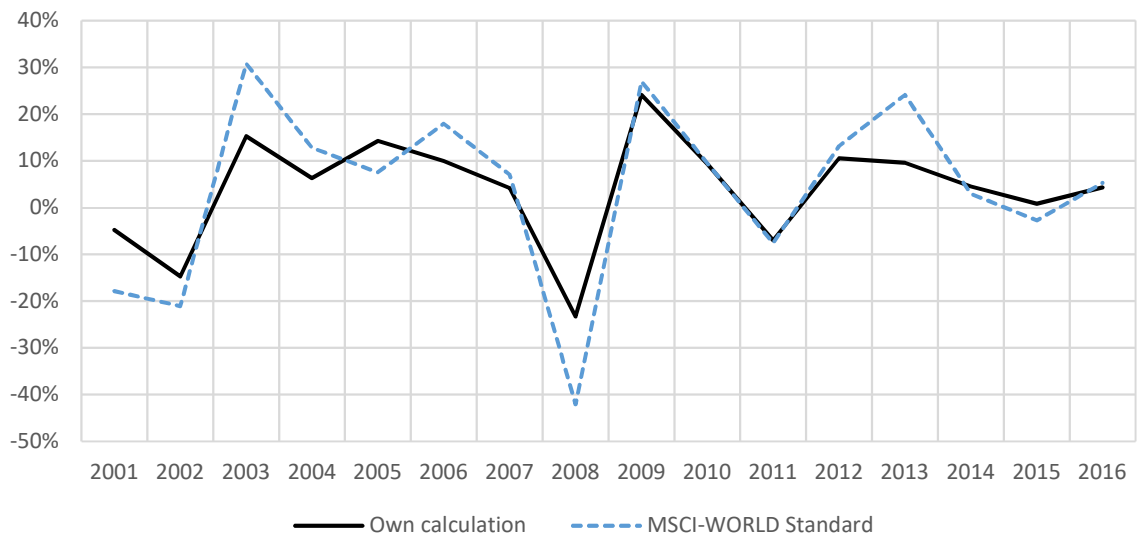
¹³⁰ EC DG TAXUD, 'Taxes in Europe' Database (TEDB)', n.d., https://ec.europa.eu/taxation_customs/taxes-europe-database-tedb_en.

¹³¹ IBFD, 'IBFD Your Portal to Cross Border Tax Expertise', n.d., <https://www.ibfd.org/>.

¹³² OECD, 'OECD Tax Database', n.d., <http://www.oecd.org/tax/tax-policy/tax-database.htm>.

¹³³ See <https://data.worldbank.org/indicator/FR.INR.DPST>

Figure 5. Average Rates of Return of Mutual Funds



Sources: Own computations and MSCI-World Standard.

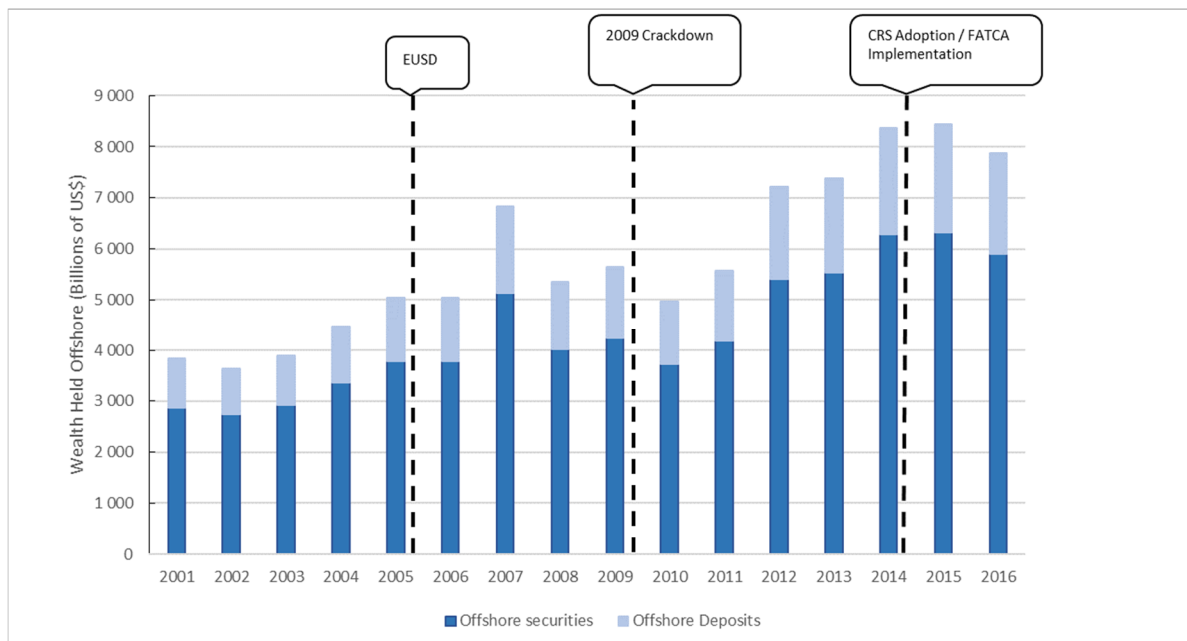
5 Findings

5.1 Estimates of Global Offshore Wealth

We report estimates of global offshore wealth in Figure 6, showing the three episodes of interest in the fight against international tax evasion. A first key result is that estimated global offshore wealth is US\$ 7.8 trillion in 2016 (EUR 7.5 trillion), or 10.4% of global GDP – a considerable amount. The yearly average for the 2001-2016 period is US\$ 5.8 trillion (EUR 4.7 trillion). This is broadly consistent with accepted results from the literature for the same year (US\$ 8.3 trillion in Alstadsæter, Johannesen and Zucman (2018) and US\$ 10.3 trillion from the BCG 2017 annual report).

Secondly, while no response to the EUSD can be detected, the 2009 crackdown coincides with a decrease of estimated global offshore wealth. However, this decrease is only temporary as offshore wealth picks up again in 2012-2014, converging back to pre-crisis values. In 2016, the Study’s most recent year, we again report a decrease, which is consistent with a possible effect from the latest measures to fight tax evasion (the amendment of DAC by the EU in 2014, the implementation of FATCA by the US in 2014 and the endorsement of the CRS by the G20 in 2014).

Figure 6. Estimated Global Offshore Wealth (Billions of US\$)

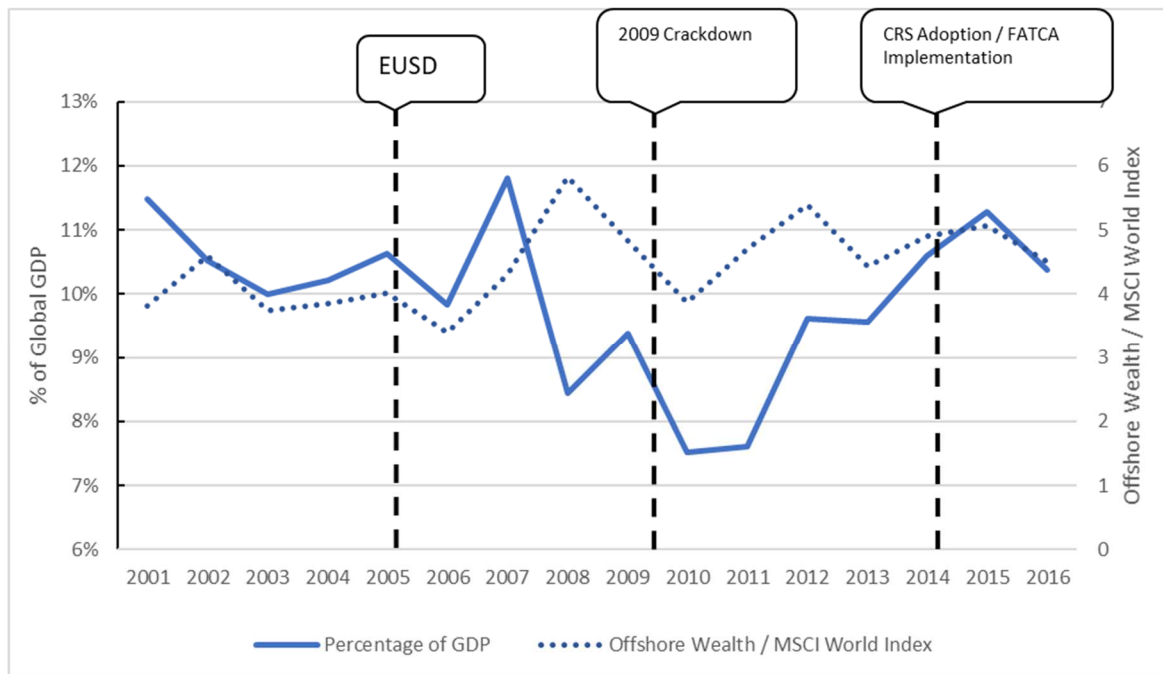


Sources: Own computations

Figure 7 shows estimated global offshore wealth in GDP points and corrected for global security prices.¹³⁴ Interestingly, the latter is flatter than offshore wealth both in dollar terms and in GDP points, which suggest that much of the variability just reported is in fact driven by security prices. Still, it is observed that the decrease in global offshore wealth observed in 2016 holds in GDP points and with price-corrected values.

¹³⁴ The global securities prices used is the MSCI World Price Index: <https://www.msci.com/world>.

Figure 7. Estimated Offshore Wealth as % of Global GDP and Corrected for the MSCI World Index



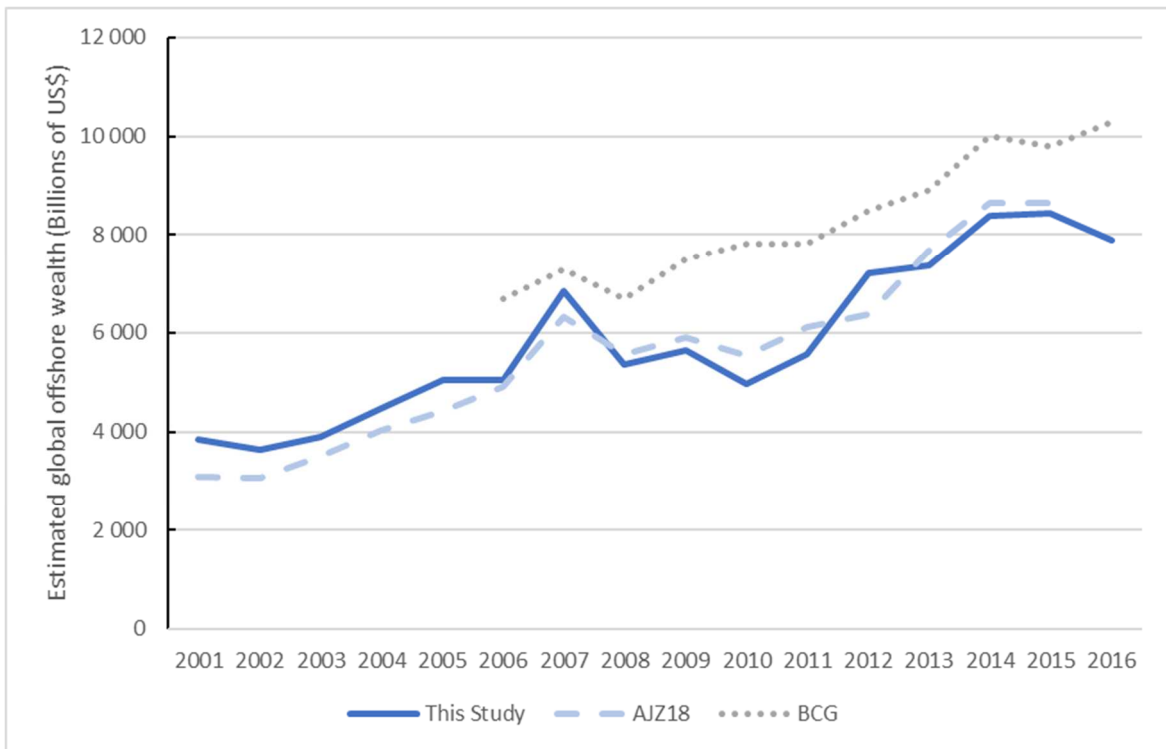
Sources: Own computations, World Bank Indicators for global GDP and MSCI.

Figure 8 reports offshore wealth estimated in this Study alongside corresponding estimates from the literature, confirming that our estimates are close to Alstadsæter, Johannesen and Zucman (2018), with differences driven both by the most recent data used in this Study and small methodological variations.¹³⁵ As noted, a difference with BCG estimates is that they cover segments of international wealth that we do not, notably life insurance and cash money. This suggests that this Study may underestimate global offshore wealth by 20% by not including these segments – the average gap between this Study’s estimates and the BCG’s.¹³⁶

¹³⁵ In this Study, the estimation of the gravity model (see Box 3 in Appendix 1) is implemented on the basis of data for the 2001-2016 period whereas the model in Alstadsæter, Johannesen and Zucman (2018) is estimated with data from a shorter period. Estimates for portfolio assets in the Cayman Islands are consequently different in the two studies. Other similar minor variations exist.

¹³⁶ This is different from (and additional to) the 20% gap related to real estate suggested by results from the CRA (2017) study. See section 2.2.1.

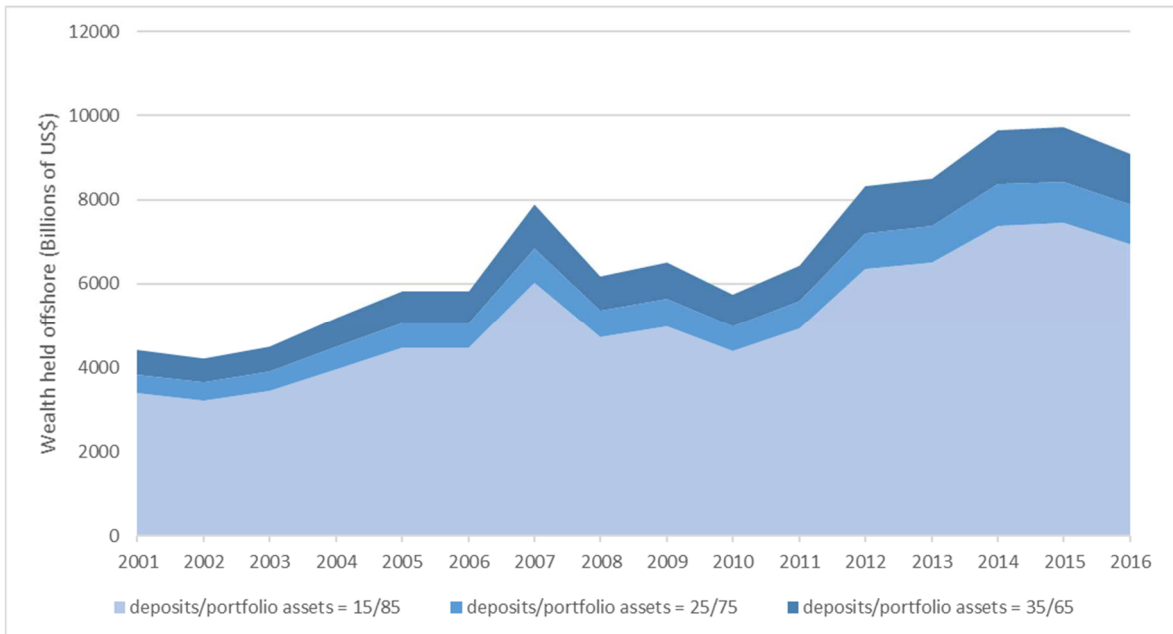
Figure 8. Comparison of Global Offshore Wealth Estimates



Sources: Own computations, Alstadsæter, Johannesen and Zucman (2018) (AJZ18) and BCG's Global Wealth reports (2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017).

The estimates of offshore wealth presented in Figure 6 are based on the central assumption that portfolio securities account for 75% of offshore wealth. As noted, a sensitivity analysis has been performed with the share of securities made to vary between 65% and 85%. Figure 9 makes it clear that variations in the proportions of portfolio securities around the value of 75% do not cause major fluctuations in our results on global offshore wealth. For a share of 65% of portfolio securities (respectively 85%), total offshore wealth is estimated to be approximately 15% higher (respectively 12% lower), across the period.

Figure 9. Estimated Offshore Wealth Under Alternative Ratios of Deposits to Portfolio Assets (Billions of US\$)



Sources: Own computations

5.2 Offshore Wealth by Country of Ownership and by IFC

5.2.1 IFCs

Type I IFCs

14 jurisdictions are classified as Type I IFCs using the methodology above (Table 2). While most Type I IFCs appear each year over the study period, marginal adjustments were made for some jurisdictions (see Table 22 in Appendix 4).

Table 2. Type I IFCs Over the Study Period, 2001 – 2016

Jurisdiction	Number of years as Type I IFC	Comments
Bahamas	16	
Bahrain	16	
Cayman Islands	16	
Cyprus	9	Cyprus did not report before 2008.
Guernsey	16	
Hong Kong	16	To ensure continuity, Hong Kong was classified as a Type I IFC for 2002 even if its Type I ratio belongs to the first cluster.
Isle of Man	16	
Jersey	16	
Luxembourg	16	
Macao	10	Macao did not report in 2001 and 2002 and for continuity, Macao was classified as a Type I IFC in 2010 and 2011 even if its Type I ratio belongs to the first cluster.
Netherlands Antilles (Curaçao from 2010)	16	
Panama	3	Panama did not report in 2001.
Singapore	16	
Switzerland	16	

Sources: Own computations.

Type II IFCs

Type II weights and Type II ratios (outgoing deposits on GDP) for the 151 countries with a non-null Type II weight for at least one year are presented in Table 22 in Appendix 4 for each year in the study period.

5.2.2 Offshore Wealth by Country of Ownership

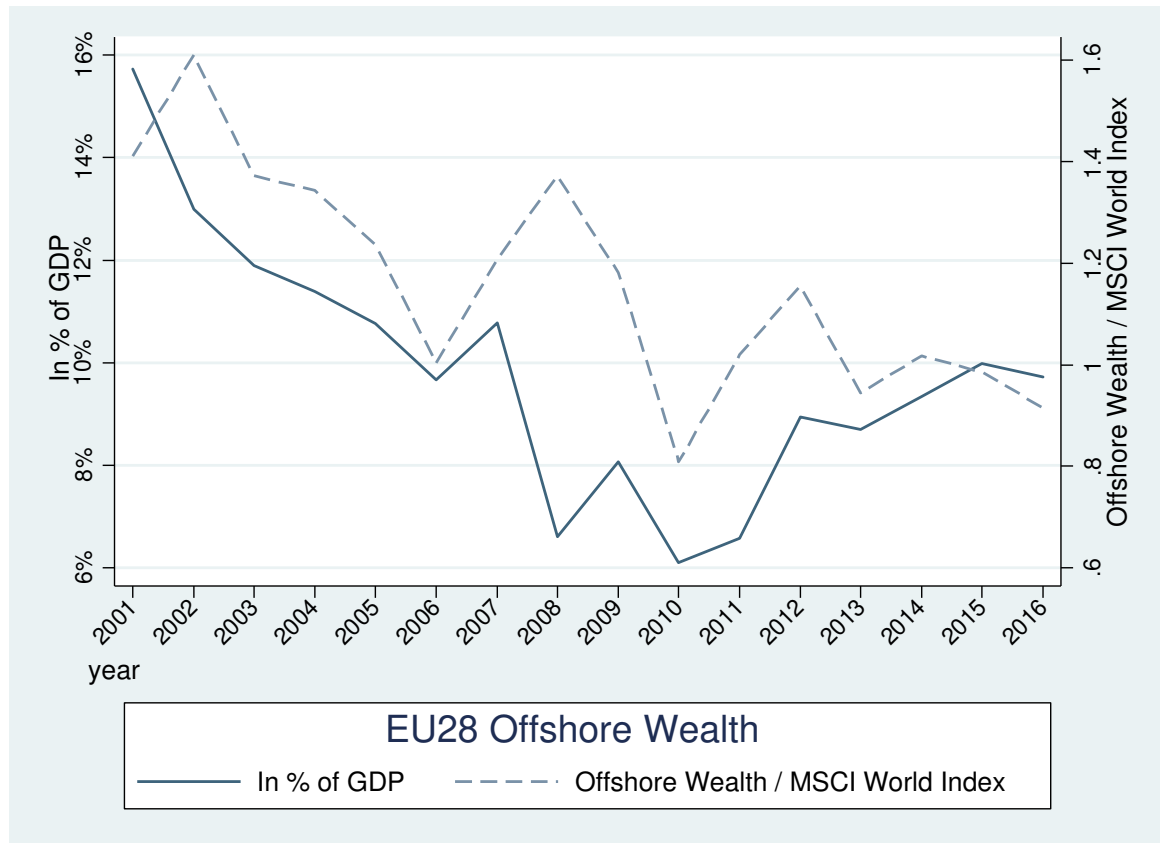
Following the methodology above, offshore wealth has been estimated by country of ownership. Table 3 summarises estimated offshore wealth over the study period for EU Member States, the EU as a block, the OECD as a block and other countries of interest (Australia, Brazil, Canada, China, India, Japan, South Korea and the United States of America).

Offshore Wealth Held by EU Residents

Offshore wealth held by EU residents in 2016 is estimated at US\$ 1.6 trillion (EUR 1.5 trillion) in 2016 or an average of US\$ 1.5 trillion (EUR 1.2 trillion) over 2001-2016. As a ratio of GDP, this is a sharp decrease, from 15.7% in 2001 to 9.7% in 2016 — and this holds after correcting EU residents' offshore wealth with global security prices (see Figure 10). However, this decline cannot be interpreted as evidence of impact from the 2005 EUSD. Between 2005 and 2007, estimated EU offshore wealth in fact went up in dollar terms (from US\$ 1.6 trillion in 2005 to US\$ 1.9 trillion in 2007). The decrease only began in the wake of the 2008 crisis (from 10.8% of GDP in 2007 to 6.6% in 2008). EU residents' offshore wealth goes up again after 2011, to reach 9.7% of GDP in 2016.

Another important finding is that the increase in global offshore wealth over the last years of the study (2010-2016) is not driven by EU residents. The EU share of offshore wealth in fact decreases from around 28.1% in 2007 to 20.3% in 2016 (more details in Table 24 in Appendix 4).

Figure 10. Estimated Offshore Wealth Held by EU Residents as % of GDP and Corrected for the MSCI World Index



Sources: Own computations, World Bank Indicators for GDP and MSCI.

Reduced Share of EU-held Offshore Wealth

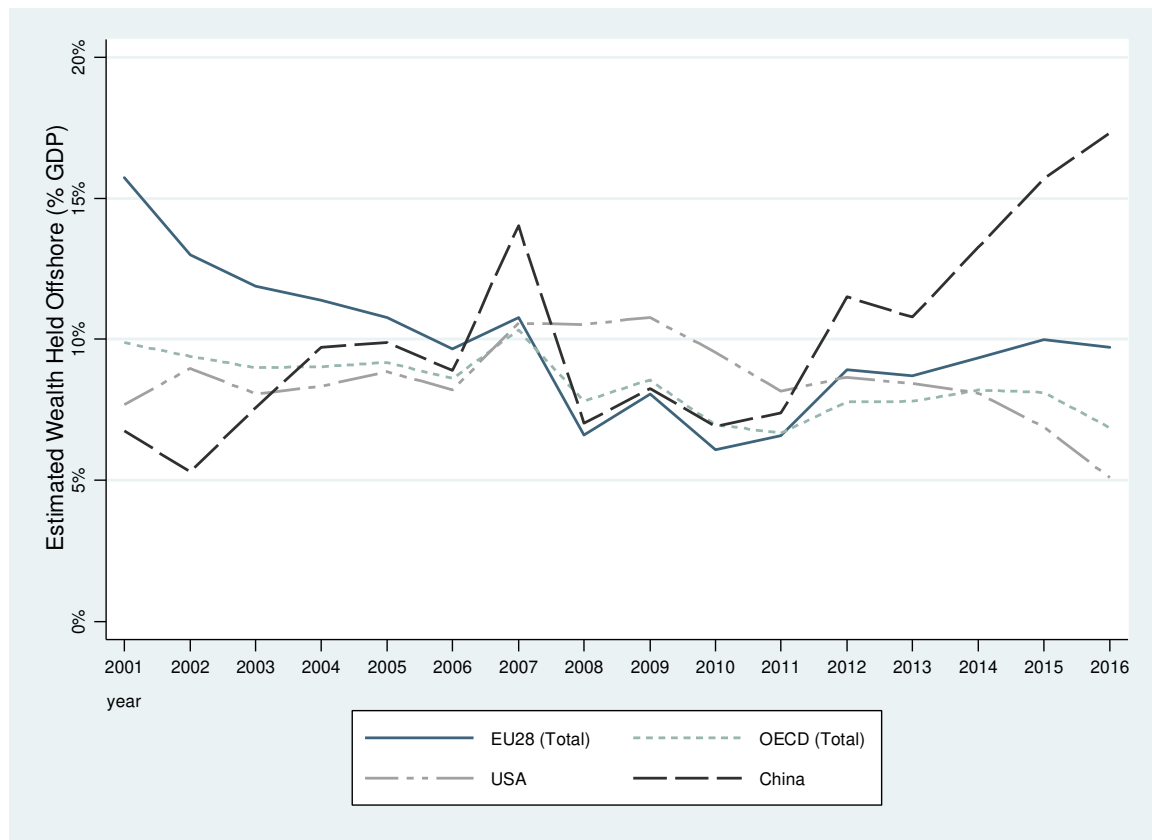
Rather, the increase in global offshore wealth is primarily driven by non-OECD countries, with an estimated contribution in dollar terms growing from US\$ 1.1 trillion in 2001 to US\$ 4.6 trillion in 2016.

Among non-OECD economies, the surge of China is especially strong, with a 21-fold increase of offshore wealth held by Chinese residents over the period (from US\$ 90 billion in 2001 to US\$ 1.9 trillion in 2016). In the final year of the study period, China is by far the largest provider of offshore wealth (Figure 11).

The strong increase of the Chinese offshore wealth is a direct consequence of the corresponding increase in deposits held in Hong Kong by Chinese residents, as reported in the BIS locational statistics. The evolution of the special status of Hong Kong vis-à-vis China during the study period is an interesting element of context for this fact. In 2004, Hong Kong became the first financial market to conduct offshore renminbi business, with a strong growth in the volume of renminbi transactions since inception.¹³⁷ This suggests that the surge of Chinese offshore wealth in the last years of the study period may follow from factors other than tax evasion.

¹³⁷ Hong Kong Monetary Authority, 'Renminbi Business in Hong Kong', n.d., <https://www.hkma.gov.hk/eng/key-functions/international-financial-centre/renminbi-business-hong-kong.shtml>.

Figure 11. Offshore Wealth as % of GDP by Region



Sources: Own computations, World Development Indicator of the World Bank (WDI) for GDP.

Indirect Offshore Wealth

Figure 12 presents the evolution of estimated offshore wealth held directly and indirectly through Type II IFCs. Key findings are as follows:

- The estimated offshore wealth held indirectly by EU residents increases between 2004 and 2006. In 2004, it was 34.5% of their global offshore wealth; in 2006, this share goes up to 43.5% (see Figure 12 below and Table 27 in Appendix 4 for the estimated share of indirect offshore wealth for each Member State and other countries of interest);
- Indirect offshore wealth held by American and Chinese residents remains stable over 2004-2006.

Taken together, these facts are consistent with the EUSD having induced an increase of the indirect share of offshore wealth held by EU residents – but not a reduction of its overall value. This finding is consistent with the literature (Section 2.3.6).

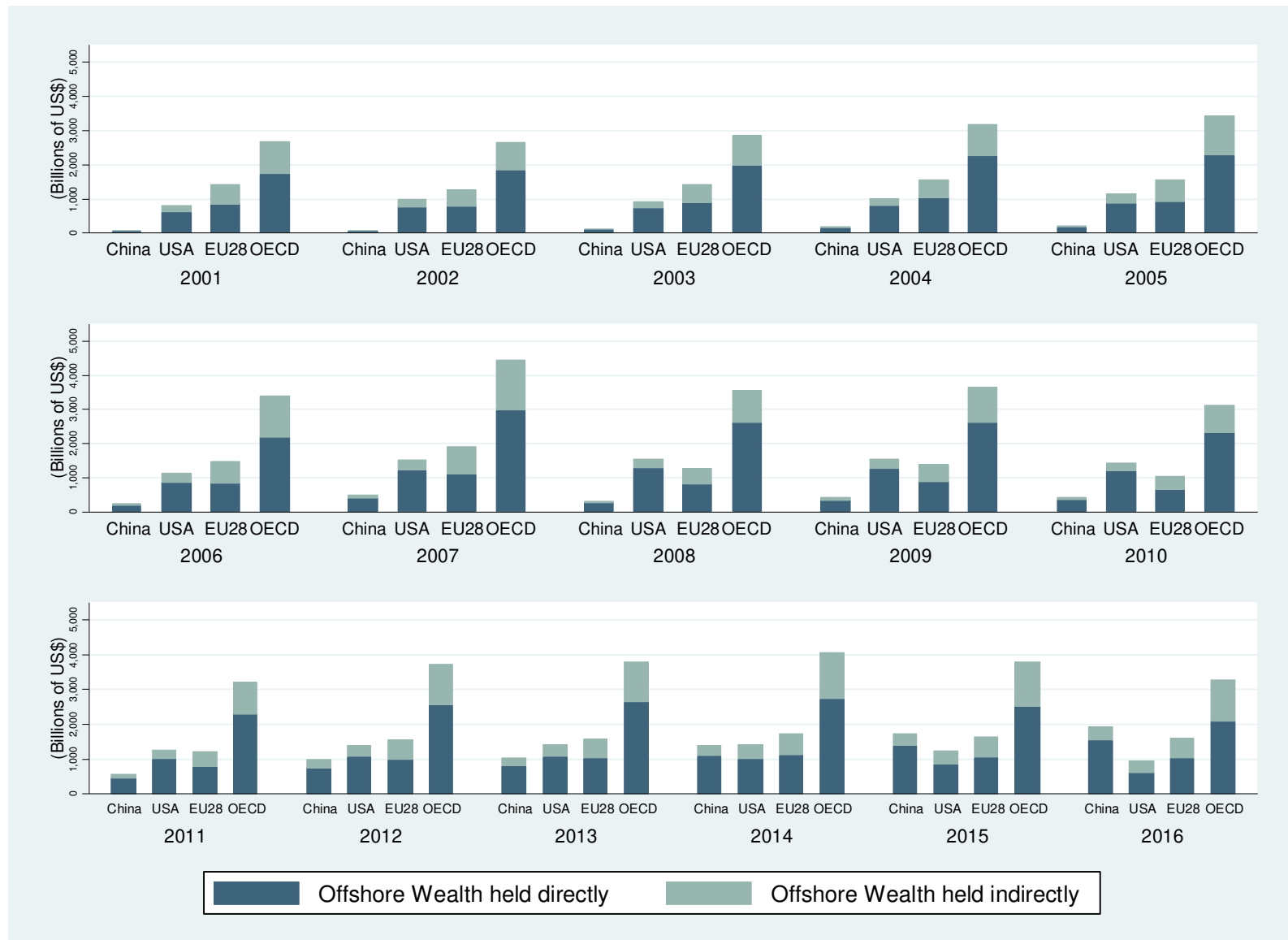
Table 3. Estimated Offshore Wealth by Country (Billions of US\$)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EU-28 (Total)	1416.17	1275.37	1421.91	1571.33	1554.42	1488.13	1916.88	1262.38	1380.21	1034.89	1205.83	1545.31	1568.33	1740.00	1638.03	1602.92
OECD (Total)	2683.07	2665.12	2854.98	3190.50	3427.26	3389.54	4444.40	3560.21	3646.38	3110.05	3204.42	3725.63	3784.67	4058.63	3794.07	3273.32
Non-OECD (Total)	1148.41	978.78	1033.59	1280.89	1606.96	1649.65	2374.22	1791.42	1993.51	1854.20	2369.73	3483.25	3585.73	4311.53	4635.79	4597.30
Members States																
Austria	29.99	27.56	28.01	29.08	32.35	40.06	44.70	27.45	37.67	32.00	30.96	37.95	41.21	49.20	48.48	43.31
Belgium	65.66	68.52	77.38	81.41	78.88	55.33	85.92	57.65	69.72	40.52	46.96	75.52	65.26	60.15	52.08	66.04
Bulgaria	2.34	1.89	1.80	2.07	3.82	3.97	6.75	4.91	6.33	7.35	7.19	12.44	9.45	9.14	10.30	15.33
Croatia	3.34	3.00	2.82	3.08	3.96	3.99	4.97	6.08	6.23	5.18	8.54	9.22	5.86	5.60	5.16	4.20
Cyprus	3.86	3.85	3.74	5.46	6.98	8.54	14.02	8.21	9.53	7.43	8.52	10.88	8.85	9.17	9.44	10.14
Czech Republic	12.52	7.23	9.12	9.74	12.11	19.45	19.09	14.62	15.67	14.09	15.81	22.88	22.71	27.74	25.20	35.58
Denmark	2.56	2.61	3.58	4.56	4.80	5.60	6.17	3.80	4.05	3.00	5.15	6.61	7.82	9.26	7.74	5.37
Estonia	0.75	0.82	0.86	0.88	1.12	1.19	1.18	0.94	1.40	0.90	1.41	1.81	1.78	2.46	3.12	3.10
Finland	3.91	3.44	3.83	4.36	4.46	4.35	6.80	21.98	5.36	3.08	6.01	7.36	8.48	8.88	5.46	7.03
France	183.68	181.89	196.13	251.15	212.40	202.38	269.62	179.92	192.87	169.03	215.47	279.97	301.61	342.83	310.31	291.56
Germany	422.29	368.26	429.19	483.29	464.36	469.03	589.30	377.51	437.29	292.96	309.10	357.87	344.57	390.04	348.52	349.01
Greece	44.92	36.39	42.20	48.91	39.26	39.86	63.23	40.20	43.77	50.00	57.82	68.77	62.38	69.67	67.66	66.34
Hungary	3.43	4.50	5.35	4.87	4.98	7.56	6.99	5.31	6.29	6.07	7.87	11.69	8.03	12.15	7.24	8.10
Ireland	11.29	10.64	16.72	19.04	24.91	22.72	16.00	15.51	13.23	11.22	12.15	15.16	13.05	16.33	18.70	21.24
Italy	216.92	190.09	184.83	187.49	163.82	145.25	172.23	121.43	144.96	85.00	104.24	144.46	167.10	166.15	163.45	149.89
Latvia	2.27	1.58	1.46	1.42	1.98	2.08	1.98	2.36	3.31	2.40	2.82	3.96	3.10	3.60	5.84	4.12
Lithuania	1.05	1.00	0.87	0.90	0.81	1.51	2.04	1.66	1.71	1.24	1.87	2.56	2.42	2.48	2.29	2.19
Luxembourg	1.75	2.23	1.32	1.90	2.97	3.83	6.77	3.40	4.00	4.12	4.10	3.65	3.43	3.47	5.20	4.55
Malta	1.63	1.58	1.92	1.64	1.64	3.40	1.88	0.75	1.48	1.44	2.35	2.96	3.09	4.76	4.74	5.45
Netherlands	48.76	34.60	31.60	34.13	30.95	31.27	52.81	43.75	50.34	35.92	58.46	53.97	63.44	52.04	64.34	55.45
Poland	11.24	9.83	9.08	9.23	11.81	11.64	15.98	10.70	10.47	8.21	9.77	18.73	17.01	20.22	24.28	33.89
Portugal	46.02	40.76	48.95	51.78	53.24	53.44	65.38	46.56	44.90	41.20	45.64	61.14	66.47	69.92	61.09	49.08
Romania	2.70	2.49	2.43	2.94	4.97	4.02	5.11	5.30	5.74	4.85	6.08	8.23	9.70	9.14	9.30	10.89
Slovakia	2.15	2.10	2.09	2.15	2.44	2.34	3.81	2.33	2.41	2.16	2.75	3.56	5.82	7.36	5.58	4.45
Slovenia	1.26	1.04	1.09	1.26	1.31	1.36	1.90	1.68	1.64	1.55	1.95	2.60	2.22	1.66	1.89	2.43
Spain	97.65	92.83	117.28	121.61	142.78	83.81	102.28	65.99	70.94	55.76	69.93	125.72	128.61	111.57	112.28	107.08
Sweden	10.96	13.20	15.07	19.16	16.43	25.14	41.68	14.92	14.20	11.30	14.56	18.50	16.87	35.58	22.18	16.92
United Kingdom	181.28	161.44	183.21	187.82	224.86	235.00	308.30	177.46	174.69	136.91	148.34	177.13	177.98	239.42	236.18	230.17
Others																
Australia	26.96	28.75	31.87	38.23	46.24	47.93	52.06	41.09	66.53	44.24	55.17	72.21	75.33	89.38	81.05	83.07
Brazil	132.12	103.85	95.43	96.13	107.14	99.71	120.28	102.36	73.37	87.80	119.48	134.38	134.77	144.38	146.70	101.09
Canada ¹³⁸	30.65	27.84	28.10	28.12	37.54	39.35	47.37	41.92	40.51	38.77	41.47	61.33	58.12	80.33	55.73	45.45
China	90.48	77.82	125.85	190.04	226.02	244.69	498.19	322.99	422.11	422.46	559.78	985.07	1036.95	1391.19	1737.60	1938.56
India	39.54	29.06	25.93	30.45	43.96	50.81	95.83	59.04	72.12	50.28	55.61	35.92	35.89	36.15	41.05	33.74
Japan	52.36	47.66	44.87	119.40	111.87	107.73	147.23	131.47	127.58	139.38	183.76	90.24	81.73	88.33	97.55	82.71
Russia	55.24	46.68	44.87	50.35	71.96	82.22	117.83	127.14	138.29	116.46	158.57	240.76	219.48	295.81	267.36	193.11
South Korea	10.57	12.28	20.61	19.95	15.24	20.28	40.08	24.54	25.22	26.35	38.56	35.92	50.14	94.05	110.36	71.91
USA	818.24	984.44	928.98	1024.36	1159.03	1138.15	1530.45	1550.91	1554.54	1427.51	1267.13	1399.67	1407.52	1411.09	1246.49	950.32

Sources: Own computations

¹³⁸ The estimate found for Canada at end-2013, US\$ 67.8 billion, is close to the lower bound of the CRA's estimates (US\$ 71.3 billion), which is calculated using the method by Alstadsæter, Johannesen and Zucman (2018).

Figure 12. Estimated Direct and Indirect Offshore Wealth

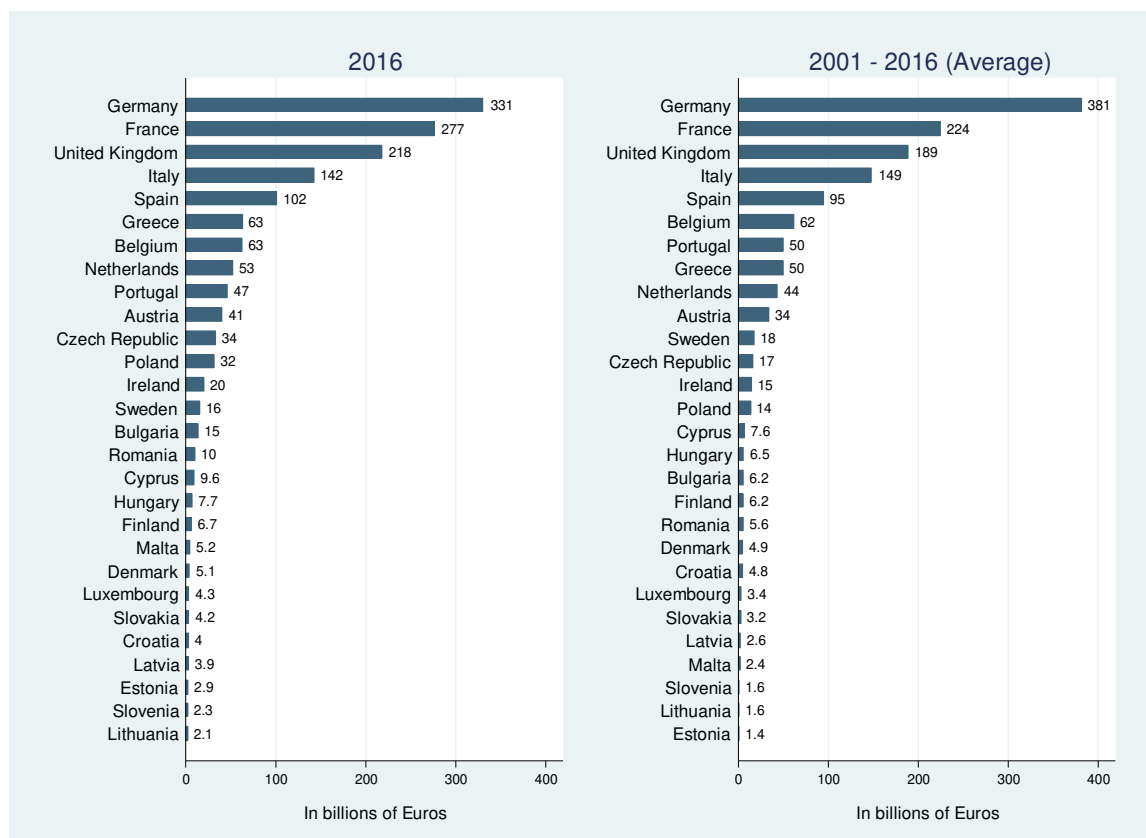


Sources: Own computations

Heterogeneity Among Member States

Heterogeneity in monetary value. Figure 13 reports the ranking of Member States by estimated offshore wealth, in euros.¹³⁹ Not surprisingly, Member States with the largest offshore wealth are the EU’s largest economies. Germany, the UK, France, and Italy make up more than 65% of EU-28 offshore wealth on average over the study period. The last year of the study period (left-hand diagram) also shows a high degree of concentration around the EU largest economies.

Figure 13. Member States: Estimated Offshore Wealth (Billions of Euros)



Sources: Own computations

Heterogeneity in GDP terms. As shares of GDP, the ranking is markedly different but also displays strong heterogeneity, as reported in Figure 14. The largest economies (mainly Germany, France, UK, Italy and Spain) are close to or above the EU-28 mean.¹⁴⁰

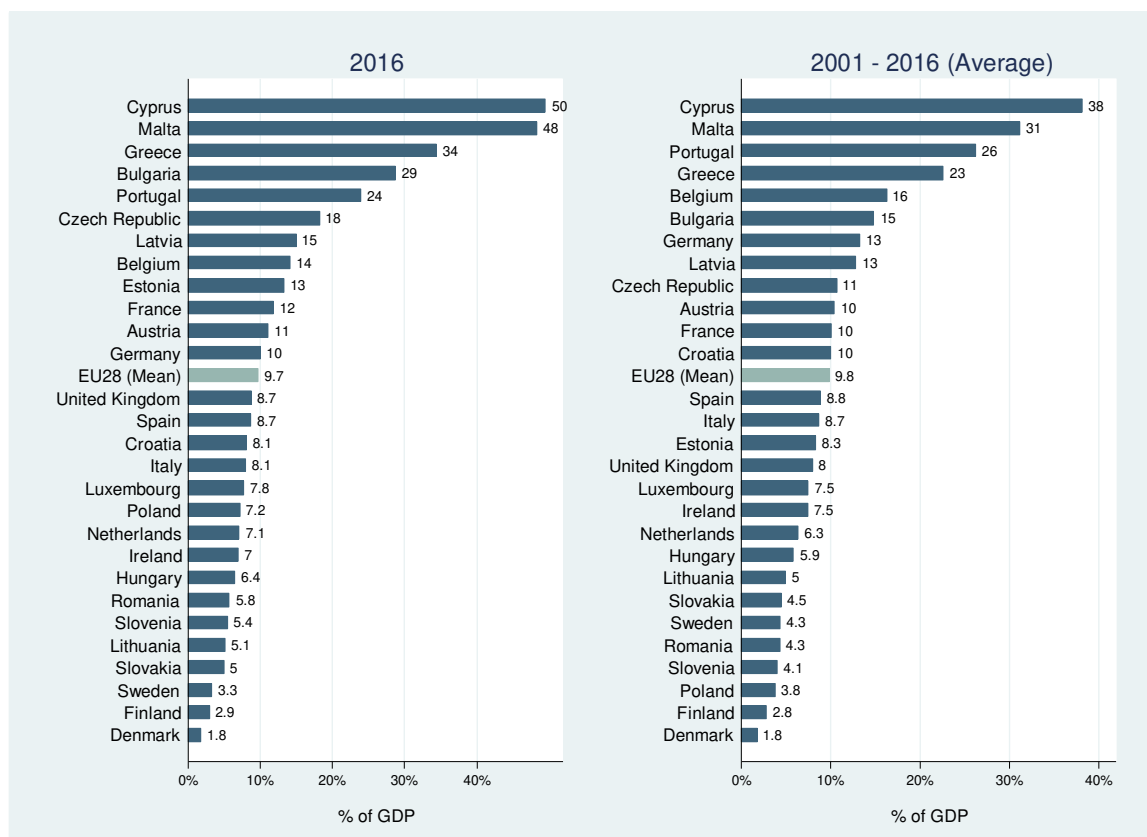
¹³⁹ The estimated values of the offshore wealth for the study period (2001-2016) can be found in Table 26 in Appendix 4.

¹⁴⁰ See Table 25 in Appendix 4 for detailed results.

Member States with the largest offshore wealth in GDP terms are Cyprus, Malta, Portugal and Greece, which are consistently above the EU-28 mean in each year of the study period (Figure 15) and above 20% of GDP on average.¹⁴¹

A third group of countries include Member States with estimated offshore wealth below 5% of GDP. In 2016 these include Denmark, Finland, Sweden and Slovakia and, on average over the period, Poland, Slovenia, Romania and Lithuania.

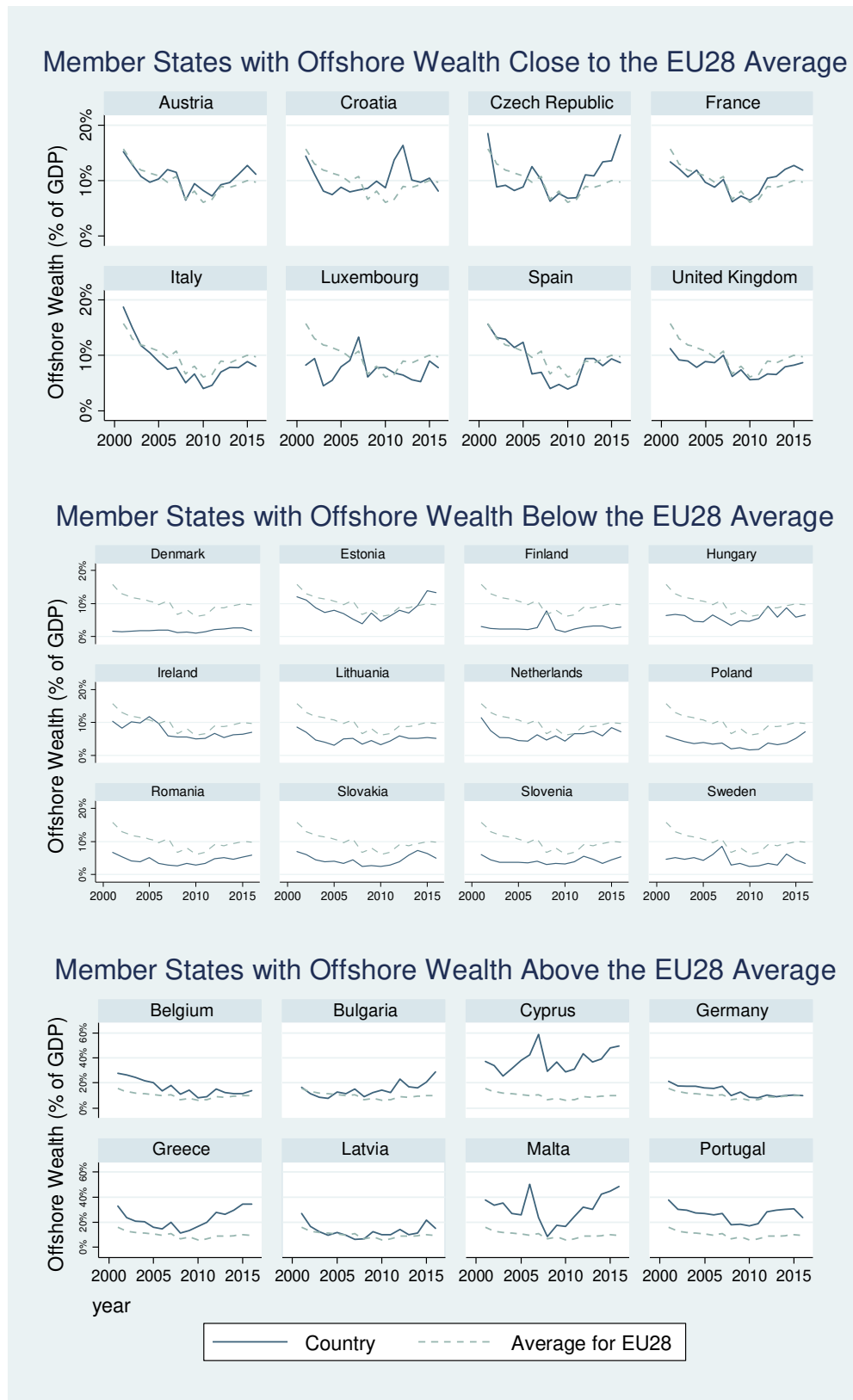
Figure 14. Member States: Estimated Offshore Wealth (% of GDP)



Sources: Own computations and WDI for GDP

¹⁴¹ Some of the EU countries that were under an external assistance programme tend to have a higher offshore wealth than the EU average, but it may be due to economic uncertainty reasons and not to tax evasion.

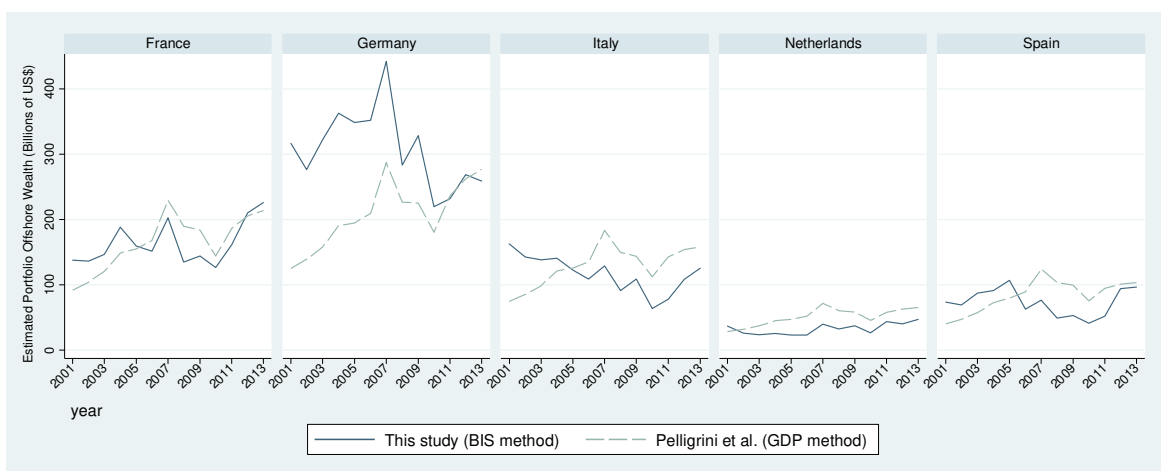
Figure 15. Evolution of Estimated Offshore Wealth, by Member State (in % of National GDP)



Sources: Own computations, WDI for GDP.

Comparing with results in Pellegrini et al. In Figure 16, the offshore wealth estimated by this Study is compared with results from Pellegrini et al. (2016) for 5 Member States (France, Germany, Italy, the Netherlands and Spain). Remember that Pellegrini et al. (2016) assumes that the offshore wealth held by residents of a given country is proportional to that country’s GDP and is therefore constant in GDP terms.¹⁴² For France, offshore wealth estimates from this Study and those from Pellegrini et al. are close, as we have found that France’s offshore wealth is stable in GDP terms (Figure 15). By contrast, for Germany the two series of estimates diverge before 2010, reflecting the significant reduction in the offshore wealth of German residents between 2001 and 2010.

Figure 16. Comparison of Estimated Offshore Wealth for Member States



Sources: Own computations, Pellegrini et al. (2016)

5.2.3 Offshore Wealth by Type I IFC

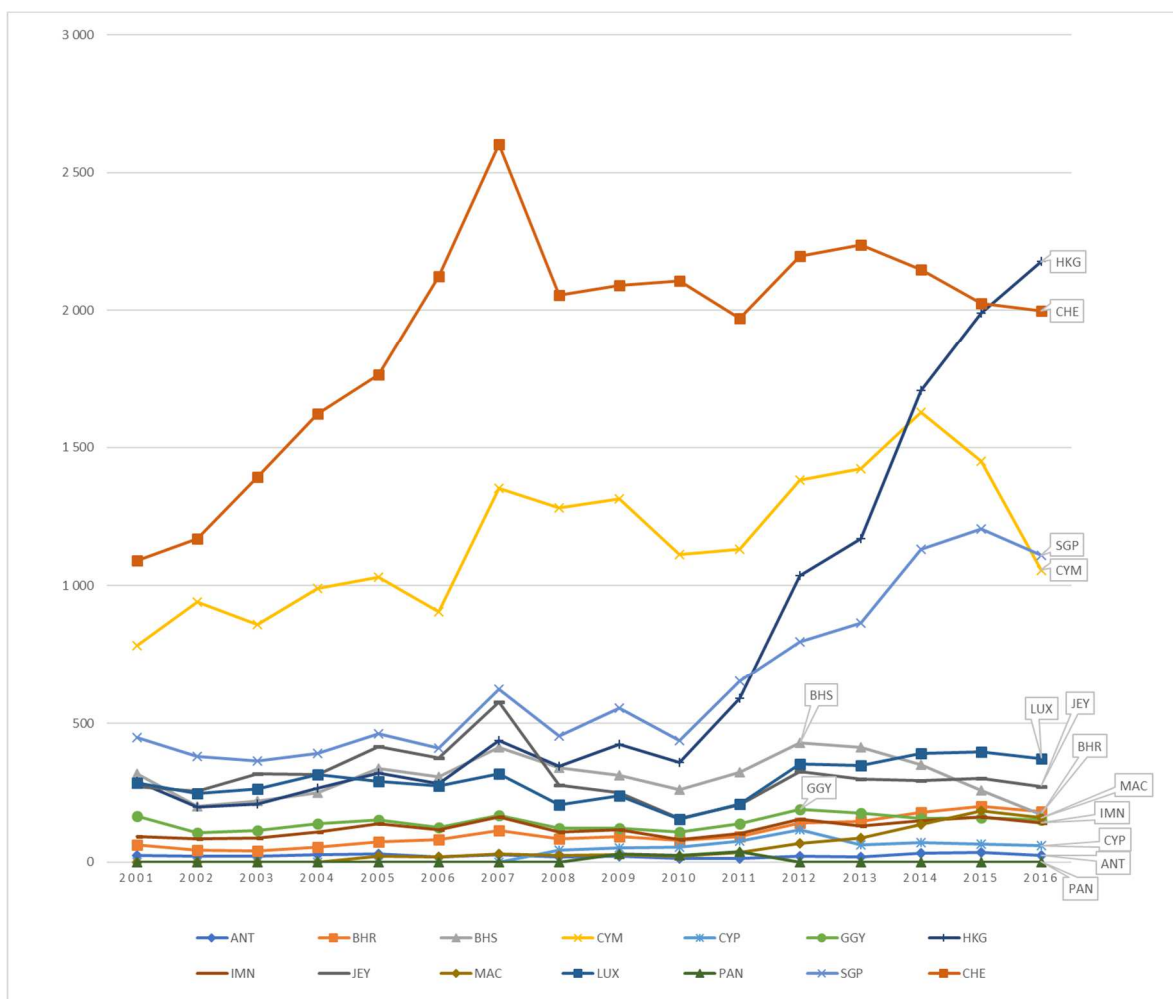
The estimates of offshore wealth held in each Type I IFC are summarised in Figure 17 and Figure 18. Appendix 4 provides full results. Key findings are as follows:

- Until 2015, **Switzerland** is the Type I IFC with the largest stock of offshore wealth (Figure 17). In dollar terms, offshore wealth held in Switzerland increases until 2007 (with a maximum of US\$ 2.6 trillion) and, after a sharp decrease in 2008, remains relatively stable thereafter. It is estimated at US\$ 2.0 trillion in 2016 (a share of 25.4% of global offshore wealth, from 42.5% in 2010).
- Until 2014, the **Cayman Islands** are the second Type I IFC in dollar terms. From 2014 on, offshore wealth held in the Cayman Islands decreases to reach US\$ 1.1 trillion in 2016. The share of global offshore wealth held in the Cayman Islands fluctuates around 21% between 2001 and 2014 and then drops to 13.4% in 2016.
- Figure 17 and Figure 18 highlight the strong dynamic of **Hong Kong** and **Singapore** as Type I IFCs since 2010. In 2016, Hong Kong was the Type I IFC with the highest dollar value of offshore wealth, at an estimated US\$ 2.2 trillion (27.7% of global offshore wealth), against only US\$ 291 billion in 2010 (7.6%). Similarly, in 2016, Singapore was the third largest Type I IFC with US\$ 1.1 trillion (14.1%) against US\$ 450 billion in 2010 (11.7%).

¹⁴² See page 33.

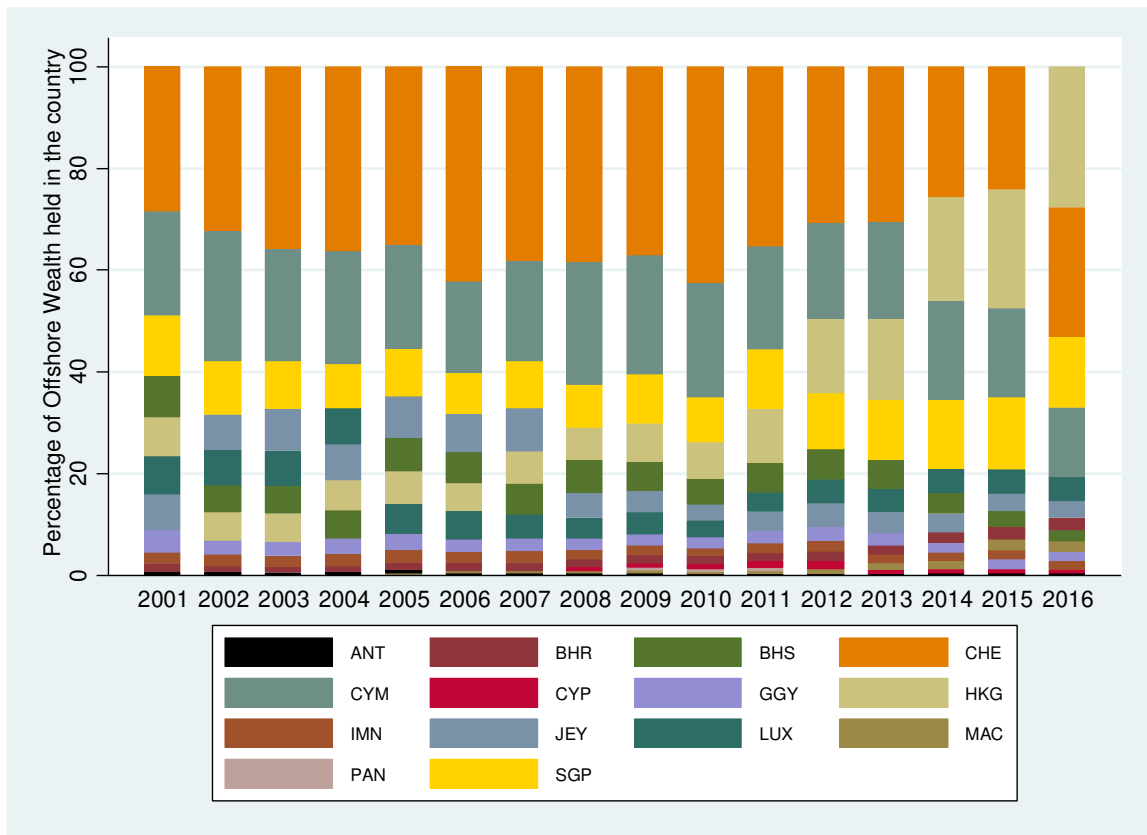
- Among other Type I IFCs:
 - The share of offshore wealth held in the **Bahamas** decreases during the study period: it is estimated at US\$ 319 billion in 2001 (8.3%) and at US\$ 171 billion in 2016 (2.2%).
 - The share of offshore wealth also decreases in the **Channel Islands** (Guernsey, Jersey and Isle of Man) and **Luxembourg**. However, in dollar value, offshore wealth held in these jurisdictions is stable over the period.
 - In contrast, the share of offshore wealth held in **Bahrain** and **Macao** increases but was still low in 2016 (around 2%).

Figure 17. Offshore Wealth by Type I IFC (Billions of US\$)



Sources: Own computations

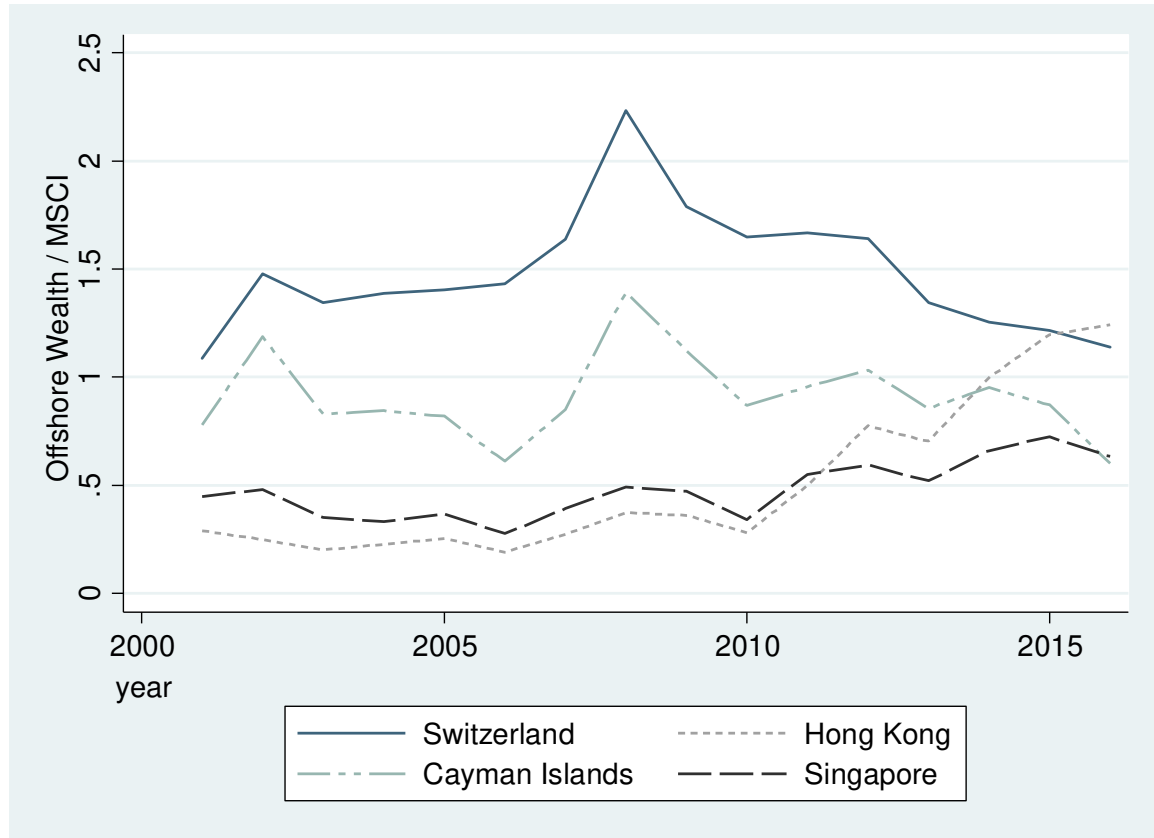
Figure 18. Share of Global Offshore Wealth in Each Type I IFC



Sources: Own computations and WDI for GDP.

For the top four Type I IFCs (Switzerland, the Cayman Islands, Hong Kong and Singapore), offshore wealth corrected by the MSCI world index is presented in Figure 19. This confirms the decline of Switzerland and the Cayman Islands as Type I IFCs, and the emergence of Hong Kong and Singapore.

Figure 19. Offshore Wealth Located in the Main Type I IFCs Corrected by the MSCI World Index



Sources: Own computations and MSCI.

5.2.4 Consistency Checks Using Swiss Leaks, Panama and Paradise Papers

A general caveat on data from these sources is that it is, by nature, unstructured. While they are useful to track individual cases, these sources thus do not lend themselves easily to the systematic macroeconomic analysis implemented in this Study. We use them to check the consistency of our results where meaningful comparisons can be made.

Swiss Leaks

Data from the Swiss Leaks¹⁴³ is used to check the consistency of the distribution of wealth ownership in Switzerland by country of origin as computed by our method using data from the BIS. Countries that hold a large fraction of HSBC offshore wealth are expected to hold a large fraction of offshore wealth in all Swiss banks. There is a limitation to this, as the Swiss Leaks data covers only one bank in Switzerland, HSBC, and information is only disclosed for 2006/2007.

In Table 4, the shares of cross-border deposits in the Swiss banks for the top 20 countries are compared with the shares of HSBC deposit accounts of these countries for 2006.¹⁴⁴ With a few exceptions, we find that these two sets of shares are broadly consistent. The existing small differences (for example, Russia) are consistent with the fact that Swiss Leaks data originates from only one bank and is noisier than the BIS data.

¹⁴³ See Appendix 2 for a detailed description of the Swiss Leaks data.

¹⁴⁴ Table 31 in Appendix 4 summarises the same comparison but by taking the 20 countries with the highest shares of HSBC deposit accounts.

Table 4. Comparison of Estimated Shares of Cross-Border Deposits in the Swiss bank (BIS Data) and Shares of Deposits in HSBC Swiss Banks (Swiss Leak Data) in 2006

	Top 20 (BIS)	Ownership share of fiduciary deposits	Ownership share of HSBC deposits	Rank in HSBC
Germany	1	8.30%	2.75%	10
Italy	2	7.75%	5.28%	4
France	3	6.84%	10.22%	2
Turkey	4	6.23%	2.00%	14
Russia	5	4.90%	1.27%	20
Saudi Arabia	6	4.17%	2.15%	13
Brazil	7	3.77%	4.93%	5
Spain	8	3.49%	1.62%	15
United Arab Emirates	9	3.46%	1.09%	22
Mexico	10	3.17%	1.55%	16
Argentina	11	3.04%	1.50%	17
UK	12	2.53%	11.94%	1
Israel	13	2.42%	4.02%	7
Austria	14	1.99%	0.84%	27
Greece	15	1.85%	1.32%	19
USA	16	1.74%	9.43%	3
Egypt	17	1.44%	1.19%	21
India	18	1.39%	2.89%	9
Venezuela	19	1.34%	4.41%	6
Morocco	20	1.28%	0.91%	26

Sources: Own computations and ICIJ Swiss Leaks.

Panama and Paradise Papers

Data from the Panama and Paradise Papers¹⁴⁵ is used to check the consistency between the list of Type II IFCs estimated in this Study and the use of shell companies as revealed by this source.

Firstly, we compare the list of jurisdictions where corporations were formed by Mossack-Fonseca and Appleby¹⁴⁶ against the list of Type II IFCs estimates in this Study. Table 5 presents the top 15 jurisdictions with the highest ratio of number of corporations to GDP for each jurisdiction (in US\$ billions) and the bottom 15 jurisdictions for the same ratio, for the years 2001 and 2014.¹⁴⁷ In both years, all top jurisdictions for the number of corporations / GDP ratio have a Type II weight different from 0 (at the exception of Marshall Islands in 2001); most jurisdictions with the lowest such ratio have a Type II weight equal to 0. As with the Swiss Leaks analysis above, the relatively minor differences may be explained by the lack of representativeness of the leaked data. For example, the high relative number of corporations in Uruguay may be explained by the relative geographical and cultural proximity of that country to Panama.

¹⁴⁵ International Consortium of Investigative Journalists, 'ICIJ Offshore Leaks Database', n.d., <https://offshoreleaks.icij.org/pages/database>.

¹⁴⁶ Information provided by corporate registries of Aruba, Cook Islands, Bahamas, Barbados, Malta, Nevis and Samoa contained in the Paradise Papers are not analysed as corporations located in these jurisdictions will be overrepresented. Table 34 in Appendix 4 provides information for all 136 countries for which data is available.

¹⁴⁷ As information from Appleby are only valid until 2014 in the Paradise Papers, we stopped the analysis to 2014 for the Panama Papers and the Paradise Papers.

Table 5. Where Are Panama and Paradise Papers Corporations Located?

2001					2014				
	Country	Total nb of corporations	Nb of corp./ GDP(US\$ billions)	Type II Weight		Country	Total Nb of corporations	Nb of corp./ GDP(US\$ billions)	Type II Weight
1	Bermuda	4971	1350.6	98%	1	Cayman Islands	5029	1482.0	100%
2	Cayman Islands	2459	1052.5	99%	2	Bermuda	4719	835.0	99%
3	Isle of Man	1185	714.2	98%	3	Seychelles	762	567.4	99%
4	Guernsey	472	264.0	96%	4	Samoa	387	480.6	100%
5	Jersey	1032	241.4	97%	5	Guernsey	1432	451.2	97%
6	Samoa	44	161.1	97%	6	Jersey	2558	447.7	98%
7	Seychelles	63	101.2	74%	7	Isle of Man	2868	386.1	93%
8	Gibraltar	145	63.4	94%	8	Bahamas	2299	209.8	96%
9	Bahamas	381	45.8	95%	9	Gibraltar	362	158.2	97%
10	Uruguay	779	37.3	66%	10	Hong Kong	30525	104.7	62%
11	Belize	28	32.1	96%	11	Mauritius	887	69.3	88%
12	Hong Kong	5218	30.8	59%	12	Dominica	36	68.8	80%
13	Dominica	10	29.4	57%	13	Belize	107	63.2	99%
14	Mauritius	132	29.1	74%	14	Uruguay	2526	44.1	52%
15	Marshall Islands	3	26.1	0%	15	Cyprus	829	35.5	81%
120	Nigeria	0	0	25%	120	India	43	0	0%
121	Haiti	0	0	0%	121	Tanzania	1	0	0%
122	Lithuania	0	0	0%	122	Belgium	11	0	27%
123	Sri Lanka	0	0	0%	123	Lithuania	1	0	0%
124	Slovakia	0	0	0%	124	Italy	39	0	0%
125	Mongolia	0	0	0%	125	Nigeria	10	0	0%
126	Mozambique	0	0	25%	126	Viet Nam	3	0	0%
127	Finland	0	0	0%	127	Austria	7	0	0%
128	Senegal	0	0	60%	128	Romania	3	0	0%
129	Kyrgyzstan	0	0	0%	129	Germany	47	0	19%
130	Belgium	0	0	50%	130	Denmark	3	0	0%
131	Macedonia	0	0	0%	131	South Korea	8	0	0%
132	Cameroon	0	0	39%	132	Finland	1	0	0%
133	Trinidad and Tobago	0	0	42%	133	Japan	12	0	0%
134	Chad	0	0	5%	134	Liberia	0	0	96%
135	Saint Vincent and the Grenadines	0	0	94%	135	Slovakia	0	0	0%

Sources: Own computations and ICIJ Panama and Paradise Papers.

Secondly, the dataset is used to compare the evolution of indirect offshore wealth estimated in this Study with the evolution of the number of corporations formed by Mossack-Fonseca and Appleby for EU residents. Caveats are in order on the usability of the data for that purpose, however:

- Again, leaked data comes from two firms only and is not expected to be fully representative;
- In a large number of cases, the actual owner of the corporation (and therefore her country of residence) is not identified. This is notably the case when the corporation is owned by another corporation not set up by one of the two law firms. All of the top 20 jurisdictions for corporation ownership have a Type II weight different from 0 in this Study for both years (Table 6), which suggests

that the actual owner of the corporations may not be in most cases correctly identified in the leaked data.¹⁴⁸

Table 6. Who Owns the Corporations in the Panama and Paradise Papers?

2001					2014				
	Country	Total nb of corporations	Nb of corp./ GDP(US\$ billions)	Type II Weight		Country	Nb of corporations	Nb of corp./ GDP(US\$ billions)	Type II Weight
1	Isle of Man	118	71.1	98.25%	1	Dominica	68	129.9	79.61%
2	Guernsey	94	52.6	96.39%	2	Guernsey	177	55.8	97.02%
3	Jersey	212	49.6	97.35%	3	Jersey	265	46.4	98.13%
4	Liechtenstein	54	21.7	94.41%	4	Gibraltar	85	37.2	97.46%
5	Dominica	7	20.6	57.48%	5	Nauru	4	34.2	66.93%
6	Gibraltar	39	17.0	93.74%	6	Liechtenstein	217	32.6	82.63%
7	Hong Kong	2751	16.2	59.50%	7	Isle of Man	228	30.7	93.17%
8	Uruguay	258	12.3	65.54%	8	Hong Kong	8188	28.1	62.16%
9	Panama	133	10.6	96.67%	9	Mauritius	324	25.3	88.01%
10	Cyprus	107	10.3	76.73%	10	Cyprus	581	24.9	80.50%
11	Malta	41	9.5	73.96%	11	Seychelles	27	20.1	98.54%
12	Zimbabwe	57	8.4	59.12%	12	Uruguay	1099	19.2	52.10%
13	Haiti	27	7.5	0.48%	13	Belize	31	18.3	98.85%
14	Andorra	11	7.3	74.41%	14	Panama	723	14.5	93.11%
15	Cape Verde	4	7.1	50.90%	15	Haiti	124	14.1	12.32%
16	Netherland Antilles	18	6.2	97.89%	16	Netherland Antilles	51	12.3	96.75%
17	Lebanon	100	5.7	86.31%	17	Malta	127	11.3	73.68%
18	Guatemala	104	5.6	65.27%	18	Vanuatu	9	11.0	87.13%
19	Ecuador	121	4.9	63.03%	19	Marshall Islands	2	10.9	99.84%
20	Seychelles	3	4.8	73.61%	20	Lebanon	450	9.3	59.80%

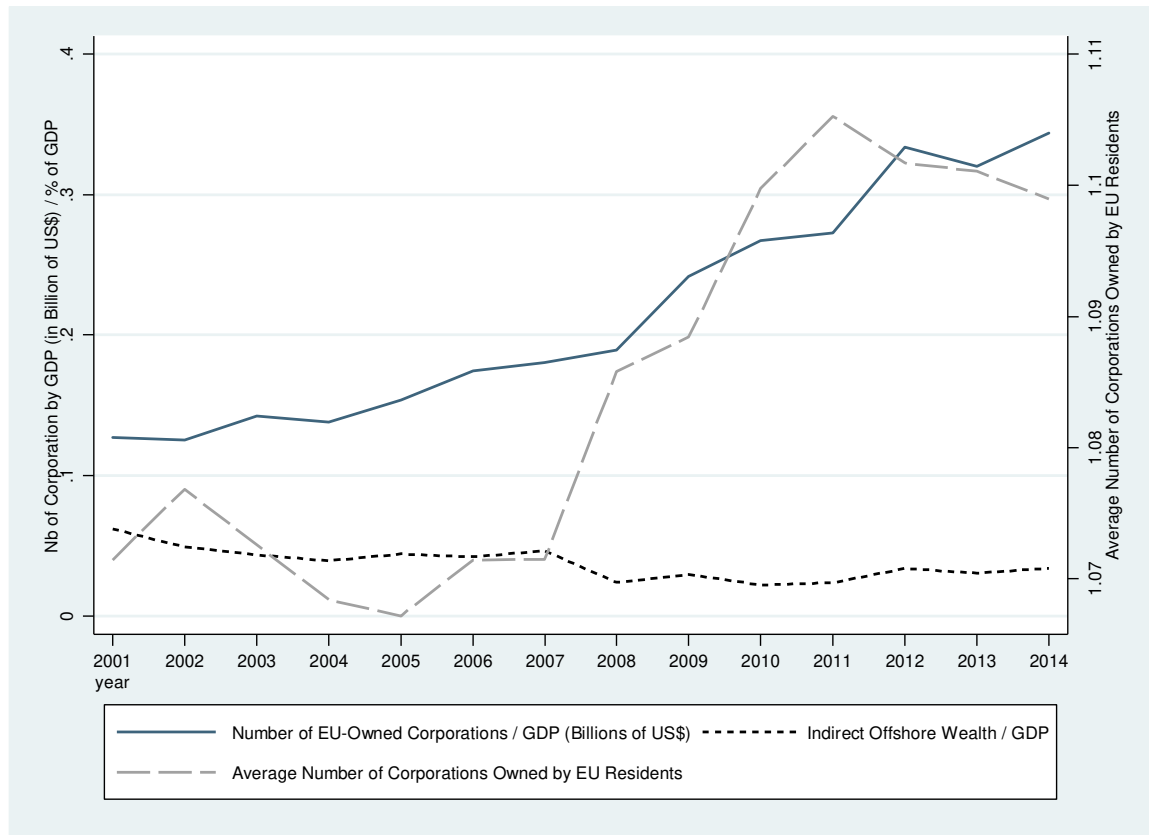
Sources: Own computations and ICIJ Panama and Paradise Papers.

These issues clearly limit the usability of the data. However, under the assumption that errors are constant over time, the evolution of the ratio of the number of EU-owned corporations over GDP (based on the Panama and Paradise data) can be compared with the evolution of the ratio of indirect offshore wealth owned by EU residents over GDP (from this Study). This comparison is reported in Figure 20. Up until 2007, the two ratios are clearly correlated, which lends support to our results. After 2007, the ratio of EU-owned corporations to GDP increases while indirect offshore wealth held by EU residents is constant. A third curve in this diagram shows the average number of corporations owned by EU residents,¹⁴⁹ showing a strong rise after 2007. One possible interpretation of this data is that, starting in 2007, EU residents increased their use of screening arrangements to hold their offshore wealth even though the total offshore wealth held through these mechanisms did not increase. This is entirely consistent with the increase of *indirect* holdings of EU residents (in value) after the implementation of the EUSD, as reported above, and it is also consistent with our results on total estimated offshore wealth.

¹⁴⁸ Corporations owned by other corporations or institutions were removed from the analysis of the Panama and Paradise Papers.

¹⁴⁹ Computed on the basis of the Panama and Paradise data.

Figure 20. Number of EU-owned Corporations Created by Mossack-Fonseca & Appleby and EU-owned Indirect Offshore Wealth



Sources: Own computations and ICIJ Panama and Paradise Papers.

5.3 Estimates of Revenue Lost to International Tax Evasion

Estimates of revenue lost to international tax evasion display substantial volatility across time. This is mainly for two reasons. First, rates of return on capital vary significantly from year to year (see Appendix 1). Second, offshore wealth estimates also exhibit variations, which are amplified when estimating the original income transferred offshore.¹⁵⁰ For these reasons, the estimates of revenue lost to international tax evasion presented below have been smoothed by applying a simple backward moving average over three years.¹⁵¹

As they are for EU Member States only, the estimates presented in this section are expressed in euros. Because the euro-dollar exchange rate is itself volatile, this also adds volatility to our estimates. Estimates expressed as percentages of GDP, on the other hand, are robust to variations of the exchange rate, as yearly GDPs are computed on the same basis as estimates of revenue losses.

¹⁵⁰ Recall that the original income is estimated as the difference between two consecutive years of stocks of offshore wealth, which tends to amplify noisy volatility.

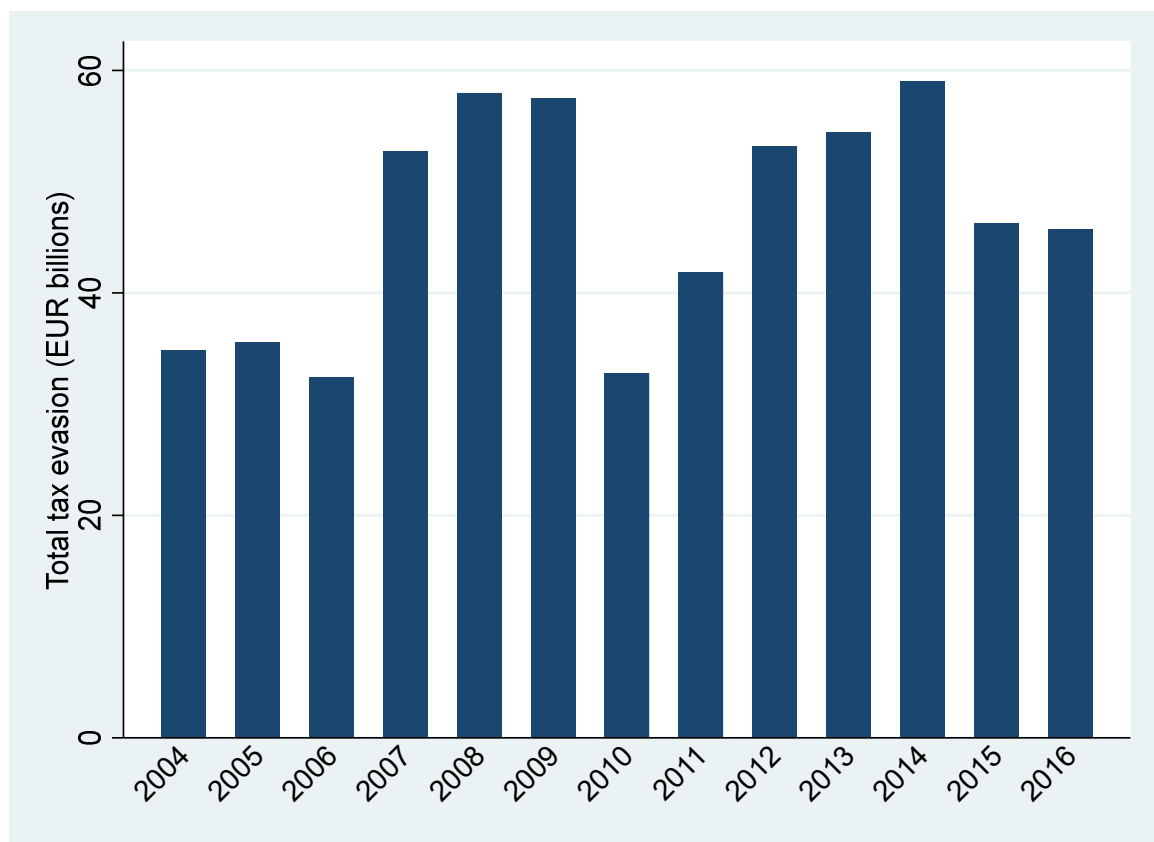
¹⁵¹ This explains why the time series starts in 2004 instead of 2001. Non-smoothed estimates are presented in Table 30 in Appendix 4. This smoothing procedure is especially useful when examining estimated revenue loss for a particular year, say 2016 (which is particularly important as the most recent year) to limit unwarranted noise affecting individual data points.

5.3.1 The Global Picture: International Tax Evasion at the EU level

The average yearly revenue lost to international tax evasion for the EU-28 over the period 2004-2016 is estimated at EUR 46 billion, or approximately 0.46% of GDP.

As shown in Figure 21, this estimate varies across time, ranging from a minimum of EUR 32 billion in 2006 to a maximum of EUR 59 billion in 2014. In 2016, the last year covered by the analysis, total revenue lost to tax evasion represents EUR 46 billion (0.32% of GDP). The last two years (2015 and 2016) show a decrease with respect to the 2012-2014 period.

Figure 21. EU-28: Total Revenue Lost to International Tax Evasion (Billions of Euros)

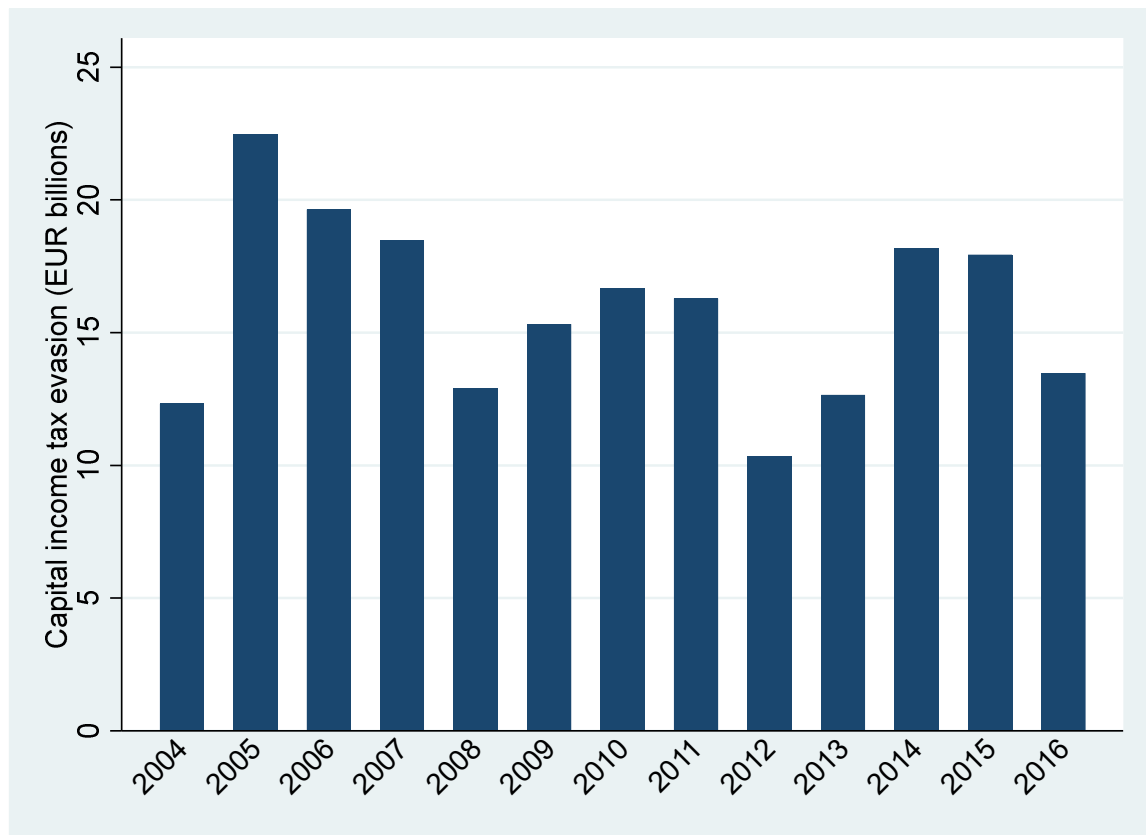


Sources: Own computations

International Tax Evasion on Capital Income

The evolution of revenue lost to tax evasion on capital income for the EU-28 is reported in Figure 22. On average over the period, it is an estimated EUR 16 billion per year, or 37% of total revenue lost to international tax evasion as estimated in this Study. Revenue lost to tax evasion on capital income reached a EUR 10 billion minimum in 2012 and a EUR 22 billion maximum in 2005. It is estimated at EUR 13 billion in 2016, the last year covered by the Study.

Figure 22. EU-28: International Tax Evasion on Capital Income (Billions of Euros)

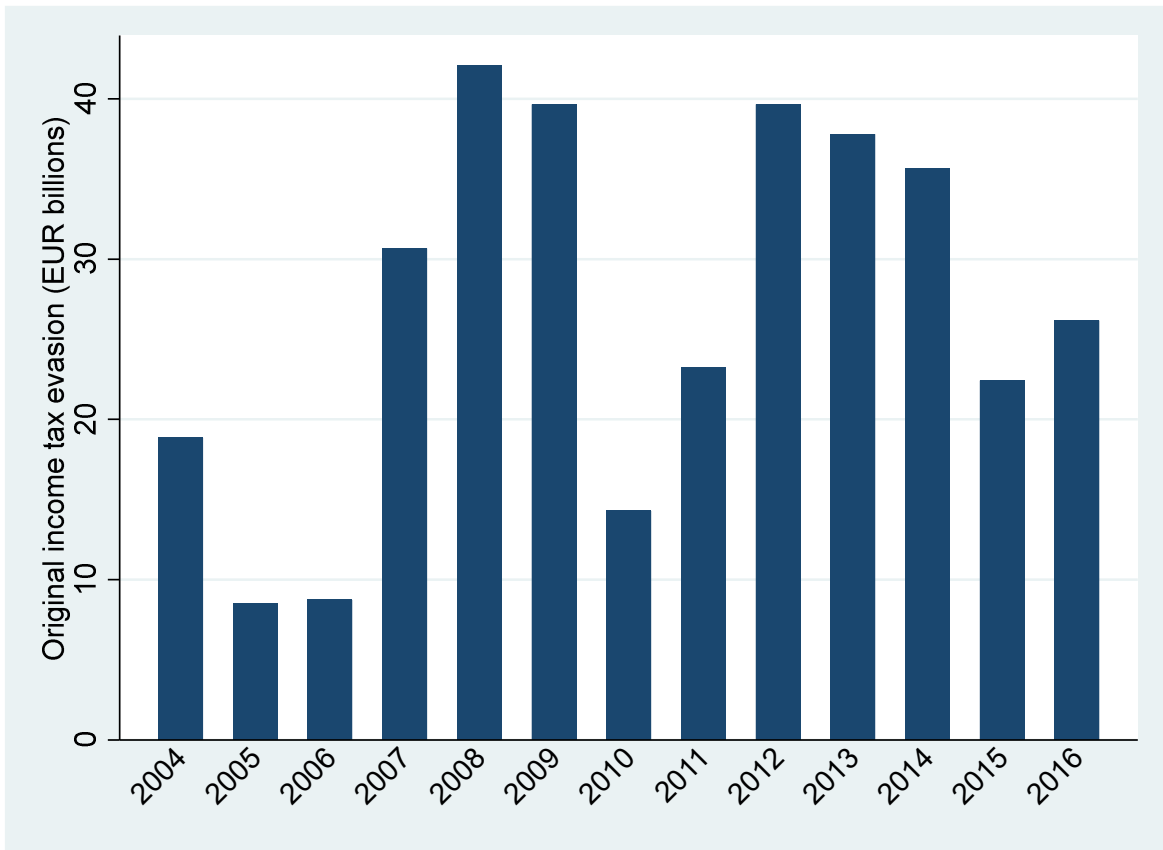


Sources: Own computations

International Tax Evasion on Original Income

The evolution of the revenue lost to tax evasion on original income for the EU-28 over the years 2004-2016 is shown in Figure 23. Recall that these estimates capture the tax revenue lost on the incremental wealth moved offshore, which is interpreted as the estimated original income (see Section 3.4). On average over the period, an estimate for EU-28 revenue lost to tax evasion on the original income is 55% (EUR 27 billion per year) of estimated total revenue lost to international tax evasion. In 2016, it amounts to EUR 26 billion (0.18% of GDP).

Figure 23. EU-28: International Tax Evasion on Original Income (Billions of Euros)

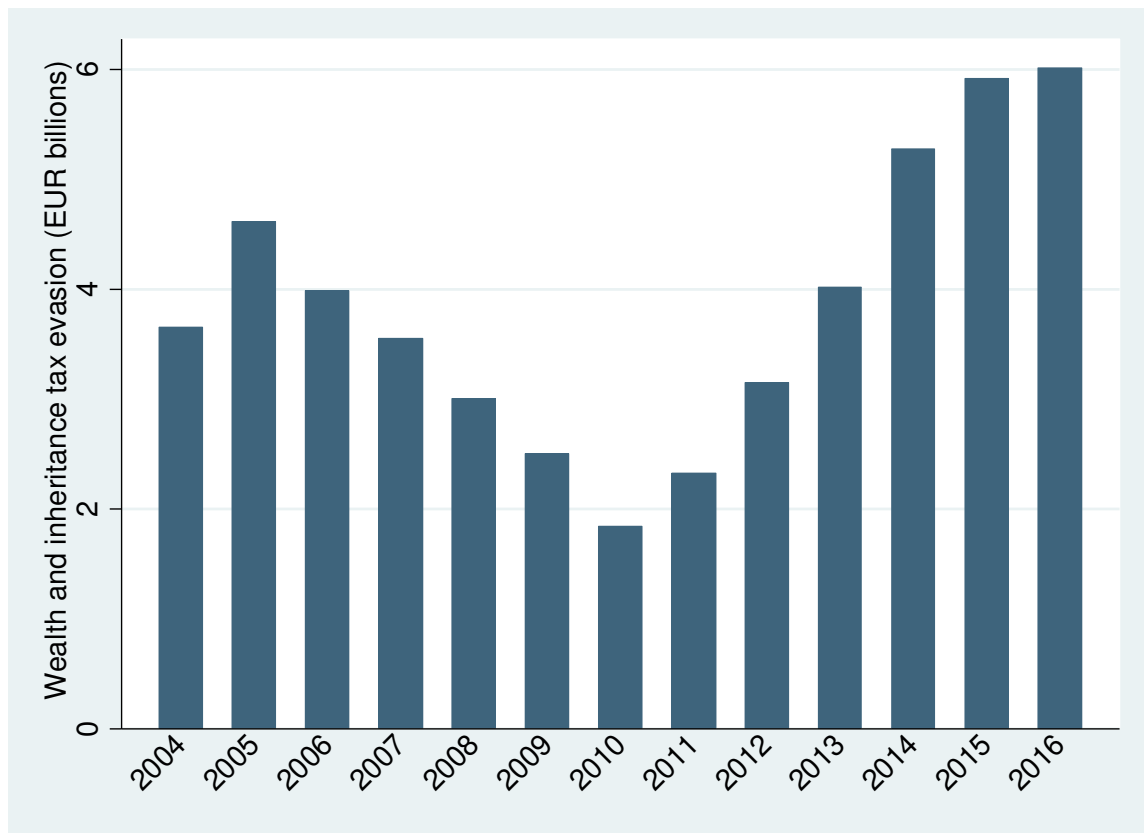


Sources: Own computations

International Tax Evasion on Wealth and Wealth-transfer Taxes

Wealth and inheritance tax evasion is the remainder of total estimated revenue lost to international tax evasion by EU-28 residents and is estimated at 0.03% of GDP on average over the period, or EUR 4 billion per year. In 2016, it represented EUR 6 billion (0.04% of GDP). Its evolution over time, with an increase starting in year 2010 (Figure 24), is correlated with the evolution of EU offshore wealth (see Section 5.2.2 and Figure 10).

Figure 24. EU-28: International Tax Evasion on Wealth and Inheritance Taxes (Billions of Euros)



Sources: Own computations

5.3.2 Sensitivity Analysis

Non-Compliance Rate

The results on the revenue lost to international tax evasion above assume a constant non-compliance rate of 75%. A sensitivity analysis with this rate varying between 60% and 90% has been implemented. Figure 25 makes it clear that these variations do not cause major fluctuations in the tax evasion results, which display some robustness with respect to the assumed non-compliance rate.¹⁵²

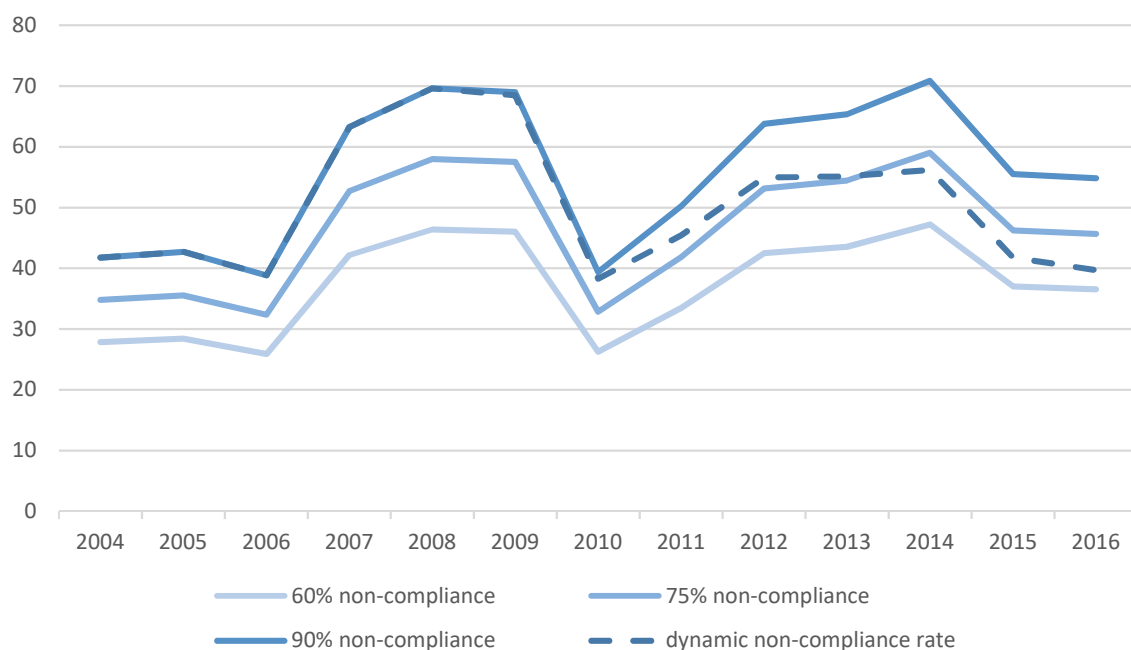
Revenue lost to tax evasion being estimated as the product of the non-compliance rate, the effective tax rate and the tax base, a change in the non-compliance rate results in a proportional change in revenue lost to tax evasion. An increase in non-compliance by 15 percentage points (20% relative to the assumed 75% non-compliance rate) leads to a 20% higher estimated average tax evasion (EUR 56 billion instead of EUR 46 on

¹⁵² As acknowledged, the lack of detailed data on compliance rate per country led to the selection of a uniform compliance rate of 75% for all EU Member States. However, the scope of defensive measures may be different between countries, which could lead to higher compliance rates in some countries. For example, Portugal has in place a specific system of reporting and auditing financial transfers to offshores. Another example is the Netherlands, that since 2010, have introduced a new regulation for legal vehicles known as APVs (Afgezonderde Particuliere Vermogens), helping the recovery of taxes (personal income tax and inheritance taxes) in cases where assets were previously held without taxation (domestically and abroad) through APVs such as foundations and trusts.

average). If the rate of non-compliance were to drop by 15 percentage points, the revenue lost to tax evasion estimate would be 20% lower than the baseline, totaling an average yearly revenue loss of roughly EUR 37 billion.

A further sensitivity analysis has been performed, with a dynamic non-compliance rate ranging from 90% in 2002-2008 to 60% in 2016. This is represented as the dashed curve in Figure 25. As expected, this curve coincides with the 90% curve until 2008. Subsequent levels of revenue lost to tax evasion are lower than under the 90% scenario, totaling EUR 37 billion in 2016. Overall, results are therefore also robust to the assumption of a dynamic, decreasing, non-compliance rate.

Figure 25. EU-28: International Tax Evasion Under Alternative Non-Compliance Rates (Billions of Euros)



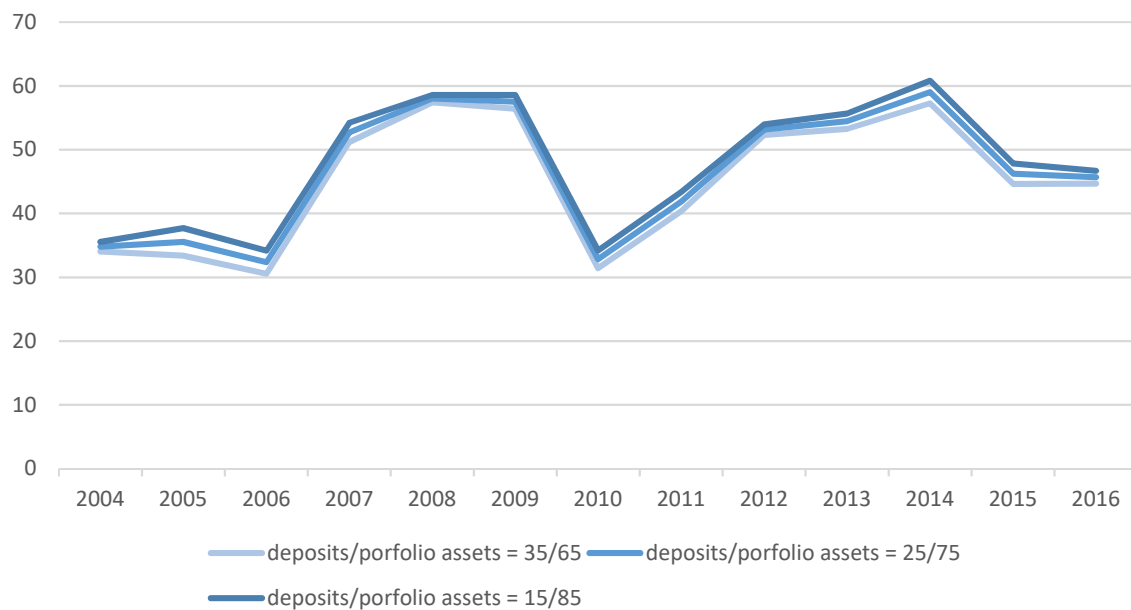
Sources: Own computations

Ratio of Deposits to Portfolio Assets

Under the central scenario, individuals are assumed to hold 25% of their financial wealth in deposits (and 75% as portfolio assets). A sensitivity analysis has been performed, with the deposit share varying from 15% to 35%. Figure 26 shows that revenue lost to tax evasion estimates are mostly robust to these variations. The main reason for this result is that a change in the deposit share has two opposing effects on tax evasion. On the one hand, a higher deposit share tends to increase the estimated offshore wealth (see Figure 9), which mechanically translates into more tax evasion.¹⁵³ On the other hand, a larger deposit share implies lower tax evasion as the rate of return on deposits is lower than rates of return on portfolio assets.

¹⁵³ Recall that the methodology adopted in this Study consists of first estimating offshore portfolio assets and then inferring the level of offshore deposits by using the ratio of deposits to portfolio assets.

Figure 26. EU-28: International Tax Evasion Under Alternative Ratios of Deposits to Portfolio Assets (Billions of Euros)



Sources: Own computations

5.3.3 Country-by-Country Estimates

Detailed estimations of international tax evasion by Member State are presented in Appendix 5. Table 7 below provides a summary of these results. Figure 27 and Figure 28 present revenue lost to tax evasion by Member State expressed respectively in euros and as a percentage of GDP. These results reflect the heterogeneity reported above on offshore wealth.

In euro terms, the revenue lost to tax evasion on average over the period was highest in France, with an average of EUR 10.74 billion per year. This is approximately 23% of total estimated revenue loss in EU-28 over the period and 0.7% of France's GDP. Overall, three Member States (France, Germany and the UK) account for more than 55% of total EU-28 estimated revenue lost to tax evasion. In 2016, the top estimates for revenue loss in euro terms are in France (EUR 10.08 billion), UK (EUR 8.52 billion) and Germany (EUR 7.22 billion). On average over the period, the 14 Member States with the lowest estimated lost revenue account for less than 5% of the EU-28 total (Lithuania, Estonia, Slovenia, Latvia, Slovakia, Romania, Bulgaria, Malta, Luxembourg, Hungary, Croatia, Cyprus, Denmark and Czech Republic).

As shares of GDP (Figure 28), the ranking is markedly different and also displays strong heterogeneity, with the highest average of revenue loss estimates over the period in Malta (2.34% of GDP), Cyprus (1.65% of GDP) and Portugal (1.01% of GDP). In 2016, our most recent year, countries with the largest ratios of level of revenue lost to tax evasion to GDP were Malta (2.39%), Cyprus (0.72%) and Latvia (0.68%).

These estimates are not perfectly correlated with estimates of offshore wealth reported earlier, both in euros and as shares of GDP. This can be explained by differences in the national tax systems but also by the dynamics of offshore wealth through time for each country (see Figure 15 and Table 3). Germany for example has an average offshore wealth over the study period of 13% of GDP, above the 9.8% EU-28 mean (Figure 14).

Estimated level of revenue loss to tax evasion for this country, 0.44% of GDP, is however close to the EU-mean, 0.46% of GDP. This contrast is caused by the fact that the German offshore wealth has declined over the study period, implying a low estimated level of revenue lost to tax evasion on the original income transferred offshore. The same kind of argument can be made when comparing offshore wealth and level of revenue loss in 2016. For example, while the estimated offshore wealth held by Portugal's residents is 24% of GDP in 2016, twice as much as France, level of revenue lost to tax evasion in those two countries is very close as a share of GDP (0.45% and 0.48% respectively). This again can be explained by the fact that the offshore wealth of Portugal has declined in 2016 and therefore that little income is estimated to have been transferred offshore, which translates into relatively low estimates of revenue lost to tax evasion in 2016.

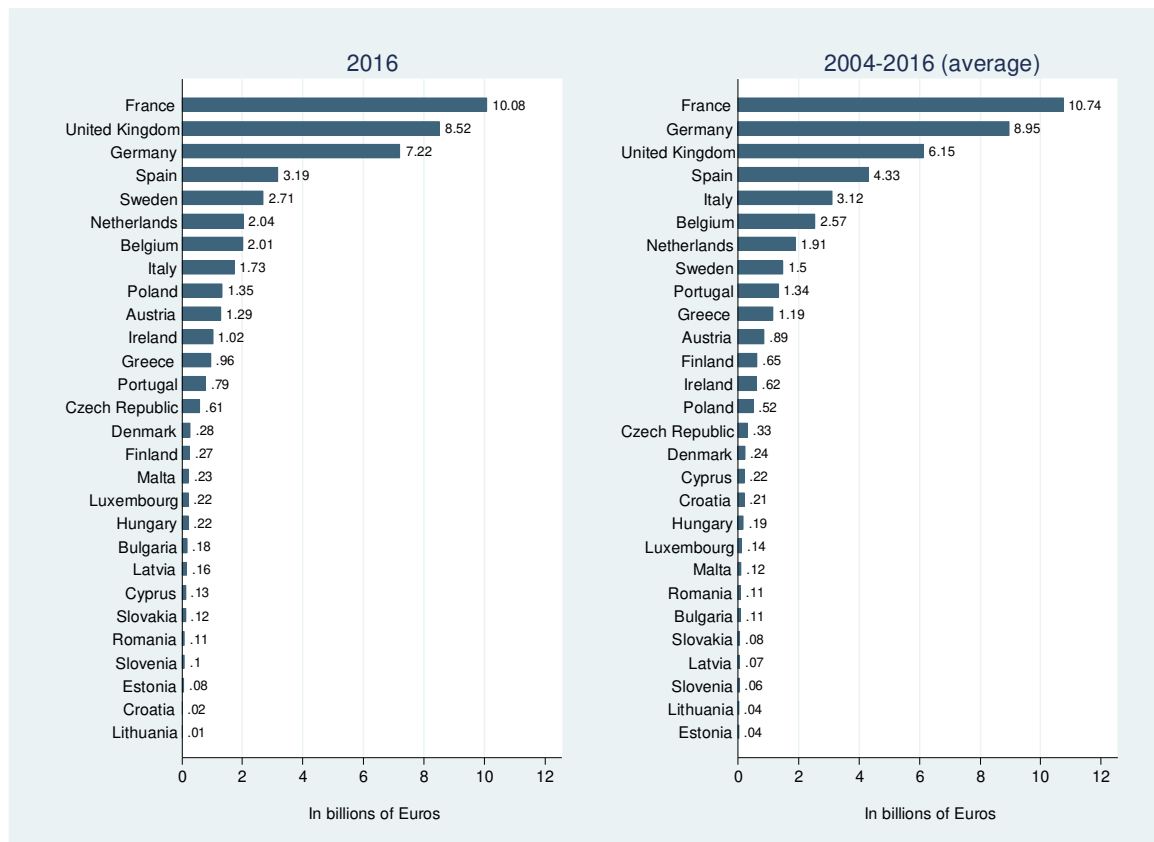
Table 7. International Tax Evasion by Member State

	2016 (EUR billions)	% of EU-28	% of GDP	2004-2016 (average, EUR billions) ¹⁵⁴	% of EU-28	% of GDP
Belgium	2.01	4.39%	0.50%	2.57	5.54%	0.93%
Bulgaria	0.18	0.39%	0.39%	0.11	0.24%	0.42%
Czech Republic	0.61	1.33%	0.36%	0.33	0.72%	0.30%
Denmark	0.28	0.61%	0.10%	0.24	0.52%	0.13%
Germany	7.22	15.81%	0.24%	8.95	19.26%	0.44%
Estonia	0.08	0.18%	0.40%	0.04	0.08%	0.32%
Ireland	1.02	2.23%	0.39%	0.62	1.34%	0.44%
Greece	0.96	2.11%	0.57%	1.19	2.57%	0.76%
Spain	3.19	6.98%	0.30%	4.33	9.32%	0.54%
France	10.08	22.08%	0.48%	10.74	23.12%	0.70%
Croatia	0.02	0.05%	0.05%	0.21	0.45%	0.64%
Italy	1.73	3.8%	0.11%	3.12	6.71%	0.25%
Cyprus	0.13	0.28%	0.72%	0.22	0.48%	1.65%
Latvia	0.16	0.35%	0.68%	0.07	0.16%	0.50%
Lithuania	0.01	0.03%	0.03%	0.04	0.08%	0.16%
Luxembourg	0.22	0.48%	0.43%	0.14	0.30%	0.46%
Hungary	0.22	0.47%	0.20%	0.19	0.42%	0.25%
Malta	0.23	0.51%	2.39%	0.12	0.25%	2.34%
Netherlands	2.04	4.48%	0.30%	1.91	4.11%	0.39%
Austria	1.29	2.83%	0.38%	0.89	1.91%	0.39%
Poland	1.35	2.95%	0.33%	0.52	1.12%	0.21%
Portugal	0.79	1.74%	0.45%	1.34	2.88%	1.01%
Romania	0.11	0.24%	0.07%	0.11	0.23%	0.12%
Slovenia	0.1	0.22%	0.26%	0.06	0.13%	0.23%
Slovakia	0.12	0.27%	0.16%	0.08	0.18%	0.19%
Finland	0.27	0.59%	0.13%	0.65	1.40%	0.45%
Sweden	2.71	5.93%	0.61%	1.5	3.22%	0.52%
United Kingdom	8.52	18.67%	0.37%	6.15	13.24%	0.39%
EU-28	45.66	100.00%	0.32%	46.44	100.00%	0.46%
<i>Capital income tax evasion</i>	13.48	29.52%	0.09%	15.89	36.50%	0.15%
<i>Inheritance tax evasion</i>	0.67	1.47%	0.00%	0.44	0.99%	0.00%
<i>Wealth tax evasion</i>	5.35	11.72%	0.04%	3.40	7.59%	0.03%
<i>Tax evasion on original income</i>	26.16	57.29%	0.18%	26.74	54.91%	0.26%

Sources: Own computations and Eurostat for GDP.

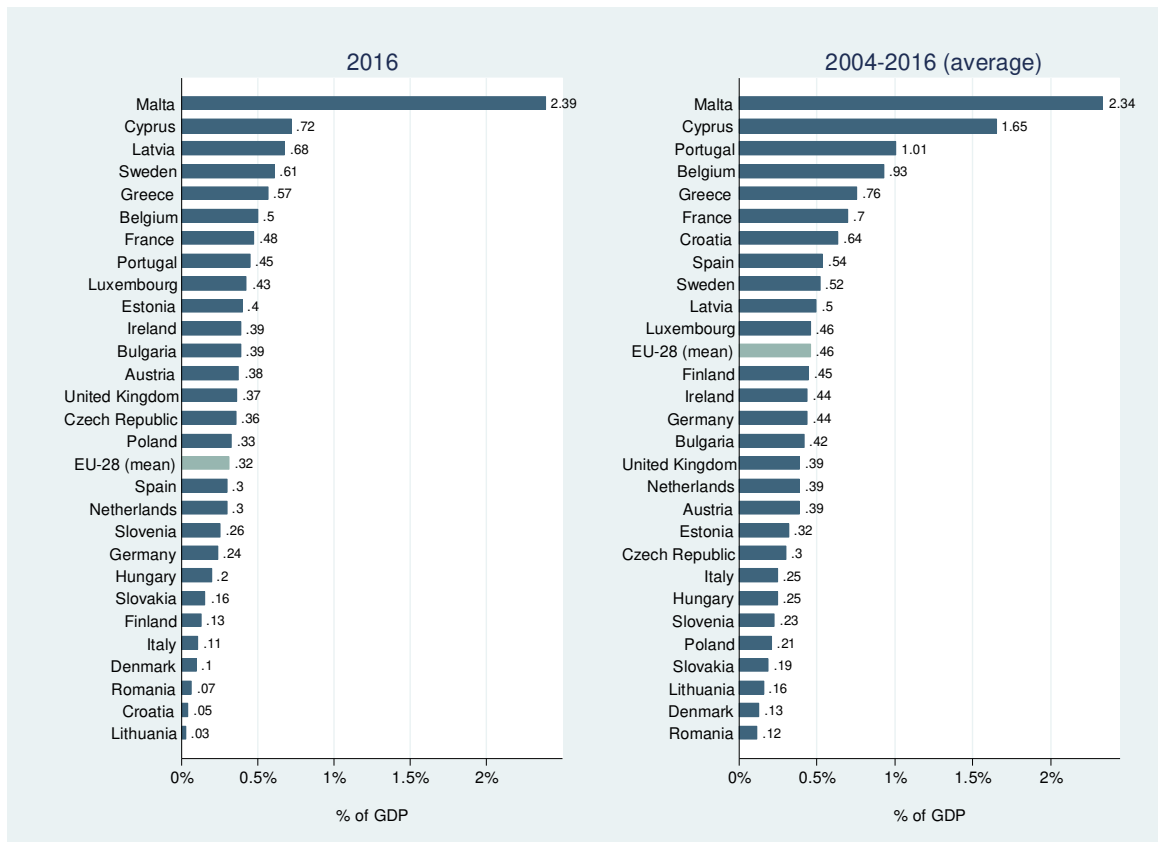
¹⁵⁴ Conversations into euros use the IMF's IFS exchange rate at the end of each year.

Figure 27. Revenue Lost to International Tax Evasion by Member State (Billions of Euros)



Sources: Own computations and Eurostat for GDP.

Figure 28. International Tax Evasion by Member State (% of GDP)



Sources: Own computations and Eurostat for GDP.

6 Conclusions

Building on the recent advances from the literature on the topic, with the insight that discrepancies in international statistics can be used to value offshore holdings, this Study provides measures of offshore wealth held by individuals (for the world's main economies) and corresponding estimates of international tax evasion (for the EU and EU Member States). We report estimates over the 2001-2016 period.

Following the literature, the methodology has included three main steps:

1. *Estimation of global offshore financial wealth.* At the global level, values of international portfolio asset and liabilities should balance, and they do not. This gap is the basis of an estimate of global offshore wealth.
2. *Breakdown by country of ownership and by international financial centre (IFC).* Data on international shares of offshore deposits was next used to allocate global offshore wealth to each individual country of ownership (the country where the individual owners of the offshore wealth reside). This step has been implemented for all major economies. A breakdown of offshore wealth held in each individual IFC is also provided.
3. *Estimation of international tax evasion by Member State.* Based on the estimated offshore wealth by country of ownership, international tax evasion was then estimated, using appropriate rates of non-compliance (the share of offshore wealth corresponding to a tax evasion behaviour). This is provided for the EU and EU Member States.

The Study has offered the following methodological improvements with respect to the literature:

- In Step 2 above, the "indirect" offshore wealth (defined as the wealth held through screening devices such as shell companies) is estimated for each country of ownership and added to the estimated "direct" offshore wealth (held by individuals in their own names). This is achieved by drawing a clear distinction between two types of IFCs (that are often treated equivalently in international lists of non-compliant jurisdictions): (i) wealth-receiving IFCs ("Type I"); and (ii) screening device-providing IFCs ("Type II"). Equipped with this distinction, the Study re-allocates holdings originating from Type II IFCs to the (estimated) ultimate owners.
- Also in Step 2, because international data on cross-border deposits does not discriminate between deposits held by households (which are used to distribute offshore wealth by country of ownership) and deposit held by corporations, the Study uses statistics on foreign direct investment (FDI) to correct the unwanted influence of corporate deposits on estimates. This is an improvement over the standard practice of assuming identical ratios of corporate/individual outgoing deposits.
- In Step 3, where most recent contributions have focused on tax evasion on the capital income generated by offshore holdings (dividends, interest, etc.), the Study also addresses foregone tax revenue on the original unreported income transferred offshore in the first place. As reported below, this component of foregone revenue turns out to be significantly larger than tax evasion on capital income and on the stock of wealth.

Global Offshore Wealth

A first finding is that the estimated global offshore wealth is US\$ 7.8 trillion in 2016 (EUR 7.5 trillion), or 10.4% of global GDP, a considerable amount. The yearly average

for the 2001-2016 period is US\$ 5.8 trillion (EUR 4.7 trillion). This is broadly consistent with accepted results from the literature (US\$ 8.3 trillion from Zucman (2017) and US\$ 10.3 trillion from the BCG 2017 annual report, both estimates for 2016).

Secondly, the 2009 crackdown coincides with a decrease of estimated global offshore wealth. However, this decrease is only temporary, as offshore wealth picks up again in 2012-2014, converging back to the values observed before the 2008 crisis. In 2016, the Study's most recent year, we again report a decrease, which is consistent with a possible impact from the latest measures to fight tax evasion (the EU DAC2, implementation of FATCA, and the endorsement of the CRS by the G20).

Offshore Wealth Held by EU Residents

Offshore wealth held by EU residents is estimated at US\$ 1.6 trillion (EUR 1.5 trillion) in 2016 and an average of US\$ 1.5 trillion (EUR 1.2 trillion) over 2001-2016. While stable in dollar terms, as a ratio of GDP this is a marked decrease from 15.7% in 2001 to 9.7% in 2016.

However, this decline cannot be interpreted as evidence of impact from the 2005 EUSD. Between 2005 and 2007, estimated EU offshore wealth in fact went up in dollar terms (from US\$ 1.6 trillion in 2005 to US\$ 1.9 trillion in 2007). The decrease only began with the 2008 crisis (from 10.8% of GDP in 2007 to 6.6% in 2008). EU residents' offshore wealth goes up again after 2011, to reach 9.7% of GDP in 2016.

Reduced Share of EU-held Offshore Wealth

Another important finding is that the increase in global offshore wealth over the last years of the study (2010-2016) is primarily driven by non-OECD countries, with an estimated contribution in dollar terms growing from US\$ 1.1 trillion in 2001 to US\$ 4.6 trillion in 2016.

Among non-OECD economies, the surge of China is especially strong, with a 21-fold increase of offshore wealth held by Chinese residents over the period (from US\$ 90 billion in 2001 to US\$ 1.9 trillion in 2016). In the final year of the study period (2016), China held by far the largest block of offshore wealth, although this result needs to be interpreted with caution as it may be influenced by the emergence of Hong Kong as a major centre for renminbi trading, not necessarily by non-compliant behaviour.

Indirect Offshore Wealth

Estimated offshore wealth held indirectly (through shell companies and other screening arrangements) by EU residents increases between 2004 and 2006. In 2004, it was 34.5% of their global offshore wealth; in 2006, this share goes up to 43.5%. Interestingly, indirect offshore wealth held by American and Chinese residents remained stable from 2004 to 2006. These facts are consistent with the EUSD having induced an increase of the indirect share of offshore wealth held by EU residents (without a reduction in its overall value).

Heterogeneity Among Member States

Our estimates suggest strong heterogeneity among Member States in offshore wealth held by individuals, both in dollar and GDP terms.

Not surprisingly, the largest offshore wealth shares are held by EU's largest economies. Germany, the UK, France, and Italy make up more than 65% of EU-28 offshore wealth on average over the study period. As shares of GDP, the ranking is markedly different and also displays strong heterogeneity. The largest economies (mainly Germany, France, UK, Italy and Spain) are close to the EU-28 mean while Member States with the

largest offshore wealth in GDP terms are Cyprus, Malta, Portugal and Greece, which are consistently above the EU-28 mean in each year of the study period and above 20% of GDP on average.

A third group of countries include Member States with estimated offshore wealth below 5% of GDP. In 2016 these include Denmark, Finland, Sweden and Slovakia and, on average over the period, Poland, Slovenia, Romania and Lithuania.

Estimates of Revenue lost to International Tax Evasion

Yearly average revenue losses due to international tax evasion for the EU-28 over the study period is estimated at EUR 46 billion, or approximately 0.46% of GDP. These estimates include three components of international tax evasion: tax evasion on capital income; on the stock of wealth; on the original unreported income.

The heterogeneity in offshore wealth among Member States translates into heterogeneity in revenue lost. In euro terms, revenue lost to international tax evasion on average over the period is the highest in France, with an average of EUR 10.74 billion per year, or 0.7% of GDP. Overall, three Member States (France, Germany and the UK) account for more than 55% of total EU-28 revenue lost to tax evasion. On average over the period, the 14 Member States with the lowest estimated lost revenue account for less than 5% of the EU-28 total (Lithuania, Estonia, Slovenia, Latvia, Slovakia, Romania, Bulgaria, Malta, Luxembourg, Hungary, Croatia, Cyprus, Denmark and Czech Republic).

Limitations of the Study

It is important to be aware of the limitations of the Study, which are mostly a result of the data available at this time:

- Important elements of wealth, namely life insurance contracts, cash money and real estate are not captured by our methodology as they are not reflected in the global discrepancy between portfolio assets and liabilities. As with other contributions in the literature implementing the same approach, our estimates should thus be interpreted as minima.
- While the Study has used FDI data to better clean out cross-borders corporate deposits from cross-borders deposits from individuals, specific data for the latter would increase the precision of the computations.
- Non-compliance rates (which are needed to produce estimates of tax evasion) are based on observed behaviour in selected countries, as reported in the literature. In addition, sensitivity tests on these rates have mostly confirmed our central assumptions and results. Nevertheless, more data from more countries on the non-compliance behaviour associated with offshore wealth would improve the robustness of results.
- Finally, new strategies adopted by tax evaders may stretch the ability of the methodology to capture hidden offshore holdings and the related tax evasion. For example, the growing practice of dual fiscal residencies (with investments made out of a fiscal residency of convenience) will not be captured by our approach, as they are reflected in international statistics and do not give rise to the anomalies we track here.

References

- Alstadsæter, Annette, Niels Johannesen, and Gabriel Zucman. 'Tax Evasion and Inequality'. Working Paper. National Bureau of Economic Research, 2017. <https://doi.org/10.3386/w23772>.
- . 'Who Owns the Wealth in Tax Havens? Macro Evidence and Implications for Global Inequality'. *Journal of Public Economics*, In Honor of Sir Tony Atkinson (1944-2017), 162 (1 June 2018): 89–100. <https://doi.org/10.1016/j.jpubeco.2018.01.008>.
- Boston Consulting Group. 'Global Wealth 2017: Transforming the Client Experience', 2017.
- Canada Revenue Agency. 'International Tax Gap and Compliance Results for the Federal Personal Income Tax System', 2018.
- Caruana-Galizia, Paul, and Matthew Caruana-Galizia. 'Offshore Financial Activity and Tax Policy: Evidence from a Leaked Data Set'. *Journal of Public Policy* 36, no. 3 (September 2016): 457–88. <https://doi.org/10.1017/S0143814X16000027>.
- De Nederlandsche Bank. 'Statistics', n.d. <https://statistiek.dnb.nl/en/statistics/index.aspx>.
- De Simone, Lisa, Rebecca Lester, and Kevin Markle. 'Transparency and Tax Evasion: Evidence from the Foreign Account Tax Compliance Act (FATCA)', June 2018.
- Deloitte. 'The Deloitte Wealth Management Centre Ranking 2015: Capturing Value in a Shifting Environment', 2015.
- DG TAXUD, EC. 'Taxes in Europe' Database (TEDB)', n.d. https://ec.europa.eu/taxation_customs/taxes-europe-database-tedb_en.
- Elsayyad, May, and Kai A. Konrad. 'Fighting Multiple Tax Havens'. *Journal of International Economics* 86, no. 2 (1 March 2012): 295–305. <https://doi.org/10.1016/j.jinteco.2011.09.002>.
- Financial Stability Forum. 'Report of the Working Group on Offshore Centres', 5 April 2000.
- Forstater, Maya. 'Tax and Development: New Frontiers of Research and Action', 2018.
- Grinberg, Itai. 'The Battle Over Taxing Offshore Accounts'. *UCLA Law Review*, 2012. <https://www.uclalawreview.org/the-battle-over-taxing-offshore-accounts/>.
- Guttentag, Joseph, and Reuven Avi-Yonah. 'Closing the International Tax Gap'. *Book Chapters*, 1 January 2005. https://repository.law.umich.edu/book_chapters/70.
- Hanlon, Michelle, Edward L. Maydew, and Jacob R. Thornock. 'Taking the Long Way Home: U.S. Tax Evasion and Offshore Investments in U.S. Equity and Debt Markets'. *The Journal of Finance* 70, no. 1 (1 February 2015): 257–87. <https://doi.org/10.1111/jofi.12120>.
- Hemmelgarn, Thomas, and Gaëtan Nicodème. *Tax Co-Ordination in Europe: Assessing the First Years of the EU-Savings Taxation Directive*. June 2009. Taxation Papers 18. Luxembourg: Office for Official Publ. of the Europ. Communities, 2009.
- Henry, James S. 'The Price of Offshore Revisited: New Estimates for Missing Global Private Wealth, Income, Inequality, and Lost Taxes'. Tax Justice Network Working Paper, 2012.
- Hong Kong Monetary Authority. 'Renminbi Business in Hong Kong', n.d. <https://www.hkma.gov.hk/eng/key-functions/international-financial-centre/renminbi-business-hong-kong.shtml>.
- IBFD. 'IBFD Your Portal to Cross Border Tax Expertise', n.d. <https://www.ibfd.org/>.

- International Consortium of Investigative Journalists. 'ICIJ Offshore Leaks Database', n.d. <https://offshoreleaks.icij.org/pages/database>.
- International Monetary Fund. 'Balance of Payments and International Investment Position Statistics (BOP/IIP)', n.d. <http://data.imf.org/?sk=7A51304B-6426-40C0-83DD-CA473CA1FD52&sId=1440014571113>.
- , ed. *BPM6 Compilation Guide*. Washington, DC: International Monetary Fund, 2014.
- . 'Coordinated Portfolio Investment Survey (CPIS)', n.d. <http://data.imf.org/?sk=B981B4E3-4E58-467E-9B90-9DE0C3367363>.
- . 'IMF Fiscal Monitor: Capitalizing on Good Times', April 2018. <https://www.imf.org/en/Publications/FM/Issues/2018/04/06/fiscal-monitor-april-2018>.
- . 'International Financial Statistics', n.d. <http://data.imf.org/?sk=4C514D48-B6BA-49ED-8AB9-52B0C1A0179B>.
- . 'Offshore Financial Centers: IMF Background Paper', June 2000. <http://www.imf.org/external/np/mae/oshore/2000/eng/back.htm>.
- Johannesen, Niels. 'Tax Evasion and Swiss Bank Deposits'. *Journal of Public Economics* 111, no. Supplement C (1 March 2014): 46–62. <https://doi.org/10.1016/j.jpubeco.2013.12.003>.
- Johannesen, Niels, Patrick Langetieg, Daniel Reck, Max Risch, and Joel Slemrod. 'Taxing Hidden Wealth: The Consequences of U.S. Enforcement Initiatives on Evasive Foreign Accounts'. Working Paper. National Bureau of Economic Research, March 2018. <https://doi.org/10.3386/w24366>.
- Johannesen, Niels, and Gabriel Zucman. 'The End of Bank Secrecy? An Evaluation of the G20 Tax Haven Crackdown'. *American Economic Journal: Economic Policy* 6, no. 1 (February 2014): 65–91. <https://doi.org/10.1257/pol.6.1.65>.
- Klautke, Tina, and Alfons J. Weichenrieder. 'Interest Income Tax Evasion, the EU Savings Directive and Capital Market Effects'. *Fiscal Studies* 31, no. 1 (1 March 2010): 151–70. <https://doi.org/10.1111/j.1475-5890.2010.00110.x>.
- Kleven, Henrik Jacobsen, Martin B. Knudsen, Claus Thustrup Kreiner, Søren Pedersen, and Emmanuel Saez. 'Unwilling or Unable to Cheat? Evidence From a Tax Audit Experiment in Denmark'. *Econometrica* 79, no. 3 (1 May 2011): 651–92. <https://doi.org/10.3982/ECTA9113>.
- Lane, Philip R., and Gian Maria Milesi-Ferretti. 'The External Wealth of Nations Mark II: Revised and Extended Estimates of Foreign Assets and Liabilities, 1970–2004'. *Journal of International Economics* 73, no. 2 (1 November 2007): 223–50. <https://doi.org/10.1016/j.jinteco.2007.02.003>.
- Lane, Philip R., and Jay C. Shambaugh. 'Financial Exchange Rates and International Currency Exposures'. *American Economic Review* 100, no. 1 (March 2010): 518–40. <https://doi.org/10.1257/aer.100.1.518>.
- Noked, Noam. 'Tax Evasion and Incomplete Tax Transparency'. *Laws* 7, no. 3 (23 August 2018): 31. <https://doi.org/10.3390/laws7030031>.
- OECD. *Global Forum on Transparency and Exchange of Information for Tax Purposes Peer Reviews: Switzerland 2016*. Paris: Organisation for Economic Co-operation and Development, 2016. <http://www.oecd-ilibrary.org/content/book/9789264258877-en>.
- . 'Global Forum on Transparency and Exchange of Information for Tax Purposes: Tax Transparency 2017, Report on Progress', 2017.

- . *Harmful Tax Competition: An Emerging Global Issue*. Paris: Organisation for Economic Co-operation and Development, 1998. <http://www.oecd-ilibrary.org/content/book/9789264162945-en>.
- . *Model Tax Convention on Income and on Capital 2014 (Full Version)*. Paris: Organisation for Economic Co-operation and Development, 2015. <http://www.oecd-ilibrary.org/content/book/9789264239081-en>.
- . 'OECD Tax Database', n.d. <http://www.oecd.org/tax/tax-policy/tax-database.htm>.
- . 'Standard for Automatic Exchange of Financial Account Information in Tax Matters, Second Edition', 2017. http://www.oecd-ilibrary.org/taxation/standard-for-automatic-exchange-of-financial-account-information-in-tax-matters-second-edition_9789264267992-en.
- . *Towards Global Tax Co-Operation: Progress in Identifying and Eliminating Harmful Tax Practices*. Paris: Organisation for Economic Co-operation and Development, 2000. <http://www.oecd-ilibrary.org/content/book/9789264184541-en>.
- . 'Update on Voluntary Disclosure Programmes: A Pathway to Tax Compliance', August 2015.
- OECD, and Council of Europe. *The Multilateral Convention on Mutual Administrative Assistance in Tax Matters*. Paris: Organisation for Economic Co-operation and Development, 2011. <http://www.oecd-ilibrary.org/content/book/9789264115606-en>.
- Omartian, Jim. 'Do Banks Aid and Abet Asset Concealment: Evidence from the Panama Papers'. SSRN Scholarly Paper. Rochester, NY: Social Science Research Network, 23 October 2017. <https://papers.ssrn.com/abstract=2836635>.
- Owens, Jeffrey. 'Offshore Tax Evasion: The Role of Exchange of Information', 2007.
- Pellegrini, Valeria, Alessandra Sanelli, and Enrico Tosti. 'What Do External Statistics Tell Us about Undeclared Assets Held Abroad and Tax Evasion?' Banca d'Italia, 2016.
- Roussille, Nina. 'Tax Evasion and the "Swiss Cheese" Regulation', 2015.
- Slemrod, Joel. 'Tax Compliance and Enforcement', 13 July 2017. <http://webuser.bus.umich.edu/jslemrod/JEL%20compliance%207-13-17.pdf>.
- Swiss National Bank. 'SNB Data Portal', n.d. <https://data.snb.ch/en>.
- The Bank for International Settlements. 'Debt Securities Statistics', 3 December 2017. <https://www.bis.org/statistics/secstats.htm>.
- Treasury Inspector General for Tax Administration. 'A Combination of Legislative Actions and Increased IRS Capability and Capacity Are Required to Reduce the Multi-Billion Dollar U.S. International Tax Gap', 2009.
- United Nations Conference on Trade and Development. 'FDI Statistics', n.d. <https://unctad.org/en/Pages/DIAE/FDI%20Statistics/FDI-Statistics.aspx>.
- United States Senate. 'Offshore Tax Evasion: The Effort to Collect Unpaid Taxes on Billions in Hidden Offshore Accounts', 2014.
- . 'Tax Haven Banks and U.S. Tax Compliance', 2008.
- United States Treasury. 'Treasury International Capital (TIC) System', n.d.
- Wooldridge, Philip D. 'The Changing Composition of Official Reserves'. SSRN Scholarly Paper. Rochester, NY: Social Science Research Network, 1 September 2006. <https://papers.ssrn.com/abstract=1632408>.

Zoromé, Ahmed. 'Concept of Offshore Financial Centers: In Search of An Operational Definition'. *IMF Working Papers* 07, no. 87 (2007): 1. <https://doi.org/10.5089/9781451866513.001>.

Zucman, Gabriel. *La Richesse cachée des nations*. La République des Idées. Le Seuil, 2017.

———. 'Taxing across Borders: Tracking Personal Wealth and Corporate Profits'. *Journal of Economic Perspectives* 28, no. 4 (November 2014): 121–48. <https://doi.org/10.1257/jep.28.4.121>.

———. *The Hidden Wealth of Nations - The Scourge of Tax Havens*. Chicago: University of Chicago Press, 2015.

———. 'The Missing Wealth of Nations: Are Europe and the U.S. Net Debtors or Net Creditors?' *The Quarterly Journal of Economics* 128, no. 3 (August 2013): 1321–64.

APPENDICES

Appendix 1. Detailed Methodology

Step 1: Estimates of Global Offshore Wealth

The financial wealth held offshore by households is comprised of portfolio assets and deposits. Global offshore portfolio wealth held by individuals is estimated as the global excess of international portfolio liability positions over international portfolio asset positions.

Estimation of Portfolio Assets

The first data source used to evaluate portfolio assets is the IMF's CPIS, which provides year-end bilateral international portfolio asset positions for 61 countries over the 2001-2016 period. The concepts and valuation of the CPIS data are based on the IMF's Balance of Payments Manual (version 6, hereafter BPM6).

Since our objective is to compile these positions for all countries,¹⁵⁵ we supplement the CPIS data with:

- The IMF's IIP, which includes portfolio positions for 158 countries as against the rest of the world. The concepts and valuation of the IIP are, as for the CPIS, based on BPM6.
- The EWN database, which provides estimates of portfolio equity and debt assets for 211 countries based on CPIS and IIP as well as third-party estimations. The EWN estimations, though, are only available until 2014.

When combining these three databases, special attention must be paid to differences between them:

- In the IMF's CPIS, the cross-border portfolio asset securities include the reserve invested in portfolio assets and the ones invested by international organisations whereas that is not the case for the EWN and the IMF IIP databases. The CPIS database is complemented by two other IMF surveys: The Securities Held by International Organisations (SSIO) and the Securities Held as Foreign Exchange Reserves (SEFER).
- In the EWN database, the estimation of cross-border debts includes both portfolio debts and other debts (the latter being of no relevance to the Study), and the breakdown between the two types of debt is provided only for countries that report their IIP to the IMF.

As reported in detail in Appendix 2, data gaps remain after the combined use of CPIS, IIP and EWN. The methodology to fill gaps is based on and updated from Zucman (2013). Four main limits to estimating the global portfolio asset securities using the CPIS database are identified, for which other estimation strategies are implemented:

- Not all countries are participating in the IMF's CPIS.
- Statistics are not available for each year for all reporting countries.
- Zucman (2013) identifies limits for two important countries in the CPIS Metadata: the Cayman Islands and the Netherlands.

¹⁵⁵ There are approximately 240 jurisdictions globally.

The portfolio assets are estimated based on the CPIS database for 71 countries; of these, 63 countries have statistics available on portfolio assets for the entire study period (2001-2016).¹⁵⁶ Some countries are dropped from the original CPIS database because data are not considered reliable. This is the case for China and Saudi Arabia (other estimation strategies are implemented) and for small countries whose participation in CPIS is either not constant over the years or too brief. For these countries, the portfolio assets are estimated using the EWN database.

- **Corrective strategies for missing years.** Two different strategies are implemented to fill the gap for countries that are not reporting each year:
 - If the missing years are the last years of the Study (2015 and 2016), the portfolio assets are estimated applying the yearly change rates of countries which do report every year (including 2015 and 2016).
 - Otherwise, the portfolio assets are estimated applying the share of the country's portfolio to the total of the CPIS assets of the closest reporting year.
- **Corrective strategy for the Netherlands' SFI.** In the IIP metadata, the Netherlands report that "in practice the collection of information for this category [Special Financial Institutions sector] is troublesome, and therefore, we usually are forced to revise our figures afterwards substantially to get the full picture". The same raw data, luckily, is also compiled and updated by the De Nederlandsche Bank (DNB)¹⁵⁷, which we use whenever they are available as they are likely to be more reliable. The IIP statistics published by the DNB is compared with the portfolio assets of the Netherlands in the CPIS database. We take the maximum of the two values after converting the DNB statistics into US\$ using the IMF official exchange rates for each year (IFS). For 2001 and 2002, data are not available on the DNB website such that we take the value of Zucman (2013).
- **Corrective strategy for Cayman mutual fund sector.** Before 2015, the Cayman Islands report only the portfolio assets of their banks, excluding their mutual fund industry. We estimate the value of the foreign asset securities owned by all sectors of the Cayman Islands as follows:
 - Firstly, the value of all US portfolio securities held by the Cayman Islands is computed as the sum of the short-term debt securities and long-term securities (portfolio equities and long-term portfolio debts);
 - For long-term securities, we use the end-of-year estimates of long-term US securities held by residents of other jurisdictions (both equities and long-term debt) of Bertaut and Tyron (2007) for 2001-2011 and Bertaut and Judson (2014) for 2012-2016.
 - Short-term portfolio debts are estimated using the US short-term security held by foreigners provided by the US Treasury International Capital system (TIC).¹⁵⁸ In this database, it corresponds to the sum of "short-term US treasury obligations", "other ST negotiable securities (excl. CDs)", and "negotiable CDs".

¹⁵⁶ The CPIS database is complemented by the SEFER and SSIO surveys for these countries.

¹⁵⁷ De Nederlandsche Bank, 'Statistics', n.d., <https://statistiek.dnb.nl/en/statistics/index.aspx>.

¹⁵⁸ United States Treasury, 'Treasury International Capital (TIC) System', n.d. United States Treasury. United States Treasury. United States Treasury.

- Next, the share of US securities in the portfolio of the Cayman Islands is estimated using a gravity model (Box 3), following Lane and Shambaugh (2010)¹⁵⁹. Data used to estimate the gravity model are:
 - The bilateral cross-border portfolio holdings data of CPIS;
 - From the CEPII database (for control variables and distance variables);
 - From the World Bank’s Development Indicators, completed by the EWN database (for countries GDP and population data);
 - List of countries with offshore financial centre of the IMF.¹⁶⁰
- Table 8 presents the regression coefficients of the gravity model. The adjusted R² of the model is lower than the one of Zucman (2013) (0.685 for equities and 0.707 for debts). However, our estimated values are close to the ones of Zucman (2013), with a maximum of US\$ 400 billion difference (see Table 9). This difference can be explained by the use of more recent data and a longer estimation period in this Study.

Box 3. The Gravity Model

The **gravity model of international trade** predicts bilateral trade flows based on the economic sizes (often using GDP measurements) of and distance between two units.

Information on the value of US securities held by the Cayman Islands, $A_{KY,US,t}$ is available in data published by the US Treasury.

Total foreign securities owned by the Cayman Islands can then be recovered by estimating the following gravity-like model of bilateral cross-border portfolio holdings:

$$\log(1 + A_{i,j,t}) = \phi_j + \theta_t + \beta Z_{i,j,t} + \gamma X_{i,t} + \epsilon_{i,j,t},$$

where $A_{i,j,t}$ denotes the portfolio holdings of country i in country j in year t (as declared in the CPIS database), ϕ_j denotes host-country fixed effects, θ_t year fixed-effects, $Z_{i,j,t}$ is a vector of bilateral controls (distance, GDP gap, dummies for common language, etc.), and $X_{i,t}$ a vector of source-level controls (population, GDP per capita, etc.).

From the predicted bilateral claims $A_{i,j,t}^p$, one can compute the predicted share of each country j in i ’s portfolio at time t as:

$$\omega_{i,j,t}^p = \frac{A_{i,j,t}^p}{\sum_k A_{i,k,t}^p}.$$

The estimated value of total foreign securities owned by the Cayman Islands is then equal to $A_{KY,US,t} / \omega_{KY,US,t}^p$.

¹⁵⁹ Philip R. Lane and Jay C. Shambaugh, ‘Financial Exchange Rates and International Currency Exposures’, *American Economic Review* 100, no. 1 (March 2010): 518–40, <https://doi.org/10.1257/aer.100.1.518>. Lane and Shambaugh.

¹⁶⁰ <https://www.imf.org/external/np/mae/osshore/2000/eng/back.htm#table1>

Table 8. Gravity Model Estimation

	(1) Log equities b/se	(2) Log debt b/se
Log distance	-0.676*** (0.015)	-0.746*** (0.012)
Common language	1.396*** (0.036)	0.542*** (0.030)
Colony dummy	0.942*** (0.063)	0.582*** (0.054)
Industrial pair dummy	2.059*** (0.046)	1.963*** (0.037)
Log of GDP gap	0.112*** (0.010)	0.193*** (0.008)
Log of GDP p.c. gap	-0.120*** (0.011)	-0.037*** (0.009)
Source country OFC	0.883*** (0.175)	1.609*** (0.146)
Latitude of source country	-0.000 (0.001)	0.007*** (0.000)
Source country landlocked	-0.645*** (0.035)	-0.263*** (0.028)
Log of source country population	0.600*** (0.009)	0.565*** (0.007)
Log of source country GDP	0.000*** (0.000)	0.000*** (0.000)
Observations	56857	61878
Adjusted R-squared	0.561	0.575

* p<0.05, ** p<0.01, *** p<0.001

Table 9. Portfolio Assets of Cayman Islands Estimation – Comparison with Zucman (2013)

		2001	2002	2003	2004	2005	2006	2007	2008
Our estimates	Equity	89	102	183	219	261	348	524	338
	Debt	144	180	226	372	395	608	752	702
	Total	233	282	409	591	656	956	1276	1040
Z13 estimation	Equity	164	202	339	404	432	618	776	461
	Debt	168	220	279	455	472	713	852	779
	Total	332	422	618	859	904	1331	1628	1240

Sources: Own computations and Zucman (2013).

Chinese Portfolio Assets Estimation

Following Wooldridge (2006)¹⁶¹, the figures reported in the SEFER by China for its publicly-held assets are too low to be consistent with a participation of China in the SEFER survey. Moreover, regarding its privately-held assets, China does not participate in CPIS and the values that are reported in IIP are imperfect because there is no report before 2004 and China reports at book value. Therefore, both estimation of their

¹⁶¹ Philip D. Wooldridge, 'The Changing Composition of Official Reserves', SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, 1 September 2006), <https://papers.ssrn.com/abstract=1632408>.

publicly-held assets (i.e., the reserve) and correction of their privately-held assets are necessary.

- **Publicly-held assets by China.** Estimates on China's international reserves are sourced from the foreign exchange assets reported in the IMF's International Financial Statistics (IFS)¹⁶²; assumptions are needed to determine which part is invested in securities.¹⁶³ Based on the literature (Zucman, 2017), we assume that 85% of the international reserves is invested in securities for the period 2001-2008 and that this share increases after the crisis (2009: 87%; 89% for 2010; 91% for 2012; and for the period 2013-2016: 95%).
- **Privately-held assets.** China's privately-held assets are extrapolated backwards from reliable statistics available in the IMF's IIP and then, using the same proportional evolution of the US securities held by China, derived from the TIC data.
 - For portfolio equity, statistics from the IMF's IIP are reliable for after 2008. As for the 2001-2008 period, the portfolio equity asset is estimated by extrapolating backwards using the proportional change of US equity held by China. For the US equity held by China, we use the end-of-year values estimated by Bertaut and Tyron (2007) for 2001-2011 and by Bertaut and Judson (2014) for 2012-2016.
 - For portfolio debt, statistics from the IMF's IIP are reliable for after 2004. As for the 2001-2004 period, the portfolio debt is estimated by extrapolating backwards using the proportional change of US debt held by China.
- Finally, publicly- and privately-held assets are summed to obtain estimates of the total portfolio assets.

Middle Eastern Oil Exporters (MEOs) Portfolio Assets Estimation

Countries that we include as MEOs are Bahrain, Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates.

CPIS data are not available for all these countries. Only Bahrain and Kuwait are participating regularly and reliably in CPIS. Moreover, in these countries, a specific kind of investor, the Sovereign Wealth Funds, plays an important role in their accumulation of foreign claims but are not included in the reserve statistics of CPIS.

- **Publicly-held assets by MEO.** Estimates of the international reserves held by MEO countries (including the Sovereign Wealth Funds) are provided by the IMF's IFS. Additionally, following Zucman (2017), we assume that 75% of the international reserves are invested in securities for the period 2001-2008, rising to 90% post-crisis. For Iran, no data are available, such that we take the estimation from the EWN database and use the value of 2014 for 2015 and 2016.
- Privately-held assets.
 - Firstly, we use the estimates of the US securities held by MEO countries – i.e., the end-of-year US long-term security estimated by Bertaut and

¹⁶² International Monetary Fund, 'International Financial Statistics', n.d., <http://data.imf.org/?sk=4C514D48-B6BA-49ED-8AB9-52B0C1A0179B>.

¹⁶³ Zucman (2017) assumes that 85% of the China's international reserves were invested in securities before 2009 and that this share rose post-crisis to reach 95% in 2013.

Tyron (2007) and Bertaut and Judson (2014) and the short-term debt from the US Treasury website.

- We assume then that the share of US assets represents 70% of the portfolio assets of MEO countries in 2001 and drop by 2% per year until representing 50% in 2011 and after.¹⁶⁴
- Missing years are filled by using the same year-by-year evolution ratio as of the publicly-held assets.
- Finally, publicly- and privately-held assets are summed to obtain estimates of the total portfolio assets.

Non-CPIS Reporting Countries Portfolio Assets Estimation

To complete the global portfolio asset estimation, we take the estimated value of portfolio securities for all countries in the EWN database that are not CPIS-reporting, or for which estimates of assets are not already done (China, MEO countries). However, the EWN database has two limits:

- There is no portfolio debt asset for countries that were not reporting their IIP to the IMF up to 2014. Only the aggregate debt assets are estimated (i.e., not only including portfolio debt but also other debts such as cross-border bank accounts, for example). To remedy these missing estimates, we apply the average ratio of portfolio debt to total debt, calculated for countries for which these estimates are available.
- The database is not updated after 2014. To fill the missing years, we use two strategies:
 - We take the IIP portfolio asset values when reported by countries for 2015 and 2016.
 - If these statistics are not available, we fill the missing years by using the same evolution ratios as the CPIS statistics.

The use of the EWN estimates as well as the extrapolation strategies allow us to estimate portfolio assets for 132 additional jurisdictions.

Estimation of Portfolio Liability Securities

The EWN and IIP databases are primarily used for portfolio liabilities, as few countries report that information to CPIS. The latter, however, provides derived data on liability positions based on its mirroring asset information (see Appendix 2). This derived data is used for filling data gaps as detailed below.

As for portfolio asset securities, there remain missing countries and years in the combined EWN-IIP databases, and data additions are necessary. The methodology is also based on and updated from Zucman (2013). The limits to estimate the global values of cross-border portfolio liabilities are:

- In the EWN database, no estimates are available after 2014.
- Not all countries are included in the EWN database.
- No estimates are available for portfolio debt liabilities if countries are not reporting their IIP to the IMF.
- Limits are identified in the EWN estimates for important countries:

¹⁶⁴ See appendices in Zucman (2013) and Zucman (2017).

- For the estimates of portfolio assets, the Netherlands estimates need to be compared with the ones published with the Dutch National Bank to be sure that the Special Financial Institution Sector is included.
- For Cayman Islands, as well as for other small financial centres, the portfolio liabilities are estimated using the CPIS-derived liabilities in the EWN database.

When possible, the limits of the EWN database are mainly corrected with the IIP database.

Main Databases: EWN and the IMF's IIP databases

The EWN database provides estimates for 211 jurisdictions. This database is first completed by the IMF's IIP one, mostly for the years 2015 and 2016 but also for other years marginally as this database is more current than the EWN one. The estimates are updated with the IIP database for 38 countries for which there were no estimations or estimates equal to 0 in EWN but estimates different from 0 in IIP. The IIP also allows us to provide estimates for 2015 and 2016 for 131 countries.

- **Corrective strategy for missing portfolio debt estimates.** In the EWN database, no portfolio debt estimates are available for countries that did not report their IIP to the IMF. For these countries, we estimate the portfolio debts with the derived portfolio debt liabilities from the CPIS. This strategy allows us to fill the missing values for portfolio debt liabilities of 114 countries.
- **Corrective strategy for the missing years.** Estimates for 2015 and 2016 are missing for countries that did not report their IIP to IMF as well as for some countries that have not reported for 2016 yet. For these countries, the portfolio liability securities are estimated using the CPIS year-by-year evolution ratio of the total assets of reporting countries. These strategies fill estimates for missing years for 92 countries.
- **Corrective strategy for the Netherlands' SFI.** The IIP statistics published by the DNB is compared with the portfolio liabilities of the Netherlands in the EWN database. We take the maximum of the two values after converting the DNB statistics to US\$ using the IMF official exchange rates for each year (IFS). For 2001 and 2002, data are not available on the DNB website, so we take the estimates of Zucman (2013).
- **Comparison with the CPIS-derived liability securities.** The selected estimate is the maximum of the derived liabilities and our estimates. This is because the IMF derives portfolio liabilities for each country from the portfolio assets that CPIS participating countries report as counterparts. These estimates can therefore be regarded as a minimum of the portfolio liability in each country. Using this strategy, estimates are corrected for 187 countries.
- **Correction for the Cayman Islands and Other Small Financial Centres.** We build on Zucman (2013) to correct estimates for the Bahamas, Bermuda, Jersey, Guernsey, the Isle of Man, the Netherland Antilles and the British Virgin Islands. Table 10 presents the detailed estimation for those financial centres. The portfolio debt, portfolio fund equity and portfolio non-fund equity are estimated separately as follows:
 - Debt liabilities (bonds) are estimated using the international debt securities database of the BIS. The estimates are the maximum between the financial centre debt security statistics from the BIS and the CPIS-derived debt liabilities. The debt statistics from the BIS are not available for Guernsey, Jersey and the Isle of Man, however.

- The non-fund equity liabilities are estimated using the TIC survey of US foreign assets. The mutual funds equity liabilities held by US residents in the financial centre are deducted from the total of equities held by the US residents in this financial centre.
- Fund equity liabilities (stocks) are estimated using the Net Asset Value provided in different digests from the financial centres' central banks (e.g., CIMA for Cayman Islands).
 - For the Cayman Islands: the fund equity liabilities are estimated using the CIMA's Investment Digest (2007-2016). The estimates are equal to the Net Asset Value (NAV) from which 50% of the value from the master funds¹⁶⁵ and other funds are deducted. Indeed, it is assumed that 50% of these funds are invested in domestic funds. Before 2005, the fund equity liabilities are estimated by extrapolating backwards using the proportional change or the total securities assets of the Cayman Islands. The methodology to compute the NAV in the CIMA's Investment Digest changed after 2013. However, for 2013, the values for the NAV estimated with both methodologies is provided. Therefore, after 2013, the estimates using the new methodology are corrected by the 2013 ratio between the NAV estimate using the previous methodology and the one using the new methodology.
 - For the Bahamas, the Isle of Man and the British Virgin Islands, no data is available.
 - For Bermuda, these statistics are estimated by using the NAV published in the annual report published by the Bermuda Monetary Authority.
 - For Jersey, Guernsey and the Netherland Antilles, it is assumed that the fund portfolio equity liabilities are equal to the mutual fund portfolio equity assets reported in CPIS by the country.¹⁶⁶
- The sum of the estimated non-fund and fund equity liabilities is compared to the CPIS- (mirror) derived equity liability and the maximum is taken for the estimates of the portfolio equity liability of each financial centre. This applies to all small financial centres, including those for which no data is available (for example, the Bahamas, the Isle of Man and the British Virgin Islands), which are then corrected with CPIS mirror data.

Other Countries

For countries for which no estimates are provided by the EWN or the IMF's IIP databases, portfolio liabilities are estimated using the liabilities derived from the CPIS asset database.

¹⁶⁵ A Master – Feeder structure is commonly used to allow investors with different tax requirement to invest in the same fund. The onshore feeder vehicle is used to raise capital from global investors managers and then this feeder will invest primarily into the offshore Master funds.

¹⁶⁶ After 2010, the estimates for the Netherland Antilles correspond to the statistics reported by Curacao & Sint Marteen.

International Organisations

The portfolio liabilities of international organisations are estimated using the international debt securities database of the BIS for the portfolio debt and the CPIS-derived liabilities for the portfolio equity.

Table 10. Estimations of Portfolio Liabilities for Financial Centres Not Reporting to IIP (Billions of US\$)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Cayman Islands																
Debt	391	453	512	657	712	911	1182	1143	1146	1155	1140	1202	1247	1307	1330	1349
CPIS-derived debt liabilities	319	418	512	657	712	911	1078	829	856	880	900	916	868	654	676	704
Estimated value (BIS)	391	453	496	526	544	878	1182	1143	1146	1155	1140	1202	1247	1307	1330	1349
Equity	414	460	664	788	933	1185	1670	1190	1150	1272	1474	1595	1813	2031	2082	2130
CPIS-derived equity liabilities	98	116	188	278	352	509	754	435	639	698	994	1094	1332	1759	1825	1910
Estimated value	414	460	664	788	933	1185	1670	1190	1150	1272	1474	1595	1813	2031	2082	2130
In fund	384	433	624	727	845	1056	1486	1129	1040	1147	1239	1331	1412	1578	1560	1573
In non-fund (TIC)	30	27	40	61	88	129	184	61	109	125	235	264	400	452	521	556
Bahamas																
Debt	2	4	5	8	6	5	13	9	10	9	12	14	13	11	13	13
CPIS-derived debt liabilities	2	4	5	8	5	5	13	7	5	6	7	7	7	6	5	7
Estimated value (BIS)	2	2	3	4	6	5	9	9	10	9	12	14	13	11	13	13
Equity	6	9	12	12	11	12	13	7	9	11	10	8	8	12	12	11
CPIS-derived equity liabilities	6	9	12	12	11	12	13	7	9	11	10	8	8	12	12	11
Estimated value	1	1	2	2	2	1	1	1	1	1	3	3	4	5	4	3
In fund	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
In non-fund (TIC)	1	1	2	2	2	1	1	1	1	1	3	3	4	5	4	3
Bermuda																
Debt	24	23	26	27	31	34	41	50	65	76	81	87	97	99	100	104
CPIS-derived debt liabilities	13	12	17	23	30	34	35	37	52	59	60	79	77	57	58	73
Estimated value (BIS)	24	23	26	27	31	34	41	50	65	76	81	87	97	99	100	104
Equity	175	157	223	310	361	401	501	312	302	343	314	330	380	427	436	461
CPIS-derived equity liabilities	158	128	174	251	286	344	484	254	302	343	300	330	380	427	436	461
Estimated value	175	157	223	310	361	401	501	312	266	309	314	327	345	347	316	334
In fund	56	68	116	158	188	212	249	171	147	178	190	188	176	165	144	137
In non-fund (TIC)	119	89	107	152	173	189	252	141	119	131	124	139	169	182	172	197
Jersey																
Debt	35	42	81	122	154	196	280	203	181	149	110	120	139	100	94	97
CPIS-derived debt liabilities	35	42	81	122	154	196	280	203	181	149	110	120	139	100	94	97
Estimated value (BIS)																
Equity	63	41	49	55	77	93	149	89	119	200	176	193	253	236	237	201
CPIS-derived equity liabilities	5	6	10	26	32	32	52	47	71	85	95	106	149	170	168	186
Estimated value	63	41	49	55	77	93	149	89	119	200	176	193	253	236	237	201
In fund	63	41	48	55	76	90	144	78	100	180	146	156	191	157	159	118

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
In non-fund (TIC)	0	0	1	0	1	3	5	11	19	20	30	37	62	79	78	83
Guernsey																
Debt	6	7	17	18	20	24	29	23	24	29	27	39	37	36	39	38
CPIS-derived debt liabilities	6	7	17	18	20	24	29	23	24	29	27	39	37	36	39	38
Estimated value (BIS)																
Equity	33	38	53	77	102	145	195	119	143	182	175	185	193	187	219	277
CPIS-derived equity liabilities	8	10	11	16	24	43	51	36	53	54	59	67	77	81	70	76
Estimated value	33	38	53	77	102	145	195	119	143	182	175	185	193	187	219	277
In fund	29	35	49	72	96	134	184	114	134	172	165	168	173	165	201	257
In non-fund (TIC)	4	3	4	5	6	11	11	5	9	10	10	17	20	22	18	20
The Isle of Man																
Debt	0	0	0	0	1	1	1	1	1	2	4	4	4	4	3	2
CPIS-derived debt liabilities	0	0	0	0	1	1	1	1	1	2	4	4	4	4	3	2
Estimated value (BIS)																
Equity	0	0	2	0	2	4	5	3	5	8	7	6	7	6	9	10
CPIS-derived equity liabilities	0	0	2	0	2	4	5	3	5	8	7	6	7	6	9	10
Estimated value	0	0	0	0	0	1	1	0	1	2	2	2	2	2	3	3
In fund	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
In non-fund (TIC)	0	0	0	0	0	1	1	0	1	2	2	2	2	2	3	3
The Netherland Antilles																
Debt	81	91	101	103	102	112	128	118	106	94	83	66	53	38	28	23
CPIS-derived debt liabilities	41	48	53	61	69	91	113	75	67							
Estimated value (BIS)	81	91	101	103	102	112	128	118	106	94	83	66	53	38	28	23
Equity	29	28	31	41	65	81	122	63	107	88	79	76	120	115	102	123
CPIS-derived equity liabilities	21	22	31	38	56	70	108	47	69							
Estimated value	29	28	23	41	65	81	122	63	107	88	79	76	120	115	102	123
In fund	14	13	0	12	20	25	35	26	51	7	19	16	38	38	35	35
In non-fund (TIC)	15	15	23	29	45	56	87	37	56	81	60	60	82	77	67	88
The British Virgin Islands																
Debt	10	10	21	23	22	25	31	29	28	35	42	59	79	111	156	197
CPIS-derived debt liabilities	5	6	9	8	10	12	17	14	15	16	20	29	45	66	85	107
Estimated value (BIS)	10	10	21	23	22	25	31	29	28	35	42	59	79	111	156	197
Equity	9	18	27	30	35	49	70	39	38	43	77	87	84	94	82	113
CPIS-derived equity liabilities	9	18	27	30	35	49	70	39	38	43	77	87	84	94	82	113
Estimated value	0	0	2	3	5	4	5	3	4	6	13	20	32	33	26	44
In fund	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
In non-fund (TIC)	0	0	2	3	5	4	5	3	4	6	13	20	32	33	26	44

Sources: Own computations

Estimates of Global Portfolio Assets and Liabilities: Intermediary Results

In Table 11 and Table 12, we report the estimated value of portfolio assets and liabilities over the study period.

These findings confirm that even though portfolio assets in CPIS (88.4% of global portfolio assets in 2016) and portfolio liabilities in EWN (91.6% of global portfolio liabilities in 2014) both cover a large share of total portfolio securities, corrective strategies and the use of other databases are necessary and quantitatively important:

- For portfolio *assets*, using a gravity model to estimate portfolio assets in the Cayman Islands (entirely missing from CPIS data) leads to an estimated US\$ 2,047 billion in 2014 (i.e., 3.5% of the total of the estimated assets or around 33% of the estimated portfolio offshore wealth). Another example of correction leads to filling a gap in EWN data for a value of US\$ 2,121 billion in 2016 (a missing year in the EWN database) – a very significant 3.6% of the total estimated assets for that year;
- For portfolio *liabilities*, the use of additional data sources for 2015 and 2016 is similarly necessary as EWN does not provide any data for these two years; a correction of US\$ 2,472 billion is also introduced by taking the maximum of either the estimated values of portfolio liabilities or the corresponding mirror data from the CPIS asset database.

Table 11. Portfolio Assets Estimates (Billions of US\$)

	Raw CPIS assets	Correction for CPIS reporting countries			Correction for non-CPIS reporting countries				Total securities assets
		Missing years	Netherlands correction	Cayman Islands non-bank sector	China	Middle-East oil exporters	Of which: reported in CPIS	EWN assets for other countries	
2001	12,718	12	24	182	213	141	22	347	13,615
2002	14,148	28	19	227	288	115	22	449	15,253
2003	19,221	21	3	346	405	144	29	610	207,22
2004	23,489	2	1	533	611	228	35	745	25,574
2005	26,052	2	0	584	814	307	46	872	28,586
2006	33,162	0	5	871	1,174	464	63	1094	36,708
2007	39,304	0	3	1,186	1,585	606	79	1397	44,001
2008	31,041	0	0	990	1,907	649	74	1338	35,850
2009	37,523	0	2	1,086	2,330	659	69	1471	42,954
2010	40,604	0	2	1,219	2,791	765	68	1620	46,932
2011	39,359	0	2	1,478	3,099	913	64	1684	46,471
2012	43,630	0	3	1,598	3,320	1018	71	1887	51,385
2013	47,768	0	0	1,873	3,889	1136	58	2012	56,621
2014	48,683	0	0	2,047	3,913	1158	51	2092	57,843
2015	49,731	18	0	378	3,425	1009	48	2092	56,607
2016	51,469	67	1	480	3,225	896	49	2121	58,211
<i>Nb of countries included in the estimations or correction</i>	72	8	1	1	1	8	2	132 (extrapolation for 2015-2016; IIP for 68 countries and CPIS ratio for 64 countries)	213
<i>Notes on the estimation strategies</i>	Use of CPIS database	Extrapolation with ratio	Comparison with the IIP published by the DNB	Estimation using the US securities held by Cayman Islands (TIC data) and gravity model	Estimation using the US securities held by China (TIC data), IIP of China and reserves published in IFS	Estimation using the US securities held by MEO (TIC data) and reserves published in IFS	Use of EWN estimations, extrapolations when no portfolio asset debt estimates, and IIP and extrapolation ratio for 2015 and 2016		

Sources: Own computations.

Table 12. Portfolio Liabilities Estimates (Billions of US\$)

	EWN liabilities	Correction to EWN data					raw CPIS derived liabilities > reported liabilities	Non EWN countries Other CPIS derived liabilities	Small Financial Centres (incl. Cayman Islands)	International organisations	Total securities liabilities
		IIP liabilities (not included in EWN)	No debt data	Missing Years	Netherlands corrections						
2001	14,590	1	439	0	265	246	1	163	389	16,484	
2002	15,925	0	555	0	326	192	1	155	449	17,982	
2003	21,425	0	720	0	18	274	1	199	517	23,632	
2004	26,458	0	914	0	0	252	3	214	573	28,923	
2005	29,525	0	1,015	0	0	431	3	255	563	32,372	
2006	37,187	0	1,309	0	0	451	3	266	603	40,495	
2007	45,059	0	1,607	0	0	453	5	309	672	49,129	
2008	36,370	0	1,218	0	0	264	2	272	673	39,868	
2009	43,801	7	1,241	0	0	261	3	255	821	47,190	
2010	46,812	8	1,253	0	5	497	3	313	916	50,655	
2011	46,737	11	1,169	0	5	654	3	280	1,073	50,651	
2012	52,231	13	1,231	0	18	882	3	254	1,374	56,791	
2013	56,978	20	1,210	0	15	1,334	4	309	1,490	62,149	
2014	58,765	29	992	0	75	1,514	7	294	1,522	64,120	
2015		54,012		4,059	0	2,098	6	332	1,494	62,929	
2016		54,551		4,269	20	2,472	7	343	1,527	64,116	
<i>Nb of countries included in the estimations or correction</i>	211	136	114	92	1	187	31	8		242	
<i>Notes on the estimation strategies</i>	Use of EWN values	Use of last IIP report to update EWN and complete for 2015 and 2016	Use of the CPIS-derived liabilities to complete portfolio debt data	Use of evolution ratio for missing years	Comparison with the IIP published by the DNB	Comparing the estimated securities liabilities and take the max	Use of CPIS-derived liabilities		Estimation from the SEFER-derived equity liabilities and the data on international debt from the BIS		

Sources: Own computations

Estimates of Deposits Held in IFCs

To produce estimates of deposits in IFCs, we follow the literature in using assumptions on the ratio of deposits over the total offshore financial wealth. Based on observed statistics, such as in the SNB data, the literature¹⁶⁷ typically assumes that 25% of the financial wealth is held in the form of deposits and 75% in the form of portfolio securities.

Step 2: Breakdown of Offshore Wealth by Country of Ownership and by IFC

The breakdown of offshore wealth by country of ownership and by IFC relies on cross-border deposits statistics from two sources: BIS Locational Banking statistics and SNB fiduciary deposits. BIS Locational Banking statistics provide the basic information to estimate cross-border deposits held by individuals, which will be in turn the basis for breaking down global offshore wealth by country of ownership. SNB fiduciary deposits will be used mainly to determine the share of global offshore wealth held in Switzerland.

Main Data Processing

Several adjustments are made to the BIS Locational Banking statistics from the BIS:

- Firstly, under a confidential agreement, the BIS has provided the authors with additional data on bilateral deposits from the BIS for an aggregate group of jurisdictions that include Hong Kong SAR, Macao SAR, Singapore, Bahamas, Bermuda, the Cayman Islands, Curacao, the Netherlands Antilles, Panama, Guernsey, the Isle of Man, Jersey and Bahrain. We append this confidential database to the main BIS Locational Banking statistics database.¹⁶⁸
- To correct for deposits originating from financial non-bank institutions, we have used the decomposition of the BIS between non-financial non-bank deposits and financial non-bank deposits at the aggregate level. This breakdown is not available bilaterally, but it is both available for incoming deposits in most BIS-reporting jurisdictions and for outgoing deposits of all counterpart jurisdictions. For the 18 BIS-reporting jurisdictions for which the decomposition of the incoming deposits is not available, estimations are necessary. The strategies used are as follows:
 - For the Cayman Islands, the average share of non-financial non-bank deposits from non-residents out of the total of non-bank deposits is computed using the 2016 Banking Digest from the CIMA¹⁶⁹ (see Table 13 for details).

¹⁶⁷ Zucman, 'The Missing Wealth of Nations'.

¹⁶⁸ For some of these jurisdictions, bilateral statistics are already available in the main database. These jurisdictions were deducted from the confidential aggregate. This is the case for Jersey, Guernsey, and Isle of Man as well as for Macao for the 2013 – 2016 period and for Hong Kong for the 2014 – 2016 period.

¹⁶⁹ https://www.cima.ky/upimages/publicationdoc/BankingStatistical_1513711868.pdf

Table 13. Estimated Share of Non-financial Incoming Deposits in the Cayman Islands (US\$)

	2013	2014	2015	2016
Non-financial corporations	146,683	143,910	117,042	109,120
Other financial corporations	197,875	147,076	110,043	91,988
Individuals- Households	4,321	4,625	4,848	3,834
Other deposits	30,218	16,955	43,787	19,352
Total non-bank deposits	379,097	312,566	275,720	224,294
Total non-financial deposits	181,222	165,490	165,677	132,306
Ratio of non-financial on non-bank deposits	0.48	0.53	0.60	0.59
Average ratio				0.55

Sources: Own computations and CIMA's Banking Digest (2016).

- For Bahrain, the ratio of non-financial deposits is estimated using the average share of private sector deposits out of the total deposits published in the banking statistics report of the central bank of Bahrain.¹⁷⁰
- For the following jurisdictions, the estimated share is the average share of similar jurisdictions for which the decomposition is available:
 - For Panama and the Netherland Antilles, the estimated share is the average share of Bermuda and the Bahamas;
 - For Hong Kong and Singapore: average share of Taiwan and Macao;
 - For Jersey: average share of the Isle of Man and Guernsey;
 - For Greece: average share of Portugal, Spain, France and Italy;
 - For Malaysia: average share of the Philippines and Indonesia.
- For the remaining jurisdictions (Brazil, Chile, China, India and Mexico), the share of non-financial deposits is estimated by the average share of all other jurisdictions for which the decomposition is available.

Two data adjustments are necessary on SNB foreign fiduciary deposits:

- The statistics for foreign fiduciary deposits in Swiss banks are established following the parent company level consolidation principle. It implies that deposits invested by a parent bank company in one of its foreign subsidiaries are not recorded. To overcome this limitation and estimate the value of deposits at the bank office level consolidation, we apply the same ratio between the total deposits with the parent company level consolidation and the bank office level consolidation, calculated from the total value of fiduciary deposits (from both residents and non-residents).¹⁷¹
- From 1984 on, Liechtenstein has not been considered as a foreign country in SNB statistics on fiduciary deposits. As Liechtenstein was the largest foreign holder of deposits before 1984, and for consistency with the rest of the methodology, we estimate deposits from Liechtenstein in Switzerland applying the same ratio of deposits from Liechtenstein on the total of deposits from Liechtenstein and Switzerland in 1984 to the value of resident fiduciary deposits.

¹⁷⁰ <https://www.cbb.gov.bh/assets/statistics/Aug%202018.pdf>

¹⁷¹ The SNB used to publish statistics on fiduciary deposits both at the parent company level consolidation principle and at the bank office level consolidation principle. As the statistics at the bank level consolidation principle are no longer published, we used the same factor as Alstadsæter, Johannesen and Zucman (2018).

We, then, add these estimated deposits to the total value of non-resident fiduciary deposits.

Using FDI Data

Statistics on deposits by non-financial institutions, as provided by the BIS, do not distinguish between individuals and corporations – but we need to get as close as possible to cross-border deposits of individuals. Recognising that the share of cross-border deposits by corporations is positively correlated with the level of foreign direct investments (FDI), a correction is applied to the BIS statistics. Outgoing cross-border deposits by a given country i in a given year t are given by the following formula:

$$d_{i,t} = w_{i,t} * d_{i,t}^{bis},$$

where

$$w_{i,t} = \frac{\frac{3}{2} \frac{gdp_{i,t}}{\sum gdp_{i,t}} + \frac{1}{2} \frac{fdi_{i,t}}{\sum fdi_{i,t}}}{\frac{gdp_{i,t}}{\sum gdp_{i,t}} + \frac{fdi_{i,t}}{\sum fdi_{i,t}}}.$$

The weight $w_{i,t}$ is applied to $d_{i,t}^{bis}$, the outgoing deposits of country i in year t . It is decreasing with the share of FDI by country i with respect to the total world FDI and increasing with its share of GDP. It has been specified to be equal to 1 for countries with a share of FDI equal to their share of GDP.¹⁷² The FDI statistics used for the computation of these weights are taken from the United Nations Conference on Trade and Development¹⁷³.

Importantly, this correction strategy based on FDI is only used to correct outgoing deposits, i.e., to estimate (i) Type II weights; (ii) the ownership breakdown of global offshore wealth. The symmetric strategy for incoming deposits, i.e., to identify Type I IFC and to estimate the share of deposits held in each Type I IFC was not used. This is because this correction based on FDI data does not allow to estimate the share between individuals (including shell companies) and corporations for the ownership of deposits with sufficient precision. While it is safe to believe that a small inaccuracy on the FDI weight $w_{i,t}$ would be offset by the estimation of the Type II weights and therefore would have small consequences on the estimated share of deposits by country of ownership, because of the binary classification of Type I IFCs (yes/no), a small imprecision in $w_{i,t}$ may cause any given country to be wrongly classified as a Type I IFC – and therefore estimated offshore wealth held in that country to be greatly overestimated.

IFC Identification

To compute Type I and Type II deposit ratios, we rely on bilateral cross-border non-financial non-bank deposits derived from the BIS Locational Banking statistics, i.e., deposits owned by non-residents.¹⁷⁴ The geographic coverage for each of the ratios is as follows:

¹⁷² The corrective weights based on FDI statistics as well as the ratio of FDI on GDP for each country can be found in Table 23 in Appendix 4.

¹⁷³ United Nations Conference on Trade and Development, 'FDI Statistics', n.d., <https://unctad.org/en/Pages/DIAE/FDI%20Statistics/FDI-Statistics.aspx>.

¹⁷⁴ This is because the criterion for inclusion of assets in BIS cross-border statistics is residency and not citizenship. Deposits from individuals who own an "investment passport" in an IFC are included as long as those individuals are not residents of that jurisdiction.

- Type I deposit ratios (incoming deposits in one jurisdiction on the GDP of this jurisdiction) can be computed for the 48 BIS-reporting jurisdictions.¹⁷⁵ As noted (see footnote 31), those IFCs for which it is not possible to compute the Type I deposit ratio (as they are not included in BIS data) are small and the global cross-border claim coverage by the BIS is estimated at more than 90% on the 2001 – 2016 period. Therefore, even if the list might not be exhaustive for Type I IFCs, the estimation would not be impacted by omitted jurisdictions.
- Type II deposit ratios (outgoing deposits from one jurisdiction on the GDP of this jurisdiction) can be computed for all world jurisdictions, as they all appear in BIS data.¹⁷⁶

Type I Identification

Identifying Type I IFCs proceeds through the following steps:

- For each of the 48 BIS-reporting jurisdictions, we compute yearly Type I ratios over the 2001-2016 period.¹⁷⁷ Figure 29 represents the average Type I ratio (over the study period) for each jurisdiction.¹⁷⁸
- As illustrated in Figure 29, jurisdictions with a Type I ratio higher than 1 are considered as outliers and classified as Type I IFCs. For other jurisdictions (bottom chart of Figure 29), two clusters of jurisdictions can be distinguished:
 - For each year, we use a simple k-means clustering algorithm (see Box 4) to partition the jurisdictions (with a Type I ratio below 1) into two clusters.
 - A given jurisdiction is classified as a Type I IFC if it belongs to the clusters with the largest Type I ratios.

¹⁷⁵ See Table 19 in Appendix 2 for the list of BIS-reporting jurisdictions.

¹⁷⁶ As reported in Appendix 2, the BIS reports data on deposits held by non-residents in each reporting countries (i.e. liabilities). Because that data is bilateral, we can derive outgoing deposits for each country (i.e. assets). The considered outgoing deposits are those held in BIS-reporting jurisdictions. Therefore, every jurisdiction with deposits held in a BIS-reporting jurisdiction is recorded as a counterpart in the BIS Locational Banking statistics. However, the value of outgoing deposits from these jurisdictions is only partially covered as deposits in jurisdictions that do *not* report to the BIS are not recorded. Once again, this omitted part is small as per the construction of the BIS statistics.

¹⁷⁷ To compute the Type I ratio, we use the estimated non-financial incoming deposits.

¹⁷⁸ For the second graph of Figure 29, the jurisdictions classified as a Type I IFC for at least one year are grouped at the top of the graph.

Box 4. K-means Clustering

The K-means clustering algorithm is an unsupervised method which aims to partition the observations into k clusters, defined by a K centroid. This algorithm allows observations to be clustered based on feature similarity. Indeed, the algorithm works iteratively such that each observation belongs to the cluster with the nearest mean (the K centroid).

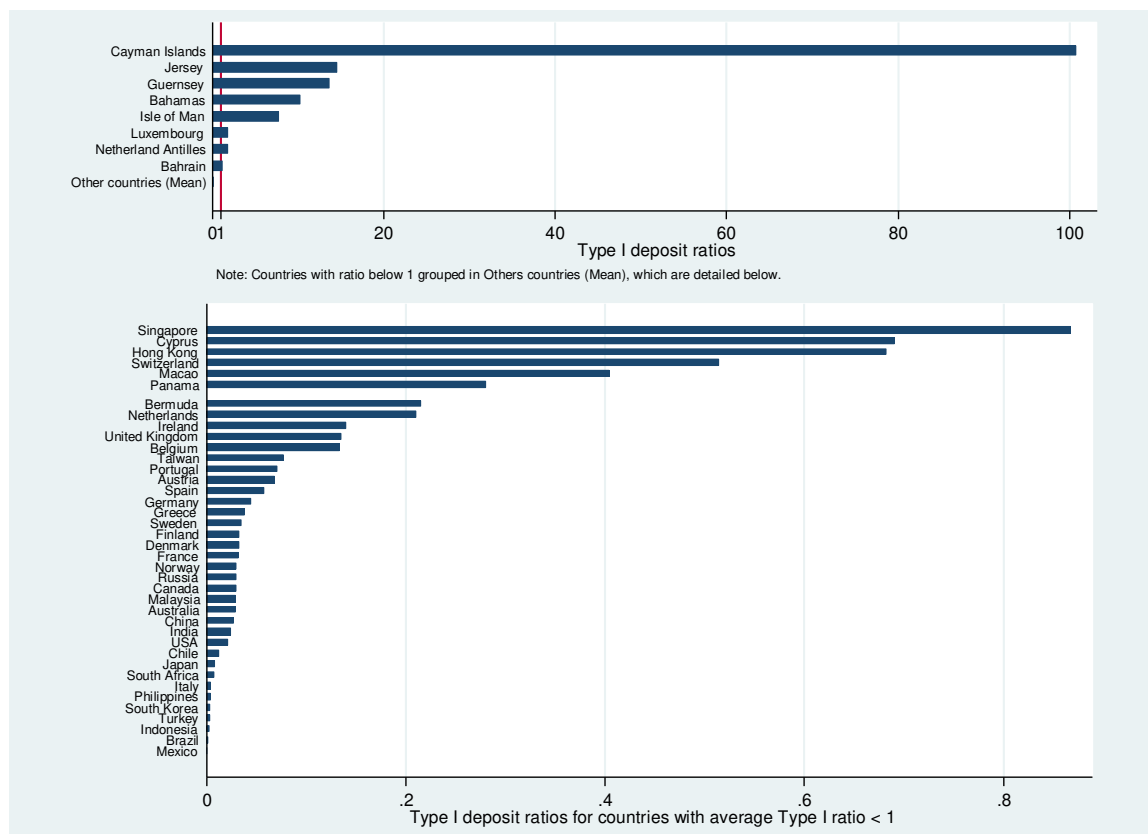
Formally, the K-means clustering algorithm uses iterative refinement to define the clusters. Firstly, the number k of clusters is chosen, and the K centroids of each cluster is randomly selected. Secondly, the algorithm iterates between two steps:

1/Data assignment step: Each observation is assigned to the cluster for which the squared Euclidean distance with its K centroid is minimal.

2/Centroid update step: The centroids of each cluster are updated by taking the mean of all observations assigned to the cluster.

Finally, these two steps are iterated until the stopping criteria is met. In this case, the stopping criteria is that the sum of the distances between each observation and the centroid from the cluster to which it belongs is minimised.

Figure 29. Type I Deposit Ratios by Jurisdiction - Averages over the Study Period, 2001-2016



Sources: Own computations using the BIS Locational Statistics and the WDI for the GDP.

Type II Identification

For Type II IFCs, it is assumed that only a share of the outgoing deposits (after correction for the share of nonfinancial nonbank deposits and FDI data), defined as the Type II weight, is explained by the use of shell companies by non-residents. This share is the excess of outgoing deposits that could not be explained by standard economic activity. It is computed as follows:

$$s_{i,t} = 2 * \frac{\frac{d_{i,t}}{\sum d_{i,t}}}{\frac{d_{i,t}}{\sum d_{i,t}} + \frac{gdp_{i,t}}{\sum gdp_{i,t}}} - 1,$$

whenever the right-hand side is positive; otherwise it is 0.

This formula merely says that a country with a large amount of outgoing deposits, relative to its GDP, is more likely to facilitate the creation of shell companies. It has been specified so that a country with an outgoing deposit share equal to or lower than its GDP share ($d_{i,t} / \sum d_{i,t} \leq gdp_{i,t} / \sum gdp_{i,t}$) does not provide shell companies at all ($s_{i,t} = 0$).

The jurisdiction's GDPs are the same as the ones used to estimate the gravity model. Additional missing values for some small jurisdictions are estimated using statistics from a variety of sources – including the jurisdiction statistical institution (for New Caledonia or British Virgin Islands, for example), the US Central Intelligence Agency (for example for Turks and Caicos Islands, Gibraltar or the Falkland Islands), the Bank of Korea for North Korea, etc.

Breakdown of Global Offshore Wealth by Country of Ownership

As noted, the estimated share of deposits by country of ownership are obtained using BIS Locational Banking data, as corrected by the share of nonfinancial nonbank outgoing deposits and FDI statistics.

However, the use of shell companies and other interposing devices pollute the BIS data in view of our objective which is to determine the country of residence of the final deposit holder. The following subsection reports how we deal with this difficulty.

The SNB's foreign fiduciary deposit statistics are not used to estimate the ownership breakdown of offshore wealth even though a breakdown by country of ownership is provided in this dataset. This is because, as for BIS data, they are contaminated by the use of shell companies. It is therefore preferable to apply the above correction for shell companies estimated from the BIS data, to the data for deposits in Swiss banks as recorded in the BIS data rather than the ones in the SNB data.

Estimation of Indirect Offshore Wealth

To address the use of shell companies and other screening means, we assume that a share of deposits (defined by Type II weights) originating from Type II IFCs, indirect deposits, belong to other countries' residents. To break down the indirect deposits by (estimated) true country of ownership, we apply specific computations at each specific time periods to account for influence of the EUSD, in a context of a sharp rise in the offshore holdings of non-EUSD countries – e.g. China. Box 5 presents the detailed methodology for this correction. Table 14 presents a fictitious example illustrating the approach.

Box 5. Treatment of Shell Companies

The sum of foreign deposits in an arbitrary Type I IFC H is the sum of the direct deposits from residents of a group of countries A, a group of countries B, and the direct and indirect deposits from a Type II IFC providing interposing entities. We assume that the indirect deposits in H, estimated applying the estimated Type II weight on deposits originating from the Type II IFC, are from shell companies that ultimately belongs to residents of countries A or B. They are the indirect deposits of these countries' residents in H.

The total deposits value from the residents of one country is the sum of their direct and indirect deposits. The value of direct deposits of A residents and B residents in H comes directly from the SNB fiduciary data or the BIS Locational Banking data. To estimate the indirect deposits of A residents and B residents, we implement specific strategies depending on the studied period:

1/ For the years before the entry into force of the EUSD¹⁷⁹: We assume that the share of deposits indirectly held in the Type I IFC through Type II IFC by residents of country A is the same as the total share of deposits country A residents held in this Type I IFC. This breakdown is computed assuming that "if residents of a country owns 10% of the wealth not owned via shell companies in 2003-2004, they also own 10% of the wealth owned via such shells" (Alstadsæter, Johannesen and Zucman 2018).

2/ For the years after the entry into force of the EUSD:¹⁸⁰ Assuming that H is in the EUSD jurisdiction,¹⁸¹ that A represents all the countries that are affected by the EUSD and B countries *not* affected by the EUSD, we will implement the following methodology:

- We assume that the indirect deposits in H by B residents follow the same year-by-year evolution as their direct ones in H. In other words, if the direct deposits of B residents in H increase by 1% between the two years, then the indirect deposits in H of B residents also increase by 1%.
- We assume next that the residual indirect deposits in H from Type II IFCs belong to A residents. Within A, we assume that the ownership share of the residual Type II IFC indirect deposits by each A country is the same as for the direct deposits in H (e.g., if the deposits from French residents represent 25% of the direct deposits from A countries, then we assume that 25% of the residual indirect deposits from Type II IFC are held by French residents).

¹⁷⁹ This methodology allows to account for shell corporations owned by shareholders from different countries. Deposits originating from Type II IFC in each Type I IFC are reallocated to other non-Type II countries given the share of direct deposits of each non-Type II country in this Type I IFC.

¹⁸⁰ The year of the coming into force of the EUSD is 2005. We have tested using the year of the announcement of the EUSD, 2003. Results are very close.

¹⁸¹ If H is not under the scope of the EUSD, the breakdown of indirect deposits is the same as before the implementation of the EUSD for all countries of ownership.

Table 14. Fictitious Example of the Estimated Share of Offshore Wealth in a Type I IFC, by Country of Ownership

Deposits in Type I IFC	2004			2005		
	A	B	Type II IFC	A	B	Type II IFC
Observed deposits	800	200	100	600	300	500
Breakdown of indirect deposits	80	20	-100	470	30	-500
Total estimated value of deposits	880	220	0	1 070	330	0
Estimated share of deposits (i.e., estimated share of offshore wealth in Type I IFC)	80%	20%		76.43%	23.57%	

Notes: In black, the (hypothetical) observed values of deposits; in blue, the estimated values.

Estimation of Deposit Shares by Country of Ownership in Type I IFCs

The estimated share of deposits for a given country in a given Type I IFC is computed as follows:

- Firstly, the total of deposits held by each Type I IFC residents is estimated as the sum of the direct deposits and the indirect deposits reallocated to them (see Box 5).
- Secondly, the ownership share of deposits of that country's residents in all Type I IFCs is then simply the ratio of the sum of estimated deposits in all Type I IFCs just computed to the total of incoming deposits in all Type I IFCs.

Estimation of Offshore Wealth Shares by Country of Ownership in Type I IFCs

We assume that the share of total wealth (deposits plus portfolio investments) for each country of ownership is the same as the share of deposits alone.

Estimation of Offshore Wealth by Country of Ownership

We finally apply the estimated proportion of wealth held by each country in Type I IFCs to the global offshore wealth estimated in Step 1.

Offshore Wealth Held in Each Type I IFC

Offshore Wealth Held in Switzerland

Offshore wealth held in Switzerland is estimated by summing the values of foreign portfolio securities held by non-residents in Swiss banks and the deposits owned by non-residents in fiduciary accounts. The securities holdings by non-residents are given by the bank custody accounts data from the SNB and the SNB's foreign fiduciary deposit statistics. For both, the values are converted to US\$ using the IMF official exchange rates in each year (IFS).

Offshore Wealth Held in Other Type I IFCs

For Type I IFCs reporting to the BIS (for IFCs others than Switzerland), global wealth data can be derived from the BIS aggregate statistics on deposits owned by non-residents in each IFC.¹⁸²

¹⁸² The statistics are corrected by the share of nonfinancial nonbank incoming deposits.

BIS data only cover deposits, not portfolio assets. Therefore, it is assumed that the share of offshore wealth held in each Type I IFC is the same as the share of non-resident deposits held in each Type I IFC.

The estimated offshore wealth held in other Type I IFCs corresponds to the remaining wealth after subtracting the estimated offshore wealth in Switzerland to the global one estimated during Step 1.

To breakdown by Type I IFC, first, the total of deposits held in all Type I IFCs is computed and then the amount of deposits held in each jurisdiction is divided by this total. Finally, the computed share of foreign deposits held in each Type I IFC is applied to the estimated offshore wealth held in Type I IFCs other than Switzerland to obtain offshore wealth held in each Type I IFC.

Step 3: Estimation of International Tax Evasion

The capital income tax is the tax on revenue produced by the investment of offshore wealth. We assume that: (1) offshore wealth is held in two types of assets: deposits and portfolio securities (debt and equity); (2) deposits and securities are, respectively, 25% and 75% of the offshore wealth;¹⁸³ (3) the capital income tax is due only on investments with a positive rate of return; (4) the capital rate of return is calculated as an unweighted average rate of the return of mutual funds in the sample of funds; (5) in the baseline scenario, the rate of non-compliance is set at 75%.¹⁸⁴

Under these assumptions, the formula for the yearly capital income tax evasion for each asset type is the following:

$$\begin{aligned} & \text{Offshore Wealth (country, year)} * \text{Share of asset type} * \\ & \text{Share of assets with positive rate of return (asset type)} * \\ & \text{Capital Rate of Return on assets with positive return (year, type of asset)} * \\ & \text{Tax rate (country, year)} * \text{Rate of non-compliance (country, year)}. \end{aligned}$$

The original income tax is due on the income transferred from the country of ownership to IFCs. We assume that: (1) the capital inflow to IFCs every year is equal to the difference between the value of offshore wealth in the current year and in the previous year;¹⁸⁵ (2) only top personal income tax rates apply;¹⁸⁶ (3) the rate of non-compliance is set to 75%, subject to sensitivity analysis as above.

The formula for tax evasion on the original income is as follows:

$$\begin{aligned} & \text{Capital inflow (country, year)} * \text{PIT rate (country, year)} * \\ & \text{Rate of non-compliance (country, year)}. \end{aligned}$$

It may well be the case that wealth has increased from one year to another simply because portfolio assets valuation has increased, not because additional investments have been made. These market valuation effects should be netted out when computing capital inflows into IFCs. To do this, we compute $i(\text{year})$, the rate of variation of the market asset price level in a given year.¹⁸⁷ The change in wealth implied by market

¹⁸³ A sensitivity analysis on the ratio of deposits to securities is implemented.

¹⁸⁴ A sensitivity analysis on the non-compliance rate is implemented.

¹⁸⁵ This amounts to assuming that interest and dividends are withdrawn every year from the offshore financial accounts.

¹⁸⁶ The assumption is based on the evidence that international tax evasion is practiced by the richest individuals in society. See Alstadsæter, Johannesen, and Zucman, 'Tax Evasion and Inequality'.

¹⁸⁷ Data on the MSCI world price index is used to determine this yearly rate of increase.

valuation effects is then equal to the stock of wealth at the beginning of the year multiplied by $i(\text{year})$. This leads to the following formula for determining (net) capital inflows in a given year:

$$\begin{aligned} & \text{Capital inflow (country, year)} \\ &= \text{Offshore Wealth (country, end_of_year)} \\ & - \text{Offshore Wealth (country, beginning_of_year)} * (1 + i(\text{year})). \end{aligned}$$

Finally, the wealth and wealth transfer taxes are based on the stock of offshore wealth.

When estimating evasion on wealth taxation, we assume that (1) only top tax rates apply; (2) the rate of non-compliance is set to 75%, subject to sensitivity analysis as above.

The wealth transfer tax corresponds to the taxation of inheritances (taxes on gifts are omitted).¹⁸⁸ Due to complex and varied tax policies in each Member State, a high-level proxy is used, based on estimates of the total wealth held by taxpayers in their country of origin. Specifically, we compute the ratio of inheritance tax revenue to financial wealth in each country and apply it to the estimated offshore wealth. This corresponds to the assumption that the share of inheritances with respect to wealth does not depend on whether wealth is held domestically or offshore.¹⁸⁹

Inheritance tax evasion is then estimated under the following assumptions: (1) the effective inheritance tax rate is equal to the inheritance tax revenue divided by the wealth held by taxpayers in each Member State; (2) the rate of non-compliance is set at 75%, subject to sensitivity analysis as above.

The formula for tax evasion for wealth and wealth transfer is then the following:

$$\begin{aligned} & (\text{Offshore Wealth (country, year)} * \text{Wealth tax rate (country, year)} \\ & + \text{Offshore Wealth (country, year)} * \\ & \text{Inheritance revenues as \% of total taxpayers' wealth (country, year)}) * \\ & \text{Rate of non-compliance (country, year)}. \end{aligned}$$

Table 15 and Table 16 present the data on tax rates and rates of return used for the estimation of international tax evasion (except for inheritance tax), as well as the main assumptions made for this estimation. The effective average rate of return on portfolio assets – weighted by the share of portfolios with a positive return – is around 9%. The average rate of return on deposits is around 3%. These rates are in line with the overall average rate of return considered in Zucman (2017), around 6%. They are, however, higher than the ones used in Pellegrini, Sanelli and Tosti (2016), who consider rates of return between 2% and 5% for portfolio assets and between 1% and 3% for deposits.

¹⁸⁸ The taxation of gifts tax was excluded due to the relatively low value of the revenue, which was over five times lower than the inheritance tax revenue in the EU in 2017.

¹⁸⁹ Wealth figures were taken from the Global Wealth Report published by Credit Suisse in 2018.

Table 15. Top Marginal Tax Rates in 2016

Year	Member State	Personal Income Tax (Capital Income)	Personal Income Tax (Employment Income)	Inheritance Tax ¹⁹⁰	Wealth Tax
2016	AT	27.5%	50%		
2016	BE	27%	53.2%	80%	
2016	BG	8%	10%	6.6%	
2016	CY	20%	35%		
2016	CZ	15%	15%		
2016	DE	25%	47.5%	50%	
2016	DK	42%	55.8%	36.3%	
2016	EE	20%	20%		
2016	ES	19%	45%	34%	2.5%
2016	FI	34%	51.6%	36%	
2016	FR	24%	50.2%	60%	1.5%
2016	EL	15%	48%	40%	
2016	HR	12%	47.2%	5%	
2016	HU	16%	15%	18%	
2016	IE	33%	48%	33%	
2016	IT	26%	48.8%	8%	
2016	LT	15%	15%	10%	
2016	LU	20%	43.6%	48%	
2016	LV	10%	23%		
2016	MT	35%	35%		
2016	NL	15%	52%	40%	
2016	PL	19%	32%	20%	
2016	PT	25%	56.5%	10%	
2016	RO	16%	16%		
2016	SE	30%	57.1%		
2016	SI	25%	50%	30%	
2016	SK	19%	25%		
2016	UK	28%	45%	40%	

Sources: TEDB, IBFD, OECD Tax Database

¹⁹⁰ Top marginal inheritance tax rates are shown for reference only. They are not used for estimating tax evasion on inheritances. See above for an explanation of how inheritance tax loss is calculated.

Table 16. Estimation of Tax Evasion: Summary of General Assumptions

Assumptions	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Capital rate of return (portfolio assets) ¹⁹¹	-5%	-15%	15%	6%	14%	10%	4%	-23%	24%	9%	-7%	11%	10%	5%	1%	4%
Share of portfolio investments with positive return	97%	23%	85%	95%	93%	90%	73%	33%	92%	86%	42%	85%	80%	87%	62%	78%
Capital rate of return (portfolio assets) - only positive	8%	5%	19%	7%	17%	13%	10%	5%	26%	11%	3%	12%	17%	8%	7%	7%
Capital rate of return (deposits)	6.8%	5.0%	4.0%	2.2%	2.7%	3.8%	4.8%	3.5%	3.5%	3.0%	2.3%	2.1%	2.1%	2.2%	2.1%	2.1%
Rate of non-compliance	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
Portfolio assets share	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
Deposits share	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%

Sources: Own calculations, www.swissfunddata.ch, and www.morningstar.co.uk.

¹⁹¹ See section 3.4 for an explanation on how these rates of return are calculated.

Summary of Main Methodological Assumptions and their Impact on Estimates

Table 17. Summary of the Main Methodological Assumptions

Issue	Assumption in this Study	Rationale for the assumption	Impact on the estimates	Assumptions in other studies
Proportion of offshore wealth held as deposit/portfolio securities	<p>Offshore wealth is composed of= 75% portfolio securities; 25% deposits.</p> <p>Sensitivity analysis implemented with two other scenarios:</p> <ul style="list-style-type: none"> - Offshore wealth composed of= 65% portfolio securities; 35% deposits. - Offshore wealth composed of= 85%; 15%deposits. 	<p>Based on the literature, in turn based on observed statistics, mainly in the SNB data.</p> <p>To infer the value of offshore deposits from the estimated offshore portfolio wealth.</p>	<p>This proportion directly affects the estimates at two stages:</p> <ul style="list-style-type: none"> - For the computation of global offshore wealth. - For the computation of the capital income tax. 	<p>Zucman (2017) and Alstadsæter, Johannesen and Zucman (2018) assume the same allocation between portfolio securities and deposits as this Study does: 75% portfolio securities and 25% deposits. This assumption is based on observed statistics, mainly in the SNB data.</p>
Breakdown of offshore wealth by country of ownership	<p>Offshore wealth held by residents in a given country is proportional with deposits held by those residents in all Type I IFCs.</p>	<p>Based on the literature.</p> <p>Two main reasons justify this central assumption:</p> <ul style="list-style-type: none"> - Individuals have the same optimizing risk/return behaviour. - It allows for heterogeneity in the propensity of taxpayers to evade taxes, by country. The 	<p>This assumption impacts the allocation of offshore wealth across countries and therefore, indirectly, estimates of tax evasion.</p> <p>It does not influence estimated global offshore wealth.</p>	<p>This assumption is used notably by Zucman (2017) and Alstadsæter, Johannesen and Zucman (2018).</p> <p>Pellegrini, Sanelli and Tosti (2016) instead assume that the ownership share of offshore wealth is proportional to the size of the economy (in terms of GDP or in terms of portfolio assets). The implicit assumption is that all countries have the same propensity to held offshore wealth and therefore evade taxes.</p>

Issue	Assumption in this Study	Rationale for the assumption	Impact on the estimates	Assumptions in other studies
		<p>volume of offshore wealth reflects this propensity.</p>		
<p>Distinguish between deposits from individuals and those from corporations in BIS Data</p>	<p>Outgoing deposits are weighted by a corrective ratio based on the proportion of FDI relative to GDP.</p>	<p>The underlying assumption for the correction with FDI is that a country with a large FDI stock (relative to GDP) will tend to have a large proportion of deposits attributable to corporations, and vice versa.</p>	<p>The share of outgoing deposits from corporations vs individuals in a given country is negatively correlated with the estimated offshore wealth held by residents from that country and therefore their estimated tax evasion.</p>	<p>Alstadsæter, Johannesen and Zucman (2018) proceed with two corrections:</p> <ul style="list-style-type: none"> - For deposits in Type I IFCs, only a fraction of non-bank deposits is assumed to belong to households. It is not clear how these fractions are computed. (Correction also made by Johannesen and Zucman, 2014) - They assume that only a part of outgoing deposits belongs to individual: Ireland (25%), United Kingdom (50%), the Netherland (25%), Belgium (50%) and the United States (80%). The other part is treated as the deposits from shell companies. <p>Pellegrini, Sanelli and Tosti (2016) assume that between 1/3 and 2/3 of non-bank deposits belong to individuals. This estimation is based on several sources that provide a sectoral decomposition of deposit belongings:</p> <ul style="list-style-type: none"> - Statistics of the Bank of England - The swiss National Bank - ECB monetary statistics - Banque Centrale du Luxembourg <p>However, there is no distinction between countries and these statistics do not take into consideration shell companies.</p>
<p>Where is the offshore wealth held?</p>	<p>The offshore wealth is assumed to be held in a major Type I IFCs, for which the incoming deposits are large</p>	<p>Based on the literature. Estimating the share of deposits only in major IFCs for which the ratio</p>	<p>In addition to the obvious impact on the estimates of where offshore wealth is held, this assumption influences, to a limited extent, the breakdown of offshore wealth by country of origin.</p>	<p>List of Type I IFCs used by Alstadsæter, Johannesen and Zucman (2018): Switzerland, Cayman Islands, Panama, USA, Hong Kong, Singapore, Macao, Malaysia, Bahrain, Bahamas, Bermuda, Guernsey, Jersey, Isle of</p>

Issue	Assumption in this Study	Rationale for the assumption	Impact on the estimates	Assumptions in other studies
	relative to +GDP.	of incoming deposits to GDP is high allows for a more precise estimates of the breakdown.		Man, Luxembourg, Cyprus, United Kingdom. However, it is not clear how this list is compiled.
Use of shell companies	<p>Estimation of the share of outgoing deposits from shell companies (indirect deposits) based on the ratio of outgoing deposits to GDP.</p> <p>This share of the outgoing deposits is allocated to other countries' residents, based on their direct deposits in type I IFCs.</p>	<p>In some countries, part of outgoing deposits is from shell companies whose ultimate owners are residents from third countries. Not correcting for the use of shell companies would lead to overestimating the offshore wealth held by some countries and underestimating that held by other countries.</p> <p>Type II weights are the excess of outgoing deposits that could not be explained by standard economic activity. They have been calibrated so that a country with outgoing deposits commensurate with its GDP does not provide shell companies at all.</p>	<p>The use of a Type II weights influences estimated ownership shares of offshore wealth. The Type II weight for one country is negatively correlated with the estimated offshore wealth held by the residents of that country.</p>	<p>Alstadsæter, Johannesen and Zucman (2018) also attribute the outgoing deposits of some countries to other countries' residents:</p> <ul style="list-style-type: none"> - Countries for which all the outgoing deposit are assumed to be from shell companies: Andorra, Aruba, Bahamas, Bahrain, Belize, Bermuda, Cayman Islands, Costa Rica, Cyprus, Dominica, Faroes Islands, Gibraltar, Grenada, Guernsey, Hong Kong, Ireland, Isle of Man, Jersey, Lebanon, Liechtenstein, Luxembourg, Macao, Malaysia, Malta, Marshall Islands, Mauritius, Nauru, the Netherland Antilles, Palau, Panama, Saint Barthélémy, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Seychelles, Singapore, Switzerland, Turks and Caicos Islands, Us Pacific Islands, Vanuatu, British Virgin Islands. - For some countries, only a share of the outgoing deposits is assumed to be held by shell companies: United Kingdom (50%), the Netherlands (75%), Belgium (50%), United States of America (20%).
Non-compliance rate of offshore wealth	<p>Estimated at 75% for all member states and all years.</p> <p>Three other scenarios are presented in this Study as sensitivity</p>	<p>Based on the literature.</p> <p>A decreasing non-compliance rate allows us to take into consideration the efforts made by countries and</p>	<p>Influence on the estimates of tax evasion:</p> <ul style="list-style-type: none"> - Estimates of international tax evasion are positively correlated to the non-compliance rate. - However, it has no impact on 	<p>Alstadsæter, Johannesen and Zucman (2018) estimated the rate of non-compliance at 90%-95% for Danish and Norwegian households in 2007 (based on Leaks and information furnished by the fiscal authorities of these countries).</p>

Issue	Assumption in this Study	Rationale for the assumption	Impact on the estimates	Assumptions in other studies
	<p>analysis:</p> <ul style="list-style-type: none"> - A constant non-compliance rate equal to 60% - A constant non-compliance rate equal to 90% <p>A decreasing non-compliance rate: constant 2001 to 2008 at 90% and then linearly decreasing to reach 60% in 2016.</p>	<p>the international community to fight tax evasion. Previously undeclared offshore wealth is now reported, but a significant share of this wealth can be let offshore.</p>	<p>the global offshore wealth estimate or on its distribution.</p>	<p>Based on the data published by the Swiss Federal Tax Administration following the USD:</p> <ul style="list-style-type: none"> - Roussille (2015) estimated that the European offshore wealth in Switzerland reported to national tax administrations ranged from 8% in 2006 to around 25% in 2013. - Zucman (2017) assumed this same rate of 75% for the non-compliance rate in 2013. <p>Pellegrini, Sanelli and Tosti (2016) assume a rate of non-compliance of 90% for portfolio assets and between 60 and 80% for cross-border deposits.</p>

Appendix 2. Detailed Data Assessment

The data sources suggested in the literature and used in this Study are reviewed in this Appendix. Table 20 below provides a systematic and detailed review, with emphasis on data sources available online. We summarise the main points of interest below.

Data on International Portfolio Investment Positions

The IMF's International Investment Positions (IIP)

The IIP database is publicly available online and downloadable as CSV files from the IMF website. It provides portfolio positions for each country as against the rest of the world. Until 2014, it was computed yearly; since 2015, it has been provided quarterly for selected countries. The concepts and the valuation of the IIP data items are based on the IMF's Balance of Payments Manual (version 6, hereafter BPM6).

The IIP is composed of four elements on both assets and liabilities: direct investment, portfolio investment, financial derivatives and other investments. A fifth component is on the assets side only: reserve assets. Only portfolio investment is relevant to the Study. It includes two subsets: (i) equity and investment fund shares; (ii) debt securities.

Between 2001 and 2016, 158 countries reported at least once their portfolio investment assets, and 147 their portfolio liabilities; 72 countries reported each year both their portfolio investment assets and liabilities.

The IMF's Coordinated Portfolio Investment Survey (CPIS)

The CPIS database is publicly available online and downloadable as CSV files from the IMF website. It provides bilateral international portfolio asset positions among reporting countries. The concepts and the valuation of the CPIS are, as for the IIP, based on BPM6. In addition to the core specific survey-based CPIS data, the database includes two other IMF surveys: The Securities Held by International Organisations (SSIO) and the Securities Held as Foreign Exchange Reserves (SEFER).

CPIS holds data on cross-border holding of portfolio investment securities. Each country reports its portfolio investment securities by foreign countries (broken down by (i) equity and investment fund shares; and (ii) debt securities). CPIS data is collected on the asset side, but the IMF derives mirroring aggregate liabilities for all economies (reporters as well as non-reporters), which are also provided as part of the CPIS database.

The data has been reported annually (at the end of December) from 2001 and bi-annually between 2012 and 2016 (end-June and end-December). The CPIS frequency can vary across participating countries. Between 2001 and 2016, 91 countries participated in CPIS but only 61 countries reported each year.

The External Wealth of Nations (EWN)

The EWN database is available online as an Excel file. It mostly provides estimations for foreign investment positions of countries and expands the combined IIP and CPIS data. For most countries, EWN uses the official IIP estimates for recent years when available.¹⁹² That data is supplemented using alternative methods and sources

¹⁹² Notably, starting in 2001, for almost all the largest economies and financial centres, the portfolio data come from IIP.

(including CPIS) to estimate missing values when IIP data is missing or only partially available in a given year.

EWN covers the period 1970-2014 for 211 countries and territories, plus the Euro area as a whole. However, for some countries, the coverage is only partial and the breakdown between portfolio debts and other debts is not always provided.

Gaps in Combined IIP, CPIS and EWN Data; the Case of the Portfolio Asset Securities Estimation

Even combined, the three databases are incomplete. The number of countries for which data are available differs between IIP and CPIS – several offshore centres that participate in CPIS do not report to IIP, for example. This is notably the case for the Bahamas, Macao, Jersey, Guernsey, Gibraltar, the Cayman Islands and the Isle of Man. Among those who report only to IIP but do not participate in CPIS, one mainly finds African countries.

For most countries who report to both IIP and CPIS, the two datasets are consistent, with some relatively minor deviations arising from differences in times of recording (as evidenced from the accompanying metadata). For a few economies, there are more substantial differences, which are sometimes due to incomplete sectoral coverage in CPIS or differing data vintages. However, valuations are assumed to follow BPM6 in the two sources, and portfolio securities are valued at market prices in both sources.

We illustrate the different possible data configurations in Table 18 below with 5 sample countries for the year 2006, each illustrating a specific situation. The key message is that the Study needs to use all three sources, and, in addition, that data gaps remain that need to be addressed through other sources. Reviewing each of the situations, focusing on portfolio assets (as opposed to liabilities):

- For Denmark, the three sources are consistent. For both portfolio investment equities and debt securities, estimates in the IIP, CPIS and EWN databases are almost identical. In this situation, any of the three databases can be used to estimate portfolio assets.
- For the United Kingdom, the three databases provide close but not identical estimates. In this situation, following the literature, we use the metadata (quality of sources, methods used to fill in data gaps, etc.) to select which source is likely to be the most reliable.
- Morocco reports its IIP to the IMF but does not participate in CPIS. In the EWN database, Morocco's IIP data is used as an estimate for portfolio equity assets; the breakdown between debt securities and other debt investments¹⁹³ is used. In this situation, only IIP and EWN can be used.
- The Bahamas, in contrast, participates in CPIS but does not report its IIP to the IMF. In this case, CPIS data is used as an estimate for the portfolio equity assets in EWN. However, the breakdown between debt portfolio and other investment debt is not reported. Here, only CPIS can be used.
- The United Arab Emirates neither participates in CPIS nor reports its IIP to the IMF. In this situation, other techniques are used by EWN to estimate portfolio equities and debt securities, but the breakdown between debt securities and other investment debts is not estimated. Only EWN provides estimates for portfolio investment – and these estimates are not sufficient for our purposes,

¹⁹³ Such as international non-security debt, for example bank loans.

as debt securities are not reported. Other assumptions are necessary to determine the distribution of the debt holdings between debt securities and other investment debt.

- A last situation not presented here is where none of the three sources provides reliable or comprehensive estimates for portfolio investment asset. This may concern important jurisdictions such as the Cayman Islands or Middle Eastern oil exporters countries as well as other smaller IFCs. Here, the corrective strategies proposed in the main text are implemented.

Table 18. Examples of Data Availability on Assets in IIP, CPIS and EWN

		Situation 1: the 3 databases are consistent	Situation 2: IIP, CPIS and EWN are inconsistent	Situation 3: only IIP is available (and repoted in EWN)	Situation 4: only CPIS is available	Situation 5: only EWN is available
		Denmark	UK	Morocco	The Bahamas	United Arab Emirates
IIP	Portfolio Investment Assets	251,885	3,318,834	178	N/A	N/A
	Equity and Investment Fund Shares	132,047	1,653,362	171	N/A	N/A
	Debt securities	119,838	1,665,472	8	N/A	N/A
CPIS	Portfolio Investment Assets	251,884	3,140,509	N/A	19,678	N/A
	Equity and Investment Fund Shares	132,046	1,366,482	N/A	1,067	N/A
	Debt securities	119,838	1,774,028	N/A	18,611	N/A
EWN	Assets					
	Equity and Investment Fund Shares	132,047	1,490,828	171	1,067	302,761
	Debt (incl. debt securities + other debt)	277,808	7,314,943	14,092	397,986	181,669
	Of which debt securities	119,838	1,564,036	8	N/A	N/A

Note: 2006, end of period, current millions of US\$.

Additional Sources

Three additional databases are used to supplement the three sources above: one from an international organisation and the others from institutions of two major jurisdictions, US and Switzerland, that provide reliable data.

The BIS's Debt Securities Statistics

The Debt Securities Statistics¹⁹⁴ are publicly available online and downloadable as CSV files from the BIS website. The debt securities statistics are compiled from a security-by-security database using information from commercial data providers and provides bilateral quarterly debt positions for a large number of countries. These statistics imperfectly estimate the aggregate global value of international debts, as many countries do not report. It is, however, useful for those countries that do report (Cayman Islands, inter alia), as explained in the main text.

Securities Data from the US Treasury International Capital System (TIC)

The US Treasury provides data on both US short- and long-term securities held by foreigners and foreign short- and long-term securities held by US residents. This data is publicly available online and downloadable as CSV files from the US Treasury website.

¹⁹⁴ The Bank for International Settlements, 'Debt Securities Statistics', 3 December 2017, <https://www.bis.org/statistics/secstats.htm>.

For short-term securities, data is provided monthly, whereas for long-term securities, they are provided annually at the end of June – which is inconsistent with our other yearly datasets, which end in December. To obtain estimates for December values on long-term securities, we therefore need to resort to the monthly estimates in Bertaut and Tryon (2007) and Bertaut and Judson (2014).

Holdings of Securities in Bank Custody Accounts Data from the SNB

The SNB has published monthly data on foreign securities held by non-Swiss residents through Swiss accounts since 1976 (“Monthly Banking Statistics” and “Bank in Switzerland”, an annual report). This data is publicly available online and downloadable as Excel files from the SNB website. However, while the data is broken down by resident/non-resident owners, assets held by non-residents are not disaggregated at the level of country of ownership.

Data on Foreign Deposits in IFCs

Data on deposit holdings in IFCs are critical to the Study. We review them below.

The BIS’s Locational Banking Statistics

The BIS provides data, downloadable as CSV file from the BIS website, on deposits held by non-residents in most important financial centres. The estimated coverage of the cross-border claims by the BIS Locational Banking statistics is at more than 90% (96% for 2016).¹⁹⁵ In each country, the coverage of foreign deposits by the BIS is high since the cross-border position excess above which banks are required to report is usually modest.¹⁹⁶

Until 2016, the BIS disclosed data on deposits owned by non-residents without disaggregation by country of ownership. Starting in 2016, the BIS has disclosed that disaggregation by country of ownership for most countries (incl. Guernsey, Hong Kong, the Isle of Man, Jersey, Luxembourg, Macao and Switzerland), including on retrospective years. However, as of 2016, a number of Type I IFCs still did not authorise the BIS to disclose bilateral deposit information – notably the Bahamas, Singapore and the Cayman Islands.¹⁹⁷ Table 19 lists the 48 jurisdictions which report to the BIS at the aggregate level.

The statistics are disclosed quarterly, and information is provided on the currency composition of banks’ balance sheet and on the sector (banks/non-banks) of the counterparties. The breakdown between non-financial and financial for the non-bank sector is also available but only at the aggregate level. This breakdown is, however, available both for the incoming deposits in the BIS-reporting jurisdictions and for outgoing deposits for all jurisdictions, derived by the BIS as a mirroring aggregate. Finally, there is no information on whether deposits are held by individuals or corporations.

¹⁹⁵ https://www.bis.org/statistics/lbs_globalcoverage.pdf

¹⁹⁶ The BIS estimates that the deposit global coverage rate systematically exceeds 90 percent.

¹⁹⁷ The BIS has provided the authors with bilateral deposit statistics for the non-reporting countries, under a confidentiality agreement.

Table 19. BIS-Reporting Jurisdictions

Jurisdictions	
Australia	Italy
Austria	Japan
Bahamas	Jersey
Bahrain	Korea
Belgium	Luxembourg
Bermuda	Macao
Brazil	Malaysia
Canada	Mexico
Cayman Islands	Netherland
Chile	Netherland Antilles
China	Norway
Chypre	Panama
Curacao	Philippines
Denmark	Portugal
Finland	Russia
France	Singapore
Germany	South Africa
Guernsey	Spain
Greece	Sweden
Hong Kong	Switzerland
India	Taiwan
Indonesia	Turkey
Ireland	United Kingdom
Isle of Man	United States of America

The SNB’s Foreign Fiduciary Deposit Statistics

Data on Swiss foreign fiduciary deposits (as opposed to the foreign securities above) are obtained through the same sources as above: “Bank in Switzerland” (annual report) and the “Monthly banking statistics”. It is available starting from 1976 and can be downloaded as CSV files from the SNB website. The SNB provides full and reliable information on fiduciary deposits hold in Swiss banks by country of ownership.

Fiduciary deposits consist of giving a mandate to a Swiss bank to invest the deposits outside Switzerland on behalf of individual investors. It is safe to assume that this unique kind of deposit is only used by individuals as it is of no relevance to corporations.

The coverage is partial monthly (at 95%) with a full annual survey.

Data on Tax Rates and Tax Systems for EU Member States

Three main databases providing information of the tax system and its evolution in each Member State will be used. We review them below.

The EC’s Taxes in Europe Database v3 (TEDB)

The TEDB is publicly available and provides detailed information regarding all taxable income including special rules for all EU Member States for 2007-2016. However, for some Member States and for periods before 2010, some information is missing, and the 2001-2006 period is not covered.

The OECD’s Tax Database

This database is publicly available online on the OECD website and provides full information on the corporate and personal income rates and thresholds for the 2001-2016 period. However, the information is limited to the OECD Member States, i.e.,

information concerning Bulgaria, Croatia, Cyprus, Lithuania, Malta and Romania are not provided.

The IBFD Tax Explorer

IBFD provides country profiles including full information on the tax system of each country. This database is a private service of IBFD and is available on a subscription basis.

Data from the International Consortium of Investigate Journalists

Founded in 1997, the ICIJ is a global network collaboration between more than 200 investigative journalists and media organisations of 70 countries. The ICIJ, on the basis of several leaks, disclosed information on both the amounts of and the identities of foreign owners of HSBC Swiss accounts (Swiss Leaks) and on owners of offshore corporations (notably the Panama Papers and the Paradise Papers).

The Swiss Leaks Database

In 2007, a former HSBC employee forwarded the internal documents of the Swiss branch of HSBC to the French tax authorities. In many instances, these documents allow the identification of the true owners of the assets held on HSBC's books in Switzerland via shell companies. In January 2015, the ICIJ disclosed some of the information contained in these files. This release covers more than US\$ 100 billion from 106,000 clients in 203 countries. Data is available online through three pages on the ICIJ's website: country; people, providing detailed information on 66 people selected by ICIJ for their public interest; and stories, listing the recent newspaper articles related to the Swiss Leaks. No raw dataset is directly downloadable online.

The ICIJ's published information by country, among which the following are of interest to this Study:

- The maximum values on the accounts for a given country for the period 2006/2007 and a histogram representing the distribution of the client account number by range of maximum amounts on this period;
- The number of clients' accounts opened between 1988 and 2006, and the number of bank accounts linked to those clients.¹⁹⁸ Moreover, a graph shows the year-by-year evolution of active accounts and the number of open accounts;
- The number of total clients that are associated with the country and the percentage of those that owned the country's passport or nationality. A diagram displays the distribution of account types: linked to a person, linked to an offshore company and numbered account (anonymous account).

The Offshore Leaks Database

Information obtained through four separate leaks – the Offshore Leaks, the Bahamas Leaks, the Panama Papers and the Paradise Papers – has been compiled into a single database provided by ICIJ, the Offshore Leaks database. For the purposes of this Study, only the Panama Papers and the Paradise Papers are of interest. This is because the Bahamas Leaks and the Offshore Leaks do not contain information on the actual owner of corporations or his residency country, which is necessary for the robustness checks to be implemented.

¹⁹⁸ For some countries, the reference period is longer.

The Panama Papers represent 11.5 million internal files of the Panamanian firm Mossack-Fonseca leaked to a German newspaper, *Süddeutsche Zeitung*, and shared with ICIJ. These files contain emails, financial spreadsheets, passports and corporate records and provide information on all the offshore companies created by Mossack-Fonseca in more than 21 offshore jurisdictions over nearly 40 years until 2015. In 2016, ICIJ started to disclose information on owners of these offshore companies.

In 2017, ICIJ obtained 13.4 million confidential electronic documents, the Paradise Papers, originating from the law firm Appleby. This database has recently been enriched with records from seven corporate registries (Aruba, Cook Islands, Bahamas, Barbados, Malta, Nevis and Samoa).

After indexing, organising and analysing the files of these leaks, ICIJ provided online downloadable databases organised in four main CSV data files:

- **The entity file** contains the name, incorporation date, legal jurisdiction and information on the status or on the closed date of the offshore entities;
- **The officer file** provides the name and country of the (natural or legal) person that has a link with an entity;
- **The intermediary file** contains the name and country of a firm that interfaces with the ultimate investors;
- A node number is attributed to each entity, officer and intermediary and **the edge file** indexes all the different links between these nodes revealed by the leak files.

Additionally, the Offshore Leaks Database, including the information of all leaks, has been incorporated by ICIJ with the help of Neo4j into a special Neo4j Desktop. This tool allows users to represent networks of related data with graphs.

The Offshore Leaks Database now contains information on more than 785,000 offshore companies, foundations and trusts. Most of these corporations are shell companies. For most of them, the database provides their incorporation date, their legal jurisdiction, and their status as well as their owner's name and country of residence. However, there is no information on whether corporations are used as obfuscating shells or for a legal purpose. Additionally, the ultimate owners of the corporations are not always identifiable, whether the information is missing, or the corporations are themselves owned by other corporations not created by law firms included in leaks.

Table 20. Databases Used in the Study

Database	Source	Description	Step in the methodology	Use in the methodology	Limitations	Statistics of interest	Metadata
Coordinated Portfolio Investment Survey (CPIS)	IMF statistics Source: http://data.imf.org/?sk=B981B4E3-4E58-467E-9B90-9DEF0C3367363 Data: downloadable online as excel or CSV files.	General information: - Data on bilateral international portfolio asset position; - Voluntary data collection; - Augmented by SSIO and SEFER; - IMF derives aggregate portfolio liabilities for all economies (reporters and non-reporters). Coverage: - Period: 2001 - 2016; - Participating countries: 91; - Frequency: Between 2001-2012: annual report at the end of December. From 2012: bi-annual report encouraged.	Step 1 Main database	- Main source for portfolio investment asset: use of aggregated data by country (equity and debt); - Use of bilateral data for estimation of gravity model; - Derived liability to complete data for portfolio investment liabilities (for some small countries and for equity liabilities of international organisations); - Marginal use to compute ratio to extrapolate from other incomplete databases (e.g., EWN for 2015/2016).	- Not all countries are reporting or reported for each year (only 61 countries reported each year between 2001 and 2016); - Survey only on portfolio assets. Liabilities are only derived from the reported asset.	- Aggregate portfolio investment assets by countries; - Bilateral portfolio investment assets; - Derived portfolio investment liabilities; - Portfolio reserves (SEFER and SSIO).	Available metadata by country (but not for all countries).
The External Wealth of Nations database (EWN)	Lane and Milesi-Ferretti (2007) Source: http://www.hiliplane.org/EWN.html Data: Downloadable online as Excel file.	General information: - Extent of the IIP by countries; - Use of CPIS data to extend IIP as well as other estimation techniques to cover more countries; - Data on international portfolio investment, direct investment, other investments, and reserves. Coverage: - Period: 1970 - 2014; - Number of covered countries: 211; - Frequency: End-of-year values.	Step 1 Main database	- Main source for portfolio investment liabilities; - Complementary source for portfolio investment assets; - Marginal use to complete data (e.g. reserves for Iran and GDP of some countries for gravity model).	- No update after 2014; - Not only raw data but estimations; - When countries are not reporting their IIP to the IMF, no breakdown between portfolio debt and other debts; - For some small countries and IFCs, data are not necessarily reliable.	- Portfolio equity assets and liabilities; - Portfolio debt assets and liabilities; - FX Reserves minus gold; - GDP.	Available metadata by country to explain the estimation techniques for each variable.

<p>International Investment Positions (IIP)</p>	<p>IMF statistics Source: http://data.imf.org/?sk=7A51304B-6426-40C0-83DD-CA473CA1FD52 Data: Downloadable online as Excel or CSV files.</p>	<p>General information: - Data on investment position of each country against the rest of the world; - Four elements for both asset and liability: direct investments portfolio investments, financial derivatives, and other investments. As well as reserve assets; Coverage - Period: 1945 – 2016; - Reporting countries: Around 150 (for 2001-2016); - Frequency: Quarterly (with variation by country).</p>	<p>Step 1 Main database</p>	<ul style="list-style-type: none"> - Complementary source to CPIS and EWN (for 2015/2016) for portfolio investment assets and liabilities; - Main source for privately-held assets of China. 	<ul style="list-style-type: none"> - Not all countries report their IIP to the IMF and not each year. 	<ul style="list-style-type: none"> - Portfolio equities and debts (asset and liability). 	<p>Available metadata by country but not for all reporting countries.</p>
<p>International banking statistics – Locational Banking statistics</p>	<p>Bank for International Settlements (BIS) statistics Source: https://www.bis.org/statistics/about_banking_stats.htm?m=6%7C31%7C637 Data: Downloadable online as CSV files.</p>	<p>General information: - Reported to the BIS at the country level; - Information about the currency composition of banks’ balance sheets and the geographical breakdown of their counterparties; - Compilation principles of the statistics in consistency with balance of payment. Coverage: - Period: 1977 – 2017; - Reporting countries: 47 countries at the aggregate level and 30 disclose breakdown by counterparty country; - Frequency: Quarterly.</p>	<p>Step 2 Main database</p>	<ul style="list-style-type: none"> - Main source for the estimation of offshore wealth by Type I IFC (except for Switzerland); - Main source for the estimation of offshore wealth by country of ownership (except in Switzerland). 	<ul style="list-style-type: none"> - Concerns only deposits and no portfolio investments; - No breakdown between deposits held by individuals and those held by corporations; - No breakdown by counterparty country for some major financial centres; - Data potentially contaminated by the use of shell companies. 	<ul style="list-style-type: none"> - Amount outstanding of cross-border deposits (Liabilities). 	<p>Available PDF document on reporting practices by country.</p>
<p>Monthly banking statistics and Bank in</p>	<p>Swiss National Bank statistics Source:</p>	<p>General information: - Data collected and published by the Swiss National Bank; - Value of the offshore</p>	<p>Step 2 Main database</p>	<ul style="list-style-type: none"> - Main source for the estimation of the global wealth in Switzerland; 	<ul style="list-style-type: none"> - Only information for Switzerland; - No breakdown by country for investment 	<ul style="list-style-type: none"> - Foreign fiduciary deposits liabilities; - Holdings of 	

Switzerland	https://data.snb.ch/en Data: Downloadable online as Excel or CSV files	portfolios held in Swiss banks; - Breakdown between resident holders and non-resident holders - Published data on fiduciary deposits by country of ownership. Coverage: - Period: 1976 - 2017; - Countries: Only Switzerland; - Frequency: Monthly partial coverage (95%) and a full annual survey.	Step 1 Secondary database	- Ratio between foreign securities and foreign deposits held in Switzerland used to estimate the aggregate amount of deposits held offshore (Step 1).	asset held in Switzerland on the behalf on foreigners; - Data potentially contaminated by the used of shell companies.	securities in bank custody accounts.	
Taxes in Europe Database v3 (TEDB)	European Commission Source: http://ec.europa.eu/taxation_customs/tdb/splSearchForm.html Data: Online scrolling database, no downloadable file.	General information: - Detailed information regarding all taxable income including special rules. Coverage - Period: Partial for 2007 - 2010 and complete for 2010 - 2016; - Countries: All EU Member States.	Step 3 Main database	- Estimation of PIT revenue loss; - Estimation of CIT revenue loss; - Estimation of inheritance tax liability loss; - Estimation of wealth tax liability loss; - Verification of plausibility of "top-rate" assumption; - Potential corrections to tax liability estimates.	- Information on special rules not always included in the country reports; - No full coverage for the period considered.		
Taxes database	OECD Source: http://www.oecd.org/tax/tax-policy/tax-database.htm Data: Online scrolling database, no downloadable file.	General information: - Information on corporate and personal income tax rates and thresholds. Coverage - Period: 2001 - 2016; - Countries: EU Member States excluding Bulgaria, Croatia, Cyprus, Lithuania, Malta and Romania.	Step 3 Main database	- Estimation of PIT revenue loss; - Estimation of CIT revenue loss.	- Information on some EU Member States missing.		
Taxes Explorer	IBFD Source (Limited	General information: - Detailed information regarding all taxable	Step 3 Main	- Estimation of PIT revenue loss; - Estimation of CIT revenue	- Access to the data restricted by fee		

	access, subscription needed): https://www.ibfd.org/ Data: Online scrolling, no downloadable file.	income including special rules. Coverage - Period: 2001 - 2016; - Countries: All EU Member States.	database	loss; - Estimation of inheritance tax liability loss; - Estimation of wealth tax liability loss; - Verification of plausibility of “top-rate” assumption; - Potential corrections to tax liability estimates.	payments.		
International Financial Statistics (IFS)	IMF statistics Source: http://data.imf.org/?sk=4C514D48-B6BA-49ED-8AB9-52B0C1A0179B Data: Downloadable online as Excel or CSV files.	General information: - One of the principal IMF’s database; - Covers main statistics: consumer price, exchange rates, government finance, interest rates, international liquidity, trade of goods. Coverage - Period: 1948 - 2016 with variations; - Countries: 194 countries and aggregated regions.	Step 1 Secondary database	- Complementary data for portfolio reserves of countries that are not participating in CPIS; - Official exchange rate for statistics in a different devise than US dollars (e.g., the Netherlands IIP).	- No breakdown between portfolio reserve and others (neither between equities and debts).	- International Reserves; - Official exchange rates of the IMF.	PDF notes on some specific countries and specific variables.
US Treasury International Capital System (US TIC)	US Treasury statistics Source: https://www.treas.gov/resource-center/data-chart-center/tic/Pages/index.aspx Estimates of Bertaut and Tryon (2007): https://www.federalreserve.gov/pubs/ifdp/2007/910/default.htm And Bertaut	General information: - Data collection on cross-border portfolio investment flows and positions between US residents and foreign residents; Coverage: - Coverage period: 1974 - 2016 (foreign holdings of US securities) and 1994 - 2016 (US holdings of foreign securities); - Countries: United States of America (and counterpart countries); - Frequency: Monthly for short-term securities and annually (end-of-June) for	Step 1 Secondary database	- Estimation of portfolio asset of the Cayman Islands; - Estimation of portfolio asset of China (use of proportional change for extrapolation of IIP for missing year and ratio between equity and debt); - Estimation of portfolio asset of Middle-East oil countries; - Estimation of the lower bound of the non-fund equity liabilities of the Cayman and other small offshore centres.	- Data on long-term securities are at end-of-June data. Use of estimates of Bertaut and Tryon (2007) for 2001-2010 and Bertaut and Judson (2014) for 2011-2016.	- US long-term and short-term securities held by foreign country residents; - Foreign short-term and long-term securities held by US residents.	

	<p>and Judson (2014): https://www.federalreserve.gov/pubs/ifdp/2014/1113/default.htm</p> <p>Data: Downloadable online as Excel or CSV files.</p>	<p>long-term securities.</p>					
Swiss Leaks	<p>ICIJ (The International Consortium of Investigate Journalists) statistics Source: https://projects.icij.org/swiss-leaks/</p> <p>Data: Online scrolling, no downloadable file.</p>	<p>General information:</p> <ul style="list-style-type: none"> - Data secreted away by a former HSBC employee; - Based on internal bank files on three dimensions: clients and their private accounts, maximum amounts on these accounts, and notes on clients; - Allows the identification of the true owner of each bank account; - Accounts represents more than US\$100 billion from more than 100 000 clients (individuals and legal entities). <p>Coverage:</p> <ul style="list-style-type: none"> - Period: 1988 - 2007 (private accounts); Maximum amounts in client accounts during 2006 and 2007. - HSBC branches in Switzerland (and their foreign clients). 	<p>Step 2 consistency check</p>	<ul style="list-style-type: none"> - To check the consistency of the distribution of countries' wealth ownership in Switzerland (after the correction for the use of shell companies). 	<ul style="list-style-type: none"> - Dataset not available, only selective information disclosed by the ICIJ; - Not time series data for the number of clients; aggregate number at the end of the period (2007); - Possible double-counting; - Only the maximum value by country over 2006/2007; - More than 19 000 clients not associated with any country. 	<ul style="list-style-type: none"> - Aggregate amount held by foreigners (with a breakdown by countries) in HSBC swiss banks. 	
Panama Papers (Offshore)	<p>ICIJ statistics Source:</p>	<p>General information:</p> <ul style="list-style-type: none"> - Leaked information on the secret owners of offshore 	<p>Step 2 consistency check</p>	<ul style="list-style-type: none"> - To check the consistency between the use of shell companies by countries and 	<ul style="list-style-type: none"> - Not all shell companies have identifiable 	<ul style="list-style-type: none"> - Residency of the shell company 	

	<p>https://offshoreleaks.icij.org/pages/database</p> <p>Data: Downloadable online as Excel or CSV files.</p>	<p>bank accounts and companies;</p> <ul style="list-style-type: none"> - Anonymous leak; - More than 214 000 offshore companies. <p>Coverage:</p> <ul style="list-style-type: none"> - Period: over nearly 40 years until 2015; - Clients of the Panamanian firm Mossack-Fonseca; - Companies located in 21 offshore jurisdictions. 		<p>their estimated offshore wealth;</p> <ul style="list-style-type: none"> - To check the consistency between the estimated indirect deposits and the use of shell companies. 	<p>owners;</p> <ul style="list-style-type: none"> - No distinction between tax evasion purpose or other (legal) purposes for the creation of offshore companies; - No information on the assets value of these companies. 	owner.	
Paradise Papers (Offshore leaks)	<p>ICIJ statistics</p> <p>Source: https://offshoreleaks.icij.org/pages/database</p> <p>Data: Downloadable online as Excel or CSV files.</p>	<p>General information:</p> <ul style="list-style-type: none"> - Leaked information on the secret owners of offshore bank accounts and companies; - Anonymous leak; - More than 290 000 offshore companies. <p>Coverage:</p> <ul style="list-style-type: none"> - Period: decades up to 2016; - Data from the law firm "Appleby", "Asciaciti", and from 7 corporate registries (Aruba, Bahamas, Barbados, Cook Islands, Malta, Nevis, and Samoa). 	Step 2 consistency check	<ul style="list-style-type: none"> - To check the consistency between the use of shell companies by countries and their estimated offshore wealth; - To check the consistency between the estimated indirect deposits and the use of shell companies. 	<ul style="list-style-type: none"> - Not all shell companies have identifiable owners; - No distinction between tax evasion purpose or other (legal) purposes for the creation of offshore companies; - No information on the assets value of these companies. 	- Residency of the shell company owner.	
Foreign Direct Investment	<p>UNCTAD Statistics</p> <p>Source : https://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx</p> <p>Data : Downloadable online as</p>	<p>Coverage</p> <ul style="list-style-type: none"> - Period: 1980 - 2017 with variations; <p>Countries: 173 countries and aggregated regions.</p>	Step 2 Secondary database	<ul style="list-style-type: none"> - To estimate the corrective weight to overcome the lack of breakdown between individuals and firms in the BIS statistics. 	<ul style="list-style-type: none"> - Only an imperfect proxy for the international activity of resident firms. 	- Outward stocks of FDI.	

International debt securities	<p>Excel files</p> <p>BIS statistics Source: https://www.bis.org/statistics/about_security_stats.htm?m=6%7C33</p> <p>Data: Downloadable online as Excel files.</p>	<p>Compiled from a security-by-security database built by the BIS using information from commercial data providers.</p>	<p>Step 1 Marginal database</p>	<p>- Portfolio investment debt liabilities for Cayman Islands, for some small offshore centres and for international organisations.</p>	<p>- Imperfect estimation: total international debts may be underestimated by the lack of report.</p>	<p>- International debt securities.</p>	
World Development Indicators	<p>World Bank statistics Direct download from Stata with wbopendata</p>		<p>Step 1 Marginal database</p>	<p>- GDP and population data for the estimation of the gravity model.</p>		<p>- GDP; - Population.</p>	
GeoDist database	<p>CEPII statistics Source: http://www.cepii.fr/bdd_modele/presentation.asp?id=6</p> <p>Data: Downloadable online as Excel file.</p>	<p>Geographical and cultural bilateral data for 225 countries.</p>	<p>Step 1 Marginal database</p>	<p>- To estimate the gravity model.</p>		<p>- Cultural and distance control variables.</p>	
Statistics from offshore centres' monetary authorities	<p>Data sources: website of the monetary authorities of the concerned offshore centres</p> <p>Format: PDF</p>		<p>Step 1 Marginal database</p>	<p>- Estimation of equity invested in funds in the small offshore centres (Cayman etc.).</p>		<p>- Net asset values.</p>	

	files						
International Investment Position for the Netherlands	<p>DNB statistics</p> <p>Source: https://statistiek.dnb.nl/en/statistics/index.aspx</p> <p>Data : Downloadable online as Excel file</p>		<p>Step 1</p> <p>Marginal database</p>	<p>- Comparison of the the Netherland's IIP published by the DNB with the one reported in IIP or CPIS</p>		<p>- IIP portfolio assets and liabilities for the Netherlands</p>	
Statistics from IFC central banks	<p>Data sources: website of the central bank of the concerned countries</p> <p>Format: PDF files</p>		<p>Step 2</p> <p>Marginal database</p>	<p>- To construct the assumptions on the breakdown between individuals and corporations' deposits.</p>			

Appendix 3. Non-Cooperative Jurisdiction Lists, Adhesion to EUSD, FATCA Status and Commitment to AEOI

Country	EUSD		FATCA		AEOI		OECD List (2009)	JZ14 List of IFC (2014)	AJZ18 List of IFC (2018)	EU List of non-cooperative jurisdictions (March 2019)
	Adhesion	Choice of Tax Withholding	IGA Status	Model ¹⁹⁹	Committed jurisdiction ²⁰⁰	Intended date of 1st exchange				
Albania					Yes	2020				Grey list
Algeria			In force	1						
American Samoa										Black list
Andorra	Yes	Yes			Yes	2018	Grey list	Yes		
Angola			In force	1						
Anguilla	Yes		Signed	1	Yes	2017	Grey list	Yes		Grey list
Antigua and Barbuda			In force	1	Yes	2018	Grey list	Yes		Grey list
Argentina					Yes	2017				
Armenia			Signed	2						Grey list
Aruba	Yes				Yes	2018	Grey list	Yes		Black list
Australia			In force	1	Yes	2018				Grey list
Austria	Yes	Yes	In force	2	Yes	2018	Grey list	Yes	Yes	
Azerbaijan			In force	1	Yes	2018				
Bahamas, The			In force	1	Yes	2018	Grey list	Yes	Yes	Grey list
Bahrain			Signed	1	Yes	2018	Grey list	Yes	Yes	
Barbados			In force	1	Yes	2018		Yes		Black list
Belarus			In force	1						
Belgium	Yes	Yes (till 01/01/2010)	In force	1	Yes	2017	Grey list	Yes	Yes	
Belize					Yes	2018	Grey list	Yes		Black list
Bermuda			In force	2	Yes	2017	Grey list	Yes	Yes	Black list
Bosnia and Herzegovina										Grey list
Botswana										Grey list
Brazil			In force	1	Yes	2018				
British Virgin Islands	Yes	Yes (till 01/01/2012)			Yes	2017	Grey list	Yes		Grey list
Brunei Darussalam					Yes	2018	Grey list			
Bulgaria	Yes (from 2007)		In force	1	Yes	2017				
Cabo Verde			Agreement	1						Grey list
Cambodia			In force	1						
Canada			In force	1	Yes	2018				
Cayman Islands	Yes		In force	1	Yes	2017	Grey list	Yes	Yes	Grey list
Chile			Signed	2	Yes	2018	Grey list	Yes		

¹⁹⁹ See footnote 80.

²⁰⁰ Adopted the AEOI Standard through either the Multilateral Convention or bilateral treaties.

Country	EUSD		FATCA		AEOI		OECD List (2009)	JZ14 List of IFC (2014)	AJZ18 List of IFC (2018)	EU List of non-cooperative jurisdictions (March 2019)
	Adhesion	Choice of Tax Withholding	IGA Status	Model ¹⁹⁹	Committed jurisdiction ²⁰⁰	Intended date of 1st exchange				
China			Agreement	1	Yes	2018				
Colombia			In force	1	Yes	2017				
Cook Islands					Yes	2018	Grey list	Yes		Grey list
Costa Rica			Signed	1	Yes	2018	Black list	Yes		Grey list
Croatia	Yes (from 2013)		In force	1	Yes	2017				
Curacao	Yes	Yes	In force	1	Yes	2018		Yes		Grey list
Cyprus	Yes		In force	1	Yes	2017		Yes	Yes	
Czech Republic	Yes		In force	1	Yes	2017				
Denmark	Yes		In force	1	Yes	2017				
Dominica			Agreement	1	Yes	2018	Grey list	Yes		Black list
Dominican Republic			Signed	1						
Estonia	Yes		In force	1	Yes	2017				
Faroe Islands					Yes	2017				
Fiji										Black list
Finland	Yes		In force	1	Yes	2017				
France	Yes		In force	1	Yes	2017				
New Caledonia										
Georgia			In force	1						
Germany	Yes		In force	1	Yes	2017				
Ghana					Yes	2018				
Gibraltar			In force	1	Yes	2017	Grey list	Yes		
Greece	Yes		In force	1	Yes	2017				
Greenland			Signed	1	Yes	2018				
Grenada			Signed	1	Yes	2018	Grey list	Yes		
Guam										Black list
Guatemala							Grey list			
Guernsey	Yes	Yes (till 01/07/2011)	In force	1	Yes	2017		Yes	Yes	
Guyana			In force	1						
Haiti			Agreement	1						
Honduras			In force	1						
Hong Kong			In force	2	Yes	2018	Grey list	Yes	Yes	
Hungary	Yes		In force	1	Yes	2017				
Iceland			In force	1	Yes	2017				
India			In force	1	Yes	2017				
Indonesia			Agreement	1	Yes	2018				
Iraq			Agreement	2						
Ireland	Yes		In force	1	Yes	2017				
Isle of Man	Yes	Yes (till 01/07/2011)	In force	1	Yes	2017		Yes	Yes	
Israel			In force	1	Yes	2018				
Italy	Yes		In force	1	Yes	2017				
Jamaica			In force	1						
Japan			In effect	2	Yes	2018				
Jersey	Yes	Yes (till)	In force	1	Yes	2017		Yes	Yes	

Country	EUSD		FATCA		AEOI		OECD List (2009)	JZ14 List of IFC (2014)	AJZ18 List of IFC (2018)	EU List of non-cooperative jurisdictions (March 2019)
	Adhesion	Choice of Tax Withholding	IGA Status	Model ¹⁹⁹	Committ ed jurisdiction ²⁰⁰	Intend ed date of 1st exchange				
		01/01/2015)								
Jordan										Grey list
Kazakhstan			Signed	1	Yes	2020				
Korea, Republic of			In force	1	Yes	2017				
Kosovo			In force	1						
Kuwait			In force	1	Yes	2018				
Labuan Islands					Yes (as part of Malaysia)	2018				
Latvia	Yes		In force	1	Yes	2017				
Lebanon					Yes	2018				
Liberia							Grey list	Yes		
Liechtenstein	Yes	Yes	In force	1	Yes	2017	Grey list	Yes		
Lithuania	Yes		In force	1	Yes	2017				
Luxembourg	Yes	Yes	In force	1	Yes	2017	Grey list	Yes	Yes	
Macao			Signed	2	Yes	2018	Grey list	Yes	Yes	
Macedonia, FYR										Grey list
Malaysia			Agreement	1	Yes	2018		Yes	Yes	
Maldives					Yes	2020	Black list			Grey list
Malta	Yes		In force	1	Yes	2017		Yes		
Marshall Islands					Yes	2018	Grey list	Yes		Black list
Mauritius			In force	1	Yes	2018				Grey list
Mexico			In force	1	Yes	2017				
Moldova			In force	2						
Monaco	Yes	Yes			Yes	2018	Grey list	Yes		
Mongolia										Grey list
Montenegro			Signed	1						Grey list
Montserrat	Yes		In force	1	Yes	2017	Grey list	Yes		
Morocco										Grey list
Namibia										Grey list
Nauru					Yes	2018	Grey list	Yes		Grey list
Netherlands	Yes		In force	1	Yes	2017				
Netherlands Antilles (Bonaire, Sint-Eustatius Saba- BES)	Yes	Yes (till 01/01/2012)			Yes (as part of the Netherlands)	2017	Grey list	Yes	Yes	
New Zealand			In force	1	Yes	2018				
Nicaragua			Agreement	2						
Nigeria					Yes	2019				
Niue					Yes	2018	Grey list	Yes		Grey list
Norway			In force	1	Yes	2017				
Oman										Black list
Pakistan					Yes	2018				
Palau										Grey list
Panama			In force	1	Yes	2018	Grey list	Yes	Yes	
Paraguay			Agreement	2						

Country	EUSD		FATCA		AEOI		OECD List (2009)	JZ14 List of IFC (2014)	AJZ18 List of IFC (2018)	EU List of non-cooperative jurisdictions (March 2019)
	Adhesion	Choice of Tax Withholding	IGA Status	Model ¹⁹⁹	Committed jurisdiction ²⁰⁰	Intended date of 1st exchange				
Peru			Agreement	1	Yes	2020				
Philippines			Signed	1			Black list			
Poland	Yes		In force	1	Yes	2017				
Portugal	Yes		In force	1	Yes	2017				
Qatar			In force	1	Yes	2018				
Romania	Yes (from 2007)		In force	1	Yes	2017				
Russia					Yes	2018				
Samoa					Yes	2018	Grey list	Yes		Black list
San Marino	Yes	Yes	In force	2	Yes	2017	Grey list	Yes		
Saudi Arabia			In force	1	Yes	2018				
Serbia, Republic of			Agreement	1						Grey list
Seychelles			Agreement	1	Yes	2017		Yes		Grey list
Sierra Leone										
Singapore			In force	1	Yes	2018	Grey list	Yes	Yes	
Sint Maarten	Yes	Yes			Yes	2018		Yes		
Slovak Republic	Yes		In force	1	Yes	2017				
Slovenia	Yes		In force	1	Yes	2017				
South Africa			In force	1	Yes	2017				
Spain	Yes		In force	1	Yes	2017				
St. Kitts and Nevis			In force	1	Yes	2018	Grey list	Yes		Grey list
St. Lucia			In force	1	Yes	2018	Grey list	Yes		Grey list
St. Vincent and the Grenadines			In force	1	Yes	2018	Grey list	Yes		
Swaziland										Grey list
Sweden	Yes		In force	1	Yes	2017				
Switzerland	Yes	Yes	In force	2	Yes	2018	Grey list	Yes	Yes	Grey list
Taiwan			Signed	2						
Thailand			Signed	1						Grey list
Tonga										
Trinidad and Tobago			In force	1	Yes	2018		Yes		Black list
Tunisia			Agreement	1						
Turkey			Signed	1	Yes	2018				Grey list
Turkmenistan			In force	1						
Turks and Caicos Islands	Yes	Yes (till 01/01/2012)	In force	1	Yes	2017	Grey list	Yes		
US Virgin Islands								Yes		Black list
Ukraine			Signed	1						
United Arab Emirates			In force	1	Yes	2018				Black list
United Kingdom	Yes		In force	2	Yes	2017			Yes	
United States									Yes	
Uruguay					Yes	2018	Black list	Yes		
Uzbekistan			In force	1						
Vanuatu					Yes	2018	Grey list	Yes		Black list
Vatican			In force	1						

Country	EUSD		FATCA		AEOI		OECD List (2009)	JZ14 List of IFC (2014)	AJZ18 List of IFC (2018)	EU List of non-cooperative jurisdictions (March 2019)
	Adhesion	Choice of Tax Withholding	IGA Status	Model ¹⁹⁹	Committed jurisdiction ²⁰⁰	Intended date of 1st exchange				
Vietnam			In force	1						Grey list

Sources: EU, OECD, US treasury, Johannesen and Zucman (2014), and Alstadsæter, Johannesen and Zucman (2018).

Appendix 4. Additional Results

IFC Deposit Ratio Tables

Table 21 below presents the type I Deposit ratios by jurisdiction.

It is interesting to compare the list of Type I jurisdictions with the 8 groups of IFCs identified by the BCG for 2016 (Channel Islands and Dublin, Caribbean and Panama, Luxembourg, Switzerland, Singapore, the United Kingdom, Hong Kong and the United States). While the two lists are relatively close, there are several important differences. The BCG assumes that part of the global offshore wealth is invested out of the United States, the United Kingdom and Ireland (whereas these countries are not included in our list for 2016); conversely, Macao and Bahrain are included in our list for 2016 but not in the BCG's.

Table 21. Type I Deposit Ratios by Jurisdiction

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Bahamas	Ratio	8.15	5.85	7.33	7.42	8.67	10.60	12.18	12.93	10.93	11.50	10.16	8.72	8.72	5.71	3.52	2.43
	T1 Cluster	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Bahrain	Ratio	1.48	1.15	1.05	1.09	1.16	1.54	1.65	1.32	1.39	1.37	1.02	0.99	1.01	0.95	1.04	0.94
	T1 Cluster	3	3	3	3	3	3	3	3	3	3	3	2	3	2	3	2
Cayman Islands	Ratio	71.26	100.50	100.09	100.47	86.13	99.46	120.45	144.61	137.54	152.83	107.46	88.83	94.34	86.04	69.18	52.37
	T1 Cluster	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Cyprus	Ratio								0.60	0.68	0.91	0.87	1.02	0.59	0.52	0.53	0.49
	T1 Cluster								2	2	2	2	2	2	2	2	2
Guernsey	Ratio	19.78	13.76	15.28	13.94	14.45	15.10	14.89	14.23	14.81	16.44	14.05	13.02	12.52	8.84	8.11	8.05
	T1 Cluster	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Hong Kong	Ratio	0.37	0.31	0.38	0.43	0.45	0.51	0.65	0.63	0.69	0.70	0.75	0.86	0.95	1.05	1.04	1.14
	T1 Cluster	2	1	2	2	2	2	2	2	2	2	2	2	2	3	3	3
Isle of Man	Ratio	11.89	11.57	11.11	10.52	11.84	12.29	8.86	7.35	7.36	6.10	5.28	5.20	4.27	3.62	3.90	3.47
	T1 Cluster	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Jersey	Ratio	13.47	14.80	19.01	15.04	18.24	20.86	24.28	16.17	15.41	12.79	11.12	12.44	11.73	9.19	8.56	7.96
	T1 Cluster	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Luxembourg	Ratio	2.86	2.71	2.63	2.46	1.98	2.27	1.96	1.47	1.62	1.29	1.10	1.35	1.26	1.06	1.11	1.07
	T1 Cluster	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Macao	Ratio			0.23	0.20	0.43	0.44	0.47	0.42	0.45	0.32	0.29	0.34	0.38	0.44	0.65	0.60
	T1 Cluster			1	1	2	2	2	2	2	1	1	2	2	2	2	2
Netherlands Antilles	Ratio	1.67	1.87	2.04	2.29	2.20	1.86	2.13	1.85	1.83	1.86	1.26	1.38	1.22	1.72	1.74	1.26
	T1 Cluster	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Panama	Ratio		0.00	0.23	0.25	0.25	0.27	0.30	0.31	0.37	0.36	0.34	0.32	0.29	0.32	0.31	0.28
	T1 Cluster		1	1	1	1	1	1	1	2	2	2	2	1	1	1	1
Singapore	Ratio	1.07	1.08	1.10	0.92	0.92	0.98	1.09	0.95	1	0.83	0.75	0.60	0.64	0.66	0.66	0.63
	T1 Cluster	3	3	3	2	2	2	3	2	3	2	2	2	2	2	2	2
Switzerland	Ratio	0.63	0.61	0.55	0.54	0.52	0.62	0.69	0.55	0.54	0.47	0.40	0.43	0.45	0.41	0.41	0.40
	T1 Cluster	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Notes: The three clusters for the T1 classification are as follows: the clusters 1 and 2 are estimated using the k-means estimation for countries with ratio lower than 1, 1 corresponds to the cluster with the lowest T1 ratios and 2 to the one with the highest ratios; the cluster 3 include all the ratios that are higher than 1. In grey, the jurisdiction is classified as a Type I IFC, if it belongs to the T1 cluster 2 or 3. To ensure continuity of our estimations, marginal post-processing adjustments have been made when a given jurisdiction does not belong to the second cluster for one or two single years and if the Type I ratio is still relatively high (for Hong Kong in 2002 and for Macao in 2010 and 2011). Cyprus did not report before 2008. Macao did not report in 2001 and 2002. Panama did not report in 2001.

Sources: Own computations

Table 22. Type II Ratios and Type II Weights for Countries with a non-null Type II Weights for at Least One Year

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	
Afghanistan	Type II Ratio		4.2%	1.8%	0.6%	1.1%	1.6%	2.3%	1.0%	1.0%	0.8%	0.8%	1.0%	0.8%	0.7%	0.8%	0.9%
	Type II Weight		14.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Albania	Type II Ratio	0.9%	0.6%	0.6%	0.6%	0.4%	0.5%	0.7%	0.6%	0.7%	0.7%	0.5%	0.4%	1.1%	1.3%	1.2%	4.4%
	Type II Weight	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.8%
Algeria	Type II Ratio	3.6%	4.1%	4.0%	3.4%	3.2%	3.9%	3.5%	2.7%	3.5%	2.7%	2.1%	2.0%	2.2%	1.9%	2.4%	2.8%
	Type II Weight	9.9%	13.0%	6.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Andorra	Type II Ratio	20.2%	21.0%	19.5%	16.6%	36.5%	36.8%	30.8%	25.2%	25.9%	17.7%	17.7%	24.2%	25.5%	34.3%	36.6%	42.8%
	Type II Weight	74.4%	74.0%	69.6%	63.3%	82.3%	79.7%	73.4%	72.5%	73.3%	64.8%	67.5%	74.4%	75.1%	81.7%	82.7%	85.1%
Angola	Type II Ratio	9.1%	8.2%	6.7%	8.1%	6.1%	5.0%	3.4%	5.3%	7.9%	4.0%	1.9%	4.3%	5.0%	7.1%	12.9%	14.4%
	Type II Weight	50.8%	44.5%	31.5%	36.8%	26.4%	8.9%	0.0%	14.1%	33.0%	2.9%	0.0%	9.3%	15.7%	34.7%	57.6%	61.4%
Argentina	Type II Ratio	6.8%	15.5%	13.8%	11.5%	9.8%	9.5%	9.3%	7.3%	7.9%	6.1%	4.5%	4.4%	4.5%	4.7%	4.2%	3.9%
	Type II Weight	39.1%	66.3%	59.6%	50.9%	47.0%	39.3%	32.3%	28.9%	33.0%	23.1%	13.4%	10.2%	10.7%	15.1%	8.9%	6.3%
Aruba	Type II Ratio	11.2%	13.9%	21.3%	19.0%	15.8%	20.2%	19.6%	28.0%	28.0%	19.4%	18.8%	18.5%	26.2%	26.3%	22.5%	21.1%
	Type II Weight	58.3%	63.1%	71.8%	67.1%	63.3%	65.9%	61.0%	74.9%	75.1%	67.3%	69.1%	67.8%	75.7%	76.8%	73.2%	71.9%
Azerbaijan	Type II Ratio	6.0%	5.4%	5.2%	6.7%	4.6%	2.8%	2.5%	1.5%	1.0%	1.1%	0.8%	0.9%	1.6%	1.3%	1.6%	2.1%
	Type II Weight	33.5%	26.5%	20.1%	28.2%	12.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bahamas	Type II Ratio	121.5%	125.1%	217.2%	171.4%	244.0%	264.8%	246.3%	202.4%	205.0%	187.5%	161.7%	162.6%	186.7%	187.2%	195.2%	185.0%
	Type II Weight	95.2%	95.1%	96.8%	95.7%	97.1%	96.9%	96.2%	96.1%	96.2%	96.0%	95.8%	95.7%	96.2%	96.4%	96.5%	96.3%
Bahrain	Type II Ratio	27.2%	25.3%	22.8%	23.0%	20.7%	21.8%	18.8%	11.7%	12.1%	10.3%	10.4%	8.7%	7.8%	7.9%	10.2%	7.4%
	Type II Weight	80.4%	77.9%	73.4%	72.1%	70.8%	68.0%	59.8%	48.9%	50.6%	46.2%	50.4%	41.8%	36.7%	39.1%	49.3%	36.3%
Barbados	Type II Ratio	26.4%	15.6%	17.2%	36.3%	31.9%	84.2%	81.7%	38.8%	16.5%	21.2%	12.7%	12.9%	15.1%	14.2%	19.2%	17.0%
	Type II Weight	79.8%	66.4%	66.3%	81.4%	80.0%	90.6%	89.0%	81.3%	61.1%	69.7%	57.5%	56.8%	61.3%	61.1%	69.3%	66.3%
Belgium	Type II Ratio	8.9%	8.8%	8.5%	7.7%	5.3%	7.3%	8.4%	5.5%	9.5%	6.2%	6.1%	6.6%	7.5%	6.0%	6.7%	4.9%
	Type II Weight	50.1%	47.4%	41.8%	34.7%	19.5%	27.5%	27.7%	15.3%	40.7%	24.1%	28.1%	30.0%	34.8%	27.4%	31.7%	17.6%
Belize	Type II Ratio	157.0%	142.9%	170.3%	173.9%	311.9%	377.3%	500.8%	531.1%	524.5%	518.4%	525.7%	577.1%	568.3%	595.7%	597.4%	572.6%
	Type II Weight	96.3%	95.7%	96.0%	95.8%	97.8%	97.8%	98.1%	98.5%	98.5%	98.6%	98.7%	98.8%	98.7%	98.9%	98.8%	98.8%
Benin	Type II Ratio	6.7%	7.8%	5.9%	5.4%	4.6%	4.5%	6.2%	4.2%	5.5%	3.5%	3.6%	3.8%	3.1%	2.6%	2.5%	2.6%
	Type II Weight	38.8%	42.6%	25.4%	18.0%	13.0%	4.5%	13.0%	2.9%	16.4%	0.0%	1.6%	3.3%	0.0%	0.0%	0.0%	0.0%
Bermuda	Type II Ratio	354.2%	521.5%	656.9%	1377.9%	849.3%	828.3%	841.3%	455.7%	525.4%	512.7%	605.7%	566.9%	648.3%	595.5%	564.6%	672.1%
	Type II Weight	98.3%	98.8%	98.9%	99.5%	99.2%	99.0%	98.9%	98.3%	98.5%	98.5%	98.9%	98.8%	98.9%	98.8%	98.8%	99.0%
Bhutan	Type II Ratio	0.1%	0.2%	0.5%		0.1%		4.8%	0.2%	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%	0.1%	7.2%
	Type II Weight	0.0%	0.0%	0.0%		0.0%		0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	35.2%
Bolivia	Type II Ratio	1.8%	2.2%	8.4%	6.2%	6.1%	12.7%	16.0%	14.3%	13.2%	9.6%	8.8%	7.8%	6.4%	7.9%	5.9%	6.3%
	Type II Weight	0.0%	0.0%	41.4%	24.6%	26.8%	50.7%	54.4%	56.2%	53.7%	43.6%	43.9%	37.5%	28.0%	39.3%	25.6%	29.3%
Botswana	Type II Ratio	4.0%	2.8%	2.3%	2.3%	2.4%	3.0%	2.7%	2.4%	3.2%	3.2%	3.1%	3.6%	3.0%	3.2%	3.1%	2.7%
	Type II Weight	14.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Brazil	Type II Ratio	3.3%	3.3%	2.9%	2.6%	1.9%	1.7%	1.5%	1.3%	1.2%	1.3%	1.3%	1.1%	1.2%	1.3%	1.9%	1.7%
	Type II Weight	5.7%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Brunei Darussalam	Type II Ratio	5.7%	4.9%	5.7%	12.9%	9.0%	11.5%	16.4%	15.9%	24.7%	19.9%	14.3%	18.9%	10.5%	15.7%	18.2%	16.0%
	Type II Weight	31.3%	21.9%	24.4%	55.2%	43.5%	46.9%	55.3%	59.7%	72.2%	68.1%	61.2%	68.4%	48.6%	64.0%	68.0%	64.5%
Bulgaria	Type II Ratio	2.0%	1.6%	1.4%	1.3%	1.6%	3.6%	3.6%	2.4%	3.4%	3.0%	2.6%	3.1%	2.7%	2.8%	3.6%	4.9%
	Type II Weight	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.7%	17.3%
Burkina Faso	Type II Ratio	4.4%	4.0%	4.1%	4.1%	4.0%	4.0%	4.1%	4.1%	3.8%	3.7%	2.9%	2.9%	4.0%	2.7%	2.7%	2.0%

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Burundi	Type II Weight	19.3%	11.6%	8.3%	4.4%	6.2%	0.0%	0.0%	1.5%	0.0%	0.0%	0.0%	0.0%	4.9%	0.0%	0.0%	0.0%
	Type II Ratio	16.2%	16.9%	20.5%	16.2%	12.2%	11.9%	12.1%	9.7%	11.0%	9.8%	8.0%	7.0%	6.3%	4.5%	4.3%	4.3%
	Type II Weight	69.1%	68.5%	70.9%	62.5%	55.1%	48.2%	43.8%	41.7%	46.9%	44.3%	39.9%	32.8%	27.1%	13.2%	10.7%	11.0%
Cabo Verde	Type II Ratio	9.1%	3.5%	2.5%	3.0%	5.9%	4.1%	5.0%	3.9%	3.5%	3.1%	4.9%	4.2%	4.8%	6.3%	9.4%	6.4%
	Type II Weight	4.0%	2.8%	2.3%	2.3%	2.4%	3.0%	2.7%	2.4%	3.2%	3.2%	3.1%	3.6%	3.0%	3.2%	3.1%	2.7%
Cambodia	Type II Ratio	1.5%	1.3%	1.3%	1.4%	1.2%	1.3%	1.6%	1.3%	1.4%	1.8%	2.1%	1.7%	2.1%	6.1%	3.2%	2.5%
	Type II Weight	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	28.0%	0.0%	0.0%
Cameroon	Type II Ratio	6.8%	7.1%	6.5%	6.2%	4.9%	5.4%	5.1%	4.7%	6.2%	6.2%	6.0%	5.6%	6.3%	4.7%	5.8%	5.5%
	Type II Weight	39.1%	38.3%	30.3%	24.6%	16.1%	12.9%	3.2%	7.7%	22.0%	23.9%	27.4%	22.0%	27.2%	15.1%	24.8%	23.0%
Cayman Islands	Type II Ratio	617.0%	760.1%	1154.4%	1523.0%	1838.6%	1647.2%	1801.9%	1802.6%	1761.8%	1760.2%	1738.6%	1828.5%	2032.1%	2367.5%	2134.2%	2338.6%
	Type II Weight	99.0%	99.2%	99.4%	99.5%	99.6%	99.5%	99.5%	99.6%	99.5%	99.6%	99.6%	99.6%	99.6%	99.6%	99.7%	99.7%
Central African Republic	Type II Ratio	9.9%	7.1%	7.3%	6.5%	5.4%	4.8%	4.2%	4.8%	3.9%	4.4%	3.3%	2.4%	4.8%	3.4%	2.9%	1.9%
	Type II Weight	53.8%	38.3%	35.6%	26.8%	21.1%	6.9%	0.0%	9.2%	0.0%	7.9%	0.0%	0.0%	14.4%	0.0%	0.0%	0.0%
Chad	Type II Ratio	3.3%	4.8%	4.9%	5.2%	6.6%	2.9%	4.4%	2.5%	3.1%	1.7%	2.5%	2.5%	1.3%	1.3%	1.6%	1.5%
	Type II Weight	5.4%	20.6%	17.0%	16.9%	29.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Chile	Type II Ratio	5.4%	5.3%	4.9%	5.1%	4.1%	6.2%	4.8%	3.4%	3.1%	3.0%	3.1%	2.9%	3.0%	3.2%	3.7%	3.3%
	Type II Weight	29.4%	25.5%	17.0%	15.5%	7.7%	19.8%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.8%	0.0%
Colombia	Type II Ratio	6.8%	4.8%	7.5%	7.4%	5.3%	6.7%	5.8%	4.3%	4.8%	3.9%	3.3%	3.4%	3.6%	3.8%	4.2%	4.2%
	Type II Weight	39.2%	21.0%	36.4%	33.1%	19.7%	23.5%	9.7%	3.7%	9.5%	0.9%	0.0%	0.0%	0.0%	5.2%	9.2%	10.3%
Comoros	Type II Ratio	5.8%	7.2%	6.5%	5.0%	5.1%	5.0%	4.6%	4.4%	4.7%	3.8%	3.2%	3.6%	2.9%	2.8%	4.9%	2.9%
	Type II Weight	32.1%	39.3%	30.2%	14.3%	17.7%	9.0%	0.0%	4.9%	8.7%	0.6%	0.0%	0.6%	0.0%	0.0%	17.0%	0.0%
Congo	Type II Ratio	11.8%	12.2%	15.9%	10.0%	8.4%	8.4%	9.9%	8.2%	9.2%	8.8%	6.4%	7.5%	8.6%	9.5%	12.3%	11.9%
	Type II Weight	59.7%	58.9%	64.1%	45.7%	40.5%	33.9%	35.4%	34.5%	39.5%	39.7%	30.3%	35.9%	40.7%	46.6%	55.8%	55.2%
Congo (DR)	Type II Ratio	12.5%	11.0%	10.6%	9.9%	8.6%	8.2%	9.3%	7.6%	8.6%	8.1%	8.6%	6.4%	6.2%	3.6%	3.3%	3.0%
	Type II Weight	61.8%	55.4%	50.5%	45.3%	41.7%	33.0%	32.7%	30.9%	36.6%	36.2%	42.7%	28.6%	26.3%	2.3%	0.0%	0.0%
Costa Rica	Type II Ratio	13.8%	13.2%	9.8%	11.1%	12.7%	18.3%	17.9%	15.6%	12.7%	9.1%	7.7%	7.8%	7.1%	7.6%	6.7%	6.5%
	Type II Weight	64.6%	61.6%	47.7%	49.6%	56.5%	62.9%	58.1%	59.2%	52.3%	41.2%	38.1%	37.5%	32.6%	37.5%	31.5%	30.5%
Cyprus	Type II Ratio	22.5%	20.7%	26.4%	22.1%	25.9%	31.7%	39.4%	18.1%	20.7%	21.2%	20.3%	23.7%	26.6%	31.9%	36.3%	34.6%
	Type II Weight	76.7%	73.6%	76.7%	71.1%	75.9%	76.9%	78.5%	63.7%	67.7%	69.7%	71.0%	74.0%	76.0%	80.5%	82.6%	81.9%
Côte d'Ivoire	Type II Ratio	11.2%	9.9%	9.1%	9.2%	8.9%	9.8%	9.6%	8.0%	6.7%	6.0%	6.7%	6.3%	5.1%	4.9%	3.6%	3.6%
	Type II Weight	58.3%	51.9%	44.6%	42.4%	43.2%	40.5%	33.7%	33.2%	25.2%	22.9%	32.0%	27.7%	17.1%	17.6%	1.4%	1.5%
Djibouti	Type II Ratio	29.8%	30.1%	25.1%	24.3%	18.8%	28.2%	29.5%	15.8%	20.4%	16.6%	18.1%	14.8%	10.5%	7.4%	15.8%	19.8%
	Type II Weight	81.9%	81.0%	75.6%	73.4%	68.3%	74.3%	72.3%	59.6%	67.4%	62.9%	68.1%	61.4%	48.5%	36.5%	63.9%	70.4%
Dominica	Type II Ratio	11.0%	9.1%	12.5%	11.4%	14.9%	23.8%	25.5%	27.2%	31.2%	32.7%	29.3%	34.4%	30.7%	30.3%	28.7%	30.1%
	Type II Weight	57.5%	48.6%	56.4%	50.6%	61.7%	70.3%	68.7%	74.3%	77.3%	79.3%	79.0%	81.3%	78.9%	79.6%	78.4%	79.5%
Dominican Republic	Type II Ratio	2.1%	1.9%	7.6%	7.3%	3.3%	12.2%	12.4%	10.4%	10.1%	7.8%	7.4%	7.9%	7.9%	8.1%	7.6%	7.3%
	Type II Weight	0.0%	0.0%	37.3%	32.4%	0.0%	49.3%	44.8%	44.2%	43.4%	34.4%	36.8%	38.1%	36.9%	40.4%	37.5%	35.9%
Ecuador	Type II Ratio	13.1%	10.4%	10.9%	9.7%	9.7%	9.7%	10.2%	9.5%	10.2%	8.6%	7.9%	7.2%	6.1%	5.8%	6.6%	6.3%
	Type II Weight	63.0%	53.3%	51.4%	44.4%	46.3%	40.2%	36.7%	40.9%	44.0%	39.0%	39.2%	34.0%	25.3%	25.2%	30.8%	29.5%
Egypt	Type II Ratio	9.0%	10.2%	11.2%	12.4%	12.8%	13.0%	12.8%	9.4%	8.1%	6.7%	6.3%	4.7%	4.7%	5.1%	3.5%	3.5%
	Type II Weight	50.6%	52.9%	52.4%	53.9%	56.7%	51.7%	46.0%	40.4%	33.9%	27.8%	29.6%	13.8%	12.5%	19.2%	0.1%	1.4%
El Salvador	Type II Ratio	3.7%	3.6%	2.3%	3.4%	4.4%	6.2%	7.9%	8.6%	9.8%	9.5%	9.3%	9.1%	7.3%	8.1%	7.2%	8.1%
	Type II Weight	10.8%	6.6%	0.0%	0.0%	11.3%	19.9%	25.1%	36.3%	42.0%	43.2%	46.1%	43.8%	33.4%	40.1%	34.9%	40.2%
Equatorial Guinea	Type II Ratio	2.1%	1.7%	2.2%	1.6%	1.1%	1.5%	1.1%	0.5%	1.0%	0.8%	0.8%	1.2%	1.9%	2.5%	2.8%	3.8%

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Eritrea	Type II Weight	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.1%
	Type II Ratio	1.7%	2.0%	2.2%	1.6%	1.4%	2.6%	1.3%	1.8%	0.7%	1.0%	4.1%	1.6%	1.3%	2.1%	2.3%	1.8%
	Type II Weight	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	9.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Estonia	Type II Ratio	3.2%	3.5%	3.3%	4.1%	2.9%	3.1%	3.6%	3.6%	4.3%	3.4%	3.7%	5.7%	4.8%	4.5%	4.5%	4.2%
	Type II Weight	3.7%	5.7%	0.0%	5.3%	0.0%	0.0%	0.0%	0.0%	4.0%	0.0%	3.6%	23.2%	13.5%	12.7%	12.6%	9.9%
Fiji	Type II Ratio	22.5%	20.7%	26.4%	22.1%	25.9%	31.7%	39.4%	18.1%	20.7%	21.2%	20.3%	23.7%	26.6%	31.9%	36.3%	34.6%
	Type II Weight	76.7%	73.6%	76.7%	71.1%	75.9%	76.9%	78.5%	63.7%	67.7%	69.7%	71.0%	74.0%	76.0%	80.5%	82.6%	81.9%
Finland	Type II Ratio	1.4%	1.3%	2.4%	3.8%	3.0%	3.4%	3.4%	2.7%	2.7%	3.8%	4.2%	3.2%	3.7%	3.4%	6.5%	4.9%
	Type II Weight	0.0%	0.0%	0.0%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	10.3%	0.0%	1.0%	0.0%	30.4%	17.5%
France	Type II Ratio	2.4%	2.4%	2.9%	3.3%	2.9%	2.9%	3.5%	3.2%	3.2%	2.8%	3.0%	4.0%	3.6%	2.4%	3.1%	2.5%
	Type II Weight	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.8%	0.0%	0.0%	0.0%	0.0%
French Polynesia	Type II Ratio	6.0%	4.5%	3.9%	9.0%	8.9%	9.9%	7.5%	10.4%	8.4%	8.2%	7.8%	15.4%	9.6%	10.2%	10.3%	9.9%
	Type II Weight	33.6%	17.5%	5.8%	41.2%	43.3%	41.1%	22.4%	44.2%	35.9%	36.7%	38.7%	62.5%	45.3%	49.4%	49.7%	48.2%
	Type II Ratio	7.9%	8.3%	11.8%	8.8%	5.9%	7.1%	7.9%	8.3%	9.5%	7.4%	7.7%	9.8%	11.1%	10.1%	11.5%	10.4%
Gabon	Type II Weight	45.5%	44.8%	54.3%	40.3%	25.1%	26.0%	25.2%	34.8%	40.8%	32.3%	38.0%	46.9%	50.7%	49.1%	53.5%	50.4%
	Type II Ratio	12.1%	14.7%	19.9%	21.9%	19.2%	19.9%	15.6%	11.5%	12.5%	10.0%	11.4%	13.0%	7.1%	9.5%	6.3%	49.9%
Gambia	Type II Weight	60.6%	64.7%	70.2%	70.9%	68.8%	65.5%	53.4%	48.2%	51.7%	45.0%	53.8%	56.9%	32.4%	46.7%	29.0%	87.1%
	Type II Ratio	1.6%	4.2%	7.1%	1.5%	0.8%	1.3%	1.4%	2.6%	2.7%	3.4%	2.9%	3.1%	2.8%	2.5%	2.9%	2.6%
Georgia	Type II Weight	0.0%	13.8%	33.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Type II Ratio	3.6%	3.8%	4.9%	5.0%	4.6%	5.2%	5.5%	4.8%	5.4%	6.0%	5.3%	6.6%	6.4%	5.1%	4.8%	4.8%
Germany	Type II Weight	10.1%	9.7%	16.4%	14.2%	13.5%	11.2%	7.8%	8.5%	15.0%	22.7%	21.1%	29.7%	28.0%	19.3%	16.0%	15.9%
	Type II Ratio	11.8%	10.9%	10.3%	9.6%	7.3%	4.9%	3.5%	3.0%	3.1%	3.3%	2.6%	4.6%	3.3%	3.8%	4.6%	4.8%
Ghana	Type II Weight	59.9%	55.1%	49.3%	43.9%	34.4%	8.4%	0.0%	0.0%	0.0%	0.0%	0.0%	12.4%	0.0%	4.8%	13.9%	16.8%
	Type II Ratio	91.7%	68.1%	68.7%	80.7%	126.0%	151.2%	202.5%	141.5%	126.4%	196.7%	123.8%	162.2%	116.2%	268.1%	127.7%	143.3%
Gibraltar	Type II Weight	93.7%	91.2%	90.3%	91.2%	94.5%	94.7%	95.4%	94.5%	93.9%	96.2%	94.6%	95.7%	93.9%	97.5%	94.7%	95.3%
	Type II Ratio	10.5%	12.5%	11.7%	11.9%	8.4%	7.4%	5.7%	3.4%	3.4%	4.7%	5.7%	8.4%	10.2%	11.4%	14.4%	13.7%
Greece	Type II Weight	55.9%	59.8%	54.1%	52.4%	40.9%	28.0%	9.3%	0.0%	0.0%	11.3%	25.0%	40.4%	47.4%	53.6%	61.2%	59.8%
	Type II Ratio	1.5%	1.3%	0.3%	0.2%	4.9%	5.1%	4.4%	3.6%	3.7%	6.1%	4.5%	5.0%	4.9%	5.9%	5.4%	4.4%
Greenland	Type II Weight	0.0%	0.0%	0.0%	0.0%	16.0%	10.4%	0.0%	0.0%	0.0%	23.1%	13.1%	17.0%	15.2%	26.5%	22.1%	12.1%
	Type II Ratio	8.1%	10.9%	7.5%	12.6%	9.1%	8.6%	11.3%	16.4%	17.4%	12.9%	9.2%	11.6%	8.1%	10.4%	10.0%	8.4%
Grenada	Type II Weight	46.3%	55.1%	36.3%	54.4%	43.8%	34.7%	41.1%	60.7%	62.8%	54.7%	45.4%	53.0%	38.3%	50.1%	48.6%	41.8%
	Type II Ratio	14.1%	11.7%	12.4%	11.5%	11.7%	12.0%	12.4%	10.6%	11.1%	10.7%	9.8%	9.5%	9.6%	9.1%	9.0%	9.0%
Guatemala	Type II Weight	65.3%	57.6%	56.2%	51.1%	53.6%	48.5%	44.7%	45.1%	47.3%	47.8%	47.9%	45.6%	45.0%	45.2%	44.2%	44.6%
	Type II Ratio	161.0%	163.7%	173.2%	172.5%	204.0%	240.7%	231.4%	228.3%	303.7%	331.4%	264.0%	256.2%	243.2%	227.8%	172.6%	196.7%
Guernsey	Type II Weight	96.4%	96.2%	96.1%	95.8%	96.6%	96.6%	96.0%	96.6%	97.4%	97.7%	97.4%	97.3%	97.1%	97.0%	96.1%	96.6%
	Type II Ratio	6.2%	6.6%	6.9%	6.7%	8.7%	8.7%	6.9%	6.2%	6.4%	4.1%	4.5%	5.2%	5.5%	3.9%	2.8%	2.7%
Guinea	Type II Weight	35.5%	35.3%	32.5%	28.4%	42.3%	35.4%	18.2%	21.3%	23.1%	4.6%	13.6%	18.9%	20.7%	6.6%	0.0%	0.0%
	Type II Ratio	5.3%	6.4%	9.3%	4.5%	4.6%	6.1%	6.9%	2.9%	6.5%	6.1%	4.6%	8.5%	9.9%	7.4%	10.9%	12.6%
Guinea-Bissau	Type II Weight	28.3%	34.2%	45.6%	9.0%	12.8%	18.7%	18.5%	0.0%	23.7%	23.5%	14.3%	41.2%	46.5%	36.7%	51.5%	57.0%
	Type II Ratio	13.2%	17.5%	16.8%	22.9%	25.1%	42.4%	32.6%	14.1%	12.0%	6.9%	5.8%	12.4%	9.2%	11.0%	9.9%	6.7%
Guyana	Type II Weight	63.4%	69.5%	65.6%	72.0%	75.3%	82.2%	74.6%	55.7%	50.0%	29.3%	25.5%	55.3%	43.7%	52.2%	48.3%	31.7%
	Type II Ratio	3.0%	3.6%	2.6%	2.2%	2.5%	8.5%	7.6%	8.4%	6.7%	7.8%	7.2%	6.2%	4.5%	4.4%	4.2%	4.6%
Haiti	Type II Weight	0.5%	7.1%	0.0%	0.0%	0.0%	34.2%	23.2%	35.6%	25.3%	34.8%	35.1%	26.9%	10.3%	12.3%	9.7%	14.5%
	Type II Ratio	4.2%	2.6%	2.4%	1.4%	1.8%	9.2%	9.9%	9.3%	8.4%	7.2%	8.4%	7.3%	7.4%	6.8%	7.0%	6.6%
Honduras	Type II Ratio	4.2%	2.6%	2.4%	1.4%	1.8%	9.2%	9.9%	9.3%	8.4%	7.2%	8.4%	7.3%	7.4%	6.8%	7.0%	6.6%

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Hong Kong	Type II Weight	17.0%	0.0%	0.0%	0.0%	0.0%	37.9%	35.2%	39.6%	35.9%	31.4%	42.0%	34.6%	34.4%	32.6%	33.6%	31.4%
	Type II Ratio	11.7%	13.0%	18.2%	18.5%	18.5%	21.6%	31.4%	23.4%	22.5%	19.7%	19.4%	13.7%	14.7%	14.8%	13.9%	13.8%
	Type II Weight	59.5%	61.1%	67.8%	66.5%	67.9%	67.8%	73.8%	70.8%	69.9%	67.8%	69.8%	58.7%	60.4%	62.2%	60.0%	60.1%
Hungary	Type II Ratio	1.3%	1.6%	1.4%	1.3%	1.7%	2.0%	2.3%	2.2%	2.8%	4.0%	2.4%	2.8%	3.1%	2.6%	2.8%	3.7%
	Type II Weight	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%	0.0%	0.0%	0.0%	0.0%	0.0%	3.4%
Iceland	Type II Ratio	1.6%	1.6%	2.6%	2.1%	3.5%	4.6%	6.9%	2.4%	6.2%	4.0%	3.2%	5.3%	5.5%	12.7%	7.2%	10.4%
	Type II Weight	0.0%	0.0%	0.0%	0.0%	0.0%	5.6%	18.7%	0.0%	22.1%	2.4%	0.0%	19.8%	20.3%	57.4%	34.6%	50.3%
Ireland	Type II Ratio	8.6%	8.0%	10.6%	11.4%	12.9%	16.3%	22.6%	20.7%	17.7%	21.1%	23.7%	28.4%	26.7%	24.9%	23.0%	19.4%
	Type II Weight	48.8%	43.4%	50.3%	50.8%	56.9%	59.4%	65.3%	67.6%	63.3%	69.6%	74.7%	77.8%	76.1%	75.7%	73.7%	69.8%
Isle of Man	Type II Ratio	336.3%	321.3%	341.1%	303.3%	258.8%	325.6%	278.8%	132.0%	152.6%	138.8%	130.8%	144.6%	110.0%	97.4%	95.3%	90.6%
	Type II Weight	98.3%	98.1%	98.0%	97.6%	97.3%	97.5%	96.7%	94.1%	94.9%	94.7%	94.9%	95.2%	93.6%	93.2%	93.0%	92.7%
Israel	Type II Ratio	10.2%	11.0%	10.0%	9.9%	9.8%	10.4%	11.6%	7.5%	7.1%	5.5%	4.8%	5.3%	5.5%	5.6%	6.1%	5.9%
	Type II Weight	54.8%	55.4%	48.2%	45.2%	46.7%	42.9%	42.1%	30.4%	28.1%	18.4%	16.1%	19.8%	20.9%	24.1%	27.2%	26.5%
	Type II Ratio	6.2%	5.5%	6.9%	9.0%	7.9%	7.8%	9.4%	8.8%	8.5%	7.6%	7.4%	6.9%	9.1%	7.2%	5.0%	4.7%
Jamaica	Type II Weight	35.3%	27.1%	33.1%	41.3%	37.9%	30.4%	32.9%	37.4%	36.0%	33.7%	36.8%	32.0%	42.9%	35.4%	18.4%	15.8%
	Type II Ratio	220.9%	287.5%	247.5%	218.6%	283.8%	319.6%	450.8%	558.7%	614.8%	653.5%	557.8%	547.8%	518.4%	365.7%	332.8%	355.4%
Jersey	Type II Weight	97.4%	97.8%	97.2%	96.6%	97.5%	97.4%	97.9%	98.6%	98.7%	98.8%	98.8%	98.7%	98.6%	98.1%	97.9%	98.1%
	Type II Ratio	41.9%	37.5%	35.0%	30.7%	36.2%	39.6%	35.7%	32.2%	27.3%	20.9%	18.0%	16.4%	12.0%	13.6%	13.5%	14.8%
Jordan	Type II Weight	86.8%	84.5%	81.9%	78.3%	82.2%	81.0%	76.6%	77.8%	74.5%	69.4%	67.9%	64.3%	53.7%	59.6%	59.2%	62.2%
	Type II Ratio	2.3%	1.2%	1.0%	1.9%	3.5%	1.3%	3.1%	3.4%	3.6%	3.5%	3.0%	2.9%	2.5%	3.1%	3.6%	7.7%
Kazakhstan	Type II Weight	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%	38.4%
	Type II Ratio	32.3%	34.4%	31.5%	30.9%	27.2%	22.3%	19.7%	14.6%	14.9%	13.8%	12.5%	11.2%	10.5%	7.8%	7.1%	6.0%
Kenya	Type II Weight	83.2%	83.2%	80.0%	78.5%	76.9%	68.7%	61.2%	56.8%	57.9%	57.1%	56.8%	51.7%	48.6%	39.0%	34.1%	27.2%
	Type II Ratio	4.2%	3.7%	2.9%	13.0%	167.2%	153.3%	130.2%	92.4%	70.8%	65.4%	46.5%	30.3%	25.9%	25.0%	38.4%	5.5%
Kiribati	Type II Weight	17.1%	7.5%	0.0%	55.3%	95.9%	94.7%	93.0%	91.7%	89.3%	89.1%	86.2%	79.0%	75.4%	75.8%	83.4%	23.0%
	Type II Ratio	27.0%	27.1%	23.7%	21.5%	14.1%	15.8%	18.1%	13.2%	14.0%	14.0%	14.3%	14.1%	16.8%	20.4%	30.8%	31.3%
Kuwait	Type II Weight	80.3%	79.2%	74.3%	70.4%	59.8%	58.3%	58.5%	53.5%	55.7%	57.4%	61.1%	59.8%	64.5%	71.1%	79.8%	80.2%
	Type II Ratio	1.2%	1.3%	1.1%	1.5%	4.4%	6.5%	3.7%	1.1%	1.8%	1.1%	0.5%	1.6%	1.8%	6.7%	1.4%	1.3%
Lao	Type II Weight	0.0%	0.0%	0.0%	0.0%	10.2%	22.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	32.3%	0.0%	0.0%
	Type II Ratio	3.4%	2.1%	1.7%	1.3%	1.6%	1.6%	1.1%	1.4%	2.0%	2.0%	1.7%	1.8%	2.4%	3.9%	2.9%	4.7%
Latvia	Type II Weight	6.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.6%	0.0%	15.6%
	Type II Ratio	40.3%	42.3%	39.0%	36.7%	39.8%	51.6%	49.5%	36.9%	25.8%	20.9%	19.6%	16.9%	14.1%	13.7%	12.6%	12.5%
Lebanon	Type II Weight	86.3%	86.1%	83.6%	81.6%	83.6%	85.1%	82.5%	80.4%	73.2%	69.4%	70.1%	65.3%	59.2%	59.8%	56.7%	56.9%
	Type II Ratio	1.7%	2.4%	1.5%	1.1%	1.0%	1.0%	0.7%	0.5%	6.2%	4.0%	3.5%	4.6%	2.5%	2.2%	3.0%	3.5%
Lesotho	Type II Weight	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	21.8%	3.1%	0.8%	13.3%	0.0%	0.0%	0.0%	0.7%
	Type II Ratio	337.5%	308.1%	410.6%	515.6%	515.1%	517.5%	463.4%	351.4%	357.4%	344.7%	259.6%	184.5%	157.1%	163.3%	164.6%	137.3%
Liberia	Type II Weight	98.3%	98.0%	98.3%	98.6%	98.6%	98.4%	98.0%	97.7%	97.8%	97.8%	97.4%	96.2%	95.5%	95.9%	95.9%	95.1%
	Type II Ratio	3.9%	6.4%	4.5%	5.1%	3.9%	5.5%	5.2%	3.5%	4.9%	5.0%	9.4%	5.0%	6.5%	10.0%	12.6%	13.0%
Libya	Type II Weight	13.5%	34.0%	13.1%	15.3%	5.1%	13.8%	4.3%	0.0%	10.3%	14.0%	46.4%	16.9%	28.4%	48.9%	56.7%	58.0%
	Type II Ratio	103.0%	85.1%	77.1%	57.8%	46.9%	58.7%	72.9%	56.2%	56.3%	49.5%	37.1%	47.2%	34.1%	36.2%	25.5%	27.6%
Liechtenstein	Type II Weight	94.4%	92.9%	91.3%	87.9%	86.0%	86.8%	87.8%	86.7%	86.8%	85.8%	83.0%	86.0%	80.8%	82.6%	76.0%	77.8%
	Type II Ratio	19.6%	24.7%	36.2%	42.8%	37.7%	46.0%	53.3%	46.3%	36.7%	31.9%	35.4%	56.3%	70.2%	65.7%	70.6%	69.8%
Luxembourg	Type II Weight	73.7%	77.4%	82.4%	84.0%	82.8%	83.5%	83.7%	84.1%	80.4%	78.8%	82.3%	88.1%	90.2%	90.0%	90.6%	90.6%
	Type II Ratio	12.7%	14.7%	17.8%	19.7%	19.6%	23.6%	26.4%	21.2%	23.7%	19.5%	17.8%	15.2%	18.4%	5.8%	8.3%	11.3%

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Madagascar	Type II Weight	62.1%	64.7%	67.1%	68.2%	69.4%	70.1%	69.6%	68.2%	71.2%	67.5%	67.6%	62.0%	67.1%	25.2%	40.8%	53.2%
	Type II Ratio	13.4%	13.2%	11.0%	14.9%	11.0%	12.3%	12.8%	10.2%	14.4%	8.9%	7.1%	7.3%	7.5%	7.1%	7.5%	13.1%
	Type II Weight	63.8%	61.4%	51.9%	60.0%	51.2%	49.5%	46.0%	43.4%	56.6%	40.3%	35.0%	34.4%	35.0%	34.7%	36.6%	58.2%
Malawi	Type II Ratio	9.3%	4.9%	5.4%	5.0%	4.9%	5.1%	4.4%	2.7%	2.8%	4.0%	3.7%	4.9%	4.5%	6.0%	3.2%	3.1%
	Type II Weight	51.8%	22.1%	21.6%	14.1%	16.1%	10.7%	0.0%	0.0%	0.0%	3.4%	4.0%	16.2%	11.1%	26.8%	0.0%	0.0%
Malaysia	Type II Ratio	3.1%	3.7%	3.8%	4.2%	2.9%	3.0%	3.0%	2.3%	2.9%	2.6%	2.5%	3.1%	3.2%	3.2%	3.0%	3.4%
	Type II Weight	2.3%	8.1%	4.5%	6.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Maldives	Type II Ratio	3.4%	5.8%	5.0%	8.2%	9.4%	8.2%	4.5%	3.1%	2.2%	2.6%	2.8%	4.1%	4.3%	3.1%	2.5%	3.4%
	Type II Weight	7.5%	29.7%	17.4%	37.4%	45.2%	32.6%	0.0%	0.0%	0.0%	0.0%	0.0%	6.8%	9.0%	0.0%	0.0%	0.0%
Mali	Type II Ratio	6.3%	6.7%	5.8%	4.5%	3.1%	4.4%	4.4%	4.0%	3.6%	2.6%	2.6%	2.6%	2.7%	2.1%	2.3%	2.3%
	Type II Weight	36.3%	36.0%	24.6%	9.9%	0.0%	2.6%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Malta	Type II Ratio	19.8%	22.2%	16.4%	13.1%	15.7%	41.5%	40.9%	37.1%	46.0%	30.2%	22.5%	30.6%	28.2%	22.7%	23.4%	28.6%
	Type II Weight	74.0%	75.2%	64.9%	55.6%	63.1%	81.8%	79.2%	80.5%	84.1%	77.7%	73.4%	79.2%	77.2%	73.7%	74.2%	78.5%
Marshall Islands	Type II Ratio		221.0%	456.0%	544.0%	1004.2%	1906.1%	2350.4%	2758.3%	3060.3%	3521.4%	3197.2%	3790.4%	3950.0%	4337.0%	4674.4%	4199.2%
	Type II Weight		97.2%	98.5%	98.6%	99.3%	99.6%	99.6%	99.7%	99.7%	99.8%	99.8%	99.8%	99.8%	99.8%	99.9%	99.8%
Mauritania	Type II Ratio	21.5%	19.4%	18.3%	15.7%	8.5%	10.6%	13.7%	11.4%	9.8%	13.0%	23.1%	24.5%	26.7%	15.7%	8.8%	7.7%
	Type II Weight	75.7%	72.1%	68.0%	61.6%	41.2%	43.8%	48.5%	48.0%	42.1%	55.0%	74.1%	74.6%	76.1%	64.1%	43.3%	38.1%
Mauritius	Type II Ratio	19.8%	24.9%	26.9%	32.8%	47.6%	56.2%	66.8%	55.6%	46.2%	49.3%	36.4%	47.1%	48.1%	54.0%	49.8%	59.3%
	Type II Weight	73.9%	77.5%	77.0%	79.6%	86.1%	86.2%	86.8%	86.5%	84.1%	85.8%	82.7%	86.0%	86.0%	88.0%	87.0%	89.0%
Mexico	Type II Ratio	3.7%	3.5%	4.9%	3.9%	3.7%	3.9%	3.9%	4.1%	4.8%	4.1%	3.7%	3.3%	4.4%	4.3%	4.7%	5.1%
	Type II Weight	10.8%	5.3%	16.7%	2.5%	2.1%	0.0%	0.0%	1.6%	9.6%	3.7%	3.0%	0.0%	10.0%	10.6%	14.8%	19.4%
Micronesia	Type II Ratio	0.0%	0.5%	4.3%	3.9%	2.8%	8.8%	5.5%	15.6%	10.9%	8.7%	16.2%	2.1%	1.1%	11.7%	9.8%	10.3%
	Type II Weight	0.0%	0.0%	10.4%	2.2%	0.0%	35.8%	7.2%	59.1%	46.4%	39.3%	65.0%	0.0%	0.0%	54.6%	47.5%	50.0%
Moldova	Type II Ratio	1.1%	1.2%	1.3%	1.0%	0.8%	0.9%	1.2%	2.0%	1.8%	1.5%	1.5%	0.9%	0.7%	0.8%	1.3%	1.4%
	Type II Weight	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Mongolia	Type II Ratio	0.1%	0.8%	0.3%	0.2%	0.2%	0.2%	2.8%	0.7%	0.4%	1.6%	0.2%	0.6%	0.5%	2.0%	1.7%	2.0%
	Type II Weight	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.8%	2.6%	12.8%
Montenegro	Type II Ratio	3.3%	3.0%	2.0%	1.8%	1.7%	1.5%	1.1%	1.8%	2.1%	2.2%	1.1%	3.2%	2.4%	1.6%	5.3%	3.4%
	Type II Weight	4.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	21.0%	0.0%
Morocco	Type II Ratio	6.3%	6.7%	6.5%	5.8%	5.7%	6.1%	6.9%	5.8%	5.2%	4.7%	4.9%	4.3%	5.4%	4.0%	3.2%	3.5%
	Type II Weight	36.3%	36.3%	30.5%	21.9%	23.6%	18.8%	18.7%	18.0%	12.9%	10.8%	17.2%	10.0%	19.3%	7.2%	0.0%	1.4%
Mozambique	Type II Ratio	5.0%	6.0%	2.7%	4.2%	3.4%	3.5%	1.9%	1.8%	3.6%	4.6%	3.9%	3.5%	4.4%	8.2%	8.1%	12.1%
	Type II Weight	25.2%	31.2%	0.0%	5.9%	0.0%	0.0%	0.0%	0.0%	0.0%	9.5%	6.8%	0.0%	9.4%	40.7%	40.0%	55.5%
Namibia	Type II Ratio	1.4%	1.7%	1.5%	1.2%	1.1%	1.8%	1.5%	1.5%	5.5%	6.4%	3.1%	3.0%	3.4%	2.4%	2.8%	2.7%
	Type II Weight	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.3%	26.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Nauru	Type II Ratio	173.8%	119.3%	95.4%	37.5%	81.8%	54.5%	71.5%	21.2%	31.4%	9.9%	7.7%	7.6%	9.1%	17.4%	63.7%	45.6%
	Type II Weight	96.6%	94.9%	92.9%	81.9%	91.7%	85.9%	87.6%	68.3%	77.5%	44.7%	38.0%	36.1%	43.0%	66.9%	89.7%	85.9%
Netherland Antilles	Type II Ratio	277.6%	259.8%	223.6%	161.5%	118.0%	101.6%	123.3%	104.7%	105.7%	109.5%	55.5%	380.1%	282.0%	208.2%	145.0%	88.1%
	Type II Weight	97.9%	97.6%	96.9%	95.5%	94.2%	92.2%	92.6%	92.6%	92.7%	93.3%	88.3%	98.1%	97.5%	96.7%	95.3%	92.5%
Netherlands	Type II Ratio	4.2%	4.4%	5.5%	6.0%	6.5%	7.5%	10.4%	8.3%	8.4%	10.4%	7.8%	9.5%	8.1%	7.5%	7.6%	7.1%
	Type II Weight	17.8%	17.0%	22.2%	23.2%	29.7%	28.9%	37.5%	35.1%	35.5%	46.6%	38.9%	45.3%	37.9%	37.1%	37.0%	34.8%
New Caledonia	Type II Ratio	1.2%	2.4%	3.3%	4.8%	7.3%	8.4%	8.8%	11.6%	11.4%	10.6%	9.0%	12.1%	14.6%	10.4%	9.9%	9.5%
	Type II Weight	0.0%	0.0%	0.0%	12.2%	34.5%	34.0%	30.0%	48.6%	48.4%	47.5%	44.6%	54.6%	60.1%	50.2%	47.9%	46.8%
New Zealand	Type II Ratio	3.3%	2.9%	3.7%	4.2%	3.9%	4.7%	5.1%	3.4%	4.3%	4.5%	3.6%	4.2%	4.2%	3.9%	4.2%	3.6%

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Nicaragua	Type II Weight	5.0%	0.0%	2.8%	5.6%	4.2%	6.4%	4.0%	0.0%	3.8%	9.1%	2.7%	7.9%	7.6%	5.8%	9.5%	2.5%
	Type II Ratio	17.4%	9.9%	3.3%	4.2%	5.8%	6.9%	7.5%	8.8%	10.0%	11.9%	8.9%	11.3%	10.8%	9.6%	9.3%	9.3%
	Type II Weight	71.0%	51.6%	0.0%	5.5%	24.1%	25.1%	22.3%	37.6%	43.1%	51.7%	44.2%	52.0%	49.9%	47.4%	45.5%	45.8%
Niger	Type II Ratio	5.6%	3.7%	2.2%	2.1%	2.2%	3.0%	1.7%	1.5%	1.9%	1.8%	1.7%	1.1%	0.9%	0.8%	0.9%	0.6%
	Type II Weight	31.2%	7.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Nigeria	Type II Ratio	5.0%	3.6%	4.8%	3.4%	2.7%	2.4%	3.1%	2.3%	2.8%	2.4%	2.4%	2.1%	2.1%	1.9%	1.6%	1.7%
	Type II Weight	25.5%	6.3%	15.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Norway	Type II Ratio	2.5%	1.9%	3.8%	2.7%	2.5%	4.0%	4.1%	2.5%	2.7%	2.7%	2.3%	2.4%	2.8%	2.7%	3.0%	2.3%
	Type II Weight	0.0%	0.0%	4.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Oman	Type II Ratio	23.1%	20.0%	18.4%	16.5%	21.2%	19.1%	16.3%	9.6%	8.3%	7.5%	10.4%	11.9%	10.1%	8.7%	8.6%	9.6%
	Type II Weight	77.3%	72.8%	68.2%	63.1%	71.4%	64.4%	55.0%	41.2%	35.2%	33.1%	50.1%	54.1%	47.3%	43.1%	42.6%	47.3%
Pakistan	Type II Ratio	6.9%	6.9%	6.7%	4.8%	4.0%	4.0%	3.9%	2.3%	2.2%	2.3%	2.0%	1.9%	1.6%	1.3%	1.4%	1.2%
	Type II Weight	39.8%	37.2%	31.5%	13.0%	6.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Palau	Type II Ratio		0.5%	0.5%		0.4%		0.8%		0.9%	3.5%		0.4%	0.7%	1.0%	0.9%	0.6%
	Type II Weight		0.0%	0.0%		0.0%		0.0%		0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%
Palestine	Type II Ratio	1.9%	3.7%	1.9%	1.9%	2.4%	2.8%	4.5%	4.5%	3.0%	2.3%	2.3%	2.8%	2.7%	2.0%	1.4%	1.2%
	Type II Weight	0.0%	8.6%	0.0%	0.0%	0.0%	0.0%	0.0%	5.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Panama	Type II Ratio	175.1%	172.1%	174.3%	186.4%	218.5%	257.3%	281.5%	245.5%	192.8%	165.7%	144.6%	124.8%	114.6%	96.5%	82.1%	67.3%
	Type II Weight	96.7%	96.4%	96.1%	96.1%	96.8%	96.8%	96.7%	96.8%	96.0%	95.5%	95.4%	94.5%	93.9%	93.1%	91.9%	90.3%
Papua New Guinea	Type II Ratio	0.7%	0.7%	9.3%	15.6%	14.2%	16.6%	7.8%	7.4%	22.8%	20.4%	13.1%	7.0%	4.2%	5.0%	3.3%	4.6%
	Type II Weight	0.0%	0.0%	45.6%	61.3%	60.0%	60.0%	24.4%	29.5%	70.3%	68.8%	58.5%	32.7%	7.5%	18.7%	0.0%	14.2%
Paraguay	Type II Ratio	5.6%	6.0%	7.3%	6.1%	5.3%	9.9%	8.2%	5.6%	6.3%	5.3%	3.6%	4.0%	3.5%	2.9%	3.2%	3.6%
	Type II Weight	30.5%	30.8%	35.3%	24.1%	20.0%	41.1%	26.9%	16.3%	22.2%	17.2%	2.8%	6.5%	0.0%	0.0%	0.0%	1.9%
Peru	Type II Ratio	6.4%	5.2%	5.6%	5.6%	5.8%	5.9%	6.6%	5.1%	5.0%	4.2%	4.2%	3.7%	4.0%	4.1%	5.7%	5.3%
	Type II Weight	36.9%	24.9%	23.1%	20.0%	24.1%	17.6%	16.8%	12.2%	11.1%	5.1%	9.5%	1.3%	4.5%	8.3%	24.0%	21.2%
Philippines	Type II Ratio	6.2%	6.0%	5.5%	5.5%	5.1%	5.5%	5.9%	4.0%	4.1%	3.2%	4.1%	2.7%	2.5%	2.4%	2.4%	2.3%
	Type II Weight	35.1%	30.9%	22.5%	19.0%	18.5%	13.7%	11.0%	0.0%	1.2%	0.0%	8.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Portugal	Type II Ratio	8.5%	8.8%	8.1%	5.6%	4.3%	5.0%	6.4%	4.6%	4.4%	4.8%	4.6%	5.1%	5.9%	6.0%	5.6%	4.7%
	Type II Weight	48.1%	47.1%	39.9%	19.8%	10.0%	9.5%	14.7%	7.0%	5.2%	12.2%	14.3%	18.1%	24.2%	27.4%	23.6%	15.7%
Qatar	Type II Ratio	22.8%	16.8%	12.2%	9.3%	10.6%	6.5%	8.9%	8.5%	9.8%	17.6%	16.1%	12.5%	5.8%	5.3%	9.5%	8.5%
	Type II Weight	77.0%	68.5%	55.5%	42.6%	49.7%	21.9%	30.8%	36.1%	42.3%	64.6%	64.8%	55.8%	22.8%	21.5%	46.6%	42.4%
Rwanda	Type II Ratio	11.8%	12.5%	11.6%	9.3%	8.1%	7.4%	7.1%	4.5%	5.6%	3.4%	4.9%	3.3%	3.2%	1.5%	1.9%	1.2%
	Type II Weight	59.9%	59.9%	53.8%	42.9%	39.4%	28.3%	20.1%	5.4%	17.0%	0.0%	18.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Saint Helena	Type II Ratio	16.6%	18.9%	16.6%	23.7%	26.0%	40.2%	144.4%	14.2%	18.9%	26.0%	42.6%	24.0%	20.8%	59.5%	39.1%	34.3%
	Type II Weight	69.7%	71.5%	65.2%	72.8%	76.0%	81.3%	93.6%	56.0%	65.2%	74.6%	85.1%	74.2%	70.3%	89.1%	83.7%	81.7%
Saint Lucia	Type II Ratio	2.9%	5.5%	4.8%	22.6%	13.1%	15.1%	16.2%	20.9%	24.8%	14.3%	9.1%	18.7%	23.3%	17.1%	17.7%	21.6%
	Type II Weight	0.0%	27.3%	15.5%	71.6%	57.4%	56.9%	54.8%	67.9%	72.3%	58.1%	45.1%	68.1%	73.1%	66.5%	67.3%	72.4%
Saint Vincent and the Grenadines	Type II Ratio	98.0%	113.1%	104.9%	114.3%	148.3%	372.7%	256.8%	281.9%	237.7%	219.1%	200.0%	219.2%	161.7%	156.2%	182.3%	135.4%
	Type II Weight	94.1%	94.6%	93.6%	93.7%	95.3%	97.8%	96.4%	97.2%	96.7%	96.6%	96.6%	96.8%	95.6%	95.7%	96.3%	95.0%
Samoa	Type II Ratio	232.2%	373.5%	344.0%	490.1%	632.1%	874.8%	938.1%	1011.9%	1339.2%	1314.4%	1294.6%	1495.4%	1480.9%	1792.7%	2050.0%	2525.7%
	Type II Weight	97.5%	98.3%	98.0%	98.5%	98.9%	99.1%	99.0%	99.2%	99.4%	99.4%	99.5%	99.5%	99.5%	99.6%	99.7%	99.7%
San Marino	Type II Ratio	5.1%	5.4%	6.8%	6.3%	6.4%	8.0%	7.6%	7.6%	7.1%	5.2%	5.6%	5.3%	5.9%	11.6%	17.3%	16.0%
	Type II Weight	26.6%	26.1%	32.1%	25.8%	28.9%	31.9%	23.3%	31.2%	27.9%	15.5%	23.5%	19.7%	23.5%	54.2%	66.5%	64.5%
	Type II Ratio	1.7%	4.5%	5.1%	2.3%	2.6%	4.1%	6.9%	3.5%	1.2%	1.8%	3.0%	2.5%	6.6%	6.7%	3.6%	3.2%

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<i>Sao Tome and Principe</i>	Type II Weight	0.0%	18.0%	18.3%	0.0%	0.0%	0.0%	18.4%	0.0%	0.0%	0.0%	0.0%	0.0%	29.0%	32.1%	1.8%	0.0%
	Type II Ratio	14.5%	11.1%	10.4%	9.3%	10.3%	11.6%	14.4%	7.0%	9.0%	7.8%	6.9%	7.3%	7.0%	6.4%	5.6%	6.9%
<i>Saudi Arabia</i>	Type II Weight	66.1%	55.7%	49.8%	42.6%	48.8%	47.4%	50.4%	26.9%	38.8%	34.6%	33.2%	34.4%	32.0%	29.9%	23.4%	33.6%
	Type II Ratio	11.7%	12.9%	12.5%	12.3%	10.2%	11.7%	12.9%	11.4%	11.3%	8.1%	8.5%	8.6%	9.7%	7.2%	7.0%	6.4%
<i>Senegal</i>	Type II Weight	59.6%	60.7%	56.2%	53.3%	48.3%	47.8%	46.2%	48.1%	47.8%	36.6%	42.3%	41.7%	45.4%	35.1%	33.5%	30.3%
	Type II Ratio	3.1%	2.4%	1.8%	1.6%	1.6%	1.2%	2.1%	1.8%	1.8%	2.3%	1.7%	2.4%	2.1%	2.1%	2.5%	2.4%
<i>Serbia</i>	Type II Weight	2.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Type II Ratio	19.5%	28.6%	35.2%	39.8%	139.0%	130.8%	208.7%	255.4%	357.2%	322.7%	379.1%	454.9%	438.2%	468.0%	471.2%	512.5%
<i>Seychelles</i>	Type II Weight	73.6%	80.2%	81.9%	82.9%	95.0%	93.8%	95.6%	96.9%	97.8%	97.7%	98.2%	98.4%	98.4%	98.5%	98.5%	98.7%
	Type II Ratio	5.9%	4.7%	4.2%	4.8%	5.4%	6.4%	5.0%	4.4%	3.1%	4.0%	4.4%	3.0%	3.7%	2.7%	3.4%	2.1%
<i>Sierra Leone</i>	Type II Weight	33.2%	20.2%	8.7%	12.3%	20.6%	21.0%	2.4%	4.7%	0.0%	2.5%	12.7%	0.0%	0.5%	0.0%	0.0%	0.0%
	Type II Ratio	11.7%	12.3%	13.0%	10.1%	12.4%	12.7%	14.3%	11.6%	12.1%	11.2%	9.1%	11.5%	10.3%	9.6%	10.1%	12.0%
<i>Singapore</i>	Type II Weight	59.6%	59.2%	57.6%	46.1%	55.7%	50.7%	50.2%	48.7%	50.5%	49.4%	45.0%	52.7%	48.0%	47.1%	48.8%	55.2%
	Type II Ratio	0.6%	0.8%	0.6%	0.7%	0.8%	1.7%	1.3%	1.2%	1.9%	1.9%	1.0%	1.6%	2.2%	2.1%	3.3%	3.9%
<i>Slovakia</i>	Type II Weight	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.3%
	Type II Ratio	0.7%	0.5%	0.5%	0.5%	0.4%	0.4%	2.1%	2.0%	1.7%	1.6%	1.5%	2.2%	4.6%	7.2%	9.9%	8.4%
<i>Slovenia</i>	Type II Weight	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.1%	35.3%	48.0%	41.7%
	Type II Ratio	1035.4%	1069.1%	1204.1%	1725.7%	1651.1%	2212.0%	2177.6%	1998.7%	1868.9%	1695.7%	1736.5%	2164.1%	2153.9%	2429.6%	2285.2%	2258.4%
<i>Small financial centres and other territories*</i>	Type II Weight	99.4%	99.4%	99.4%	99.6%	99.6%	99.6%	99.6%	99.6%	99.6%	99.6%	99.6%	99.7%	99.7%	99.7%	99.7%	99.7%
	Type II Ratio	14.4%	20.2%	22.3%	19.8%	19.0%	25.1%	20.6%	14.5%	17.4%	11.9%	9.3%	11.5%	12.4%	19.2%	19.5%	13.9%
<i>Solomon Islands</i>	Type II Weight	66.0%	73.0%	73.0%	68.3%	68.5%	71.6%	62.6%	56.7%	62.7%	51.7%	45.9%	52.9%	54.9%	69.6%	69.7%	60.2%
	Type II Ratio	5.1%	5.6%	4.5%	3.8%	3.2%	3.7%	3.4%	3.3%	3.2%	2.9%	2.4%	2.7%	3.0%	3.0%	3.4%	3.0%
<i>South Africa</i>	Type II Weight	26.3%	28.1%	12.2%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Type II Ratio												0.0%	0.0%	0.0%	0.0%	0.0%
<i>South Sudan</i>	Type II Weight												0.0%	0.0%	0.0%	0.0%	0.0%
	Type II Ratio	3.7%	4.2%	3.7%	3.2%	2.7%	2.1%	2.3%	1.8%	1.7%	1.7%	1.6%	2.6%	2.7%	2.2%	2.3%	2.1%
<i>Spain</i>	Type II Weight	11.4%	14.4%	3.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Type II Ratio	6.7%	5.1%	7.8%	6.7%	3.8%	3.6%	2.5%	2.5%	3.9%	3.2%	4.4%	3.8%	3.4%	8.0%	7.4%	11.8%
<i>Sri Lanka</i>	Type II Weight	38.7%	23.8%	37.9%	28.2%	3.5%	0.0%	0.0%	0.0%	0.0%	0.0%	11.8%	3.1%	0.0%	39.9%	36.2%	54.9%
	Type II Ratio	4.0%	5.3%	3.5%	2.4%	2.2%	3.2%	11.4%	20.4%	8.8%	5.9%	3.8%	4.3%	7.9%	6.1%	6.4%	5.5%
<i>Suriname</i>	Type II Weight	14.7%	25.1%	0.1%	0.0%	0.0%	0.0%	41.3%	67.2%	37.8%	22.2%	5.1%	9.2%	37.2%	27.7%	29.7%	22.6%
	Type II Ratio	12.9%	11.3%	14.6%	15.1%	16.3%	19.6%	25.7%	19.0%	16.0%	12.2%	11.3%	10.9%	10.7%	9.7%	9.3%	10.4%
<i>Swaziland</i>	Type II Weight	62.7%	56.5%	61.5%	60.4%	64.2%	65.1%	68.8%	65.2%	60.2%	52.7%	53.4%	50.7%	49.4%	47.5%	45.5%	50.2%
	Type II Ratio	11.6%	11.9%	11.3%	9.9%	8.4%	8.9%	7.5%	6.6%	6.4%	5.5%	4.6%	3.9%	2.4%	2.5%	2.0%	1.7%
<i>Switzerland</i>	Type II Weight	59.3%	58.2%	52.9%	45.1%	40.9%	36.4%	22.6%	24.6%	23.5%	18.3%	14.5%	5.0%	0.0%	0.0%	0.0%	0.0%
	Type II Ratio	5.1%	5.1%	5.1%	6.1%	7.3%	7.8%	9.8%	9.2%	9.8%	8.5%	8.4%	9.9%	9.5%	10.0%	10.4%	11.3%
<i>Syrian Arab Republic</i>	Type II Weight	26.4%	23.9%	18.9%	23.9%	34.9%	30.4%	34.9%	39.2%	42.3%	38.5%	42.0%	47.1%	44.8%	48.6%	49.8%	53.2%
	Type II Ratio	4.6%	4.2%	4.1%	3.9%	3.1%	3.6%	3.2%	2.3%	2.3%	2.1%	2.1%	1.8%	1.7%	1.6%	1.3%	1.3%
<i>Taiwan</i>	Type II Weight	21.2%	14.5%	7.7%	2.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Type II Ratio	2.9%	2.6%	2.4%	2.3%	2.5%	2.3%	2.4%	2.0%	2.2%	2.1%	2.3%	2.6%	3.5%	4.5%	3.1%	3.5%
<i>Tanzania</i>	Type II Weight	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	13.4%	0.0%	0.5%
	Type II Ratio	12.1%	12.3%	15.8%	12.9%	13.7%	12.5%	14.2%	11.9%	11.1%	10.1%	5.8%	5.4%	6.3%	3.6%	4.3%	3.8%
<i>Thailand</i>	Type II Weight	60.6%	59.2%	63.9%	55.0%	58.8%	50.1%	49.9%	49.7%	47.1%	45.6%	25.2%	21.0%	27.1%	2.4%	10.8%	4.5%

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Togo	Type II Ratio	7.3%	7.6%	6.0%	6.0%	5.5%	6.2%	6.2%	3.3%	7.8%	6.9%	5.7%	7.3%	8.3%	11.3%	12.4%	11.7%
	Type II Weight	42.1%	41.4%	26.2%	23.4%	21.3%	19.8%	13.0%	0.0%	32.3%	28.9%	24.8%	34.5%	39.0%	53.2%	56.2%	54.5%
Trinidad and Tobago	Type II Ratio	3.8%	4.1%	4.1%	4.1%	4.0%	4.7%	4.9%	4.3%	4.8%	4.3%	3.9%	4.1%	4.8%	4.0%	4.3%	4.9%
	Type II Weight	11.9%	13.5%	8.6%	4.6%	6.2%	6.1%	2.1%	3.6%	9.3%	6.7%	5.8%	7.4%	13.8%	7.7%	10.7%	17.8%
Tunisia	Type II Ratio	5.6%	4.9%	4.4%	4.3%	4.6%	6.1%	5.7%	5.4%	5.3%	5.2%	2.7%	2.7%	2.5%	2.7%	2.8%	2.4%
	Type II Weight	31.1%	21.3%	11.8%	6.8%	12.5%	18.7%	9.1%	14.9%	14.3%	15.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Turkey	Type II Ratio	11.7%	12.3%	13.0%	10.1%	12.4%	12.7%	14.3%	11.6%	12.1%	11.2%	9.1%	11.5%	10.3%	9.6%	10.1%	12.0%
	Type II Weight	59.6%	59.2%	57.6%	46.1%	55.7%	50.7%	50.2%	48.7%	50.5%	49.4%	45.0%	52.7%	48.0%	47.1%	48.8%	55.2%
Turks and Caicos Islands	Type II Ratio	114.8%	136.7%	143.9%	114.4%	128.9%	151.7%	134.0%	160.3%	187.8%	185.8%	125.9%	131.4%	78.9%	116.4%	89.7%	69.9%
	Type II Weight	95.0%	95.5%	95.3%	93.7%	94.7%	94.7%	93.2%	95.1%	95.8%	96.0%	94.7%	94.7%	91.2%	94.3%	92.5%	90.6%
Tuvalu	Type II Ratio								13.3%	20.8%	45.6%	4.2%	13.2%	6.0%	2.3%	3.1%	0.4%
	Type II Weight								53.7%	67.9%	84.7%	9.6%	57.7%	24.6%	0.0%	0.0%	0.0%
US Pacific Islands	Type II Ratio	17.7%	2.5%	5.5%	6.7%	4.5%	4.3%	3.6%	2.6%	1.3%	2.1%	1.2%	0.9%	0.9%	0.7%	0.7%	1.3%
	Type II Weight	71.3%	0.0%	22.0%	28.6%	11.9%	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Uganda	Type II Ratio	5.8%	5.4%	5.8%	4.2%	3.2%	3.1%	2.5%	1.8%	2.0%	1.6%	1.5%	1.9%	2.3%	1.3%	1.6%	2.3%
	Type II Weight	32.0%	26.2%	25.1%	6.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
United Arab Emirates	Type II Ratio	26.9%	22.0%	16.7%	16.4%	14.2%	14.6%	13.2%	6.4%	8.3%	7.2%	6.6%	7.5%	7.9%	9.3%	9.8%	10.5%
	Type II Weight	80.1%	74.9%	65.5%	62.9%	60.1%	55.8%	47.3%	23.2%	35.1%	31.2%	31.5%	35.8%	37.2%	45.8%	47.6%	50.5%
United Kingdom	Type II Ratio	2.1%	2.3%	3.5%	4.1%	4.4%	6.5%	6.7%	5.5%	5.8%	5.9%	6.2%	6.4%	6.9%	6.5%	6.0%	6.7%
	Type II Weight	0.0%	0.0%	0.0%	5.3%	11.2%	21.8%	17.4%	16.1%	18.7%	21.8%	28.5%	28.7%	31.2%	31.0%	26.9%	32.0%
Uruguay	Type II Ratio	14.2%	23.6%	31.6%	30.5%	26.9%	28.0%	25.7%	22.7%	23.0%	15.2%	11.8%	9.8%	10.6%	10.9%	11.6%	12.7%
	Type II Weight	65.5%	76.5%	80.1%	78.2%	76.7%	74.2%	68.9%	70.0%	70.5%	60.2%	54.9%	46.9%	49.1%	52.1%	54.0%	57.2%
Uzbekistan	Type II Ratio	0.7%	1.0%	0.9%	0.9%	1.1%	1.8%	1.7%	1.6%	3.1%	2.8%	4.1%	2.0%	0.9%	0.8%	1.6%	2.1%
	Type II Weight	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Vanuatu	Type II Ratio	106.5%	175.1%	170.9%	167.2%	156.6%	147.6%	140.7%	57.4%	52.3%	44.4%	50.0%	47.8%	45.3%	50.1%	85.8%	60.5%
	Type II Weight	94.6%	96.5%	96.0%	95.6%	95.6%	94.5%	93.5%	87.0%	85.8%	84.3%	87.1%	86.2%	85.2%	87.1%	92.2%	89.2%
Venezuela	Type II Ratio	16.5%	21.4%	22.5%	19.2%	16.2%	15.5%	14.7%	12.0%	11.4%	10.0%	11.0%	9.3%	9.4%	9.0%	7.9%	7.0%
	Type II Weight	69.6%	74.4%	73.1%	67.4%	64.2%	57.7%	51.3%	49.9%	48.3%	45.0%	52.5%	44.7%	44.5%	44.7%	38.7%	34.1%
Wallis and Futuna	Type II Ratio	429.2%	429.2%		7295.8%	6866.6%	7724.9%	8154.1%	16737.3%	14591.5%	14162.4%	8583.2%	2608.9%	4232.0%	3772.8%	3402.0%	9391.8%
	Type II Weight	98.6%	98.5%		99.9%	99.9%	99.9%	99.9%	100.0%	99.9%	99.9%	99.9%	99.7%	99.8%	99.8%	99.8%	99.9%
Yemen	Type II Ratio	15.3%	12.3%	9.5%	8.0%	6.2%	5.2%	6.4%	4.1%	5.1%	6.9%	4.5%	4.5%	3.1%	2.1%	2.2%	1.4%
	Type II Weight	67.6%	59.2%	46.4%	36.6%	27.4%	11.7%	15.2%	1.7%	12.2%	29.5%	13.8%	11.8%	0.0%	0.0%	0.0%	0.0%
Zambia	Type II Ratio	11.7%	13.1%	10.4%	9.1%	8.1%	6.6%	6.2%	3.1%	3.8%	3.5%	3.0%	3.6%	3.2%	3.4%	4.9%	5.5%
	Type II Weight	59.6%	61.3%	49.8%	41.7%	39.3%	22.5%	13.2%	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%	17.3%	23.1%
Zimbabwe	Type II Ratio	11.5%	14.0%	17.1%	15.5%	15.6%	18.5%	16.9%	17.5%	9.5%	7.6%	6.4%	5.3%	5.2%	5.6%	6.0%	4.8%
	Type II Weight	59.1%	63.3%	66.0%	61.1%	63.0%	63.4%	56.3%	62.7%	40.9%	33.7%	30.0%	20.0%	17.9%	23.5%	26.5%	16.5%

Sources: Own computations. Notes: *Small financial centres and other territories include: Anguilla, Antigua and Barbuda, The British Virgin Islands, Montserrat and St. Christopher, St. Kitts and Nevis, The British Antarctic Territory, The British Indian Ocean Territory, Chagos, Pitcairn Islands, South Georgia and the South Sandwich Islands, the Falkland Islands.

FDI and Corrective Weights

Table 23 presents the corrective weights applied to outgoing deposits to account for heterogeneity across countries in the ratio of household deposits over corporate deposits. The ratios of the outward stock of FDI on GDP for each country are also presented.

Table 23. Ratio of Outgoing FDI on GDP and Calculated Corrective Weights for each Country

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Afghanistan	FDI on GDP								1.45	1.29	1.00	0.91	0.32	0.33	0.31	0.31	0.29
	Weight	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.49	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Albania	FDI on GDP				3.42	2.56	4.25	6.99	11.31	13.84	12.90	13.36	15.76	18.78	18.73	32.10	34.26
	Weight	1.46	1.46	1.46	1.49	1.49	1.49	1.48	1.46	1.46	1.46	1.46	1.45	1.45	1.45	1.42	1.42
Algeria	FDI on GDP	3.92	5.52	5.03	6.97	5.57	5.20	5.63	6.30	9.42	9.38	10.23	9.59	8.28	8.04	10.97	11.67
	Weight	1.48	1.48	1.48	1.47	1.48	1.48	1.48	1.48	1.47	1.47	1.47	1.47	1.48	1.48	1.47	1.47
Andorra	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Angola	FDI on GDP		6.00	10.53	41.22	32.19	26.36	35.13	54.92	69.25	74.10	74.26	86.24	124.99	146.45	192.67	248.55
	Weight	1.32	1.47	1.46	1.36	1.39	1.42	1.40	1.33	1.33	1.32	1.30	1.28	1.23	1.19	1.15	1.10
Argentina	FDI on GDP	79.21	210.98	168.51	132.42	117.44	111.36	95.79	79.62	88.70	71.59	60.15	60.29	62.53	68.74	63.63	71.61
	Weight	1.24	1.01	1.10	1.16	1.19	1.23	1.28	1.27	1.29	1.32	1.33	1.34	1.34	1.33	1.35	1.34
Armenia	FDI on GDP	0.01	0.15	0.26	0.10	1.49	4.86	4.97	5.52	13.13	13.13	33.25	33.21	26.32	26.77	46.98	53.86
	Weight	1.50	1.50	1.50	1.50	1.49	1.48	1.49	1.48	1.46	1.46	1.40	1.40	1.43	1.43	1.38	1.37
Aruba	FDI on GDP	349.85	342.83	327.68	293.54	276.85	260.86	256.98	245.79	270.65	285.35	268.84	271.32	268.12	264.81	264.43	244.20
	Weight	0.89	0.89	0.93	0.97	0.98	1.03	1.06	1.01	1.05	1.03	1.03	1.04	1.06	1.06	1.07	1.10
Australia	FDI on GDP	310.50	317.52	384.48	367.70	296.50	355.12	400.33	232.03	393.47	393.04	300.37	308.77	290.38	304.75	288.33	332.19
	Weight	0.92	0.91	0.89	0.91	0.97	0.96	0.95	1.03	0.95	0.95	1.00	1.00	1.04	1.02	1.05	1.03
Austria	FDI on GDP	144.48	199.11	213.84	231.99	227.26	312.71	386.68	344.40	424.91	463.49	448.01	511.83	539.07	493.61	537.20	512.58
	Weight	1.11	1.03	1.04	1.03	1.03	0.99	0.96	0.93	0.94	0.91	0.90	0.88	0.88	0.90	0.90	0.92
Azerbaijan	FDI on GDP	0.18	52.28	173.17	283.97	278.20	209.26	141.49	107.10	125.49	109.45	95.87	107.84	121.42	162.60	289.24	509.60
	Weight	1.50	1.31	1.09	0.98	0.98	1.09	1.20	1.21	1.22	1.25	1.26	1.24	1.23	1.17	1.05	0.92
Bahamas	FDI on GDP	65.71	66.03	74.18	91.35	98.62	128.13	165.94	206.31	239.22	251.36	304.03	297.88	326.56	353.01	341.42	370.37
	Weight	1.27	1.27	1.27	1.24	1.22	1.20	1.17	1.06	1.08	1.07	1.00	1.01	1.01	0.98	1.01	1.00
Bahrain	FDI on GDP	219.26	224.07	261.81	299.24	317.52	326.97	355.25	363.28	329.09	306.56	468.30	455.04	446.35	499.98	638.84	591.06
	Weight	1.01	1.00	0.99	0.96	0.95	0.98	0.98	0.92	1.00	1.02	0.89	0.91	0.93	0.90	0.86	0.88
Bangladesh	FDI on GDP	1.58	1.63	1.59	1.44	1.35	1.46	1.41	0.87	1.16	0.85	0.83	0.80	0.95	0.92	0.97	0.96
	Weight	1.49	1.49	1.49	1.49	1.49	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Barbados	FDI on GDP	13.42	13.34	12.76	10.78	12.06	21.88	37.16	36.89	829.33	895.83	968.92	1013.66	869.46	857.25	892.52	901.08
	Weight	1.44	1.44	1.45	1.46	1.46	1.43	1.40	1.38	0.78	0.77	0.74	0.74	0.78	0.78	0.79	0.79
Belarus	FDI on GDP	1.63	0.25	0.35	0.35	0.46	0.50	1.02	1.19	2.84	3.49	4.76	6.93	9.59	8.03	12.45	16.16
	Weight	1.49	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.49	1.49	1.48	1.48	1.47	1.48	1.47	1.46
Belgium	FDI on GDP	762.94				1234.42	1509.30	1374.79	1569.63	1941.73	1966.48	1903.00	887.29	942.86	1087.54	1340.97	1263.13
	Weight	0.73	0.69	0.69	0.69	0.67	0.67	0.69	0.64	0.64	0.64	0.64	0.76	0.76	0.73	0.71	0.73
Belize	FDI on GDP	48.29	45.14	42.86	40.22	39.04	36.22	34.91	34.96	36.17	35.38	33.96	39.01	38.30	39.19	37.91	37.93
	Weight	1.32	1.33	1.35	1.37	1.37	1.39	1.40	1.38	1.40	1.40	1.40	1.39	1.40	1.39	1.40	1.41
Benin	FDI on GDP	4.70	5.31	5.05	2.06	4.08	2.81	4.97	3.40	8.10	3.07	9.76	14.62	20.25	18.44	23.23	23.68
	Weight	1.48	1.48	1.48	1.49	1.48	1.49	1.49	1.49	1.48	1.49	1.47	1.46	1.44	1.45	1.44	1.44
Bermuda	FDI on GDP	35.54	38.91	42.80	46.80	49.55	151.49	122.34	149.17	160.39	161.08	103.92	142.76	149.74	165.19	149.17	162.09
	Weight	1.36	1.35	1.35	1.35	1.34	1.16	1.23	1.14	1.17	1.17	1.24	1.19	1.19	1.17	1.21	1.20
Bhutan	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Bolivia	FDI on GDP	3.92	4.35	10.32	9.59	9.13	7.87	7.18	3.83	2.85	0.39	0.32	0.28	19.66	18.23	17.13	18.57
	Weight	1.48	1.48	1.46	1.46	1.47	1.47	1.48	1.49	1.49	1.50	1.50	1.50	1.44	1.45	1.45	1.45
Bosnia and Herzegovina	FDI on GDP				5.49	4.52	4.74	6.23	5.89	7.14	11.35	10.89	17.57	20.27	18.37	23.37	23.85
	Weight	1.46	1.46	1.46	1.48	1.48	1.48	1.48	1.48	1.48	1.47	1.47	1.45	1.44	1.45	1.44	1.44
Botswana	FDI on GDP	157.72	188.22	192.59	162.67	119.71	112.16	107.20	78.01	94.34	78.75	55.50	57.74	55.16	52.59	61.88	60.65
	Weight	1.09	1.04	1.06	1.11	1.18	1.23	1.25	1.27	1.28	1.31	1.34	1.34	1.36	1.36	1.35	1.36
Brazil	FDI on GDP	88.83	107.14	98.32	103.38	88.89	102.85	101.55	93.05	100.27	86.63	78.81	109.88	121.64	136.15	179.39	190.34
	Weight	1.22	1.17	1.22	1.21	1.24	1.24	1.26	1.24	1.27	1.29	1.29	1.24	1.23	1.21	1.17	1.16
Brunei Darussalam	FDI on GDP	94.54	94.03	82.73	70.94	59.77	46.06	41.87	36.80	60.17	44.40	41.30	84.95	104.39	75.97	106.49	143.38
	Weight	1.21	1.20	1.25	1.28	1.31	1.37	1.39	1.38	1.34	1.38	1.38	1.29	1.26	1.31	1.27	1.22
Bulgaria	FDI on GDP	2.41	2.47	2.50		4.17	13.28	18.31	26.54	26.97	51.04	50.07	59.67	63.29	35.91	39.36	44.28
	Weight	1.49	1.49	1.49	1.42	1.48	1.46	1.45	1.41	1.42	1.37	1.36	1.34	1.34	1.40	1.40	1.39
Burkina Faso	FDI on GDP	0.24	0.60	0.80	0.75	1.36	1.45	1.45	0.46	1.42	0.84	9.87	16.37	21.06	23.03	25.86	28.39
	Weight	1.50	1.50	1.50	1.50	1.49	1.50	1.50	1.50	1.50	1.50	1.47	1.45	1.44	1.43	1.43	1.43
Burundi	FDI on GDP	2.66	2.83	2.99	2.57	2.10	1.83	1.56	1.54	1.40	1.22	1.00	1.04	1.06	0.96	0.85	0.87
	Weight	1.49	1.49	1.49	1.49	1.49	1.49	1.50	1.49	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Cabo Verde	FDI on GDP									0.34	0.30						
	Weight	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Cambodia	FDI on GDP	52.97	53.34	51.85	47.89	42.43	38.35	32.42	29.04	30.71	30.25	28.78	28.84	29.66	28.95	29.42	32.59
	Weight	1.31	1.31	1.33	1.34	1.36	1.39	1.41	1.40	1.41	1.42	1.41	1.42	1.42	1.42	1.42	1.42
Cameroon	FDI on GDP	124.12	108.31	86.78	72.98	69.60	62.05	53.43	43.46	38.70	37.14	29.35	27.16	29.96	24.15	24.13	21.68
	Weight	1.15	1.17	1.24	1.28	1.29	1.33	1.36	1.36	1.39	1.40	1.41	1.42	1.42	1.43	1.44	1.44

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Canada	FDI on GDP	547.50	497.75	563.11	616.63	592.02	594.45	649.36	416.25	650.73	618.83	498.49	532.83	613.89	625.76	703.41	815.20
	Weight	0.79	0.81	0.81	0.80	0.80	0.84	0.84	0.88	0.83	0.85	0.88	0.87	0.85	0.85	0.84	0.81
Cayman Islands	FDI on GDP	12125.98	9606.55	11526.88	13387.68	18577.98	15843.30	16618.52	20128.22	23640.22	27948.19	29583.14	30001.04	33498.70	37536.63	55805.78	60349.48
	Weight	0.52	0.52	0.52	0.52	0.51	0.52	0.52	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
Central African Republic	FDI on GDP	46.33	43.54	37.88	33.99	32.28	29.56	25.43	21.75	21.78	21.74	19.66	19.90	28.43	25.25	27.15	24.49
	Weight	1.33	1.34	1.37	1.38	1.39	1.41	1.43	1.42	1.44	1.44	1.44	1.44	1.42	1.43	1.43	1.44
Chad	FDI on GDP	41.10	35.35	25.67	15.91	10.57	9.47	8.13	6.79	7.59	6.59	5.78	5.68	5.43	5.05	6.42	6.96
	Weight	1.35	1.36	1.41	1.44	1.46	1.47	1.48	1.47	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
Chile	FDI on GDP	165.12	175.51	188.58	187.84	183.70	176.88	204.00	237.29	313.94	285.40	316.89	369.09	376.86	422.86	450.04	476.14
	Weight	1.08	1.06	1.07	1.08	1.09	1.13	1.12	1.02	1.01	1.03	0.99	0.96	0.97	0.94	0.94	0.94
China	FDI on GDP	25.87	25.28	20.01	22.90	25.02	27.26	33.19	40.01	48.09	52.00	56.09	62.14	68.75	84.20	99.22	121.29
	Weight	1.40	1.40	1.43	1.42	1.41	1.42	1.41	1.37	1.37	1.36	1.34	1.33	1.33	1.30	1.28	1.25
Colombia	FDI on GDP	30.06	36.28	46.37	37.64	62.67	64.31	56.61	60.94	78.43	82.90	96.09	85.09	102.61	113.04	161.17	183.19
	Weight	1.38	1.36	1.34	1.37	1.31	1.32	1.35	1.31	1.31	1.30	1.26	1.29	1.27	1.25	1.19	1.17
Comoros	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Congo	FDI on GDP	16.52	16.66	14.89	12.17	9.48	7.48	7.56	5.51	6.27	5.36	8.17	6.73	6.92	6.28	9.94	12.22
	Weight	1.43	1.43	1.44	1.46	1.46	1.48	1.48	1.48	1.48	1.48	1.47	1.48	1.48	1.48	1.47	1.47
Congo (DR)	FDI on GDP	4.51	6.36	8.83	8.40	8.36	8.19	7.92	9.43	11.88	10.60	12.37	25.25	34.91	41.34	52.54	60.98
	Weight	1.48	1.47	1.47	1.47	1.47	1.47	1.48	1.47	1.47	1.47	1.46	1.43	1.41	1.39	1.37	1.36
Costa Rica	FDI on GDP	4.83	18.82	22.14	25.87	23.27	25.87	32.03	30.61	34.03	30.44	39.45	45.88	49.78	50.94	50.88	50.13
	Weight	1.48	1.42	1.42	1.41	1.42	1.42	1.41	1.39	1.41	1.42	1.38	1.37	1.37	1.37	1.38	1.38
Croatia	FDI on GDP	35.54	59.65	56.83	49.15	43.12	46.07	61.96	72.34	102.54	74.24	75.25	80.98	77.17	99.18	111.67	97.27
	Weight	1.36	1.29	1.31	1.34	1.36	1.37	1.34	1.28	1.26	1.32	1.30	1.30	1.31	1.27	1.26	1.29
Cuba	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Cyprus	FDI on GDP	76.97	109.73	141.49	182.17	194.60	340.45	386.05	6008.40	6611.68	7724.42	6216.30	8434.03	8437.97	7279.96	10131.62	9614.25
	Weight	1.25	1.17	1.14	1.09	1.07	0.97	0.96	0.54	0.55	0.54	0.55	0.54	0.54	0.54	0.53	0.54
Czech Republic	FDI on GDP	16.82	17.98	22.92	31.55	26.49	32.27	45.22	53.16	71.80	71.92	57.97	83.75	98.50	87.75	99.51	99.47
	Weight	1.43	1.42	1.42	1.39	1.41	1.40	1.38	1.33	1.32	1.32	1.34	1.29	1.27	1.29	1.28	1.29
Côte d'Ivoire	FDI on GDP	0.31		1.47		2.87	1.22	4.20	2.95	3.04	3.76	4.13	4.54	3.85	3.42	3.09	4.12
	Weight	1.50	1.49	1.49	1.49	1.49	1.50	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
Denmark	FDI on GDP	474.88	485.25	470.47	326.11	324.33	361.69	384.27	387.09	473.64	506.63	509.79	560.82	547.86	474.21	551.90	559.20
	Weight	0.82	0.81	0.84	0.94	0.94	0.95	0.96	0.90	0.91	0.89	0.87	0.86	0.88	0.91	0.89	0.90
Djibouti	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Dominica	FDI on GDP													23.75	19.47	0.39	0.38
	Weight	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.43	1.44	1.50	1.50
Dominican Republic	FDI on GDP	1.89	2.24	1.08	0.48	0.96				1.34	13.77	11.49	15.54	8.81	11.03	10.92	11.90
	Weight	1.49	1.49	1.50	1.50	1.50	1.48	1.48	1.48	1.50	1.46	1.46	1.45	1.47	1.47	1.47	1.47
Ecuador	FDI on GDP	9.79	8.27	7.50	6.90	6.63	7.08	6.57	6.12	6.75	8.01	7.83	7.98	8.12	10.55	13.93	16.33
	Weight	1.46	1.46	1.47	1.47	1.48	1.48	1.48	1.48	1.48	1.48	1.47	1.48	1.48	1.47	1.46	1.46
Egypt	FDI on GDP	6.84	7.92	8.64	11.10	10.79	10.38	13.65	22.73	22.61	24.89	25.74	22.50	22.82	22.38	21.10	21.71
	Weight	1.47	1.47	1.47	1.46	1.46	1.47	1.46	1.42	1.44	1.43	1.42	1.43	1.44	1.44	1.44	1.44
El Salvador	FDI on GDP	5.24	10.08	11.05	6.78	21.10	17.73	22.28	25.51	0.32	0.05	0.05	0.09	0.10	0.10	0.10	0.07
	Weight	1.48	1.46	1.46	1.47	1.42	1.44	1.44	1.41	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Equatorial Guinea	FDI on GDP	1.77	1.43	1.04	0.59	0.31	0.26	0.20	0.13	0.17	0.16	0.12	0.12	0.12	0.12	0.20	0.23
	Weight	1.49	1.49	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Eritrea	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Estonia	FDI on GDP	70.49	92.43	104.75	117.49	135.09	203.93	267.49	266.40	318.63	284.48	207.39	263.17	274.18	244.94	275.55	281.76
	Weight	1.26	1.21	1.20	1.19	1.16	1.10	1.05	0.99	1.01	1.04	1.09	1.04	1.05	1.07	1.06	1.07
Ethiopia	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Faroe Islands	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fiji	FDI on GDP	25.36	27.23	24.22	22.60	22.74	15.49	13.20	9.69	12.79	15.03	12.79	12.86	37.47	41.62	25.74	20.54
	Weight	1.40	1.39	1.41	1.42	1.42	1.45	1.46	1.46	1.46	1.46	1.46	1.46	1.40	1.39	1.43	1.45
Finland	FDI on GDP	404.06	458.13	444.55	432.10	400.42	444.27	456.30	402.26	517.81	555.54	488.83	589.74	538.30	427.85	406.70	465.52
	Weight	0.86	0.83	0.86	0.87	0.89	0.90	0.92	0.89	0.89	0.87	0.88	0.85	0.88	0.94	0.97	0.94
France	FDI on GDP	293.22	297.49	294.32	289.98	288.47	355.18	380.11	320.12	416.50	443.88	436.13	474.12	471.50	453.77	520.13	519.10
	Weight	0.94	0.93	0.96	0.97	0.97	0.96	0.96	0.95	0.94	0.92	0.91	0.90	0.92	0.92	0.91	0.92
French Polynesia	FDI on GDP		5.64	5.99	7.49	12.62	12.53	12.09	19.18	19.75	25.49	29.77	36.78	44.73	55.23	64.53	69.53
	Weight	1.42	1.48	1.48	1.47	1.45	1.46	1.46	1.43	1.44	1.43	1.41	1.40	1.38	1.36	1.35	1.34
Gabon	FDI on GDP	56.51	47.40	29.95	21.83	25.55	23.85	29.01	19.31	47.35	65.89	39.75	42.83	29.00	20.02	14.86	18.48
	Weight	1.30	1.32	1.39	1.42	1.41	1.43	1.42	1.43	1.37	1.33	1.38	1.38	1.42	1.44	1.46	1.45
Gambia	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Georgia	FDI on GDP	37.82	37.06	33.50	40.50	23.09	17.53	42.08	47.85	59.27	72.85	66.37	80.57	86.38	105.30	130.04	146.34
	Weight	1.36	1.36	1.38	1.36	1.42	1.44	1.39	1.34	1.35	1.32	1.32	1.30	1.30	1.26	1.23	1.22
Germany	FDI on GDP	285.10	302.40	294.13	282.00	277.55	328.51	362.53	317.08	387.08	399.33	381.84	443.44	401.55	359.49	399.88	384.08
	Weight	0.94	0.92	0.96	0.98	0.98	0.98	0.98	0.95	0.96	0.95	0.94	0.91	0.96	0.98	0.97	0.99

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Ghana	FDI on GDP							2.71	2.66	3.19	2.58	2.74	2.61	1.87	2.42	7.14	6.65
	Weight	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.48	1.48
Gibraltar	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Greece	FDI on GDP	51.55	58.51	61.10	57.34	54.89	82.02	99.37	105.04	132.17	142.38	166.94	181.21	151.33	124.10	124.88	99.77
	Weight	1.31	1.29	1.30	1.32	1.33	1.29	1.27	1.21	1.21	1.20	1.14	1.13	1.19	1.23	1.24	1.29
Greenland	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Grenada	FDI on GDP													37.88	37.15	31.83	30.37
	Weight	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.40	1.40	1.42	1.42
Guatemala	FDI on GDP	5.51	6.03	7.80	8.85	9.20	9.71	9.25	8.48	9.50	9.23	8.37	8.69	8.77	9.85	10.90	11.83
	Weight	1.48	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47
Guernsey	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Guinea	FDI on GDP	4.23	5.76	5.07	4.77	5.95	4.14	2.78	20.62	21.38	20.95	21.38	19.37	8.03	8.04	8.49	8.08
	Weight	1.48	1.47	1.48	1.48	1.48	1.49	1.49	1.43	1.44	1.44	1.43	1.44	1.48	1.48	1.48	1.48
Guinea-Bissau	FDI on GDP					1.12	0.74	0.29			5.55	4.88	5.38	5.32	7.03	8.54	7.72
	Weight	1.49	1.49	1.49	1.49	1.50	1.50	1.50	1.49	1.49	1.48	1.48	1.48	1.48	1.48	1.48	1.48
Guyana	FDI on GDP	1.69	1.85	1.81	1.92	1.83	1.04	0.87	0.79	0.73	0.66	0.59	0.53	0.51	0.49	0.47	7.99
	Weight	1.49	1.49	1.49	1.49	1.49	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.48
Haiti	FDI on GDP	0.56	0.58	0.68	0.57	0.47	0.42	0.34	0.31	0.30	0.30	0.27	0.25	0.24	0.23	0.23	0.25
	Weight	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Honduras	FDI on GDP				63.14	62.14	68.09	60.59	54.54	56.36	52.46	50.32	59.32	76.72	74.92	81.36	91.66
	Weight	1.33	1.33	1.33	1.30	1.31	1.31	1.34	1.33	1.35	1.36	1.36	1.34	1.31	1.32	1.31	1.30
Hong Kong	FDI on GDP	2052.92	1843.30	2148.14	2413.98	2622.64	3515.11	4863.23	3504.19	3920.76	4128.53	4117.67	4426.50	4500.21	4975.58	4949.96	4820.04
	Weight	0.60	0.61	0.60	0.60	0.59	0.58	0.56	0.57	0.58	0.57	0.57	0.57	0.57	0.56	0.57	0.57
Hungary	FDI on GDP	34.44	37.90	47.85	65.49	76.41	118.50	137.93	126.03	165.58	170.44	187.22	295.02	283.38	290.21	287.46	194.09
	Weight	1.37	1.35	1.34	1.30	1.27	1.22	1.21	1.17	1.16	1.16	1.12	1.02	1.04	1.03	1.05	1.16
Iceland	FDI on GDP	103.59	136.55	153.18	293.72	604.96	819.02	1178.34	532.58	787.07	861.44	781.99	860.94	611.20	486.29	450.74	298.37
	Weight	1.19	1.12	1.12	0.97	0.80	0.77	0.72	0.83	0.79	0.78	0.78	0.77	0.85	0.90	0.94	1.05
India	FDI on GDP	5.29	8.01	10.13	11.05	12.04	29.38	36.70	53.36	61.06	58.49	60.07	64.60	64.54	64.50	66.13	63.36
	Weight	1.48	1.47	1.46	1.46	1.46	1.41	1.40	1.33	1.34	1.35	1.33	1.33	1.34	1.34	1.34	1.35
Indonesia	FDI on GDP						2.86	7.39	5.49	7.25	8.84	6.95	13.51	21.21	28.51	34.10	63.43
	Weight	1.45	1.45	1.45	1.45	1.45	1.49	1.48	1.48	1.48	1.47	1.48	1.46	1.44	1.42	1.41	1.35
Iran	FDI on GDP	3.63	3.70	0.98	1.34	2.96	3.07	3.36	3.40	3.56	3.52	3.38	5.56	7.52	8.10	9.43	8.93
	Weight	1.48	1.48	1.50	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.48	1.48	1.48	1.47	1.48

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Iraq	FDI on GDP					1.78	6.04	4.52	3.31	4.54	4.56	5.37	6.82	7.31	8.34	11.85	14.12
	Weight	1.48	1.48	1.48	1.48	1.49	1.48	1.49	1.49	1.49	1.49	1.48	1.48	1.48	1.48	1.47	1.46
Ireland	FDI on GDP	374.03	460.21	446.31	550.33	492.09	520.19	555.95	614.23	1249.77	1532.38	1384.04	1826.71	2235.16	2399.88	3130.04	2762.30
	Weight	0.88	0.82	0.86	0.82	0.84	0.87	0.87	0.80	0.71	0.68	0.68	0.65	0.63	0.62	0.60	0.62
Isle of Man	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Israel	FDI on GDP	70.76	85.23	103.42	136.77	162.24	255.44	278.90	252.12	276.92	290.63	275.87	282.03	265.81	256.18	283.17	308.77
	Weight	1.26	1.22	1.21	1.15	1.11	1.04	1.04	1.01	1.04	1.03	1.02	1.03	1.06	1.06	1.06	1.05
Italy	FDI on GDP	143.84	134.28	128.71	129.28	132.00	161.23	189.68	185.05	223.28	231.15	229.04	254.21	251.60	228.04	255.53	254.51
	Weight	1.11	1.12	1.16	1.17	1.16	1.15	1.14	1.08	1.09	1.09	1.07	1.05	1.07	1.09	1.08	1.09
Jamaica	FDI on GDP	86.99	89.98	105.18	103.30	4.34	8.07	5.38	4.55	18.24	13.35	29.20	27.20	22.31	22.70	22.54	42.95
	Weight	1.22	1.21	1.20	1.21	1.48	1.47	1.48	1.48	1.45	1.46	1.41	1.42	1.44	1.44	1.44	1.40
Japan	FDI on GDP	69.74	73.93	75.47	76.95	81.29	99.23	120.17	135.04	141.63	145.80	155.24	167.28	216.85	237.51	279.58	265.73
	Weight	1.26	1.25	1.27	1.27	1.26	1.25	1.23	1.16	1.20	1.19	1.16	1.15	1.11	1.08	1.06	1.08
Jersey	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Jordan	FDI on GDP	7.81	8.76	7.87	25.12	35.72	20.69	21.02	16.95	18.65	17.90	17.47	16.46	15.63	16.98	16.24	15.85
	Weight	1.47	1.46	1.47	1.41	1.38	1.44	1.44	1.44	1.45	1.45	1.45	1.45	1.46	1.45	1.46	1.46
Kazakhstan	FDI on GDP		16.93	9.74				19.69	23.73	61.43	109.50	118.07	110.23	98.76	115.40	145.09	170.94
	Weight	1.31	1.43	1.46	1.31	1.31	1.31	1.44	1.42	1.34	1.25	1.22	1.24	1.27	1.24	1.21	1.18
Kenya	FDI on GDP	8.87	9.33	8.37	8.02	7.41	6.30	6.22	6.76	6.75	6.67	6.86	8.77	10.53	9.89	10.19	10.14
	Weight	1.46	1.46	1.47	1.47	1.47	1.48	1.48	1.47	1.48	1.48	1.48	1.47	1.47	1.47	1.47	1.47
Kiribati	FDI on GDP	8.40	8.14	8.63	7.90	6.79	7.45	9.19	14.99	12.06	10.07	11.25	11.43	10.38	10.18	9.63	9.16
	Weight	1.46	1.46	1.47	1.47	1.47	1.48	1.47	1.45	1.46	1.47	1.46	1.46	1.47	1.47	1.47	1.48
Kuwait	FDI on GDP	17.65	19.10	15.99	24.69	72.94	106.80	127.92	152.22	223.94	244.23	209.38	178.22	213.33	210.97	275.46	272.54
	Weight	1.43	1.42	1.44	1.41	1.28	1.24	1.22	1.13	1.09	1.07	1.09	1.14	1.11	1.11	1.06	1.08
Kyrgyzstan	FDI on GDP	25.76	24.47	20.47	37.63			0.31	0.25	0.22	0.32	0.25	0.22	0.16	0.27	0.08	0.08
	Weight	1.40	1.40	1.42	1.37	1.47	1.47	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Lao	FDI on GDP	14.92	15.12	13.13	11.69	10.08	7.99	11.62	5.90	5.94	9.55	7.82	6.72	5.72	6.08	9.31	9.99
	Weight	1.44	1.44	1.45	1.46	1.46	1.47	1.47	1.48	1.48	1.47	1.47	1.48	1.48	1.48	1.47	1.47
Latvia	FDI on GDP	3.78	5.49	9.45	16.62	16.61	22.26	30.37	29.02	34.13	37.66	30.63	39.60	52.87	43.40	52.83	55.32
	Weight	1.48	1.48	1.46	1.44	1.44	1.43	1.42	1.40	1.41	1.40	1.41	1.39	1.36	1.38	1.37	1.37
Lebanon	FDI on GDP	20.14	18.57	48.13	84.83	116.76	153.47	170.14	178.55	178.83	177.80	193.83	199.64	231.85	247.90	254.28	258.98
	Weight	1.42	1.42	1.34	1.25	1.19	1.16	1.16	1.09	1.15	1.15	1.11	1.11	1.09	1.07	1.08	1.09
Lesotho	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Liberia	FDI on GDP	1800.28	1878.54	2646.43	2534.61	3086.92	2892.54	2621.51	2306.64	2457.52	2359.50	1797.59	2094.45	1416.66	1370.67	1365.99	1375.13
	Weight	0.61	0.61	0.59	0.59	0.58	0.59	0.61	0.60	0.62	0.62	0.64	0.63	0.69	0.69	0.71	0.71
Libya	FDI on GDP	60.91	94.80	76.32	69.16	51.10	52.63	101.30	146.06	220.42	222.20	482.60	235.18	294.05	470.02	708.73	769.31
	Weight	1.29	1.20	1.26	1.29	1.34	1.35	1.27	1.14	1.10	1.10	0.88	1.07	1.03	0.91	0.83	0.82
Liechtenstein	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lithuania	FDI on GDP	3.91	4.17	6.36	18.79	27.44	34.58	39.72	41.08	61.64	56.76	47.84	60.15	70.47	55.21	62.87	62.81
	Weight	1.48	1.48	1.47	1.43	1.40	1.40	1.39	1.36	1.34	1.35	1.36	1.34	1.33	1.36	1.35	1.35
Luxembourg	FDI on GDP		1149.04	1308.78	1543.63	1627.84	1616.87	2284.47	2917.69	3442.44	3514.71	2794.37	2277.84	2469.94	2840.65	3460.83	3865.01
	Weight	0.62	0.66	0.66	0.64	0.64	0.66	0.63	0.58	0.59	0.59	0.60	0.62	0.62	0.60	0.59	0.59
Macao	FDI on GDP	61.63	64.85	63.46	44.18	40.23	72.04	59.12	48.03	45.45	19.54	18.18	27.46	60.42	69.30	69.19	47.34
	Weight	1.29	1.27	1.30	1.35	1.37	1.31	1.35	1.34	1.38	1.44	1.44	1.42	1.35	1.33	1.34	1.39
Macedonia	FDI on GDP	4.37	9.81	8.58	9.55	9.91	5.60	8.12	8.55	10.22	10.61	11.62	9.79	14.29	12.92	11.22	7.61
	Weight	1.48	1.46	1.47	1.46	1.46	1.48	1.48	1.47	1.47	1.47	1.46	1.47	1.46	1.46	1.47	1.48
Madagascar	FDI on GDP	2.20	2.27	1.82	2.28	2.47	1.85	1.39	1.08	1.54	1.57	1.31	1.43	1.86	1.49	1.75	1.72
	Weight	1.49	1.49	1.49	1.49	1.49	1.49	1.50	1.50	1.50	1.50	1.50	1.50	1.49	1.50	1.50	1.50
Malawi	FDI on GDP	2.24	0.89	1.37	1.57	2.06	2.63	6.54	9.30	7.78	12.88	0.90	2.09	2.38	2.64	2.35	2.87
	Weight	1.49	1.50	1.49	1.49	1.49	1.49	1.48	1.47	1.48	1.46	1.50	1.49	1.49	1.49	1.49	1.49
Malaysia	FDI on GDP	90.04	101.39	109.06	102.56	153.52	222.06	301.92	289.96	393.87	380.23	357.27	382.76	396.61	400.65	458.55	424.65
	Weight	1.22	1.19	1.19	1.22	1.13	1.07	1.02	0.97	0.95	0.96	0.96	0.95	0.96	0.95	0.94	0.97
Maldives	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Mali	FDI on GDP	4.58	0.53	1.40	1.87	1.26	0.54	1.49	1.12	1.04	1.65	1.63	3.05	3.22	2.65	8.78	14.54
	Weight	1.48	1.50	1.49	1.49	1.50	1.50	1.50	1.50	1.50	1.49	1.49	1.49	1.49	1.49	1.48	1.46
Malta	FDI on GDP	55.45	56.49	170.54	1676.22	3498.64	4885.91	7256.20	7463.03	7630.12	6932.31	7118.32	7916.72	7902.64	6573.17	6350.66	5811.09
	Weight	1.30	1.30	1.09	0.63	0.57	0.56	0.54	0.53	0.54	0.55	0.54	0.54	0.54	0.55	0.55	0.56
Marshall Islands	FDI on GDP																
	Weight		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Mauritania	FDI on GDP	3.39	3.59	2.40	4.23	4.48	3.24	2.55	2.86	3.15	6.52	5.76	5.18	7.98	13.62	15.21	15.76
	Weight	1.49	1.48	1.49	1.48	1.48	1.49	1.49	1.49	1.49	1.48	1.48	1.48	1.48	1.46	1.46	1.46
Mauritius	FDI on GDP	29.73	30.09	24.60	26.57	34.56	32.34	35.01	33.78	92.72	86.32	115.55	120.03	124.05	108.93	74.56	59.38
	Weight	1.38	1.38	1.41	1.41	1.38	1.40	1.40	1.39	1.28	1.29	1.22	1.22	1.23	1.25	1.33	1.36
Mexico	FDI on GDP	40.78	53.98	58.69	57.52	66.48	77.09	77.26	56.91	93.82	110.52	95.59	125.98	112.77	112.36	125.43	138.41
	Weight	1.35	1.30	1.31	1.32	1.30	1.30	1.31	1.32	1.28	1.25	1.26	1.21	1.25	1.25	1.24	1.23
Micronesia	FDI on GDP													15.60	15.19	15.33	14.64
	Weight	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Moldova	FDI on GDP	15.59	14.16	11.93	9.19	8.39	7.08	9.43	9.51	11.83	11.67	12.60	14.85	15.19	20.41	27.70	27.93
	Weight	1.44	1.44	1.45	1.47	1.47	1.48	1.47	1.46	1.47	1.47	1.46	1.45	1.46	1.44	1.43	1.43
Mongolia	FDI on GDP					0.91	16.61	16.41	13.46	28.25	363.84	168.81	71.85	27.89	34.88	37.34	40.62
	Weight	1.36	1.36	1.36	1.36	1.50	1.45	1.45	1.45	1.42	0.97	1.14	1.31	1.42	1.40	1.41	1.40
Montenegro	FDI on GDP								25.60	38.97	90.57	83.51	101.24	100.93	91.92	96.28	46.13
	Weight	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.41	1.39	1.28	1.28	1.26	1.27	1.28	1.29	1.39
Morocco	FDI on GDP	12.66	10.73	10.76	11.33	10.68	15.35	16.92	18.37	20.04	20.53	19.54	21.95	23.91	38.04	45.04	50.35
	Weight	1.45	1.45	1.46	1.46	1.46	1.45	1.45	1.43	1.44	1.44	1.44	1.43	1.43	1.40	1.39	1.38
Mozambique	FDI on GDP	0.10	0.08	0.04	0.03	0.05	0.10	0.07	0.05	0.20	0.27	0.76	1.19	0.64	6.32	7.35	13.06
	Weight	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.48	1.48	1.47
Myanmar	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Namibia	FDI on GDP	4.12	8.24	16.95	15.55	3.60	0.93	1.78	1.34	58.86	64.00	46.60	79.53	42.54	41.57	43.78	66.47
	Weight	1.48	1.46	1.44	1.44	1.49	1.50	1.49	1.49	1.35	1.34	1.37	1.30	1.39	1.39	1.39	1.35
Nauru	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Nepal	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Netherland Antilles	FDI on GDP	1.93	2.12	1.96	5.89	16.72	25.14	22.25	16.91	15.08	10.98	190.20	186.85	181.69	197.22	204.19	198.07
	Weight	1.49	1.49	1.49	1.48	1.44	1.42	1.44	1.44	1.46	1.47	1.11	1.13	1.15	1.13	1.14	1.15
Netherlands	FDI on GDP	778.66	852.08	970.19	971.41	938.98	1106.33	1126.32	959.72	1124.91	1157.48	1114.44	1219.71	1323.55	1187.17	1622.40	1798.43
	Weight	0.72	0.71	0.70	0.71	0.72	0.71	0.73	0.71	0.73	0.72	0.71	0.70	0.70	0.72	0.68	0.67
New Caledonia	FDI on GDP	1.52	2.39	5.03	6.49	11.04	14.34	13.17	20.80	27.28	32.22	37.04	47.17	56.29	55.57	60.10	65.04
	Weight	1.49	1.49	1.48	1.48	1.46	1.45	1.46	1.43	1.42	1.41	1.39	1.37	1.36	1.36	1.36	1.35
New Zealand	FDI on GDP	134.01	141.51	134.88	134.51	102.67	114.40	109.20	104.07	113.74	114.05	113.38	108.57	96.36	89.55	95.86	88.44
	Weight	1.13	1.11	1.15	1.16	1.22	1.22	1.25	1.21	1.24	1.24	1.23	1.24	1.28	1.29	1.29	1.31
Nicaragua	FDI on GDP					25.91	27.31	26.98	25.90	19.76	20.63	18.60	23.44	34.79	38.00	39.36	42.49
	Weight	1.42	1.42	1.42	1.42	1.41	1.42	1.42	1.41	1.44	1.44	1.44	1.43	1.41	1.40	1.40	1.40
Niger	FDI on GDP				2.68	0.56	1.65	1.17	2.40	13.93	1.60	2.73	2.89	16.38	23.28	28.45	31.49
	Weight	1.47	1.47	1.47	1.49	1.50	1.49	1.50	1.49	1.46	1.50	1.49	1.49	1.45	1.43	1.43	1.42
Nigeria	FDI on GDP	57.24	46.23	43.63	35.47	1.71	2.64	5.47	7.61	14.11	13.87	14.29	16.12	16.79	18.05	23.64	32.12
	Weight	1.30	1.33	1.35	1.38	1.49	1.49	1.48	1.47	1.46	1.46	1.45	1.45	1.45	1.45	1.44	1.42
North Korea	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Norway	FDI on GDP	215.32	240.90	249.54	332.82	323.50	376.09	382.96	312.03	461.42	440.42	388.75	424.66	349.29	346.55	473.51	519.36
	Weight	1.01	0.98	1.00	0.94	0.94	0.94	0.96	0.95	0.92	0.93	0.94	0.93	0.99	0.99	0.93	0.92

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Oman	FDI on GDP			4.07	5.25	11.71	17.20	14.35	19.52	26.82	47.68	59.14	63.92	74.07	88.73	109.27	118.00
	Weight	1.38	1.38	1.48	1.48	1.46	1.45	1.46	1.43	1.42	1.37	1.34	1.33	1.32	1.29	1.27	1.26
Pakistan	FDI on GDP	7.99	9.10	7.26	7.16	7.95	7.36	8.20	11.52	11.01	7.67	6.56	6.91	6.98	7.13	6.75	6.81
	Weight	1.47	1.46	1.47	1.47	1.47	1.48	1.48	1.46	1.47	1.48	1.48	1.48	1.48	1.48	1.48	1.48
Palau	FDI on GDP																
	Weight		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Palestine	FDI on GDP						8.15	15.23	11.93	20.49	27.03	18.37	20.56	13.71	28.15	35.10	29.79
	Weight	1.44	1.44	1.44	1.44	1.44	1.47	1.46	1.46	1.44	1.42	1.44	1.44	1.46	1.42	1.41	1.43
Panama	FDI on GDP									112.73	114.59	102.32	81.00	79.07	85.26	88.45	85.73
	Weight	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.24	1.24	1.25	1.30	1.31	1.30	1.30	1.31
Papua New Guinea	FDI on GDP	62.70	64.15	53.55	48.24	40.26	23.70	21.44	17.53	17.99	14.69	11.69	14.04	14.06	12.97	22.91	24.85
	Weight	1.28	1.28	1.32	1.34	1.37	1.43	1.44	1.44	1.45	1.46	1.46	1.46	1.46	1.46	1.44	1.44
Paraguay	FDI on GDP	7.84	21.01	8.92	14.02	9.94	15.34	6.09	6.55	5.16	4.55	2.69	4.40	7.27	9.46	11.34	11.38
	Weight	1.47	1.41	1.47	1.45	1.46	1.45	1.48	1.48	1.48	1.49	1.49	1.49	1.48	1.47	1.47	1.47
Peru	FDI on GDP	12.46	12.16	13.87	13.09	14.83	16.65	22.36	14.05	18.89	22.50	18.04	20.69	18.18	20.53	14.82	22.20
	Weight	1.45	1.45	1.45	1.45	1.45	1.45	1.44	1.45	1.45	1.44	1.44	1.44	1.45	1.44	1.46	1.44
Philippines	FDI on GDP	11.70	11.76	15.02	20.13	19.68	17.44	37.94	32.93	36.21	33.62	33.28	36.77	106.72	125.77	140.10	143.94
	Weight	1.45	1.45	1.44	1.43	1.43	1.45	1.40	1.39	1.40	1.41	1.40	1.40	1.26	1.22	1.22	1.22
Poland	FDI on GDP	1.60	2.17	1.76	2.74	5.80	12.77	16.97	15.37	26.16	34.23	35.80	52.17	58.48	50.90	57.64	62.05
	Weight	1.49	1.49	1.49	1.49	1.48	1.46	1.45	1.44	1.43	1.41	1.39	1.36	1.35	1.37	1.36	1.36
Portugal	FDI on GDP	181.75	154.44	205.58	228.64	207.43	249.62	281.99	239.57	274.83	261.37	250.94	263.33	268.68	238.68	286.25	272.81
	Weight	1.05	1.09	1.05	1.03	1.06	1.05	1.04	1.02	1.04	1.06	1.05	1.04	1.06	1.08	1.05	1.08
Qatar	FDI on GDP	5.22	3.64	6.74	18.80	21.30	17.67	78.23	64.78	109.22	100.26	135.02	131.10	163.62	190.39	267.63	337.36
	Weight	1.48	1.48	1.47	1.43	1.42	1.44	1.31	1.30	1.25	1.27	1.19	1.21	1.17	1.13	1.07	1.02
Romania	FDI on GDP	2.86	3.14	3.48	3.57	2.14	7.12	7.05	6.86	8.09	9.09	7.40	7.58	4.45	1.61	4.56	4.07
	Weight	1.49	1.49	1.49	1.49	1.49	1.48	1.48	1.47	1.48	1.47	1.48	1.48	1.49	1.50	1.49	1.49
Russia	FDI on GDP	141.08	177.29	208.02	178.97	182.25	235.25	279.66	118.78	235.79	220.57	153.90	150.59	167.74	159.82	206.56	260.19
	Weight	1.12	1.05	1.04	1.09	1.09	1.06	1.04	1.19	1.08	1.10	1.16	1.18	1.17	1.17	1.13	1.09
Rwanda	FDI on GDP							3.38	2.66	2.41	2.24	1.97	1.76	1.70	1.82	1.77	2.01
	Weight	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.50	1.49
Saint Helena	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Saint Lucia	FDI on GDP													112.47	153.39	155.35	141.59
	Weight	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.25	1.18	1.20	1.22
Saint Vincent and the Grenadines	FDI on GDP													85.26	98.83	100.15	99.73
	Weight	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.30	1.27	1.28	1.29

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Samoa	FDI on GDP			17.06	27.64	25.85	24.21	23.45	17.67	21.48	20.00	16.46	26.50	25.79	23.27	31.35	42.12
	Weight	1.43	1.43	1.44	1.40	1.41	1.43	1.43	1.44	1.44	1.44	1.45	1.42	1.43	1.43	1.42	1.40
San Marino	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Sao Tome and Principe	FDI on GDP					116.66	132.76	143.83	111.16	112.34	107.37	92.19	86.71	21.79	9.63	7.88	8.99
	Weight	1.31	1.31	1.31	1.31	1.19	1.19	1.20	1.20	1.24	1.25	1.27	1.28	1.44	1.47	1.48	1.48
Saudi Arabia	FDI on GDP	28.95	38.77	36.25	30.54	22.99	45.65	40.98	39.33	52.72	50.22	44.63	46.69	52.64	59.10	96.47	114.70
	Weight	1.39	1.35	1.37	1.39	1.42	1.37	1.39	1.37	1.36	1.37	1.37	1.37	1.36	1.35	1.29	1.26
Senegal	FDI on GDP		8.17	8.70	7.72	5.29	6.85	9.21	11.41	17.25	16.19	16.69	20.29	21.77	19.65	21.34	30.58
	Weight	1.46	1.46	1.47	1.47	1.48	1.48	1.47	1.46	1.45	1.45	1.45	1.44	1.44	1.44	1.44	1.42
Serbia	FDI on GDP								1.24	2.00	3.27	2.84	3.82	66.91	68.76	83.64	86.15
	Weight	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.50	1.49	1.49	1.49	1.49	1.33	1.33	1.31	1.31
Seychelles	FDI on GDP	223.32	211.72	220.81	194.71	214.16	201.53	215.41	243.63	284.45	254.90	239.38	255.27	215.64	224.83	226.43	224.38
	Weight	1.00	1.01	1.03	1.07	1.05	1.10	1.11	1.02	1.04	1.06	1.06	1.05	1.11	1.10	1.11	1.12
Sierra Leone	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Singapore	FDI on GDP	1009.36	1257.00	1465.72	1503.25	1500.66	1830.35	1924.05	1655.10	1981.09	1971.60	1816.12	1963.25	2034.55	2167.64	2340.45	2404.45
	Weight	0.68	0.65	0.64	0.65	0.65	0.64	0.65	0.64	0.64	0.64	0.64	0.64	0.64	0.63	0.63	0.63
Slovakia	FDI on GDP	23.40	21.61	24.48	18.95	11.91	21.53	24.11	29.31	35.44	38.62	40.96	51.01	49.04	27.94	28.14	29.53
	Weight	1.41	1.41	1.41	1.43	1.46	1.43	1.43	1.40	1.40	1.39	1.38	1.36	1.37	1.42	1.43	1.43
Slovenia	FDI on GDP	47.24	64.05	79.70	87.58	90.13	114.13	155.72	152.34	176.14	169.69	152.59	162.53	148.43	129.79	139.23	134.71
	Weight	1.33	1.28	1.26	1.25	1.24	1.22	1.18	1.13	1.15	1.16	1.16	1.16	1.19	1.22	1.22	1.23
Small financial centres and other territories*	FDI on GDP	49816.78	55861.61	62442.65	63113.71	63326.39	66860.42	76960.56	88427.34	95571.04	105239.88	119576.04	132589.22	158019.52	173057.77	188452.78	191482.77
	Weight	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Solomon Islands	FDI on GDP						14.77	36.59	35.71	41.04	39.38	35.68	33.74	41.87	41.13	43.42	40.98
	Weight	1.40	1.40	1.40	1.40	1.40	1.45	1.40	1.38	1.39	1.39	1.39	1.40	1.39	1.39	1.39	1.40
Somalia	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
South Africa	FDI on GDP	119.15	170.07	139.08	151.02	120.45	151.31	184.40	172.40	237.54	221.79	233.06	282.04	350.97	416.45	487.14	593.87
	Weight	1.15	1.07	1.14	1.13	1.18	1.16	1.14	1.10	1.08	1.10	1.06	1.03	0.99	0.94	0.92	0.88
South Korea	FDI on GDP	37.46	34.05	36.72	42.05	43.07	48.61	66.61	97.74	134.47	131.60	143.38	165.91	182.91	184.58	206.78	219.27
	Weight	1.36	1.37	1.37	1.36	1.36	1.36	1.33	1.23	1.21	1.21	1.18	1.15	1.15	1.14	1.13	1.13
South Sudan	FDI on GDP																
	Weight											1.00	1.00	1.00	1.00	1.00	1.00
Spain	FDI on GDP	229.37	231.99	243.72	263.94	263.92	344.84	393.46	361.28	417.45	456.29	441.18	476.59	403.70	376.91	411.17	426.17
	Weight	1.00	0.99	1.00	0.99	1.00	0.97	0.96	0.92	0.94	0.92	0.91	0.90	0.95	0.97	0.96	0.96

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Sri Lanka	FDI on GDP	3.82	4.33	5.24	5.08	5.86	6.08	7.02	7.09	7.34	6.19	6.30	6.94	7.27	7.65	10.13	14.91
	Weight	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.47	1.48	1.48	1.48	1.48	1.48	1.48	1.47	1.46
Sudan	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Suriname	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Swaziland	FDI on GDP	27.31	40.80	43.08	39.71	23.84	20.71	27.02	6.75	8.77	20.45	14.04	9.71	10.78	5.64	4.50	37.69
	Weight	1.39	1.34	1.35	1.37	1.42	1.44	1.42	1.47	1.47	1.44	1.46	1.47	1.47	1.48	1.49	1.41
Sweden	FDI on GDP	513.82	556.32	584.07	585.96	560.43	658.53	713.67	656.58	869.06	807.87	705.29	747.39	761.91	702.90	741.91	724.87
	Weight	0.81	0.78	0.80	0.81	0.82	0.81	0.82	0.78	0.77	0.79	0.80	0.80	0.81	0.82	0.82	0.84
Switzerland	FDI on GDP	905.41	969.65	967.54	1016.62	1058.26	1324.45	1363.41	1308.43	1600.14	1786.96	1581.26	1781.88	1738.86	1542.94	1673.29	1792.76
	Weight	0.70	0.69	0.70	0.70	0.70	0.68	0.69	0.67	0.67	0.65	0.66	0.65	0.66	0.68	0.68	0.67
Syrian Arab Republic	FDI on GDP	0.24	0.23	0.23	0.20	0.17	0.15	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
	Weight	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Taiwan	FDI on GDP	235.68	248.80	264.15	261.95	274.97	315.86	370.28	392.12	433.61	392.86	429.63	449.14	504.89	560.22	571.61	585.04
	Weight	0.99	0.97	0.98	1.00	0.99	0.99	0.97	0.90	0.93	0.95	0.91	0.91	0.90	0.87	0.88	0.89
Tajikistan	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Tanzania	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Thailand	FDI on GDP	28.73	23.77	27.30	25.46	27.30	30.06	31.59	36.25	52.89	62.65	101.79	124.27	138.70	154.64	175.35	209.34
	Weight	1.39	1.40	1.40	1.41	1.40	1.41	1.41	1.38	1.36	1.34	1.25	1.22	1.21	1.18	1.17	1.14
Timor-Leste	FDI on GDP										23.51	10.74	11.04	15.28	21.34	31.89	44.29
	Weight	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.43	1.47	1.47	1.46	1.44	1.42	1.39
Togo	FDI on GDP			1.32					16.45	28.27	36.71	286.55	403.17	372.85	382.19	456.54	469.30
	Weight	1.15	1.15	1.49	1.15	1.15	1.15	1.15	1.44	1.42	1.40	1.01	0.94	0.97	0.96	0.94	0.94
Tonga	FDI on GDP	109.05	122.62	135.48	166.74	163.34	151.30	155.88	143.59	173.64	157.90	174.84	172.33	197.25	226.13	242.74	266.44
	Weight	1.17	1.14	1.15	1.11	1.11	1.16	1.18	1.14	1.15	1.17	1.13	1.15	1.13	1.09	1.10	1.08
Trinidad and Tobago	FDI on GDP	39.79	50.79	60.39	53.32	65.64	77.25	65.57	76.03	110.53	95.64	16.82	21.69	23.19	22.04	32.17	20.76
	Weight	1.35	1.31	1.30	1.33	1.30	1.30	1.33	1.27	1.25	1.27	1.45	1.44	1.44	1.44	1.42	1.45
Tunisia	FDI on GDP	1.45	1.59	1.57	1.50	1.61	2.58	3.01	3.40	5.31	6.52	6.48	6.59	6.67	6.01	6.75	11.10
	Weight	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.47
Turkey	FDI on GDP	22.88	24.52	19.68	17.44	16.58	16.05	18.07	23.35	34.52	29.16	33.25	35.43	35.06	42.36	41.49	44.81
	Weight	1.41	1.40	1.43	1.44	1.44	1.45	1.45	1.42	1.40	1.42	1.40	1.40	1.41	1.39	1.40	1.39
Turkmenistan	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Turks and Caicos Islands	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Tuvalu	FDI on GDP																
	Weight							1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
US Pacific Islands	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
USA	FDI on GDP	217.94	184.25	237.10	273.96	277.84	322.63	364.35	210.78	299.76	321.40	290.91	323.29	374.69	360.16	331.54	341.56
	Weight	1.01	1.05	1.01	0.99	0.98	0.98	0.98	1.05	1.02	1.00	1.01	0.99	0.97	0.98	1.02	1.02
Uganda	FDI on GDP									1.59	3.27	2.69	4.35	2.17	2.94	2.98	3.35
	Weight	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.50	1.49	1.49	1.49	1.49	1.49	1.49	1.49
Ukraine	FDI on GDP	4.11	3.40	3.31	3.05	5.44	3.20	42.62	38.96	50.12	48.14	40.32	43.87	42.69	56.81	81.76	80.01
	Weight	1.48	1.48	1.49	1.49	1.48	1.49	1.39	1.37	1.37	1.37	1.38	1.38	1.39	1.35	1.31	1.32
United Arab Emirates	FDI on GDP	20.83	23.61	28.82	39.18	52.83	92.00	135.71	161.10	211.18	191.73	164.65	160.91	177.14	200.52	272.33	309.47
	Weight	1.42	1.40	1.40	1.37	1.33	1.27	1.21	1.12	1.11	1.13	1.15	1.16	1.15	1.12	1.07	1.04
United Kingdom	FDI on GDP	557.73	588.98	610.00	554.60	491.65	543.29	600.71	564.47	689.44	690.76	659.84	636.31	655.54	556.20	539.73	562.85
	Weight	0.79	0.77	0.79	0.82	0.85	0.86	0.85	0.82	0.82	0.82	0.81	0.83	0.84	0.87	0.90	0.90
Uruguay	FDI on GDP	6.32	7.94	9.26	8.97	9.15	11.16	14.38	8.51	12.61	8.57	7.39	104.72	105.90	105.13	102.97	103.62
	Weight	1.47	1.47	1.46	1.47	1.47	1.46	1.46	1.47	1.46	1.47	1.48	1.25	1.26	1.26	1.28	1.28
Uzbekistan	FDI on GDP																
	Weight	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Vanuatu	FDI on GDP		35.49	37.66	36.42	34.15	34.64	32.98	27.10	33.21	32.14	29.47	31.11	29.19	27.85	30.69	29.43
	Weight	1.40	1.36	1.37	1.38	1.38	1.40	1.41	1.41	1.41	1.41	1.41	1.41	1.42	1.42	1.42	1.43
Venezuela	FDI on GDP	64.23	94.00	114.18	81.59	64.80	67.19	58.43	44.84	59.06	48.76	70.64	69.22	71.31	53.94	53.60	54.11
	Weight	1.28	1.20	1.18	1.26	1.30	1.32	1.35	1.35	1.35	1.37	1.31	1.32	1.32	1.36	1.37	1.37
Viet Nam	FDI on GDP					1.13	2.26	4.31	6.40	12.58	19.27	23.49	28.14	37.03	40.22	44.45	48.61
	Weight	1.44	1.44	1.44	1.44	1.50	1.49	1.49	1.48	1.46	1.44	1.43	1.42	1.40	1.39	1.39	1.38
Wallis and Futuna	FDI on GDP																
	Weight	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Yemen	FDI on GDP	2.76	5.18	8.85	9.07	8.92	8.33	9.15	15.91	19.89	18.48	19.22	18.01	15.91	15.14	14.45	18.11
	Weight	1.49	1.48	1.47	1.47	1.47	1.47	1.47	1.44	1.44	1.45	1.44	1.45	1.45	1.46	1.46	1.45
Zambia	FDI on GDP						5.31	10.93	54.23	83.47	124.88	107.83	55.25	93.76	43.28	68.88	77.55
	Weight	1.34	1.34	1.34	1.34	1.34	1.48	1.47	1.33	1.30	1.22	1.24	1.35	1.28	1.38	1.34	1.33
Zimbabwe	FDI on GDP	35.07	37.98	42.09	41.53	42.08	44.49	46.36	57.37	26.21	24.63	24.06	22.69	21.75	25.00	25.51	26.19
	Weight	1.37	1.35	1.35	1.36	1.36	1.37	1.38	1.32	1.43	1.43	1.43	1.43	1.44	1.43	1.43	1.43

Sources: Own computations. Notes: * Small financial centres and other territories include: Anguilla, Antigua and Barbuda, The British Virgin Islands, Montserrat and St. Christopher, St. Kitts and Nevis, The British Antarctic Territory, The British Indian Ocean Territory, Chagos, Pitcairn Islands, South Georgia and the South Sandwich Islands, the Falkland Islands.

Tables of Estimated Offshore Wealth by Country

Table 24. Estimated Offshore Wealth by Country (% of Global Offshore Wealth)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EU-28 (Total)	36.96%	35.00%	36.57%	35.14%	30.88%	29.53%	28.11%	23.59%	24.47%	20.85%	21.63%	21.44%	21.28%	20.79%	19.43%	20.37%
OECD (Total)	70.03%	73.14%	73.42%	71.35%	68.08%	67.26%	65.18%	66.53%	64.65%	62.65%	57.49%	51.68%	51.35%	48.49%	45.01%	41.59%
Member States																
Austria	0.78%	0.76%	0.72%	0.65%	0.64%	0.79%	0.66%	0.51%	0.67%	0.64%	0.56%	0.53%	0.56%	0.59%	0.58%	0.55%
Belgium	1.71%	1.88%	1.99%	1.82%	1.57%	1.10%	1.26%	1.08%	1.24%	0.82%	0.84%	1.05%	0.89%	0.72%	0.62%	0.84%
Bulgaria	0.06%	0.05%	0.05%	0.05%	0.08%	0.08%	0.10%	0.09%	0.11%	0.15%	0.13%	0.17%	0.13%	0.11%	0.12%	0.19%
Croatia	0.09%	0.08%	0.07%	0.07%	0.08%	0.08%	0.07%	0.11%	0.11%	0.10%	0.15%	0.13%	0.08%	0.07%	0.06%	0.05%
Cyprus	0.10%	0.11%	0.10%	0.12%	0.14%	0.17%	0.21%	0.15%	0.17%	0.15%	0.15%	0.15%	0.12%	0.11%	0.11%	0.13%
Czech Republic	0.33%	0.20%	0.23%	0.22%	0.24%	0.39%	0.28%	0.27%	0.28%	0.28%	0.28%	0.32%	0.31%	0.33%	0.30%	0.45%
Denmark	0.07%	0.07%	0.09%	0.10%	0.10%	0.11%	0.09%	0.07%	0.07%	0.06%	0.09%	0.09%	0.11%	0.11%	0.09%	0.07%
Estonia	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.03%	0.03%	0.02%	0.03%	0.04%	0.04%
Finland	0.10%	0.09%	0.10%	0.10%	0.09%	0.09%	0.10%	0.41%	0.10%	0.06%	0.11%	0.10%	0.11%	0.11%	0.06%	0.09%
France	4.79%	4.99%	5.04%	5.62%	4.22%	4.02%	3.95%	3.36%	3.42%	3.40%	3.87%	3.88%	4.09%	4.10%	3.68%	3.70%
Germany	11.02%	10.11%	11.04%	10.81%	9.22%	9.31%	8.64%	7.05%	7.75%	5.90%	5.55%	4.96%	4.68%	4.66%	4.13%	4.43%
Greece	1.17%	1.00%	1.09%	1.09%	0.78%	0.79%	0.93%	0.75%	0.78%	1.01%	1.04%	0.95%	0.85%	0.83%	0.80%	0.84%
Hungary	0.09%	0.12%	0.14%	0.11%	0.10%	0.15%	0.10%	0.10%	0.11%	0.12%	0.14%	0.16%	0.11%	0.15%	0.09%	0.10%
Ireland	0.29%	0.29%	0.43%	0.43%	0.49%	0.45%	0.23%	0.29%	0.23%	0.23%	0.22%	0.21%	0.18%	0.20%	0.22%	0.27%
Italy	5.66%	5.22%	4.75%	4.19%	3.25%	2.88%	2.53%	2.27%	2.57%	1.71%	1.87%	2.00%	2.27%	1.99%	1.94%	1.90%
Latvia	0.06%	0.04%	0.04%	0.03%	0.04%	0.04%	0.03%	0.04%	0.06%	0.05%	0.05%	0.05%	0.04%	0.04%	0.07%	0.05%
Lithuania	0.03%	0.03%	0.02%	0.02%	0.02%	0.03%	0.03%	0.03%	0.03%	0.02%	0.03%	0.04%	0.03%	0.03%	0.03%	0.03%
Luxembourg	0.05%	0.06%	0.03%	0.04%	0.06%	0.08%	0.10%	0.06%	0.07%	0.08%	0.07%	0.05%	0.05%	0.04%	0.06%	0.06%
Malta	0.04%	0.04%	0.05%	0.04%	0.03%	0.07%	0.03%	0.01%	0.03%	0.03%	0.04%	0.04%	0.04%	0.06%	0.06%	0.07%
Netherlands	1.27%	0.95%	0.81%	0.76%	0.61%	0.62%	0.77%	0.82%	0.89%	0.72%	1.05%	0.75%	0.86%	0.62%	0.76%	0.70%
Poland	0.29%	0.27%	0.23%	0.21%	0.23%	0.23%	0.23%	0.20%	0.19%	0.17%	0.18%	0.26%	0.23%	0.24%	0.29%	0.43%
Portugal	1.20%	1.12%	1.26%	1.16%	1.06%	1.06%	0.96%	0.87%	0.80%	0.83%	0.82%	0.85%	0.90%	0.84%	0.72%	0.62%
Romania	0.07%	0.07%	0.06%	0.07%	0.10%	0.08%	0.07%	0.10%	0.10%	0.10%	0.11%	0.11%	0.13%	0.11%	0.11%	0.14%
Slovakia	0.06%	0.06%	0.05%	0.05%	0.05%	0.05%	0.06%	0.04%	0.04%	0.04%	0.05%	0.05%	0.08%	0.09%	0.07%	0.06%
Slovenia	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.04%	0.04%	0.03%	0.02%	0.02%	0.03%
Spain	2.55%	2.55%	3.02%	2.72%	2.84%	1.66%	1.50%	1.23%	1.26%	1.12%	1.25%	1.74%	1.74%	1.33%	1.33%	1.36%
Sweden	0.29%	0.36%	0.39%	0.43%	0.33%	0.50%	0.61%	0.28%	0.25%	0.23%	0.26%	0.26%	0.23%	0.43%	0.26%	0.21%
United Kingdom	4.73%	4.43%	4.71%	4.20%	4.47%	4.66%	4.52%	3.32%	3.10%	2.76%	2.66%	2.46%	2.41%	2.86%	2.80%	2.92%
Others																
Australia	0.70%	0.79%	0.82%	0.85%	0.92%	0.95%	0.76%	0.77%	1.18%	0.89%	0.99%	1.00%	1.02%	1.07%	0.96%	1.06%
Brazil	3.45%	2.85%	2.45%	2.15%	2.13%	1.98%	1.76%	1.91%	1.30%	1.77%	2.14%	1.86%	1.83%	1.72%	1.74%	1.28%
Canada	0.80%	0.76%	0.72%	0.63%	0.75%	0.78%	0.69%	0.78%	0.72%	0.78%	0.74%	0.85%	0.79%	0.96%	0.66%	0.58%
China	2.36%	2.14%	3.24%	4.25%	4.49%	4.86%	7.31%	6.04%	7.48%	8.51%	10.04%	13.66%	14.07%	16.62%	20.61%	24.63%
India	1.03%	0.80%	0.67%	0.68%	0.87%	1.01%	1.41%	1.10%	1.28%	1.01%	1.00%	0.50%	0.49%	0.43%	0.49%	0.43%
Japan	1.37%	1.31%	1.15%	2.67%	2.22%	2.14%	2.16%	2.46%	2.26%	2.81%	3.30%	1.25%	1.11%	1.06%	1.16%	1.05%
Russia	1.44%	1.28%	1.15%	1.13%	1.43%	1.63%	1.73%	2.38%	2.45%	2.35%	2.84%	3.34%	2.98%	3.53%	3.17%	2.45%
South Korea	0.28%	0.34%	0.53%	0.45%	0.30%	0.40%	0.59%	0.46%	0.45%	0.53%	0.69%	0.50%	0.68%	1.12%	1.31%	0.91%
USA	21.36%	27.02%	23.89%	22.91%	23.02%	22.59%	22.45%	28.98%	27.56%	28.76%	22.73%	19.42%	19.10%	16.86%	14.79%	12.07%

Sources: Own computations.

Table 25. Estimated Offshore Wealth (% of GDP)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EU-28 (Total)	15.7%	13.0%	11.9%	11.4%	10.8%	9.7%	10.8%	6.6%	8.1%	6.1%	6.6%	8.9%	8.7%	9.3%	10.0%	9.7%
OECD (Total)	9.9%	9.4%	9.0%	9.0%	9.2%	8.6%	10.3%	7.8%	8.6%	7.0%	6.7%	7.8%	7.8%	8.2%	8.1%	6.9%
Members States																
<i>Austria</i>	15.2%	12.9%	10.7%	9.7%	10.2%	11.9%	11.5%	6.4%	9.4%	8.2%	7.2%	9.3%	9.6%	11.1%	12.7%	11.1%
<i>Belgium</i>	27.6%	26.5%	24.3%	22.0%	20.4%	13.5%	18.2%	11.1%	14.4%	8.4%	8.9%	15.2%	12.5%	11.3%	11.4%	14.1%
<i>Bulgaria</i>	16.6%	11.6%	8.6%	8.0%	12.9%	11.6%	15.2%	9.0%	12.2%	14.5%	12.5%	23.1%	17.0%	16.1%	20.5%	28.8%
<i>Croatia</i>	14.3%	11.1%	8.1%	7.4%	8.7%	7.9%	8.3%	8.6%	9.9%	8.7%	13.7%	16.3%	10.1%	9.7%	10.4%	8.1%
<i>Cyprus</i>	37.1%	33.7%	25.7%	31.5%	37.8%	42.5%	58.5%	29.5%	36.7%	29.1%	31.1%	43.5%	36.8%	39.2%	48.0%	49.6%
<i>Czech Republic</i>	18.5%	8.8%	9.2%	8.2%	8.9%	12.5%	10.1%	6.2%	7.6%	6.8%	6.9%	11.0%	10.8%	13.3%	13.5%	18.2%
<i>Denmark</i>	1.6%	1.5%	1.6%	1.8%	1.8%	2.0%	1.9%	1.1%	1.3%	0.9%	1.5%	2.0%	2.3%	2.6%	2.6%	1.8%
<i>Estonia</i>	11.9%	11.1%	8.7%	7.3%	8.0%	7.0%	5.3%	3.9%	7.1%	4.6%	6.1%	7.9%	7.1%	9.4%	13.8%	13.3%
<i>Finland</i>	3.0%	2.5%	2.2%	2.2%	2.2%	2.0%	2.7%	7.7%	2.1%	1.2%	2.2%	2.9%	3.1%	3.3%	2.3%	2.9%
<i>France</i>	13.3%	12.2%	10.7%	11.9%	9.7%	8.7%	10.1%	6.2%	7.2%	6.4%	7.5%	10.4%	10.7%	12.0%	12.7%	11.8%
<i>Germany</i>	21.6%	17.7%	17.1%	17.1%	16.2%	15.6%	17.1%	10.1%	12.8%	8.6%	8.2%	10.1%	9.2%	10.0%	10.3%	10.0%
<i>Greece</i>	33.0%	23.7%	20.9%	20.3%	15.8%	14.6%	19.9%	11.3%	13.3%	16.7%	20.1%	28.0%	26.0%	29.4%	34.6%	34.4%
<i>Hungary</i>	6.4%	6.6%	6.3%	4.7%	4.4%	6.6%	5.0%	3.4%	4.8%	4.6%	5.6%	9.1%	5.9%	8.7%	5.9%	6.4%
<i>Ireland</i>	10.3%	8.3%	10.2%	9.8%	11.8%	9.8%	5.9%	5.6%	5.6%	5.1%	5.1%	6.7%	5.5%	6.3%	6.4%	7.0%
<i>Italy</i>	18.7%	15.0%	11.8%	10.4%	8.8%	7.5%	7.8%	5.1%	6.6%	4.0%	4.6%	7.0%	7.8%	7.7%	8.9%	8.1%
<i>Latvia</i>	27.2%	16.6%	12.4%	9.9%	11.7%	9.7%	6.4%	6.6%	12.7%	10.1%	10.0%	14.1%	10.3%	11.5%	21.6%	14.9%
<i>Lithuania</i>	8.5%	7.0%	4.6%	4.0%	3.1%	5.0%	5.1%	3.5%	4.6%	3.3%	4.3%	6.0%	5.2%	5.1%	5.5%	5.1%
<i>Luxembourg</i>	8.2%	9.4%	4.5%	5.5%	7.9%	9.0%	13.3%	6.1%	7.8%	7.7%	6.8%	6.4%	5.6%	5.2%	9.0%	7.8%
<i>Malta</i>	37.7%	33.8%	35.1%	27.0%	25.7%	50.3%	23.8%	8.4%	17.4%	16.5%	24.8%	32.1%	30.4%	42.4%	44.9%	48.3%
<i>Netherlands</i>	11.4%	7.4%	5.5%	5.2%	4.6%	4.3%	6.3%	4.7%	5.9%	4.3%	6.5%	6.5%	7.3%	5.9%	8.5%	7.1%
<i>Poland</i>	5.9%	4.9%	4.2%	3.6%	3.9%	3.4%	3.7%	2.0%	2.4%	1.7%	1.8%	3.7%	3.2%	3.7%	5.1%	7.2%
<i>Portugal</i>	37.9%	30.4%	29.7%	27.4%	27.0%	25.6%	27.2%	17.8%	18.4%	17.3%	18.6%	28.3%	29.4%	30.4%	30.6%	23.9%
<i>Romania</i>	6.6%	5.4%	4.1%	3.9%	5.0%	3.3%	2.9%	2.5%	3.3%	2.9%	3.3%	4.8%	5.1%	4.6%	5.2%	5.8%
<i>Slovakia</i>	7.0%	6.0%	4.5%	3.8%	3.9%	3.3%	4.4%	2.3%	2.7%	2.4%	2.8%	3.8%	5.9%	7.3%	6.4%	5.0%
<i>Slovenia</i>	6.0%	4.4%	3.7%	3.6%	3.6%	3.4%	3.9%	3.0%	3.3%	3.2%	3.8%	5.6%	4.6%	3.3%	4.4%	5.4%
<i>Spain</i>	15.6%	13.2%	12.9%	11.4%	12.3%	6.6%	6.9%	4.0%	4.7%	3.9%	4.7%	9.4%	9.4%	8.1%	9.4%	8.7%
<i>Sweden</i>	4.6%	5.0%	4.5%	5.0%	4.2%	6.0%	8.5%	2.9%	3.3%	2.3%	2.6%	3.4%	2.9%	6.2%	4.5%	3.3%
<i>United Kingdom</i>	11.2%	9.1%	9.0%	7.8%	8.9%	8.7%	10.0%	6.1%	7.3%	5.6%	5.7%	6.7%	6.5%	7.9%	8.2%	8.7%
Others																
<i>Australia</i>	7.1%	7.3%	6.8%	6.2%	6.7%	6.4%	6.1%	3.9%	7.2%	3.9%	4.0%	4.7%	4.8%	6.1%	6.0%	6.9%
<i>Brazil</i>	23.6%	20.4%	17.1%	14.4%	12.0%	9.0%	8.6%	6.0%	4.4%	4.0%	4.6%	5.5%	5.5%	5.9%	8.1%	5.6%
<i>Canada</i>	4.2%	3.7%	3.1%	2.7%	3.2%	3.0%	3.2%	2.7%	3.0%	2.4%	2.3%	3.4%	3.2%	4.5%	3.6%	3.0%
<i>China</i>	6.8%	5.3%	7.6%	9.7%	9.9%	8.9%	14.0%	7.0%	8.3%	6.9%	7.4%	11.5%	10.8%	13.3%	15.7%	17.3%
<i>India</i>	8.3%	5.7%	4.3%	4.4%	5.4%	5.5%	8.0%	5.0%	5.4%	3.0%	3.1%	2.0%	1.9%	1.8%	2.0%	1.5%
<i>Japan</i>	1.2%	1.2%	1.0%	2.5%	2.4%	2.4%	3.3%	2.6%	2.4%	2.4%	3.0%	1.5%	1.6%	1.8%	2.2%	1.7%
<i>Russia</i>	18.0%	13.5%	10.4%	8.5%	9.4%	8.3%	9.1%	7.7%	11.3%	7.6%	7.7%	10.9%	9.6%	14.3%	19.5%	15.0%
<i>South Korea</i>	2.0%	2.0%	3.0%	2.6%	1.7%	2.0%	3.6%	2.4%	2.8%	2.4%	3.2%	2.9%	3.8%	6.7%	8.0%	5.1%
<i>USA</i>	7.7%	9.0%	8.1%	8.3%	8.9%	8.2%	10.6%	10.5%	10.8%	9.5%	8.2%	8.7%	8.4%	8.1%	6.9%	5.1%

Sources: Own computations and WDI for GDP.

Table 26. Estimated Offshore Wealth by Member States (Billions of Euros)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EU-28 (Total)	1606.91	1216.14	1125.82	1153.61	1317.64	1129.94	1302.14	907.08	958.08	774.50	931.94	1171.22	1137.22	1433.16	1504.57	1520.65
<i>Austria</i>	34.03	26.28	22.18	21.35	27.43	30.42	30.36	19.73	26.15	23.95	23.92	28.76	29.89	40.53	44.53	41.09
<i>Belgium</i>	74.50	65.34	61.26	59.77	66.87	42.01	58.36	41.42	48.39	30.32	36.29	57.24	47.32	49.54	47.84	62.65
<i>Bulgaria</i>	2.65	1.80	1.42	1.52	3.24	3.02	4.58	3.53	4.39	5.50	5.55	9.43	6.85	7.53	9.46	14.54
<i>Croatia</i>	3.79	2.86	2.23	2.26	3.35	3.03	3.37	4.37	4.32	3.87	6.60	6.99	4.25	4.61	4.74	3.99
<i>Cyprus</i>	4.38	3.67	2.96	4.01	5.91	6.48	9.52	5.90	6.62	5.56	6.58	8.25	6.42	7.55	8.67	9.62
<i>Czech Republic</i>	14.20	6.89	7.22	7.15	10.26	14.77	12.97	10.50	10.88	10.54	12.22	17.34	16.47	22.85	23.15	33.75
<i>Denmark</i>	2.91	2.48	2.84	3.35	4.07	4.25	4.19	2.73	2.81	2.24	3.98	5.01	5.67	7.63	7.11	5.10
<i>Estonia</i>	0.85	0.78	0.68	0.65	0.95	0.90	0.80	0.67	0.97	0.67	1.09	1.37	1.29	2.02	2.87	2.94
<i>Finland</i>	4.44	3.28	3.04	3.20	3.78	3.30	4.62	15.80	3.72	2.31	4.64	5.58	6.15	7.32	5.01	6.66
<i>France</i>	208.41	173.44	155.29	184.39	180.05	153.67	183.15	129.28	133.88	126.50	166.53	212.20	218.70	282.38	285.03	276.60
<i>Germany</i>	479.16	351.16	339.82	354.81	393.62	356.13	400.32	271.26	303.55	219.25	238.89	271.24	249.85	321.26	320.13	331.10
<i>Greece</i>	50.97	34.70	33.41	35.90	33.28	30.26	42.95	28.88	30.38	37.42	44.68	52.12	45.23	57.38	62.15	62.94
<i>Hungary</i>	3.90	4.29	4.23	3.57	4.22	5.74	4.75	3.82	4.37	4.54	6.09	8.86	5.82	10.00	6.65	7.68
<i>Ireland</i>	12.81	10.14	13.24	13.98	21.12	17.25	10.87	11.14	9.19	8.40	9.39	11.49	9.46	13.45	17.18	20.15
<i>Italy</i>	246.14	181.26	146.34	137.65	138.87	110.29	117.00	87.25	100.62	63.62	80.56	109.49	121.17	136.85	150.13	142.20
<i>Latvia</i>	2.58	1.51	1.15	1.04	1.68	1.58	1.35	1.70	2.30	1.79	2.18	3.00	2.25	2.97	5.36	3.91
<i>Lithuania</i>	1.19	0.96	0.69	0.66	0.69	1.14	1.39	1.19	1.18	0.92	1.45	1.94	1.75	2.04	2.10	2.07
<i>Luxembourg</i>	1.99	2.12	1.05	1.40	2.51	2.91	4.60	2.44	2.78	3.08	3.17	2.77	2.49	2.86	4.77	4.31
<i>Malta</i>	1.85	1.51	1.52	1.20	1.39	2.58	1.28	0.54	1.03	1.08	1.82	2.24	2.24	3.92	4.35	5.17
<i>Netherlands</i>	55.32	32.99	25.02	25.06	26.24	23.74	35.87	31.44	34.94	26.88	45.18	40.91	46.00	42.86	59.10	52.61
<i>Poland</i>	12.75	9.38	7.19	6.78	10.01	8.84	10.86	7.69	7.27	6.14	7.55	14.19	12.33	16.66	22.30	32.16
<i>Portugal</i>	52.22	38.87	38.76	38.01	45.13	40.57	44.42	33.46	31.17	30.83	35.27	46.34	48.20	57.59	56.11	46.56
<i>Romania</i>	3.06	2.37	1.92	2.16	4.22	3.05	3.47	3.81	3.99	3.63	4.70	6.24	7.04	7.52	8.54	10.33
<i>Slovakia</i>	2.43	2.00	1.65	1.58	2.07	1.78	2.59	1.67	1.68	1.62	2.13	2.70	4.22	6.06	5.12	4.22
<i>Slovenia</i>	1.43	1.00	0.86	0.92	1.11	1.03	1.29	1.21	1.14	1.16	1.51	1.97	1.61	1.37	1.74	2.31
<i>Spain</i>	110.80	88.52	92.86	89.28	121.03	63.64	69.48	47.42	49.25	41.73	54.05	95.29	93.26	91.90	103.13	101.58
<i>Sweden</i>	12.44	12.59	11.93	14.07	13.93	19.09	28.31	10.72	9.86	8.45	11.26	14.02	12.23	29.31	20.37	16.05
<i>United Kingdom</i>	205.70	153.94	145.06	137.89	190.61	178.44	209.43	127.51	121.27	102.46	114.64	134.25	129.06	197.20	216.93	218.35

Sources: Own computations

Table 27. Estimated Share of Indirect Offshore Wealth

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
EU-28 (Total)	39.4%	37.7%	36.6%	34.5%	40.9%	43.5%	43.1%	36.0%	36.6%	36.2%	35.9%	37.8%	35.1%	36.3%	36.3%	36.5%
OECD (Total)	35.4%	31.2%	30.5%	29.7%	34.1%	35.4%	33.4%	26.5%	27.9%	25.5%	28.4%	31.7%	30.4%	33.0%	34.2%	36.2%
Member States																
<i>Austria</i>	42.8%	41.7%	40.4%	39.2%	48.4%	49.8%	47.9%	40.9%	38.9%	37.5%	38.5%	39.9%	35.0%	37.6%	37.2%	38.8%
<i>Belgium</i>	36.7%	35.0%	34.5%	32.0%	35.0%	37.2%	41.3%	33.7%	29.1%	36.3%	35.0%	37.3%	35.6%	34.7%	34.9%	34.2%
<i>Bulgaria</i>	44.5%	43.9%	42.2%	40.7%	40.8%	41.1%	41.1%	46.4%	47.2%	42.6%	42.2%	41.3%	38.2%	39.5%	38.0%	32.0%
<i>Croatia</i>	44.8%	44.5%	42.4%	40.8%	41.0%	41.0%	41.1%	41.2%	41.3%	41.2%	41.3%	41.1%	40.6%	40.1%	38.8%	38.7%
<i>Cyprus</i>	44.4%	43.2%	43.0%	41.1%	50.8%	52.4%	51.5%	44.3%	46.0%	44.4%	41.9%	41.7%	37.1%	39.3%	38.6%	38.6%
<i>Czech Republic</i>	43.1%	43.1%	40.5%	40.8%	51.3%	54.8%	53.9%	46.0%	46.7%	45.3%	42.7%	42.9%	37.1%	40.0%	38.5%	38.9%
<i>Denmark</i>	39.3%	38.2%	37.6%	37.1%	44.4%	38.5%	41.8%	38.1%	36.7%	35.7%	31.0%	33.5%	32.6%	33.4%	35.6%	35.9%
<i>Estonia</i>	44.7%	44.2%	41.5%	40.7%	49.5%	51.6%	51.6%	43.5%	46.3%	44.7%	43.1%	43.2%	38.4%	39.7%	38.1%	37.0%
<i>Finland</i>	39.5%	38.7%	37.5%	34.5%	39.9%	41.2%	41.1%	20.0%	33.6%	35.8%	27.9%	33.0%	29.4%	34.8%	37.1%	37.8%
<i>France</i>	40.1%	37.6%	35.8%	32.7%	41.6%	44.4%	42.8%	34.8%	37.6%	35.1%	35.3%	37.4%	35.2%	35.5%	36.1%	36.4%
<i>Germany</i>	35.0%	34.7%	34.4%	31.8%	36.4%	38.4%	39.0%	33.1%	34.4%	36.0%	35.3%	38.8%	37.1%	36.6%	36.5%	36.0%
<i>Greece</i>	45.1%	44.2%	42.5%	40.8%	50.4%	53.1%	52.1%	44.6%	45.2%	43.5%	41.2%	41.3%	36.7%	39.6%	38.5%	38.3%
<i>Hungary</i>	44.3%	40.1%	35.7%	38.8%	50.6%	51.8%	51.4%	45.2%	44.8%	41.5%	39.8%	39.3%	37.5%	36.8%	37.7%	37.8%
<i>Ireland</i>	35.2%	32.3%	35.8%	34.1%	37.2%	42.0%	40.9%	32.8%	31.0%	30.7%	36.2%	32.3%	30.2%	32.1%	33.9%	36.6%
<i>Italy</i>	43.9%	42.6%	41.0%	39.6%	49.5%	51.9%	52.2%	44.5%	45.3%	44.5%	42.1%	41.7%	37.5%	39.7%	38.2%	38.2%
<i>Latvia</i>	42.0%	42.3%	41.8%	40.4%	47.1%	51.9%	50.9%	43.7%	43.6%	43.6%	41.8%	42.0%	37.5%	38.6%	38.6%	37.5%
<i>Lithuania</i>	44.3%	43.6%	41.5%	39.1%	51.2%	54.4%	54.0%	46.0%	46.8%	44.6%	41.9%	42.2%	37.9%	39.2%	36.8%	36.3%
<i>Luxembourg</i>	41.3%	37.2%	37.1%	37.1%	43.6%	43.6%	42.0%	30.0%	31.8%	30.2%	30.0%	31.8%	31.9%	36.6%	34.9%	38.0%
<i>Malta</i>	46.4%	43.8%	43.2%	40.3%	45.7%	34.4%	41.7%	43.1%	34.4%	39.4%	37.6%	37.7%	33.9%	37.9%	38.2%	38.3%
<i>Netherlands</i>	34.1%	33.0%	33.6%	30.9%	37.4%	40.7%	39.9%	28.7%	29.3%	39.9%	30.9%	34.3%	32.0%	34.3%	35.4%	38.0%
<i>Poland</i>	45.7%	43.0%	41.6%	39.3%	46.4%	51.0%	52.1%	44.5%	45.1%	43.6%	41.5%	41.9%	37.0%	39.0%	37.5%	34.8%
<i>Portugal</i>	31.0%	28.0%	25.8%	27.8%	34.3%	35.7%	32.8%	26.9%	27.5%	23.6%	26.7%	29.0%	28.5%	32.7%	34.4%	36.9%
<i>Romania</i>	43.7%	42.9%	41.5%	40.4%	40.8%	40.5%	40.6%	40.9%	40.6%	40.2%	40.8%	40.7%	40.8%	40.0%	38.4%	38.4%
<i>Slovakia</i>	45.4%	44.7%	42.6%	41.1%	52.0%	54.3%	51.5%	45.2%	47.5%	45.8%	39.1%	42.8%	37.8%	39.5%	38.3%	38.7%
<i>Slovenia</i>	43.9%	44.1%	42.2%	40.9%	51.9%	54.4%	54.1%	46.2%	47.1%	45.7%	43.4%	43.3%	38.2%	39.7%	34.8%	32.8%
<i>Spain</i>	44.6%	42.7%	39.7%	38.0%	40.2%	51.3%	50.8%	41.9%	41.7%	41.2%	40.2%	40.3%	36.5%	38.6%	37.6%	37.8%
<i>Sweden</i>	40.7%	38.7%	37.4%	32.1%	40.9%	38.6%	34.4%	35.5%	38.9%	38.3%	35.1%	38.0%	35.2%	38.1%	36.8%	36.2%
<i>United Kingdom</i>	42.3%	37.7%	37.2%	36.3%	43.6%	45.0%	43.4%	37.0%	33.4%	30.7%	32.3%	32.6%	30.0%	32.8%	33.9%	34.8%
Others																
<i>Australia</i>	34.9%	29.3%	27.8%	27.7%	29.7%	29.2%	27.1%	23.8%	23.4%	22.5%	24.6%	27.4%	27.2%	27.6%	28.0%	29.8%
<i>Brazil</i>	38.2%	38.0%	34.4%	33.0%	35.5%	34.9%	32.8%	29.9%	33.7%	26.9%	26.7%	28.4%	29.0%	32.4%	34.5%	37.5%
<i>Canada</i>	38.8%	35.2%	34.0%	33.7%	34.1%	33.0%	32.2%	29.2%	31.6%	31.0%	31.5%	31.7%	32.2%	31.5%	32.6%	35.0%
<i>China</i>	27.2%	22.0%	19.8%	21.2%	24.3%	24.9%	20.6%	17.4%	19.6%	17.0%	20.3%	23.7%	23.5%	21.8%	20.9%	21.5%
<i>India</i>	38.4%	39.5%	38.5%	36.0%	34.5%	33.6%	28.5%	25.1%	24.9%	23.5%	24.4%	30.3%	31.0%	30.7%	28.9%	34.4%
<i>Japan</i>	31.2%	26.8%	25.4%	23.0%	26.4%	26.6%	22.5%	19.1%	21.4%	18.3%	21.2%	26.3%	26.0%	26.5%	25.6%	29.1%
<i>Russia</i>	44.1%	44.0%	42.3%	40.6%	40.8%	41.0%	40.8%	40.9%	40.9%	40.7%	40.6%	40.6%	39.8%	39.0%	39.8%	40.0%
<i>South Korea</i>	34.8%	29.5%	22.2%	23.2%	27.2%	26.6%	22.0%	19.5%	21.3%	18.5%	21.3%	24.8%	24.4%	22.8%	25.3%	28.5%
<i>USA</i>	27.3%	21.6%	19.9%	21.2%	24.2%	24.7%	21.1%	17.9%	20.2%	17.7%	21.0%	24.5%	24.1%	29.3%	32.3%	36.3%

Sources: Own computations

Tables of Estimated Offshore Wealth Located in Each Type I IFC

Table 28. Estimated Offshore Wealth Held in Each Type I IFC (Billions of US\$)

Year	Total	Swiss	Other	Of which:												
				ANT	BHR	BHS	CYM	CYP	GGY	HKG	IMN	JEY	LUX	MAC	PAN	SGP
2001	3831.48	1091.67	2739.80	22.73	62.58	318.53	782.03		166.14	291.49	90.14	270.54	286.11		0	449.51
2002	3643.90	1170.25	2473.65	21.12	42.46	199.65	940.94		104.36	198.11	84.36	255.71	245.92		0	381.01
2003	3888.56	1394.88	2493.69	20.95	39.40	220.79	858.92		113.40	208.81	85.47	318.21	264.38	0	0	363.35
2004	4471.39	1623.03	2848.36	26.29	52.94	248.75	989.41		137.24	266.44	107.33	313.81	316.14	0	0	390.01
2005	5034.22	1763.88	3270.34	28.41	73.23	336.02	1032.19		151.59	320.21	138.55	415.91	291.40	20.37	0	462.45
2006	5039.19	2123.94	2915.25	18.14	81.28	306.35	906.96		125.12	282.91	116.83	374.27	273.58	18.66	0	411.15
2007	6818.61	2603.19	4215.42	24.72	114.31	412.87	1352.46		168.78	436.66	160.96	575.28	318.13	27.52	0	623.73
2008	5351.64	2056.82	3294.81	18.21	84.50	339.81	1281.39	41.77	120.26	344.57	107.03	276.55	204.85	22.15	0	453.73
2009	5639.89	2091.61	3548.28	21.14	91.56	312.51	1314.94	50.77	121.10	422.93	115.68	249.62	238.46	27.39	28.53	553.65
2010	4964.25	2108.17	2856.08	12.32	79.01	260.01	1111.85	52.35	106.64	359.33	80.81	157.35	154.01	20.29	23.62	438.48
2011	5574.15	1970.56	3603.59	12.15	92.76	323.53	1131.39	75.27	138.81	590.67	102.57	205.65	208.70	33.36	36.89	651.84
2012	7208.87	2197.36	5011.51	19.77	139.60	429.02	1383.15	117.01	189.54	1037.72	153.47	326.18	352.15	66.85	0	797.05
2013	7370.40	2238.25	5132.15	17.20	145.85	412.00	1423.44	62.70	176.71	1169.44	128.21	298.13	346.38	86.87	0	865.20
2014	8370.16	2149.41	6220.75	30.33	177.54	348.92	1628.15	68.35	156.47	1708.05	149.85	292.77	392.17	136.21	0	1131.93
2015	8429.86	2025.97	6403.89	33.97	199.06	256.66	1449.63	64.70	158.93	1990.22	163.41	301.93	396.63	183.16	0	1205.58
2016	7870.62	1997.94	5872.68	23.69	180.70	171.06	1056.59	57.99	151.92	2176.81	140.16	270.38	373.06	160.58	0	1109.76

Sources: Own computations

Table 29. Estimated Offshore Wealth Held in Each Type I IFC (% of Global Offshore Wealth)

Year	Swiss	Other	Of which:												
			ANT	BHR	BHS	CYM	CYP	GGY	HKG	IMN	JEY	LUX	MAC	PAN	SGP
2001	28.49%	71.51%	0.59%	1.63%	8.31%	20.41%		4.34%	7.61%	2.35%	7.06%	7.47%		0.00%	11.73%
2002	32.12%	67.88%	0.58%	1.17%	5.48%	25.82%		2.86%	5.44%	2.32%	7.02%	6.75%		0.00%	10.46%
2003	35.87%	64.13%	0.54%	1.01%	5.68%	22.09%		2.92%	5.37%	2.20%	8.18%	6.80%	0%	0.00%	9.34%
2004	36.30%	63.70%	0.59%	1.18%	5.56%	22.13%		3.07%	5.96%	2.40%	7.02%	7.07%	0%	0.00%	8.72%
2005	35.04%	64.96%	0.56%	1.45%	6.67%	20.50%		3.01%	6.36%	2.75%	8.26%	5.79%	0.40%	0.00%	9.19%
2006	42.15%	57.85%	0.36%	1.61%	6.08%	18.00%		2.48%	5.61%	2.32%	7.43%	5.43%	0.37%	0.00%	8.16%
2007	38.18%	61.82%	0.36%	1.68%	6.05%	19.83%		2.48%	6.40%	2.36%	8.44%	4.67%	0.40%	0.00%	9.15%
2008	38.43%	61.57%	0.34%	1.58%	6.35%	23.94%	0.78%	2.25%	6.44%	2.00%	5.17%	3.83%	0.41%	0.00%	8.48%
2009	37.09%	62.91%	0.37%	1.62%	5.54%	23.32%	0.90%	2.15%	7.50%	2.05%	4.43%	4.23%	0.49%	0.51%	9.82%
2010	42.47%	57.53%	0.25%	1.59%	5.24%	22.40%	1.05%	2.15%	7.24%	1.63%	3.17%	3.10%	0.41%	0.48%	8.83%
2011	35.35%	64.65%	0.22%	1.66%	5.80%	20.30%	1.35%	2.49%	10.60%	1.84%	3.69%	3.74%	0.60%	0.66%	11.69%
2012	30.48%	69.52%	0.27%	1.94%	5.95%	19.19%	1.62%	2.63%	14.40%	2.13%	4.52%	4.89%	0.93%	0%	11.06%
2013	30.37%	69.63%	0.23%	1.98%	5.59%	19.31%	0.85%	2.40%	15.87%	1.74%	4.05%	4.70%	1.18%	0%	11.74%
2014	25.68%	74.32%	0.36%	2.12%	4.17%	19.45%	0.82%	1.87%	20.41%	1.79%	3.50%	4.69%	1.63%	0%	13.52%
2015	24.03%	75.97%	0.40%	2.36%	3.04%	17.20%	0.77%	1.89%	23.61%	1.94%	3.58%	4.71%	2.17%	0%	14.30%
2016	25.38%	74.62%	0.30%	2.30%	2.17%	13.42%	0.74%	1.93%	27.66%	1.78%	3.44%	4.74%	2.04%	0%	14.10%

Sources: Own computations

Non-Smoothed Estimates of International Tax Evasion

Table 30: Non-Smoothed Estimates of International Tax Evasion (EU-28, Billions of Euros)

Year	Capital income	Original income	Wealth and Inheritance	Total
2002	4.98	58.92	4.07	67.96
2003	24.13	0.77	3.90	28.80
2004	10.75	10.33	4.22	25.30
2005	29.20	12.76	4.84	46.81
2006	21.73	4.17	3.30	29.20
2007	12.48	77.99	3.82	94.29
2008	4.82	39.86	1.85	46.53
2009	28.58	0.89	1.82	31.28
2010	14.31	0.58	1.66	16.56
2011	2.10	68.13	3.23	73.47
2012	14.48	51.76	4.61	70.85
2013	22.14	0.19	4.63	26.96
2014	13.41	50.17	5.53	69.12
2015	10.88	11.30	5.77	27.95
2016	13.70	8.94	5.69	28.32

Additional Tables for Leak Analysis

Table 31. Comparison of Estimated Shares of Swiss Fiduciary Deposits (SNB Data) and Shares of Deposits in HSBC Swiss Banks (Swiss Leak Data) in 2006 (HSBC Perspective)

	Top 30 (HSBC)	Ownership share of HSBC deposits	Ownership share of deposits	Top in SNB
UK	1	11.94%	2.53%	12
France	2	10.22%	6.84%	3
USA	3	9.43%	1.74%	16
Italy	4	5.28%	7.75%	2
Brazil	5	4.93%	3.77%	7
Venezuela	6	4.41%	1.34%	19
Israel	7	4.02%	2.42%	13
Belgium	8	3.22%	0.90%	22
India	9	2.89%	1.39%	18
Germany	10	2.75%	8.30%	1
Canada	11	2.75%	0.80%	28
Netherlands	12	2.30%	0.83%	26
Saudi Arabia	13	2.15%	4.17%	6
Turkey	14	2.00%	6.23%	4
Spain	15	1.62%	3.49%	8
Mexico	16	1.55%	3.17%	10
Argentina	17	1.50%	3.04%	11
South Africa	18	1.41%	0.73%	30
Greece	19	1.32%	1.85%	15
Russia	20	1.27%	4.90%	5

Sources: Own computations and ICIJ Swiss Leaks.

Table 32. Corporation Locations of the Panama and Paradise Papers (Full Table)

2001					2014				
	Country	Total nb of corporations	Nb. Of corp./ GDP (US\$ billion)	Type II Weight		Country	Total nb of corporations	Nb. Of corp./ GDP (US\$ billion)	Type II Weight
1	Bermuda	4971	1350.6	98%	1	Cayman Islands	5029	1482.0	100%
2	Cayman Islands	2459	1052.5	99%	2	Bermuda	4719	835.0	99%
3	Isle of Man	1185	714.2	98%	3	Seychelles	762	567.4	99%
4	Guernsey	472	264.0	96%	4	Samoa	387	480.6	100%
5	Jersey	1032	241.4	97%	5	Guernsey	1432	451.2	97%
6	Samoa	44	161.1	97%	6	Jersey	2558	447.7	98%
7	Seychelles	63	101.2	74%	7	Isle of Man	2868	386.1	93%
8	Gibraltar	145	63.4	94%	8	Bahamas	2299	209.8	96%
9	Bahamas	381	45.8	95%	9	Gibraltar	362	158.2	97%
10	Uruguay	779	37.3	66%	10	Hong Kong	30525	104.7	62%
11	Belize	28	32.1	96%	11	Mauritius	887	69.3	88%
12	Hong Kong	5218	30.8	59%	12	Dominica	36	68.8	80%
13	Dominica	10	29.4	57%	13	Belize	107	63.2	99%
14	Mauritius	132	29.1	74%	14	Uruguay	2526	44.1	52%
15	Marshall Islands	3	26.1	0%	15	Cyprus	829	35.5	81%
16	Panama	319	25.5	97%	16	Liechtenstein	217	32.6	83%
17	Liechtenstein	62	24.9	94%	17	Malta	354	31.6	74%
18	Cyprus	247	23.8	77%	18	Panama	1533	30.7	93%
19	Malta	79	18.2	74%	19	Jordan	922	25.7	60%
20	Jordan	148	16.5	87%	20	Andorra	58	17.3	82%
21	Andorra	18	12.0	74%	21	Luxembourg	981	14.8	90%
22	Estonia	68	10.9	0%	22	Singapore	3556	11.4	47%
23	Guatemala	151	8.1	65%	23	Marshall Islands	2	10.9	100%
24	Ecuador	197	8.1	63%	24	Estonia	253	9.6	0%
25	Singapore	612	6.9	60%	25	Ecuador	909	8.9	25%
26	Luxembourg	144	6.8	74%	26	Guatemala	499	8.5	45%
27	Bolivia	44	5.4	0%	27	Switzerland	5000	7.1	47%
28	Costa Rica	79	5.0	65%	28	Latvia	204	6.5	6%
29	Lebanon	80	4.5	86%	29	United Arab Emirates	2489	6.2	46%
30	Switzerland	1202	4.3	63%	30	El Salvador	137	6.1	40%
31	Taiwan	1213	4.0	26%	31	Netherland Antilles	24	5.8	97%
32	Saint Lucia	3	3.8	0%	32	Lebanon	257	5.3	60%
33	Latvia	31	3.7	7%	33	Costa Rica	259	5.1	37%
34	United Arab Emirates	352	3.4	80%	34	Bolivia	156	4.7	39%
35	Netherland Antilles	8	2.8	98%	35	Barbados	18	3.9	61%
36	Colombia	242	2.5	39%	36	Dominican Republic	253	3.8	40%
37	Dominican Republic	62	2.4	0%	37	Colombia	1391	3.6	5%
38	Bahrain	18	2.0	80%	38	Taiwan	1914	3.6	49%
39	Jamaica	18	2.0	35%	39	Aruba	8	3.0	77%
40	Barbados	6	1.9	80%	40	Saint Vincent and the Grenadines	2	2.7	96%
41	El Salvador	22	1.8	11%	41	Turks and Caicos Islands	2	2.5	94%
42	Russia	538	1.8	0%	42	Saint Lucia	3	2.0	66%
43	Turks and Caicos Islands	1	1.7	95%	43	Thailand	643	1.6	13%
44	Malaysia	127	1.4	2%	44	Jamaica	20	1.4	35%
45	Zimbabwe	8	1.2	59%	45	Israel	424	1.4	24%
46	Ghana	6	1.1	60%	46	United Kingdom	3211	1.1	31%
47	Liberia	1	1.1	98%	47	Russia	1710	0.8	0%
48	Central African Republic	1	1.1	54%	48	Venezuela	388	0.8	45%
49	Montenegro	1	0.9	5%	49	Chad	11	0.8	0%
50	Kenya	11	0.8	83%	50	Iceland	13	0.8	57%
51	Macao	5	0.7	62%	51	Ukraine	99	0.7	0%
52	Azerbaijan	4	0.7	34%	52	Paraguay	28	0.7	0%
53	Moldova	1	0.7	0%	53	Ireland	158	0.6	76%
54	United Kingdom	1085	0.7	0%	54	Honduras	12	0.6	33%
55	Israel	74	0.6	55%	55	Central African Republic	1	0.6	0%
56	Ireland	61	0.6	49%	56	Bulgaria	30	0.5	0%
57	Ukraine	20	0.5	0%	57	Kenya	28	0.5	39%

2001				
	Country	Total nb of corporations	Nb. Of corp./ GDP (US\$ billion)	Type II Weight
58	Aruba	1	0.5	58%
59	Venezuela	60	0.5	70%
60	Paraguay	4	0.5	31%
61	Bulgaria	6	0.4	0%
62	Nicaragua	2	0.4	71%
63	Thailand	41	0.3	0%
64	Czech Republic	22	0.3	0%
65	Georgia	1	0.3	0%
66	Syria	6	0.3	59%
67	Côte d'Ivoire	3	0.3	58%
68	Honduras	2	0.3	17%
69	France	350	0.3	0%
70	South Africa	30	0.2	26%
71	Qatar	4	0.2	77%
72	Saudi Arabia	41	0.2	66%
73	Canada	154	0.2	0%
74	Portugal	25	0.2	48%
75	Morocco	8	0.2	36%
76	Kuwait	7	0.2	80%
77	Chile	14	0.2	29%
78	Cuba	6	0.2	0%
79	Botswana	1	0.2	15%
80	Brunei	1	0.2	31%
81	Belarus	2	0.2	0%
82	Australia	60	0.2	0%
83	Egypt	15	0.2	51%
84	China	203	0.2	0%
85	Greece	20	0.1	56%
86	Slovenia	3	0.1	0%
87	Argentina	38	0.1	39%
88	United States	1471	0.1	0%
89	New Zealand	7	0.1	5%
90	Iceland	1	0.1	0%
91	Brazil	68	0.1	6%
92	Angola	1	0.1	51%
93	Bangladesh	6	0.1	0%
94	Oman	2	0.1	77%
95	Tanzania	1	0.1	21%
96	Peru	5	0.1	37%
97	Philippines	7	0.1	35%
98	Tunisia	2	0.1	12%
99	Kazakhstan	2	0.1	0%
100	Uzbekistan	1	0.1	0%
101	Croatia	2	0.1	0%
102	Spain	39	0.1	11%
103	Netherlands	23	0.1	18%
104	Turkey	10	0.0	31%
105	Romania	2	0.0	0%
106	Hungary	2	0.0	0%
107	Indonesia	5	0.0	0%
108	Viet Nam	1	0.0	0%
109	Poland	5	0.0	0%
110	Norway	4	0.0	0%
111	Austria	4	0.0	0%
112	Sweden	4	0.0	0%
113	Mexico	11	0.0	11%
114	India	6	0.0	0%
115	Denmark	2	0.0	0%
116	Italy	8	0.0	0%
117	South Korea	3	0.0	0%
118	Germany	10	0.0	10%
119	Japan	3	0.0	0%
120	Nigeria	0	0.0	25%
121	Haiti	0	0.0	0%
122	Lithuania	0	0.0	0%
123	Sri Lanka	0	0.0	0%
124	Slovakia	0	0.0	0%
125	Mongolia	0	0.0	0%
126	Mozambique	0	0.0	25%

2014				
	Country	Total nb of corporations	Nb. Of corp./ GDP (US\$ billion)	Type II Weight
58	Zimbabwe	8	0.4	23%
59	Macao	22	0.4	25%
60	Slovenia	19	0.4	35%
61	China	3976	0.4	0%
62	Moldova	3	0.4	0%
63	France	1065	0.4	0%
64	Côte d'Ivoire	13	0.4	18%
65	Haiti	3	0.3	12%
66	Nicaragua	4	0.3	47%
67	Argentina	170	0.3	15%
68	Canada	414	0.2	0%
69	Brazil	559	0.2	0%
70	Ghana	12	0.2	5%
71	Montenegro	1	0.2	0%
72	Portugal	50	0.2	27%
73	Bahrain	7	0.2	39%
74	Chile	50	0.2	0%
75	Greece	45	0.2	54%
76	South Africa	65	0.2	0%
77	Kuwait	27	0.2	71%
78	Senegal	3	0.2	35%
79	Syria	6	0.1	0%
80	United States	2551	0.1	0%
81	Malaysia	46	0.1	0%
82	Kyrgyzstan	1	0.1	0%
83	Peru	26	0.1	8%
84	Morocco	14	0.1	7%
85	Egypt	38	0.1	19%
86	Botswana	2	0.1	0%
87	Czech Republic	25	0.1	0%
88	Uzbekistan	7	0.1	0%
89	Trinidad and Tobago	3	0.1	53%
90	Philippines	31	0.1	0%
91	Qatar	20	0.1	21%
92	Macedonia	1	0.1	0%
93	Mongolia	1	0.1	0%
94	Azerbaijan	6	0.1	0%
95	Saudi Arabia	60	0.1	30%
96	Spain	104	0.1	0%
97	New Zealand	14	0.1	6%
98	Angola	10	0.1	35%
99	Belarus	5	0.1	0%
100	Sri Lanka	5	0.1	0%
101	Cuba	5	0.1	0%
102	Georgia	1	0.1	0%
103	Mozambique	1	0.1	41%
104	Brunei	1	0.1	64%
105	Bangladesh	10	0.1	0%
106	Indonesia	51	0.1	0%
107	Hungary	8	0.1	0%
108	Poland	30	0.1	0%
109	Turkey	51	0.1	0%
110	Netherlands	48	0.1	37%
111	Oman	4	0.0	43%
112	Norway	22	0.0	0%
113	Tunisia	2	0.0	8%
114	Australia	54	0.0	0%
115	Kazakhstan	8	0.0	0%
116	Sweden	20	0.0	0%
117	Croatia	2	0.0	0%
118	Mexico	44	0.0	11%
119	Cameroon	1	0.0	15%
120	India	43	0.0	0%
121	Tanzania	1	0.0	0%
122	Belgium	11	0.0	27%
123	Lithuania	1	0.0	0%
124	Italy	39	0.0	0%
125	Nigeria	10	0.0	0%
126	Viet Nam	3	0.0	0%

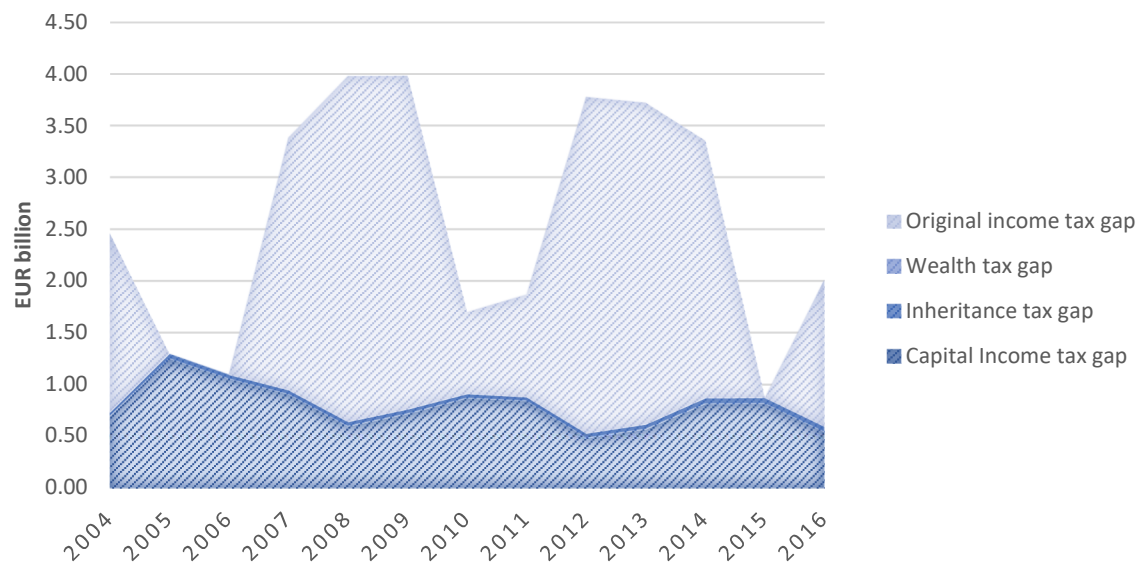
2001				
	Country	Total nb of corporations	Nb. Of corp./ GDP (US\$ billion)	Type II Weight
127	Finland	0	0.0	0%
128	Senegal	0	0.0	60%
129	Kyrgyzstan	0	0.0	0%
130	Belgium	0	0.0	50%
131	Macedonia	0	0.0	0%
132	Cameroon	0	0.0	39%
133	Trinidad and Tobago	0	0.0	42%
134	Chad	0	0.0	5%
135	Saint Vincent and the Grenadines	0	0.0	94%

2014				
	Country	Total nb of corporations	Nb. Of corp./ GDP (US\$ billion)	Type II Weight
127	Austria	7	0.0	0%
128	Romania	3	0.0	0%
129	Germany	47	0.0	19%
130	Denmark	3	0.0	0%
131	South Korea	8	0.0	0%
132	Finland	1	0.0	0%
133	Japan	12	0.0	0%
134	Liberia	0	0.0	96%
135	Slovakia	0	0.0	0%

Sources: Own computations, Panama and Paradise Papers.

Appendix 5. Estimates of Tax Evasion: Individual Country Results

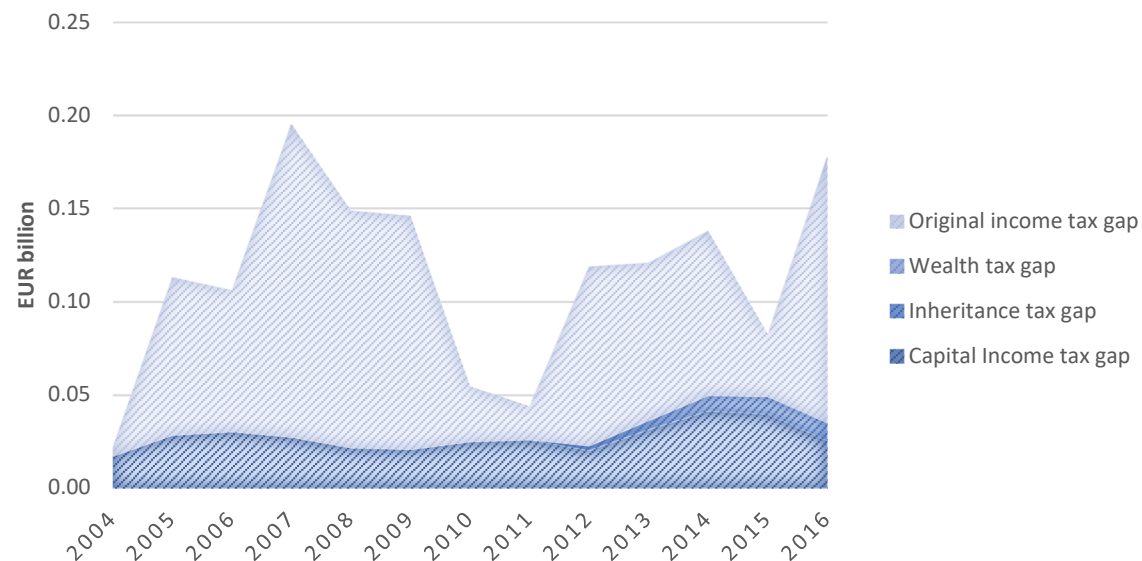
Belgium


Highlights

- The average loss in tax revenue in Belgium between 2004 and 2016 amounted to EUR 2.6 billion.
- Evasion by Belgian residents contributed to 5.5% of tax revenue losses in all EU MS.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.69	1.25	1.05	0.90	0.59	0.71	0.87	0.84	0.48	0.57	0.81	0.81	0.54	10.11
Inheritance and wealth tax evasion	0.04	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.06	0.06	0.05	0.58
Tax evasion on original income	1.73	0.00	0.00	2.44	3.34	3.22	0.79	0.99	3.25	3.11	2.48	0.00	1.42	22.76
TOTAL	2.46	1.29	1.09	3.38	3.97	3.98	1.70	1.87	3.77	3.72	3.35	0.87	2.01	33.45

Bulgaria

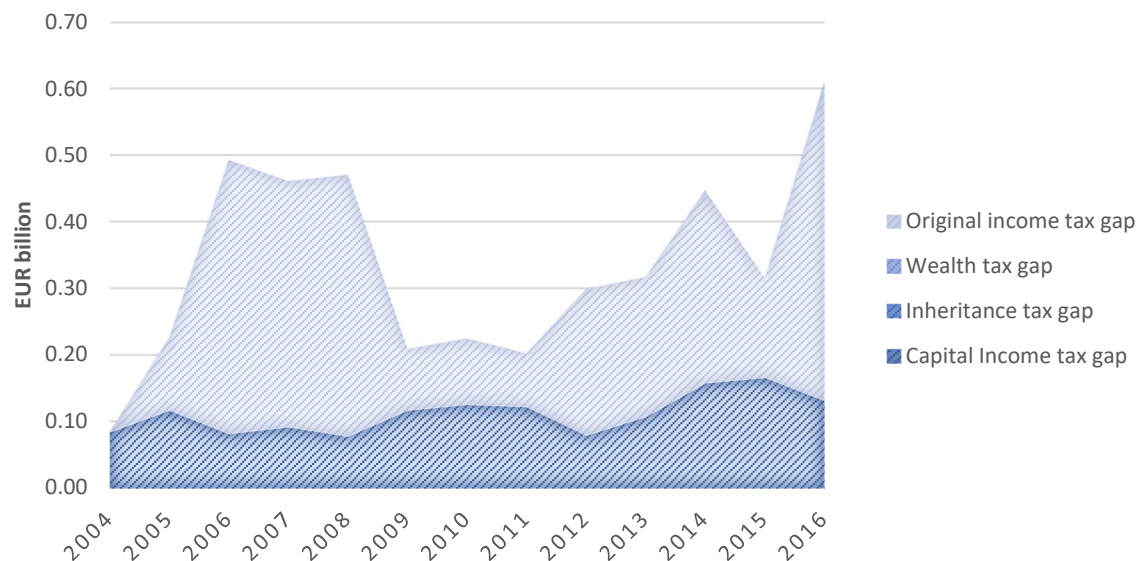


Highlights

- The average yearly loss in tax revenue in Bulgaria between 2004 and 2016 amounted to EUR 0.1 billion.
- In 2016, offshore wealth increased from 9.5 billion EUR to nearly EUR 14.6 billion.
- Bulgaria gradually lowered personal income tax, capital gains and inheritance tax (partially abolished) rates between 2001 and 2008 and currently has the lowest personal income tax rate among EU-28 (10%).

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.02	0.03	0.03	0.03	0.02	0.02	0.02	0.03	0.02	0.03	0.04	0.04	0.03	0.35
Inheritance and wealth tax evasion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.03
Tax evasion on original income	0.00	0.08	0.08	0.17	0.13	0.13	0.03	0.02	0.10	0.08	0.09	0.03	0.14	1.08
TOTAL	0.02	0.11	0.11	0.20	0.15	0.15	0.05	0.04	0.12	0.12	0.14	0.08	0.18	1.47

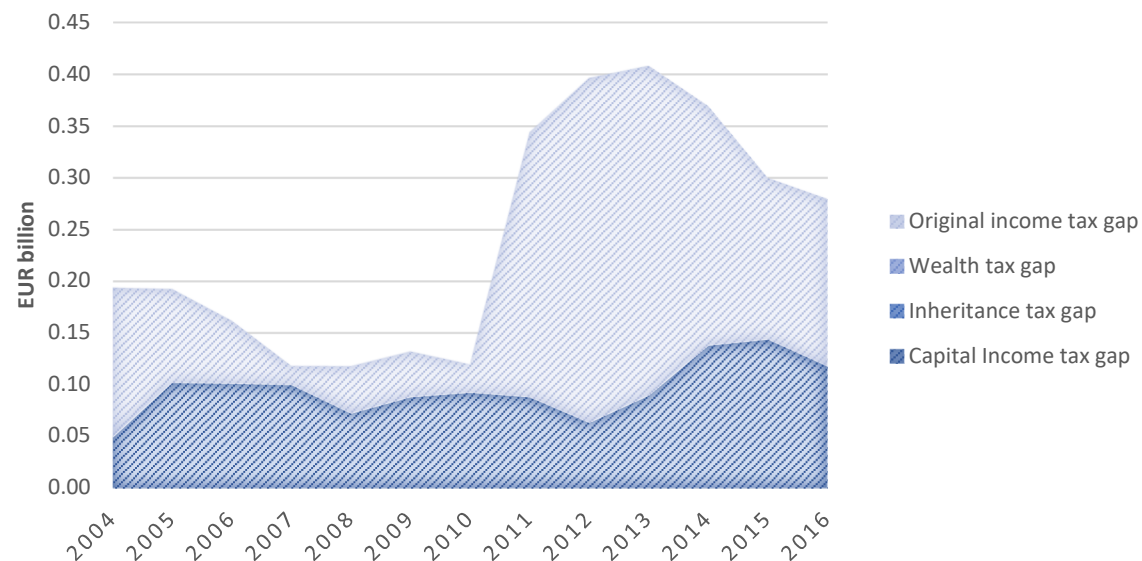
Czech Republic


Highlights

- The average loss in tax revenue in the Czech Republic between 2004 and 2016 amounted to EUR 0.3 billion.
- As a part of the tax reform in 2008, the Czech Republic reduced its top personal income tax rate from 32% to 15%.
- Starting from 2014, the inheritance tax has been abolished.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.08	0.12	0.08	0.09	0.08	0.12	0.12	0.12	0.08	0.11	0.16	0.17	0.13	1.45
Inheritance and wealth tax evasion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax evasion on original income	0.00	0.11	0.41	0.37	0.39	0.09	0.10	0.08	0.22	0.21	0.29	0.15	0.48	2.91
TOTAL	0.08	0.23	0.49	0.46	0.47	0.21	0.22	0.20	0.30	0.32	0.45	0.31	0.61	4.35

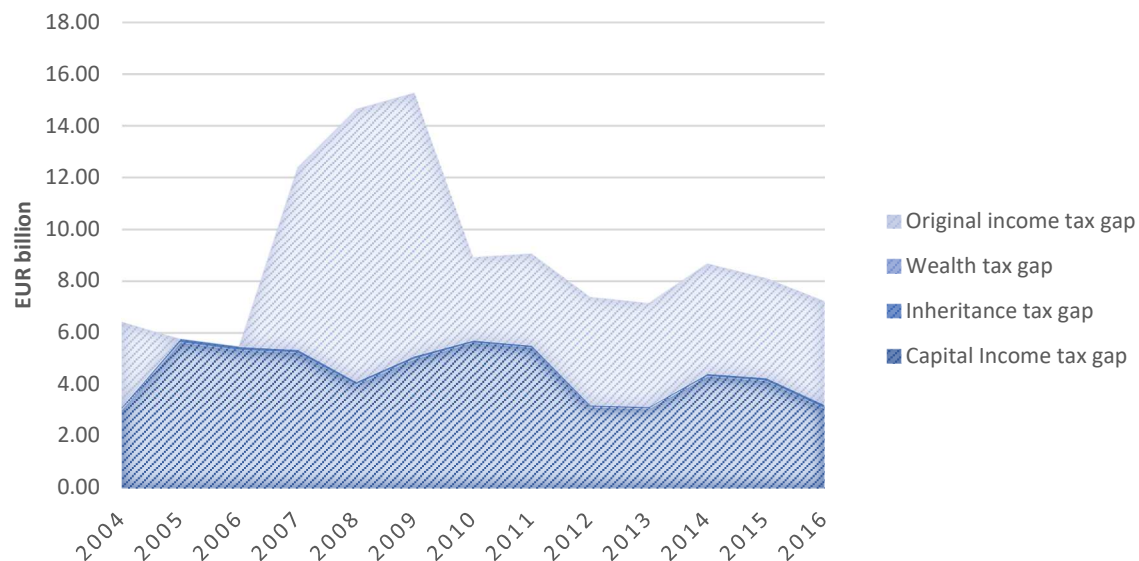
Denmark


Highlights

- The average loss in tax revenue in Denmark between 2004 and 2016 amounted to EUR 0.2 billion.
- Offshore wealth kept by Danish residents remained substantially elevated between 2014 and 2015 compared with preceding periods.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.05	0.10	0.10	0.10	0.07	0.09	0.09	0.09	0.06	0.09	0.14	0.14	0.12	1.24
Inheritance and wealth tax evasion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax evasion on original income	0.14	0.09	0.06	0.02	0.05	0.04	0.03	0.26	0.33	0.32	0.23	0.16	0.16	1.89
TOTAL	0.19	0.19	0.16	0.12	0.12	0.13	0.12	0.34	0.40	0.41	0.37	0.30	0.28	3.13

Germany

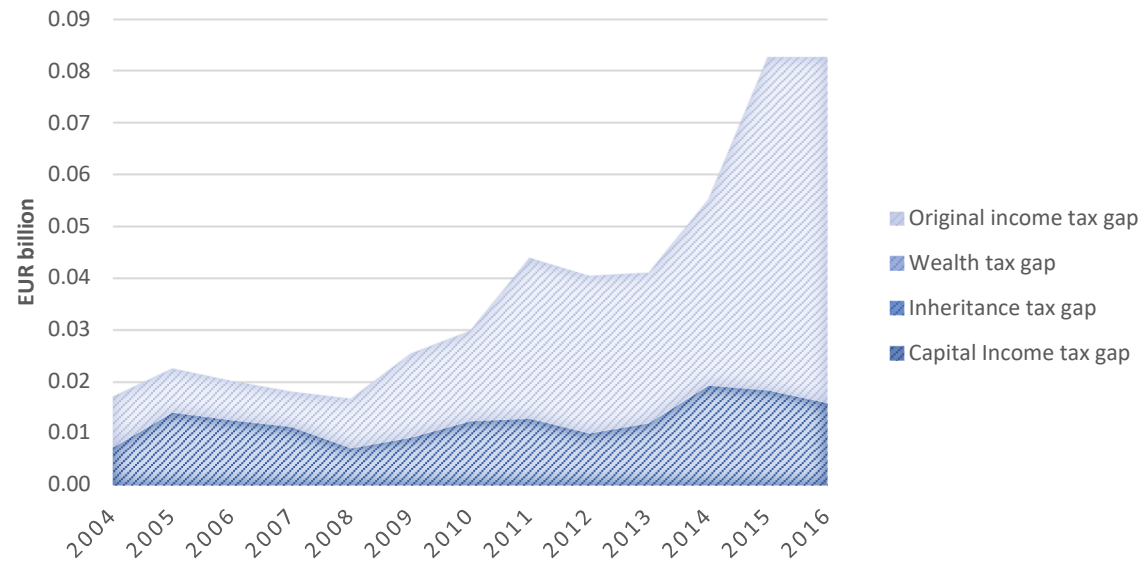


Highlights

- The average loss in tax revenue in Germany between 2004 and 2016 amounted to EUR 9 billion.
- As of 2012, offshore wealth kept by German residents fell gradually in both absolute and relative terms.
- Evasion by German residents contributed to 19% of tax revenue losses in all EU MS.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	3.03	5.63	5.34	5.24	3.99	4.99	5.62	5.43	3.13	3.07	4.32	4.15	3.09	57.02
Inheritance and wealth tax evasion	0.10	0.13	0.12	0.11	0.11	0.11	0.09	0.09	0.07	0.07	0.10	0.12	0.13	1.34
Tax evasion on original income	3.28	0.00	0.00	7.02	10.52	10.16	3.21	3.54	4.18	4.00	4.26	3.85	4.00	58.02
TOTAL	6.41	5.76	5.46	12.38	14.62	15.25	8.92	9.05	7.38	7.14	8.67	8.12	7.22	116.38

Estonia

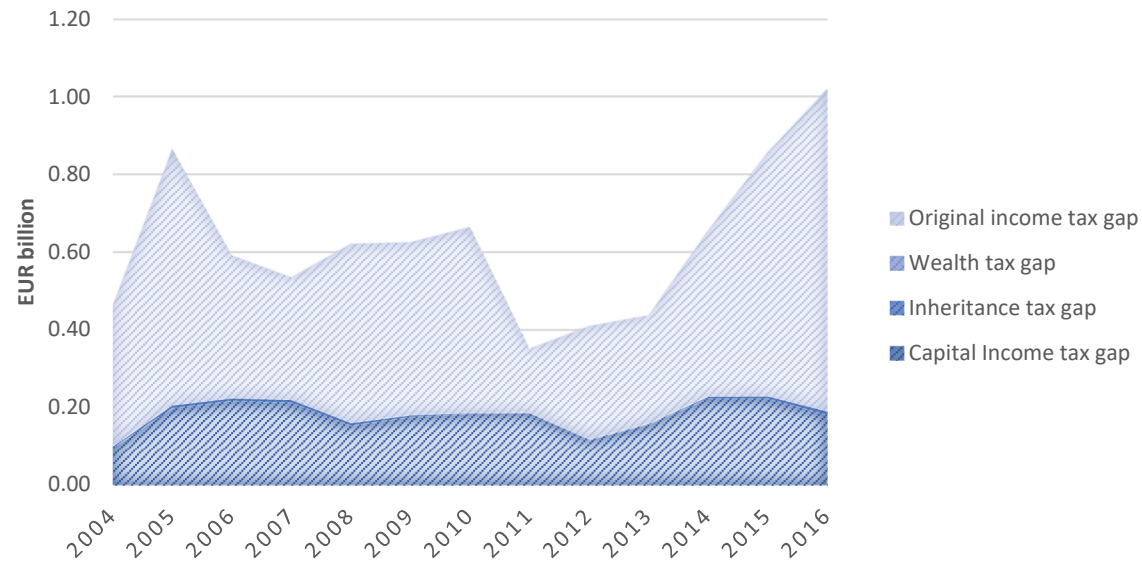


Highlights

- The average loss in tax revenue in Estonia between 2004 and 2016 amounted to EUR 4 million.
- Estonia gradually lowered its top PIT rate between 2004 and 2015 from 26% to 20%.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.16
Inheritance and wealth tax evasion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax evasion on original income	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.03	0.03	0.03	0.04	0.06	0.07	0.33
TOTAL	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.04	0.04	0.04	0.06	0.08	0.08	0.50

Ireland

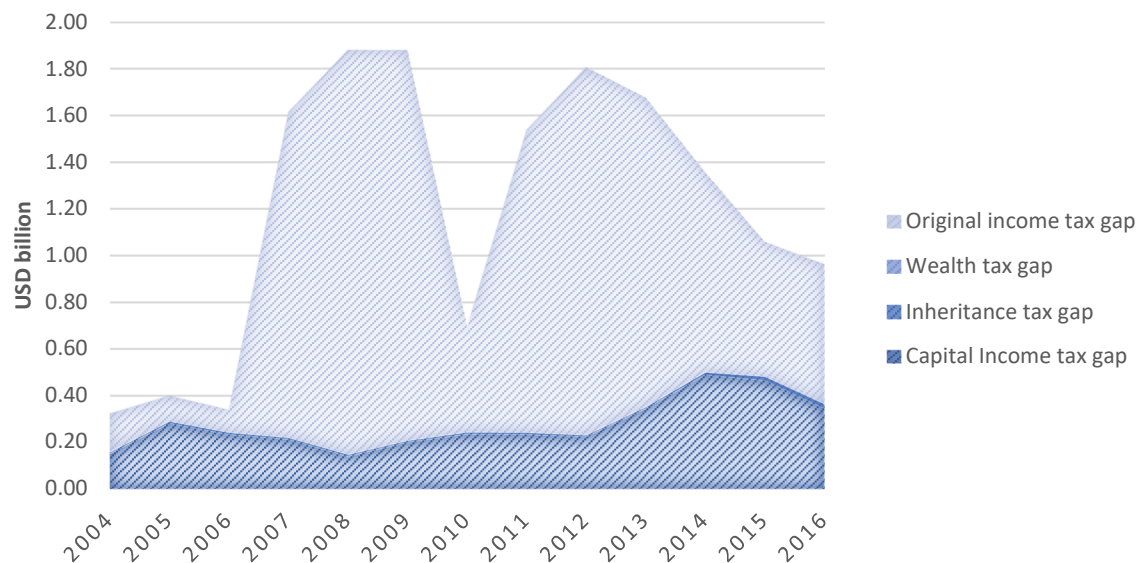


Highlights

- The average loss in tax revenue in Ireland between 2004 and 2016 amounted to EUR 0.6 billion

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.10	0.20	0.22	0.21	0.15	0.18	0.18	0.19	0.12	0.16	0.22	0.22	0.18	2.32
Inheritance and wealth tax evasion	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.07
Tax evasion on original income	0.36	0.66	0.37	0.32	0.46	0.44	0.48	0.17	0.29	0.28	0.43	0.63	0.83	5.70
TOTAL	0.46	0.86	0.59	0.54	0.62	0.62	0.66	0.35	0.41	0.44	0.66	0.86	1.02	8.09

Greece

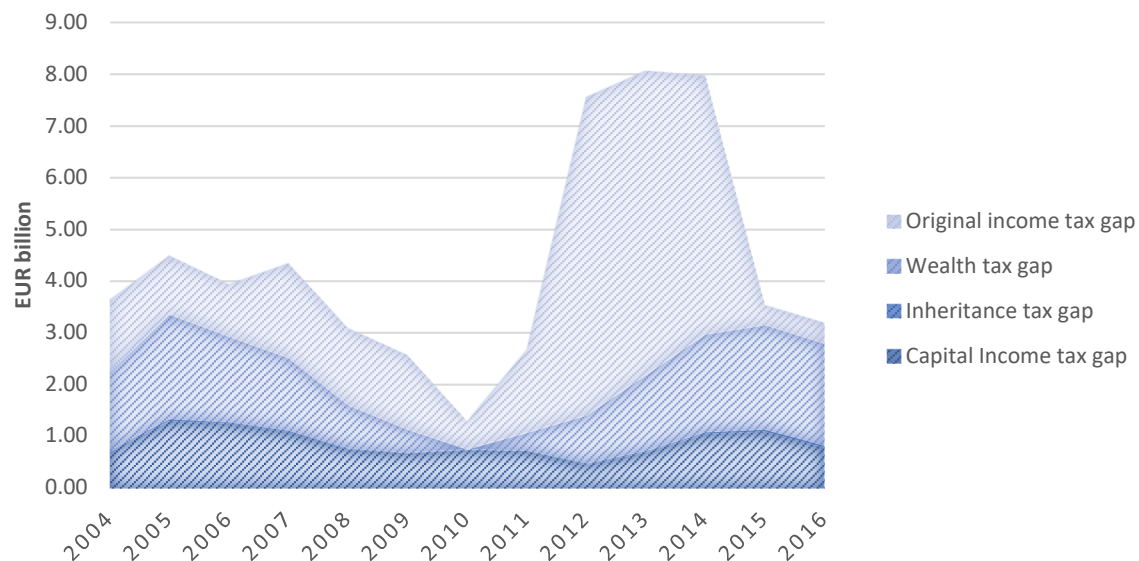


Highlights

- The average loss in tax revenue in Greece between 2002 and 2016 amounted to EUR 1.2 billion.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.15	0.28	0.23	0.21	0.14	0.20	0.23	0.23	0.22	0.34	0.49	0.46	0.34	3.54
Inheritance and wealth tax evasion	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.12
Tax evasion on original income	0.16	0.11	0.10	1.40	1.73	1.67	0.45	1.30	1.58	1.33	0.86	0.58	0.60	11.86
TOTAL	0.32	0.40	0.34	1.61	1.88	1.88	0.69	1.54	1.81	1.68	1.36	1.06	0.96	15.52

Spain

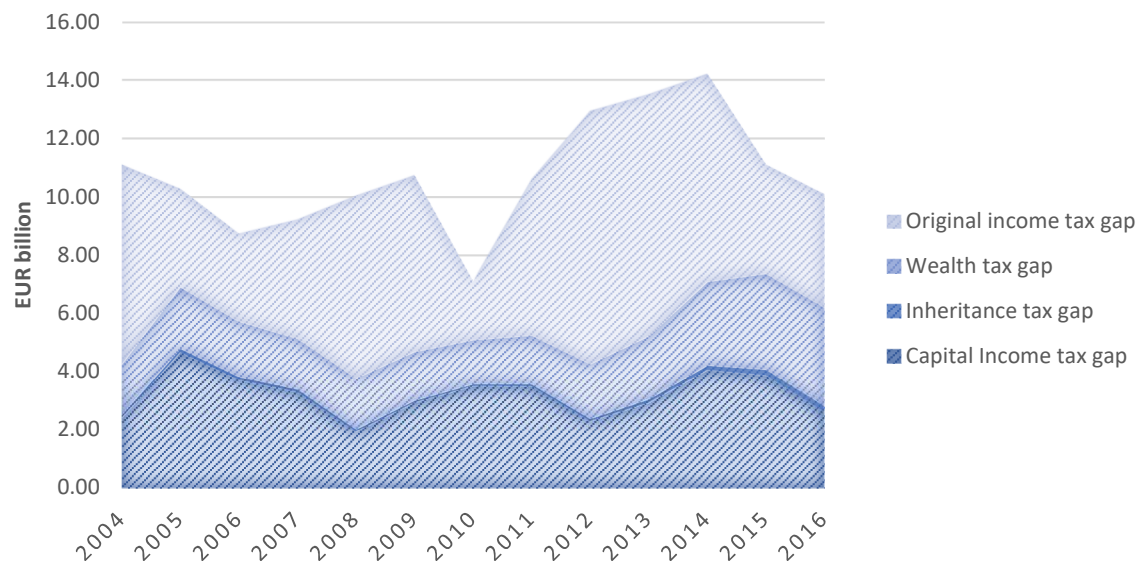


Highlights

- The average loss in tax revenue in Spain between 2004 and 2016 amounted to 4.3 billion EUR.
- Spain suspended its wealth tax in 2008. It was then restored in 2011 with some changes to the tax base and rate bands.
- Offshore wealth of Spanish residents fell significantly during the crisis – the average tax revenue losses between 2010 and 2016 was almost two time lower than in the eight preceding years.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.70	1.29	1.24	1.08	0.74	0.66	0.73	0.71	0.45	0.69	1.04	1.09	0.78	11.21
Inheritance and wealth tax evasion	1.55	2.06	1.68	1.42	0.85	0.46	0.01	0.35	0.95	1.49	1.92	2.06	2.01	16.81
Tax evasion on original income	1.39	1.14	1.02	1.83	1.49	1.44	0.54	1.61	6.16	5.89	5.00	0.39	0.40	28.30
TOTAL	3.64	4.49	3.94	4.34	3.09	2.56	1.29	2.67	7.56	8.07	7.97	3.53	3.19	56.32

France

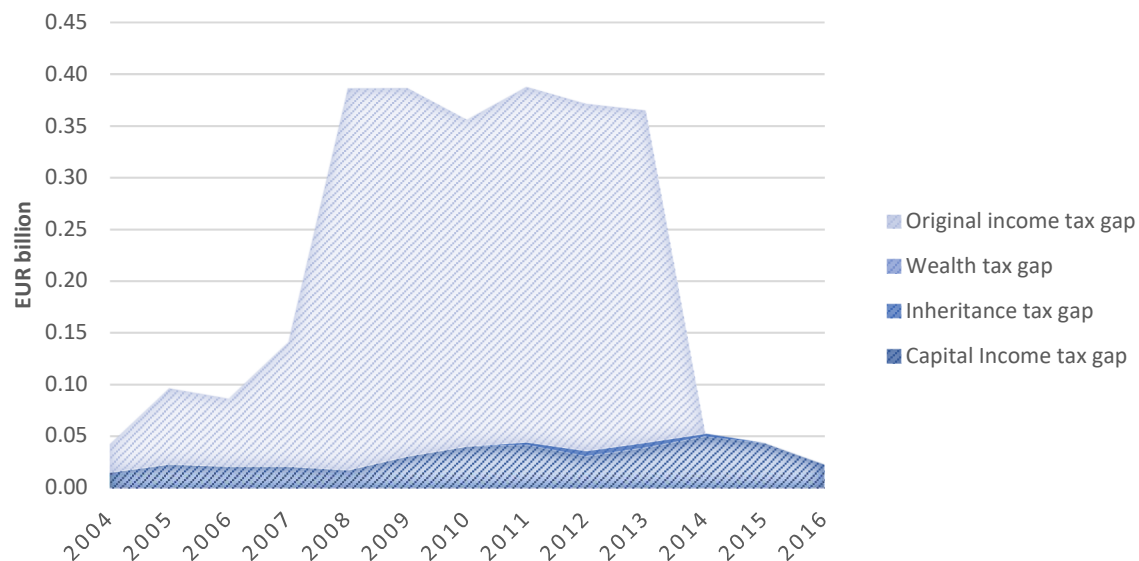


Highlights

- The average loss in tax revenue in France between 2004 and 2016 amounted to EUR 10.7 billion.
- Evasion by French taxpayers contributed to 23% of tax revenue losses in all EU MS.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	2.41	4.67	3.72	3.30	1.93	2.94	3.51	3.50	2.29	2.94	4.06	3.87	2.61	41.73
Inheritance and wealth tax evasion	1.85	2.23	2.01	1.84	1.85	1.75	1.59	1.75	1.98	2.28	3.03	3.49	3.60	29.26
Tax evasion on original income	6.85	3.38	3.02	4.09	6.26	6.05	2.01	5.35	8.67	8.29	7.12	3.73	3.88	68.69
TOTAL	11.10	10.28	8.74	9.23	10.04	10.74	7.11	10.60	12.94	13.51	14.21	11.09	10.08	139.68

Croatia

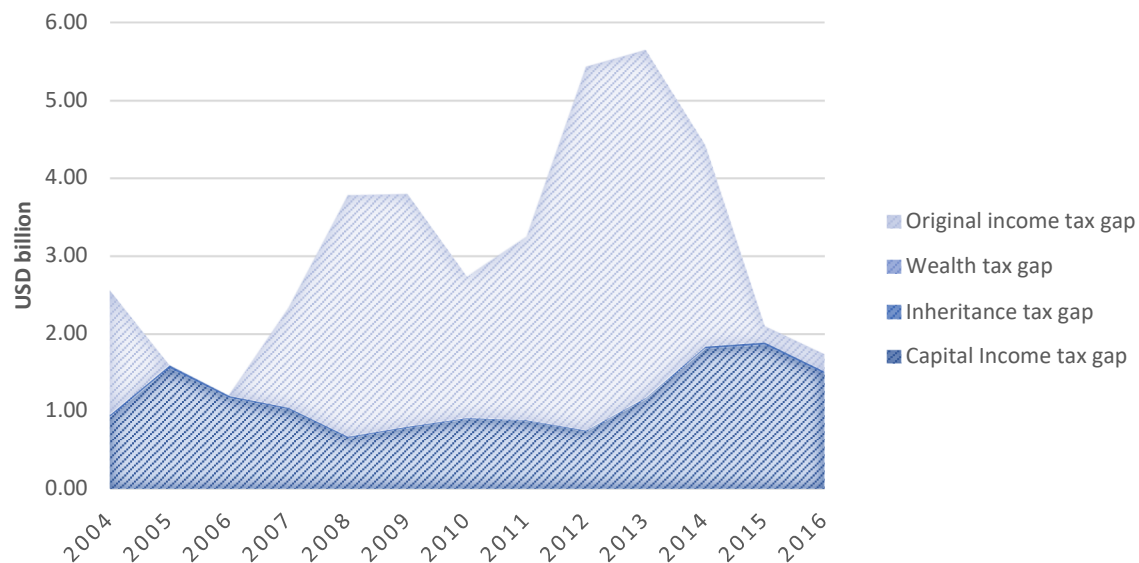


Highlights

- The average loss in tax revenue in Croatia between 2004 and 2016 amounted to EUR 210 million.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.01	0.02	0.02	0.02	0.02	0.03	0.04	0.04	0.03	0.04	0.05	0.04	0.02	0.39
Inheritance and wealth tax evasion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.02
Tax evasion on original income	0.03	0.07	0.07	0.12	0.37	0.36	0.32	0.34	0.34	0.32	0.00	0.00	0.00	2.33
TOTAL	0.04	0.10	0.09	0.14	0.39	0.39	0.36	0.39	0.37	0.36	0.05	0.04	0.02	2.73

Italy

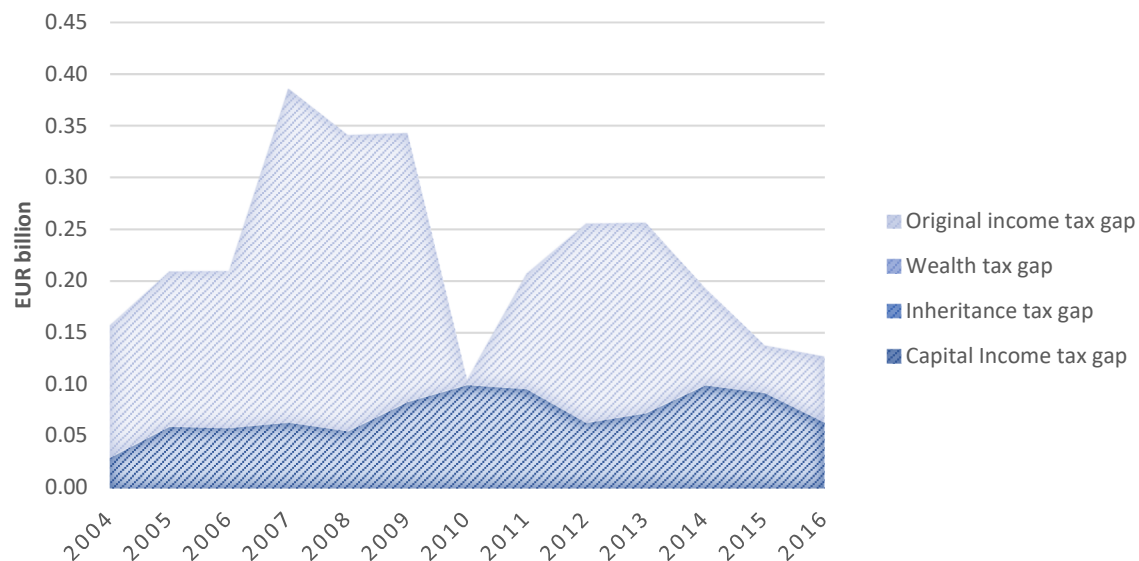


Highlights

- The average loss in tax revenue in Italy between 2002 and 2016 amounted to EUR 3.1 billion.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.93	1.56	1.18	1.03	0.66	0.79	0.90	0.88	0.74	1.16	1.81	1.86	1.49	14.97
Inheritance and wealth tax evasion	0.03	0.03	0.03	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.03	0.03	0.03	0.31
Tax evasion on original income	1.60	0.00	0.00	1.27	3.10	2.99	1.82	2.36	4.67	4.47	2.59	0.21	0.22	25.29
TOTAL	2.55	1.59	1.20	2.33	3.78	3.80	2.73	3.25	5.43	5.65	4.42	2.10	1.73	40.57

Cyprus

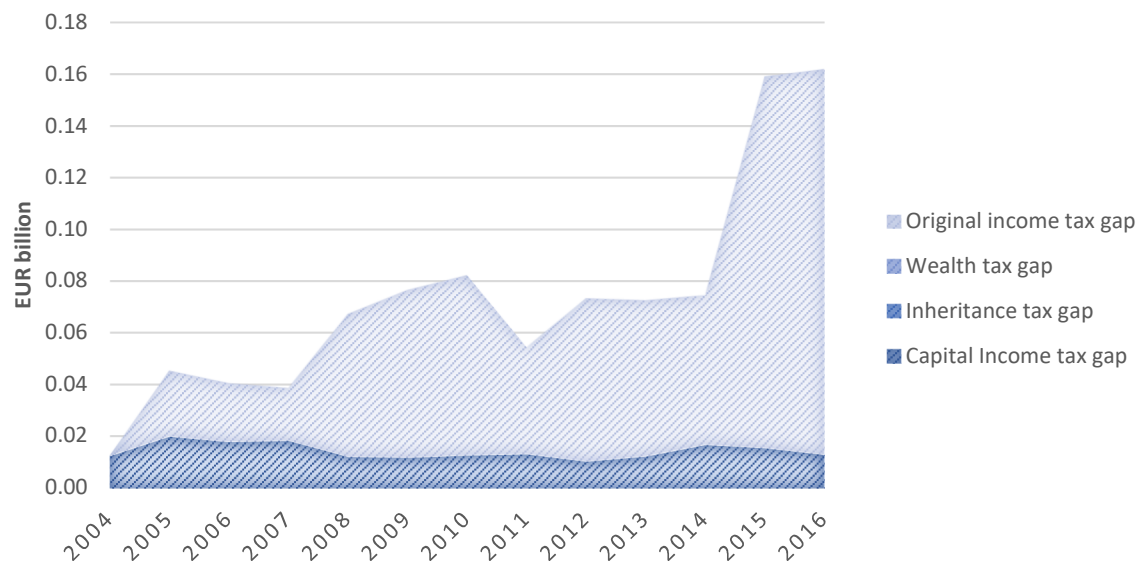


Highlights

- The average loss in tax revenue in Cyprus between 2004 and 2016 amounted to EUR 220 million.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.03	0.06	0.06	0.06	0.06	0.08	0.10	0.10	0.06	0.07	0.10	0.09	0.06	0.93
Inheritance and wealth tax evasion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax evasion on original income	0.13	0.15	0.15	0.32	0.29	0.26	0.00	0.11	0.19	0.18	0.09	0.05	0.06	1.99
TOTAL	0.16	0.21	0.21	0.39	0.34	0.34	0.10	0.21	0.26	0.26	0.19	0.14	0.13	2.92

Latvia

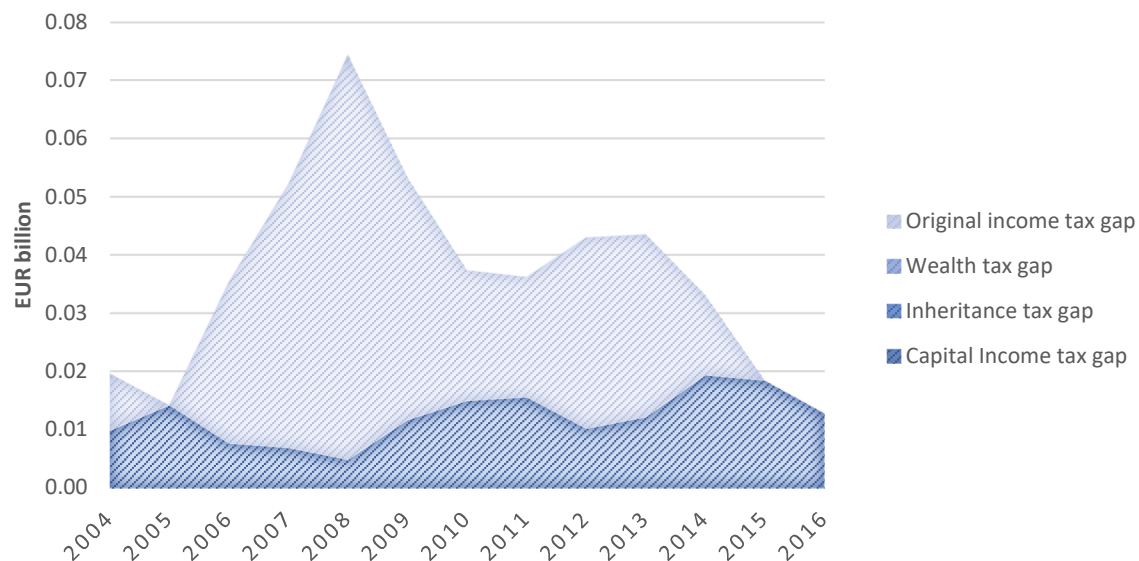


Highlights

- The average loss in tax revenue in Latvia between 2004 and 2016 amounted to EUR 70 million.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.01	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.18
Inheritance and wealth tax evasion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax evasion on original income	0.00	0.03	0.02	0.02	0.06	0.06	0.07	0.04	0.06	0.06	0.06	0.14	0.15	0.77
TOTAL	0.01	0.05	0.04	0.04	0.07	0.08	0.08	0.05	0.07	0.07	0.07	0.16	0.16	0.96

Lithuania

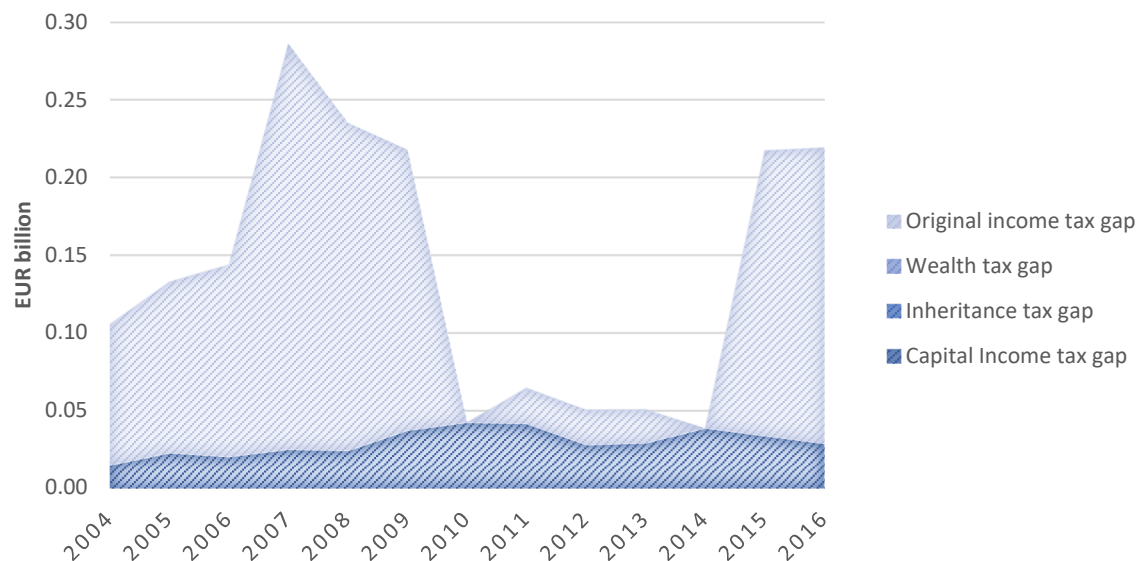


Highlights

- The average loss in tax revenue in Lithuania between 2004 and 2016 amounted to EUR 40 million.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.02	0.01	0.01	0.02	0.02	0.01	0.16
Inheritance and wealth tax evasion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax evasion on original income	0.01	0.00	0.03	0.05	0.07	0.04	0.02	0.02	0.03	0.03	0.01	0.00	0.00	0.32
TOTAL	0.02	0.01	0.04	0.05	0.07	0.05	0.04	0.04	0.04	0.04	0.03	0.02	0.01	0.47

Luxembourg

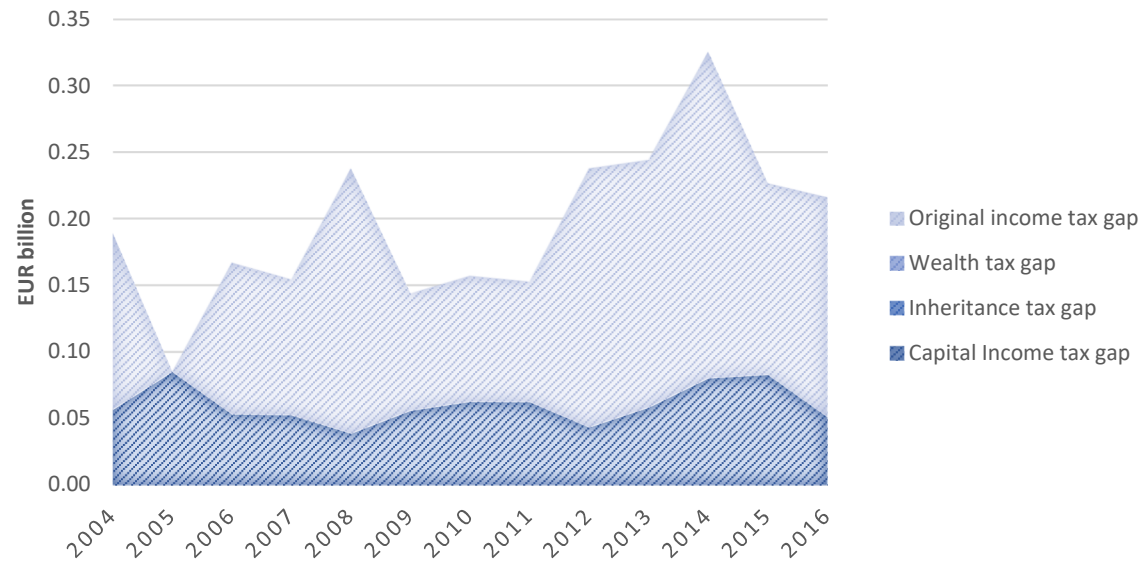


Highlights

- The average loss in tax revenue in Luxembourg between 2004 and 2016 amounted to EUR 140 million.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.01	0.02	0.02	0.02	0.02	0.04	0.04	0.04	0.03	0.03	0.04	0.03	0.03	0.38
Inheritance and wealth tax evasion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax evasion on original income	0.09	0.11	0.12	0.26	0.21	0.18	0.00	0.02	0.02	0.02	0.00	0.18	0.19	1.42
TOTAL	0.11	0.13	0.14	0.29	0.24	0.22	0.04	0.06	0.05	0.05	0.04	0.22	0.22	1.80

Hungary

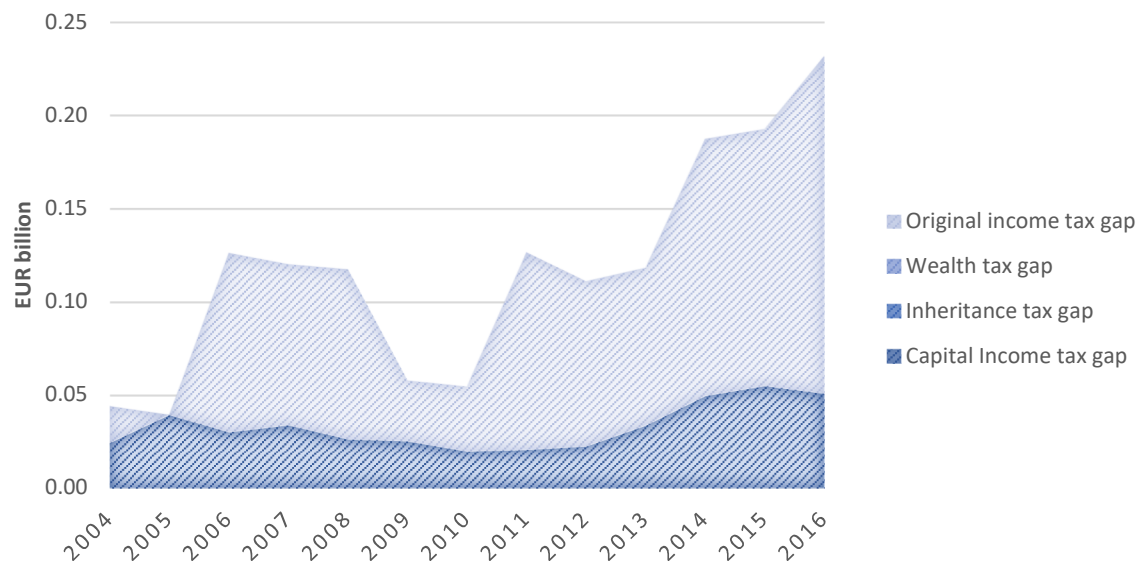


Highlights

- The average loss in tax revenue Hungary between 2004 and 2016 amounted to EUR 0.2 billion.
- As of 2011, a flat-rate personal income tax rate of 16% was introduced.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.06	0.08	0.05	0.05	0.04	0.06	0.06	0.06	0.04	0.06	0.08	0.08	0.05	0.78
Inheritance and wealth tax evasion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax evasion on original income	0.13	0.00	0.11	0.10	0.20	0.09	0.09	0.09	0.19	0.19	0.25	0.14	0.17	1.75
TOTAL	0.19	0.08	0.17	0.15	0.24	0.14	0.16	0.15	0.24	0.24	0.33	0.23	0.22	2.53

Malta

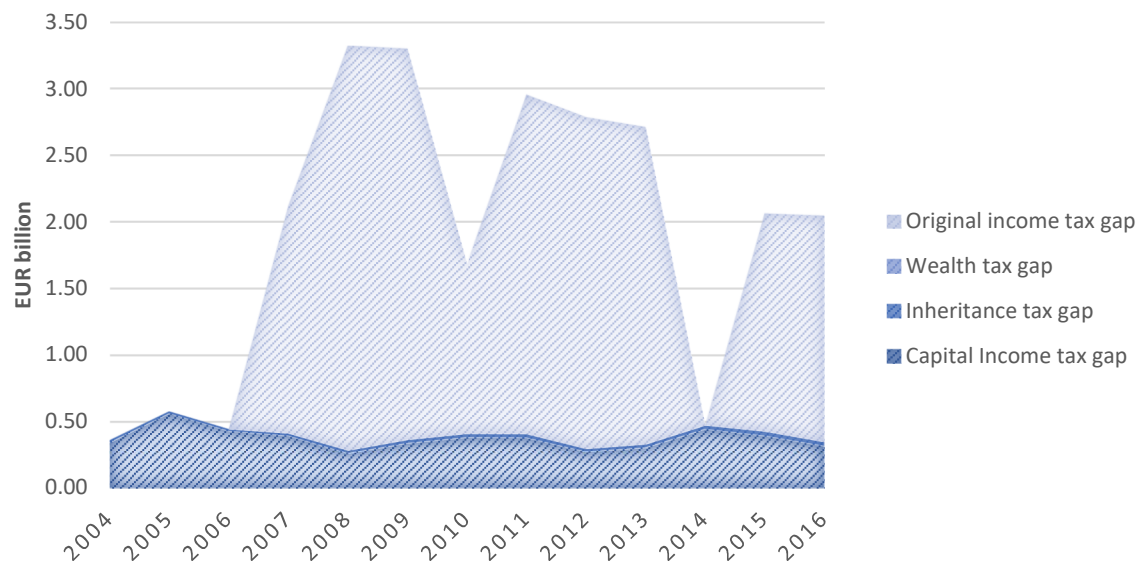


Highlights

- The average loss in tax revenue in Malta between 2004 and 2016 amounted to EUR 120 million.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.02	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.03	0.05	0.06	0.05	0.43
Inheritance and wealth tax evasion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax evasion on original income	0.02	0.00	0.10	0.09	0.09	0.03	0.03	0.11	0.09	0.08	0.14	0.14	0.18	1.10
TOTAL	0.04	0.04	0.13	0.12	0.12	0.06	0.05	0.13	0.11	0.12	0.19	0.19	0.23	1.53

Netherlands

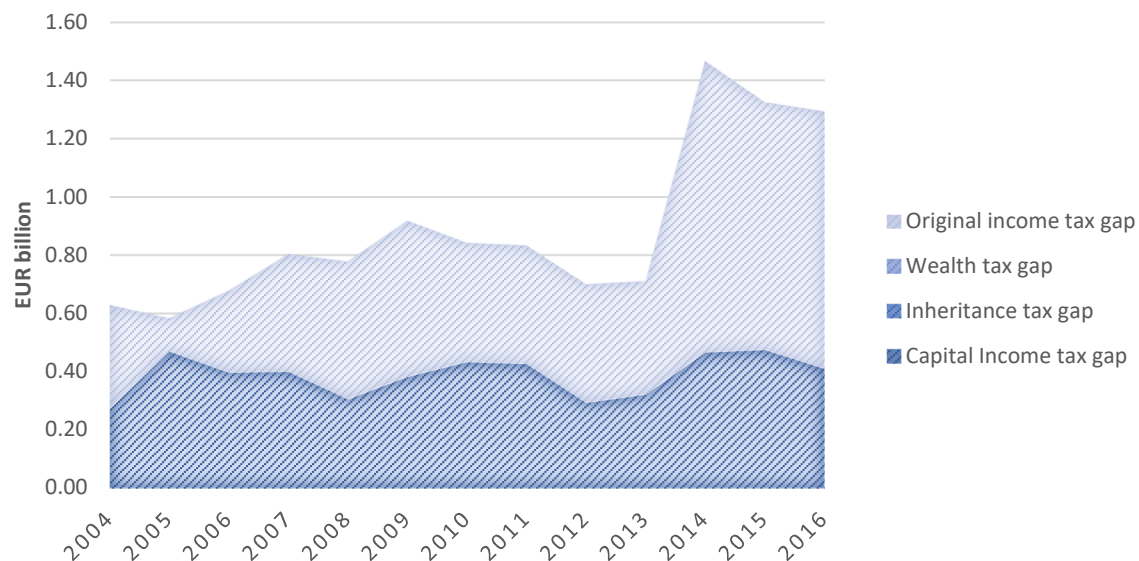


Highlights

- The average loss in tax revenue in the Netherlands between 2004 and 2016 amounted to EUR 1.9 billion.
- Evasion by Dutch taxpayers contributed to ca. 4% of tax revenue losses in all EU MS.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.34	0.56	0.43	0.39	0.26	0.34	0.38	0.38	0.27	0.30	0.44	0.39	0.31	4.79
Inheritance and wealth tax evasion	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.32
Tax evasion on original income	0.00	0.00	0.00	1.71	3.04	2.93	1.28	2.55	2.49	2.38	0.00	1.64	1.70	19.71
TOTAL	0.36	0.58	0.44	2.12	3.32	3.30	1.68	2.95	2.79	2.71	0.47	2.06	2.04	24.82

Austria

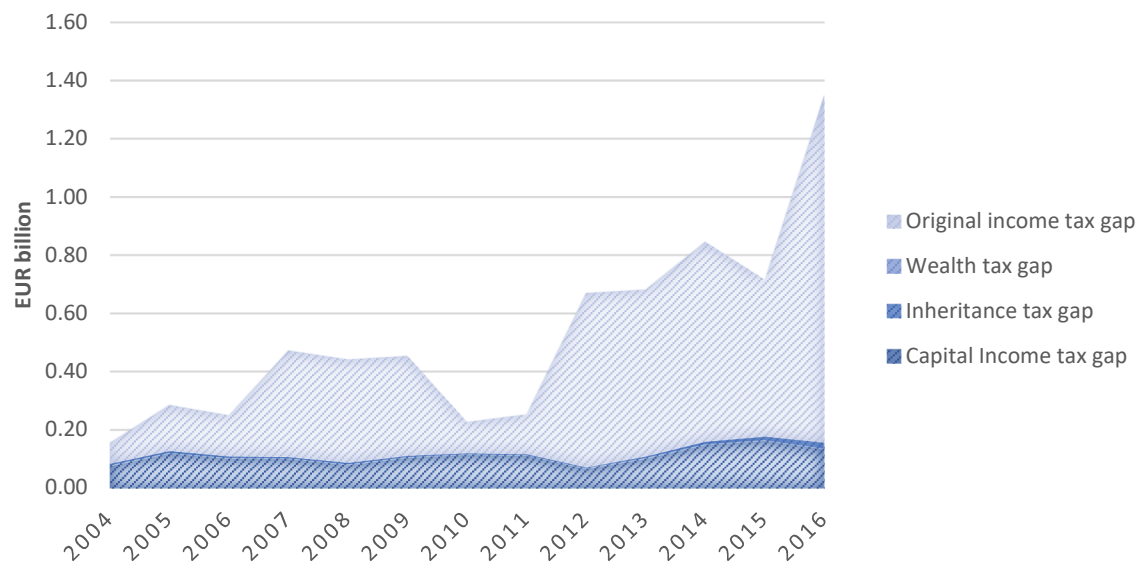


Highlights

- The average yearly loss in tax revenue in Austria between 2004 and 2016 amounted to EUR 0.9 billion.
- As of 2009 inheritance tax was discontinued.
- In 2016, top personal income tax rate increased from 50% to 55%

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.27	0.47	0.40	0.40	0.30	0.38	0.43	0.43	0.29	0.32	0.47	0.47	0.41	5.05
Inheritance and wealth tax evasion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax evasion on original income	0.36	0.11	0.28	0.40	0.47	0.53	0.41	0.41	0.41	0.39	1.00	0.85	0.88	6.50
TOTAL	0.63	0.58	0.68	0.80	0.78	0.92	0.84	0.83	0.70	0.71	1.47	1.32	1.29	11.55

Poland

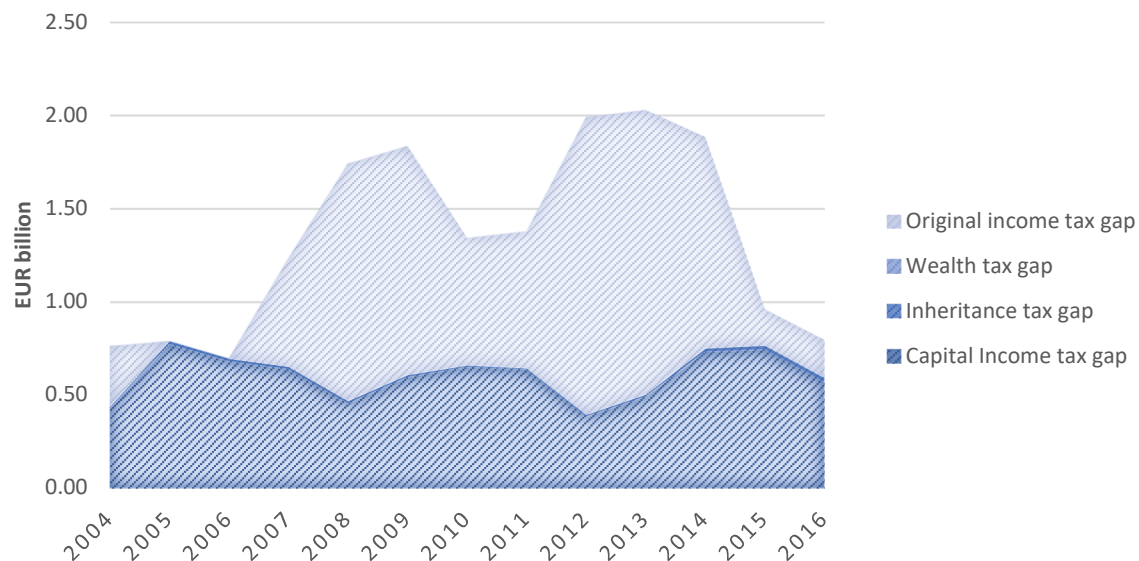


Highlights

- The average loss in tax revenue in Poland between 2004 and 2016 amounted to EUR 0.5 billion.
- Poland lowered its top personal income tax rate as of 2009.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.08	0.12	0.10	0.10	0.08	0.10	0.11	0.11	0.07	0.10	0.15	0.16	0.13	1.42
Inheritance and wealth tax evasion	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.02	0.02	0.12
Tax evasion on original income	0.07	0.16	0.14	0.37	0.35	0.34	0.11	0.14	0.60	0.57	0.69	0.54	1.19	5.27
TOTAL	0.15	0.29	0.25	0.47	0.44	0.45	0.23	0.25	0.67	0.68	0.85	0.72	1.35	6.80

Portugal

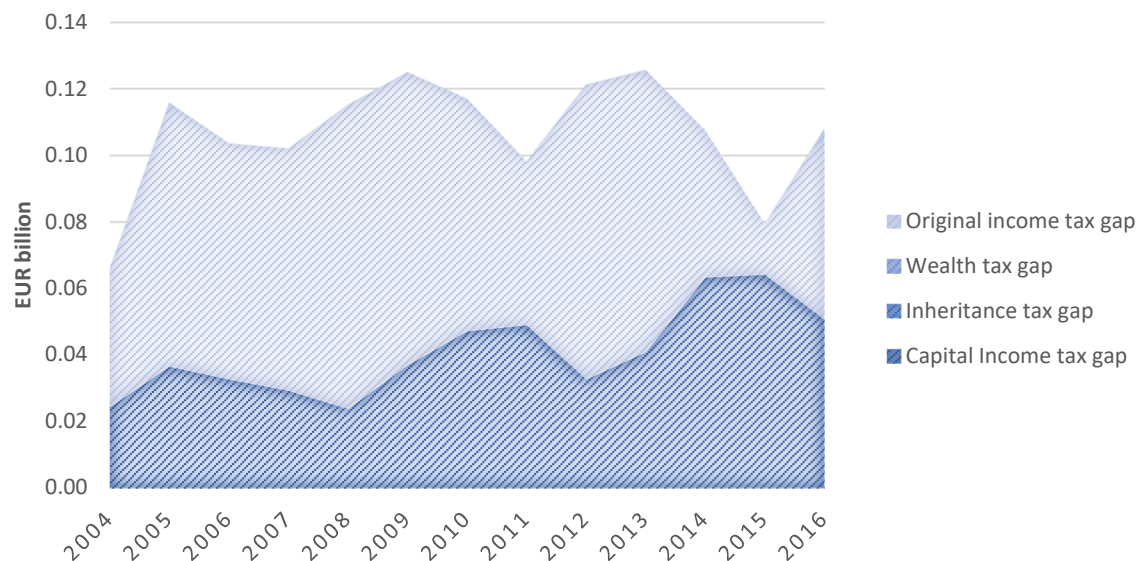


Highlights

- The average loss in tax revenue in Portugal between 2004 and 2016 amounted to EUR 1.3 billion.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.42	0.77	0.68	0.64	0.45	0.59	0.65	0.64	0.38	0.49	0.73	0.74	0.57	7.76
Inheritance and wealth tax evasion	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.19
Tax evasion on original income	0.33	0.00	0.00	0.58	1.27	1.23	0.68	0.73	1.60	1.53	1.13	0.20	0.20	9.48
TOTAL	0.76	0.79	0.69	1.23	1.74	1.84	1.34	1.38	1.99	2.03	1.88	0.96	0.79	17.43

Romania

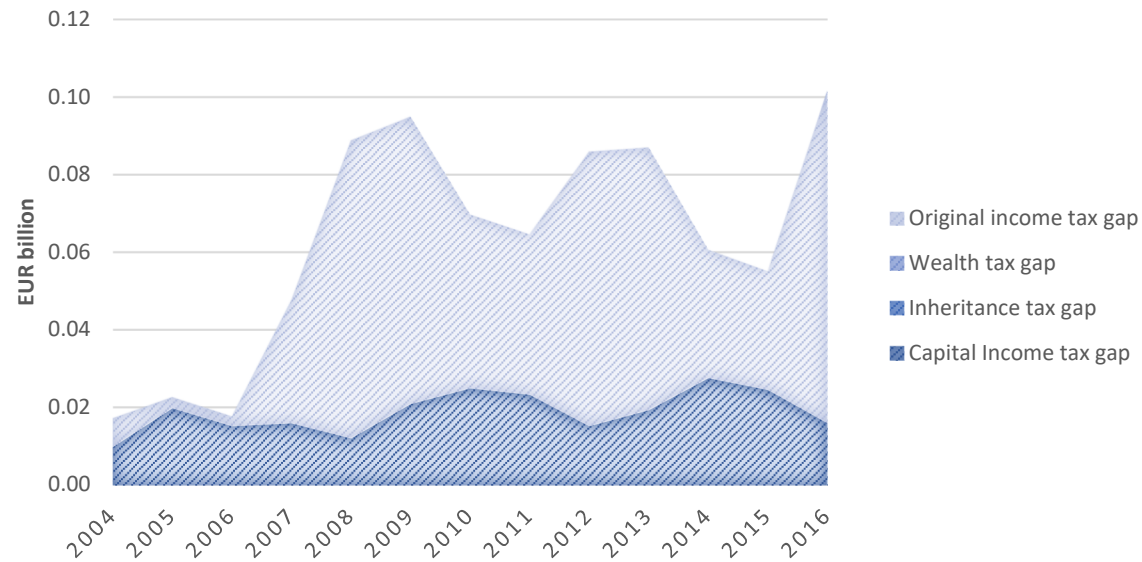


Highlights

- The average loss in tax revenue in Romania between 2004 and 2016 amounted to EUR 0.11 billion.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.02	0.04	0.03	0.03	0.02	0.04	0.05	0.05	0.03	0.04	0.06	0.06	0.05	0.53
Inheritance and wealth tax evasion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax evasion on original income	0.04	0.08	0.07	0.07	0.09	0.09	0.07	0.05	0.09	0.08	0.04	0.02	0.06	0.85
TOTAL	0.07	0.12	0.10	0.10	0.12	0.13	0.12	0.10	0.12	0.13	0.11	0.08	0.11	1.38

Slovenia

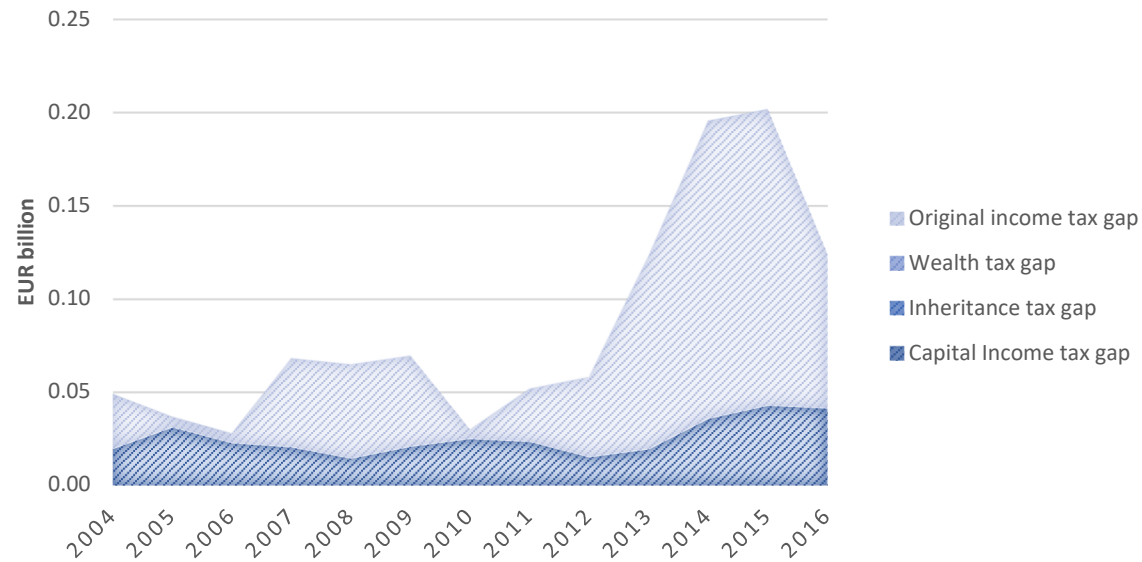


Highlights

- The average loss in tax revenue in Slovenia between 2004 and 2016 amounted to EUR 6 million.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.01	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.24
Inheritance and wealth tax evasion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax evasion on original income	0.01	0.00	0.00	0.03	0.08	0.07	0.04	0.04	0.07	0.07	0.03	0.03	0.09	0.57
TOTAL	0.02	0.02	0.02	0.05	0.09	0.09	0.07	0.06	0.09	0.09	0.06	0.06	0.10	0.81

Slovakia

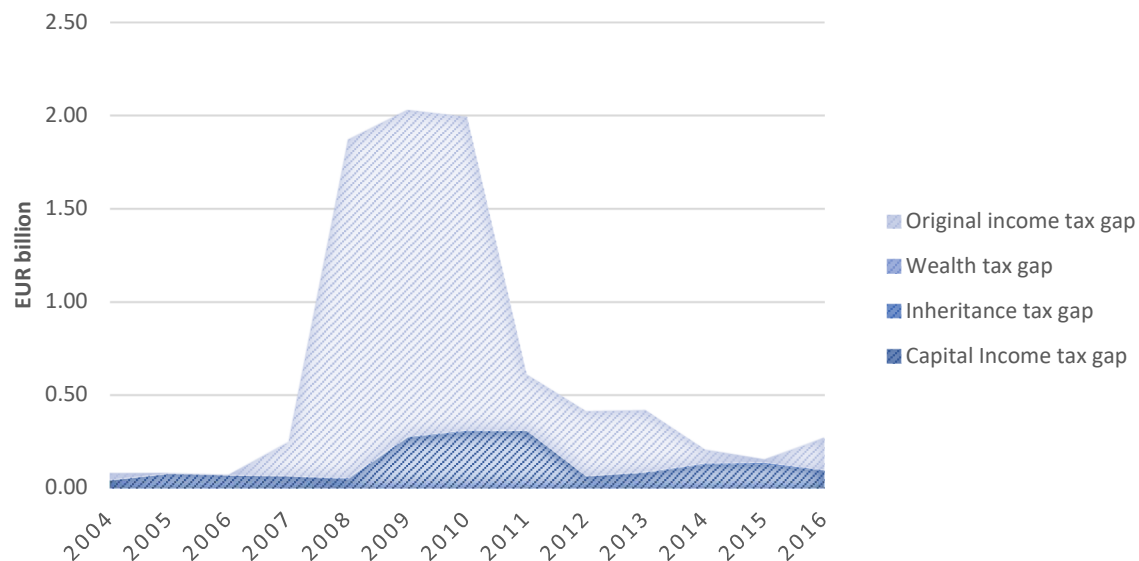


Highlights

- The average loss in tax revenue in Slovakia between 2004 and 2016 amounted to EUR 80 million.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.02	0.03	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.04	0.04	0.04	0.33
Inheritance and wealth tax evasion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax evasion on original income	0.03	0.01	0.01	0.05	0.05	0.05	0.00	0.03	0.04	0.10	0.16	0.16	0.08	0.77
TOTAL	0.05	0.04	0.03	0.07	0.06	0.07	0.03	0.05	0.06	0.12	0.20	0.20	0.12	1.10

Finland

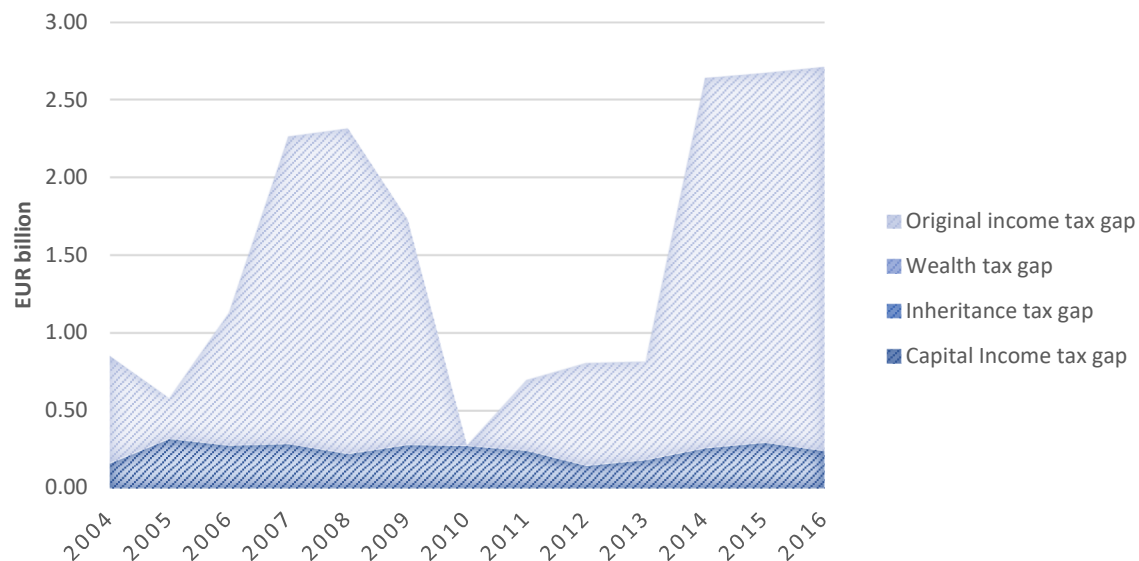


Highlights

- The average loss in tax revenue in Finland between 2004 and 2016 amounted to EUR 0.7 billion.
- Offshore wealth and, as a result, evaded tax increased and reached its maximum in 2009.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.04	0.08	0.07	0.06	0.05	0.27	0.30	0.31	0.06	0.08	0.13	0.13	0.09	1.67
Inheritance and wealth tax evasion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.03
Tax evasion on original income	0.04	0.00	0.00	0.18	1.82	1.75	1.68	0.30	0.35	0.33	0.07	0.02	0.17	6.73
TOTAL	0.08	0.08	0.07	0.25	1.87	2.03	1.99	0.61	0.41	0.42	0.21	0.15	0.27	8.44

Sweden

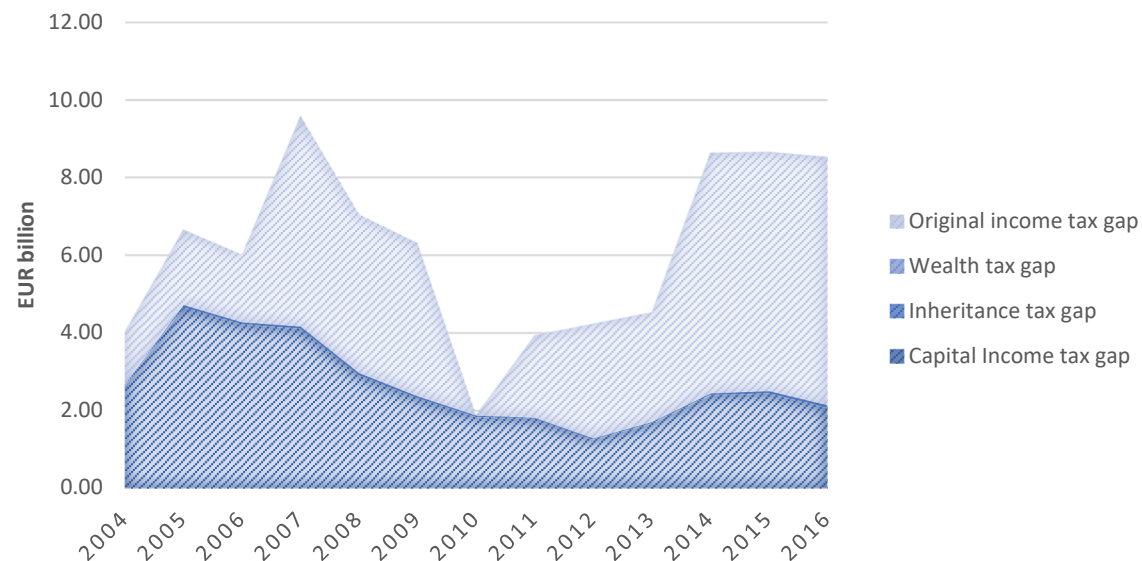


Highlights

- The average loss in tax revenue in Sweden between 2004 and 2016 amounted to EUR 1.5 billion.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	0.16	0.32	0.28	0.29	0.22	0.28	0.27	0.24	0.15	0.18	0.26	0.29	0.24	3.18
Inheritance and wealth tax evasion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax evasion on original income	0.69	0.26	0.85	1.98	2.09	1.45	0.00	0.45	0.66	0.63	2.38	2.38	2.47	16.27
TOTAL	0.85	0.58	1.13	2.26	2.31	1.73	0.27	0.70	0.81	0.81	2.64	2.67	2.71	19.46

United Kingdom



Highlights

- The loss in tax revenue between 2004 and 2016 amounted to 6.2 billion EUR, on average.
- The peak of offshore wealth kept by British residents was in 2016 when it reached EUR 219 billion.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Capital income tax evasion	2.63	4.66	4.21	4.10	2.90	2.32	1.84	1.79	1.26	1.68	2.40	2.44	2.07	34.29
Inheritance and wealth tax evasion	0.04	0.06	0.06	0.07	0.07	0.06	0.04	0.03	0.04	0.04	0.05	0.06	0.08	0.71
Tax evasion on original income	1.35	1.94	1.73	5.41	4.07	3.93	0.00	2.12	2.94	2.81	6.18	6.15	6.38	45.01
TOTAL	4.02	6.66	6.01	9.58	7.05	6.31	1.88	3.94	4.23	4.53	8.63	8.65	8.52	80.00

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