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ABSTRACT

Offshore tax evasion, international money laundering, and aggressive international tax planning significantly reduce government revenues. In particular, for some low-income countries the amount of capital flight (where elites move and hide monies offshore in tax havens) exceeds foreign aid. Governments struggle to enforce their tax laws to constrain these actions, and they are inhibited by a lack of information concerning international capital flows. The main international policy response to these developments has been to promote global financial transparency through heightened cross-border exchanges of tax information. The Article examines elements of optimal cross-border tax information exchange laws and policies by focusing on three key challenges: information quality, taxpayer privacy, and enforcement. Relatedly, the Article discusses how the exchange of automatic "big tax data" combined with data analytics can help address these challenges. The recommended laws and policies will improve how countries

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* Professor, Queen's University Faculty of Law (Canada). An earlier draft was first presented at the Human Rights and Tax in an Unequal World Conference at the New York University School of Law on September 22, 2016. The Article has also benefited from presentations and panel discussions at a University of Toronto Faculty of Law workshop, a Common Reporting Standard symposium by the Canadian Institute, the Chicago Quantitative Alliance annual meeting in Las Vegas, an Ontario Bar Association Taxation Law Program on Offshore Tax Evasion, the Deloitte Tax Symposium by the University of Waterloo, and a presentation at Osler, Hoskin & Harcourt LLP. Professor Cockfield is grateful for comments received by participants at these fora as well as comments by Maya Forstater. He also wishes to thank Sarah Hawkins, JD candidate, for her helpful research assistance.

share tax information, which in turn will help inhibit global financial crimes.

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I. INTRODUCTION

Civil war has raged in South Sudan since 2013. Since the beginning of this war, corrupt elites and war profiteers have illegally diverted and hidden hundreds of millions of dollars through anonymous tax haven investments.[1] At the same time, roughly five out of ten million citizens remain and subsist in near-starvation circumstances.[2] As long as elites can profit from war and hide the monies offshore, they may not have incentives to end the conflict. International tax and finance laws allow for these secret offshore accounts and hence contribute to international human rights violations in South Sudan and elsewhere.[3]

Relatedly, a 2014 report by the United Nations Special Rapporteur for Extreme Poverty and Human Rights notes that international tax policy serves as a significant contributor to global poverty and income inequality.[4] In support, analysis of the first major tax haven data leak shows how elites in low and middle income countries move and hide money offshore and how special tax incentives allow firms to greatly reduce their global tax liabilities.[5]

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1. THE SENTRY, WAR CRIMES SHOULDN'T PAY: STOPPING THE LOOTING AND DESTRUCTION IN SOUTH SUDAN 11 (Sept. 2016) (citing a speech from the President of South Sudan: "An estimated $4 billion are unaccounted for or, simply put, stolen by former and current officials as well as corrupt individuals with close ties to government officials."); *see* Somini Sengupta, *In South Sudan, Mass Killings, Rapes, and the Limits of U.S. Diplomacy*, N.Y. TIMES (Jan. 18, 2017) (discussing how diplomatic efforts failed to stop the risk of genocide), https://www.nytimes.com/2017/01/18/world/africa/south-sudan-united-nations.html [https://perma.cc/N4VG-FD9E] (archived Sept. 24, 2017); Geoffrey York, *'Man-made' famine declared in South Sudan: United Nations*, GLOBE AND MAIL (Feb. 20, 2017) (noting that the United Nations declared South Sudan to be in the midst of a famine), https://beta.theglobeandmail.com/news/world/man-made-famine-declared-in-south-sudan-united-nations-says/article34088530/?ref= http://www.theglobeandmail.com& [http://perma.cc/E73P-GD76] (archived Sept. 24, 2017).

2. *See* THE SENTRY, *supra* note 1, at 5 (noting roughly five out of ten million citizens receive food aid to stave off starvation).

3. The Office of the United Nations High Commissioner for Human Rights has called South Sudan "one of the most horrendous human rights situations in the world." *Id.*

4. Office of the High Comm'r for Human Rights (OHCHR), Report of the Special Rapporteur on extreme poverty and human rights, Ms. Maria Magdalena Sepùlveda Carmona, on taxation and human rights, U.N. Doc. A/69/297, at 3 (2014).

5. The data leak, obtained by the International Consortium for Investigative Journalists in 2012, included over 2.5 million documents. Gerard Ryle et al., *Secret Files Expose Offshore's Global Impact*, INT'L CONSORTIUM INVESTIGATIVE JOURNALISTS (Apr. 3, 2013) http://www.icij.org/offshore/secret-files-expose-offshores-global-impact [http://perma.cc/G4J9-9NDZ] (archived Sept. 24, 2017). The total size of the leaked

Capital flight from some low income countries exceeds the amount of inward foreign aid, reducing available resources and leading to devastating consequences, including starvation, disease, and human rights violations.[6]

In addition, multinational firms, which are often based in wealthier countries, operate and exploit natural resources in developing countries, at times without paying any significant tax. This leads to the so-called resource curse where resource-rich countries in the developing world frequently do not benefit from economic growth or tax revenues as a result of resource exploitation.[7] This outcome is attributable to corruption that occurs within some developing countries where bribes or gifts are provided by nonresident multinational firms to local government officials in exchange for tax concessions.[8]

The main policy response thus far to all of these challenges is to encourage countries to exchange tax and financial information so that home countries can better enforce their tax laws to inhibit undesired activities. Accordingly, designing optimal exchange of information (EOI) laws and policies for cross-border tax purposes is one of the main challenges for contemporary international tax law and policy.[9]

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files obtained by the ICIJ "is more than 160 times larger than the leak of US State Department documents by WikiLeaks in 2010." *Id.* For discussion, see Arthur J. Cockfield, *Big Data and Tax Haven Secrecy*, 12 FLA. TAX REV. 483, 510–517 (2016) [hereinafter *Big Data*] (discussing the ICJ data leak and global financial crimes). Global financial crimes include offshore tax evasion, international money laundering, and cross-border terrorist financing. Aggressive international tax avoidance is technically legal in that it seeks to comply with all laws while reducing global tax liabilities. *Id.* at 515.

6. LLOYD LIPSETT ET AL., INT'L BAR ASS'N, TAX ABUSES, POVERTY AND HUMAN RIGHTS: A REPORT OF THE INTERNATIONAL BAR ASSOCIATION'S HUMAN RIGHTS INSTITUTE TASK FORCE ON ILLICIT FINANCIAL FLOWS, POVERTY AND HUMAN RIGHTS 1–5 (2013); *see* John Christensen, *Africa's Bane: Tax Havens, Capital Flight and the Corruption Interface* 15–18 (Elcano Royal Inst., Working Paper No. 1/2009, 2009) (describing how certain African countries, which are vulnerable to capital flight, adopt haven-like tax policies to compete with tax havens); Léonce Ndikumana & James K. Boyce, *New Estimates of Capital Flight from Sub-Saharan African Countries: Linkages with External Borrowing and Policy Options* 27–30 (Political Econ. Research Inst., Working Paper No. 166, 2008) (concluding that a "narrow, relatively wealthy stratum" of the populations of the countries under study maintained assets in foreign countries that exceeded the national public debts of their own countries). *But see* Maya Forstater, *It's not aid in reverse, illicit financial flows are more complicated than that*, THE GUARDIAN (Jan. 18, 2017) (questioning the methodology used to calculate illicit capital flows), https://www.theguardian.com/global-development-professionals-network/2017/jan/18/its-not-aid-in-reverse-illicit-financial-flows-are-more-complicated-than-that [http://perma.cc/4828-5JEM] (archived Sept. 24, 2017).

7. *See* Allison Christians, *Putting the Reign Back in Sovereign*, 40 PEPP. L. REV. 1373, 1385–1389 (2013) (defining "resource curse" as refering to countries that are resource rich but economically poor); *see also* discussion *infra* Part II.A.2.

8. Christians, *supra* note 7, at 1385.

9. Indeed, cross-border tax sharing "has emerged in recent years as a—probably the—central issue in international tax policy discussions." Michael Keen & Jenny E. Ligthart, *Information Sharing and International Taxation: A Primer*, 13 INT'L TAX AND PUBLIC FINANCE 81, 81 (2006).

While the roots of EOI go back to the post-World War I environment, the process began to gather real policy steam with the 1998 Organization for Economic Cooperation and Development (OECD) report on Harmful Tax Competition that threatened to blacklist any noncooperative tax haven.[10] In particular, governments now seek to encourage more and better EOI to inhibit a host of revenue-depleting activities, including aggressive international tax avoidance, offshore tax evasion, and international money laundering.[11]

Since the OECD's opening shot in the late 1990s, there has been a series of ambitious EOI reforms, a somewhat stunning development in the normally glacially paced world of international tax law (see Part II.B). Recent reforms include the US unilateral Foreign Account Tax Compliance Act (FATCA); bilateral tax information exchange agreements (TIEAs); and multilateral efforts to share bulk cross-border tax information on an automatic basis called the Common Reporting Standard (CRS) and Country-by-Country Reporting (CBCR).

This Article discusses EOI initiatives with an eye toward optimal law and policy. By providing a transaction cost perspective, it shows how governments can reduce taxpayer and government costs by focusing on (a) the exchange of high quality tax and non-tax data; (b) the provision of training and resources to low and middle income countries to facilitate international tax administration; (c) the application of data analytics to exchanged and domestic sources of tax and non-tax information; and (d) the development of taxpayer privacy safeguards.

The Article is organized as follows: Part II provides context by reviewing how taxpayers and tax authorities have mixed views on the need for global financial transparency, and how the recent and varied EOI reforms reflect this state of affairs. Part III reviews the central policy challenges involved in efficient and fair EOI: (a) the need to transfer high quality information (that is, information that is available, useful, and verifiable for tax authorities); (b) how to protect taxpayer privacy interests, which vary from country to country; and (c) how to ensure meaningful enforcement of EOI by countries that have strong financial secrecy laws and/or lack tax administration resources. Part IV discusses how the application of data analytics to transferred tax and non-tax information can help authorities audit and investigate offshore tax evasion and aggressive international tax avoidance. Part V concludes.

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10. ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, HARMFUL TAX COMPETITION: AN EMERGING GLOBAL ISSUE (1998); *see infra* notes 33–36 and accompanying text.

11. For background policy pressures, see Steven A. Dean, *The Incomplete Global Market for Tax Information*, 49 B.C. L. REV. 605 (2008) (advocating selling and purchasing cross-border tax information to promote efficient exchanges).

II. TRANSACTION COSTS AND CROSS-BORDER TAX INFORMATION EXCHANGE REFORMS

This Part provides context first by setting out the main information and incentive problems facing tax authorities when they seek information concerning international investment income, and second by discussing the main US and international law and policy responses to these problems.

A. *High Transaction Costs and EOI Reforms*

This subpart outlines the main transaction cost[12] challenges confronting EOI reforms and calls for legal and policy solutions that reduce transaction costs facing taxpayers and tax authorities. Depending on the context, laws and policies (and accompanying bureaucracies) can either reduce or increase these transaction costs, promoting or discouraging efficiencies.[13] Unlike the private sector, there are no competitive markets for most goods and services supplied by the public sector. As a result, "high transaction cost issues gravitate to the polity."[14] As subsequently discussed, this is certainly the case with respect to EOI initiatives within the international tax regime.

1. Taxpayers' Preference for Global Financial Opacity

Under the current international tax regime, governments generally do not know anything about a resident taxpayer's global activities beyond taxpayer self-disclosure.[15] Enhanced EOI would

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12. Transaction costs are the costs associated with discerning a price on a given exchange. Coase described how legal rules influence transaction costs as exchanges involve the exchange of rights to perform certain actions (and not merely the trade in particular goods and services). R. H. Coase, *The Problem of Social Cost*, 3 J. L. & ECON. 1, 15–16, 43–44 (1960). While transaction costs are normally discussed in the context of private sector exchanges, transaction cost economics and transaction cost politics extend the analysis to the public sphere. Under these approaches, government institutions (that is, informal and formal rules) along with government institutional arrangements (that is, organizations) determine the level of transaction costs facing private sector and government actors, which in turn influences economic activities. Oliver E. Williamson, *Public and Private Bureaucracies: A Transaction Cost Economics Perspective*, 15 J. L. ECON. & ORG. 306 *passim* (1999).

13. *See* AVINASH K. DIXIT, THE MAKING OF ECONOMIC POLICY: A TRANSACTION-COST POLITICS PERSPECTIVES 58–61 (MIT Press 1996).

14. Douglass C. North, *A Transaction Cost Theory of Politics*, 2 J. THEORETICAL POL. 355, 362 (1990).

15. For discussion of the difficulties associated with piercing tax haven secrecy, see U.S. S. PERMANENT SUBCOMM. ON INVESTIGATIONS, COMM. ON HOMELAND SEC. AND GOV'T AFFAIRS, MINORITY & MAJORITY STAFF REP., TAX HAVEN ABUSES: THE ENABLERS, THE TOOLS AND SECRECY 1 (2006) (reviewing evidence that Americans illegally evade between $40 and $70 billion in US taxes each year).

seek to change this state of affairs by providing governments with more and better sources of tax information about their resident taxpayer's global activities. Taxpayers engaged in offshore tax evasion and international money laundering clearly prefer the status quo, which makes it difficult or impossible for authorities to investigate and track their criminal activities.

Less obviously, many taxpayers engaged in legitimate cross-border economic transactions and investments also prefer the current regime with its high transaction costs and lack of global financial transparency.

Information asymmetries raise transaction costs facing taxpayers engaged in cross-border transactions and investments.[16] A taxpayer does not know what sort of assessment will take place after a tax return is filed. In particular, multinational firms pay a hedge price to guard against risks that they will be overtaxed by domestic and foreign tax authorities on their sources of cross-border income (including the risk that a public revelation of any tax plan may harm the firm's reputation and reduce the value of intangible assets like brand or goodwill).[17]

All of this hedging takes place in an environment of highly complex technical rules, making it difficult for taxpayers to predict how domestic tax laws and tax treaties will mesh with foreign tax laws. In particular, many governments now deploy increasingly technical rules—Specific Anti-Avoidance Rules (SAARs), General Anti-Avoidance Rules (GAARs), judicially promoted anti-avoidance rules, and so on—to thwart aggressive tax avoidance strategies. This technical complexity contributes to high taxpayer transaction costs due to resources deployed to assess how the rules interact as well as how they will be enforced. Many taxpayers with the resources to engage in cross-border tax planning are actually financially better off under this regime as long as their transaction costs are outweighed by global tax savings.[18]

Moreover, under the current approach taxpayers have an informational advantage over tax authorities as the latter "ex ante lacks information about the true facts and circumstances on the

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16. For discussion, see Arthur J. Cockfield, *The Limits of the International Tax Regime as a Commitment Projector*, 33 VA. TAX REV. 59, 72–80 (2013) [hereinafter *Commitment Projector*] (describing the international tax regime as a legal and political system that enables credible government commitments to actors such as taxpayers in order to reduce transaction costs).

17. *See* Arthur J. Cockfield & Carl MacArthur, *Country-by-Country Reporting and Commercial Confidentiality*, 63 CAN. TAX J. 627, 644–45 (2015).

18. *See* Victor Fleischer, *Regulatory Arbitrage*, 89 TEX. L. REV. 227, 257–64 (2010) (discussing how transaction costs affect tax planning incentives).

taxable case, whereas the taxpayer has strong incentives not to disclose all available information . . . ."[19]

As revealed by accounting works in this area, taxpayers involved in legitimate businesses at times prefer less financial transparency when it comes to the disclosure of tax and financial information concerning their international activities.[20] First, enhanced EOI may trigger a higher risk of audit, forcing the taxpayer to deploy resources to guard against this risk.[21] Second, taxpayers may desire to hide "sensitive" forms of financial information that could be discerned through EOI reforms (e.g., reporting on taxes paid in every country where a firm operates could reveal profit margins for a global supply chain).[22]

Third, taxpayers may wish to guard against the risk that trade secrets or commercially confidential information will be improperly revealed by governments to foreign competitors, harming their ability to compete.[23] Finally, managers may prefer less transparency to hide their suboptimal allocation of global resources from their own shareholders: greater global financial transparency would let analysts discover and reveal this poor performance.[24]

2. Tax Authorities and Mixed Incentives

While taxpayers generally prefer less global financial transparency, governments have mixed incentives regarding EOI initiatives. These governments are confronted with different and at-times conflicting political incentives as they pursue distinct national socioeconomic agendas through their tax systems.

On the one hand, governments want a fair and efficient tax system to promote compliance and revenue collection. More and

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19. Markus Brem & Thomas Tucha, *Globalization, Multinationals, and Tax Base Allocation: Advance Pricing Agreements as Shifts in International Taxation?*, *in* INTERNATIONAL TAXATION HANDBOOK: POLICY, PRACTICE, STANDARDS, AND REGULATION 129 (Colin Read & Greg N. Gregoriou eds., 2007).

20. We reviewed empirical studies within the accounting field that show mixed results concerning the relationship between reporting geographic earnings and protecting commercial secrets: some studies conclude that geographic earnings disclosures harm the competitiveness of firms, while others suggest that such disclosures do not promote these harmful outcomes. Cockfield & MacArthur, *supra* note 17, at 647–50.

21. See the discussion in Ole-Kristian Hope, Mark Ma & Wayne B. Thomas, *Tax Avoidance and Geographic Earnings Disclosure*, 56 J. ACCT. & ECON. 170, 185 (2013).

22. *See* Christine A. Botosan & Mary S. Harris, *Motivations for a Change in Disclosure Frequency and Its Consequences: An Examination of Voluntary Quarterly Segment Disclosures*, 38 J. OF ACCT. RES. 329, 334 (2000).

23. *See* P.G. Berger & R. Hahn, *Segment Profitability and the Proprietary and Agency Costs of Disclosure*, 82 ACCT. REV. 869, 870–71 (2007).

24. Mary Stanford Harris, *The Association between Competition and Managers' Business Segment Reporting Decisions*, 36 J. OF ACCT. RES. 111, 126 (1998).

better cross-border tax information will allow governments to pursue criminal investigations into offshore tax evasion and international money laundering in circumstances where taxpayers use business entities to mask criminal activities.[25]

In addition, enhanced EOI would help tax authorities audit aggressive international tax planning.[26] As noted above, taxpayers have knowledge of their specific facts and circumstances while tax authorities must find and assess noncompliant tax returns without such knowledge.[27] Accordingly, the information battle often takes place between insiders (taxpayers) and outsiders (tax authorities). These endlessly varied fact patterns combined with the tax complexity noted previously significantly raise enforcement costs for tax authorities.

From an international equity perspective, global financial transparency via EOI may also encourage good governance in low income countries where foreign multinational firms exploit natural

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25. U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-13-318, OFFSHORE TAX EVASION: IRS HAS COLLECTED BILLIONS OF DOLLARS, BUT MAY BE MISSING CONTINUED EVASION 1 (2013) [hereinafter GAO, OFFSHORE TAX EVASION]; *see also Tax Haven Banks and U.S. Tax Compliance: Hearing Before the S. Permanent Subcomm. on Investigations of the Comm. on Homeland Sec. and Gov't Affairs*, 110th Cong., 2d Sess. 1 n. 1 (2008) (estimating a $100 billion annual loss from both individual tax evasion and corporate tax planning "abuses").

26. In 2013, the Organisation for Economic Co-operation and Development (OECD) and the G20 began to explore how to jointly tackle the problem of tax planning with tax havens, leading to revenue losses in relatively high tax countries like the United States. *See* ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, ADDRESSING BASE EROSION AND PROFIT SHIFTING 17 (2013) [hereinafter OECD Base Erosion Report]. The United States has ongoing domestic reform efforts to address aggressive international tax avoidance strategies (i.e., the legal efforts by multinational firms to lower their global tax liabilities) as well as international tax evasion (i.e., the criminal efforts by US citizens and residents to avoid taxes generally through purposeful non-disclosure of offshore income or properties). For background discussion, see, for example, UNITED STATES SENATE, MINORITY STAFF OF THE PERMANENT SUBCOMMITTEE ON INVESTIGATIONS, U.S. TAX SHELTER INDUSTRY: THE ROLE OF ACCOUNTANTS, LAWYERS, AND FINANCIAL PROFESSIONALS 3 (Washington: U.S. Senate, 2003) (describing how a small sample of taxpayers had managed to reduce federal tax revenues by $1.4 billion through the use of tax shelter arrangements); *see also* THE WHITE HOUSE AND DEPARTMENT OF TREASURY, PRESIDENT'S FRAMEWORK FOR BUSINESS TAX REFORM 7–8, 13–15 (Feb. 2012) (discussing the need for reform to inhibit the usage of aggressive cross-border tax planning that reduces US tax revenues). In recent years there have been public outcries, mainly within the United States and the United Kingdom, against perceived aggressive international tax planning. *See, e.g.*, Simon Nevill and Jill Treanor, *Starbucks to pay £20m in tax over next two years after customer revolt*, THE GUARDIAN (Dec. 6, 2014), https://www.theguardian.com/business/2012/dec/06/starbucks-to-pay-10m-corporation-tax [http://perma.cc/5X8P-93QQ] (archived Sept. 24, 2017).

27. Under transaction cost approaches, an investment is "transaction-specific" when it would not have been undertaken were it not for the given transaction. Such investments are those made to support a specific private sector relationship; they would be inefficient (and therefore not undertaken) outside the context of that relationship. Brem & Tucha, *supra* note 19, at 129.

resources without paying any significant tax (that is, the so-called resource curse).[28] In addition, governments may wish to inhibit the ability of tax systems to distort economic decision making, which reduces economic growth as firms deploy resources for tax reasons and not out of economic rationales (hence resources do not get deployed to their most productive uses). Greater global financial transparency also works against the agency problem noted above where the agent (managers) hides suboptimal performance from its principal (shareholders). Finally, EOI could help law enforcement officials detect and disrupt cross-border terrorist financing, promoting national security objectives.[29]

On the other hand, governments often assert the need for "tax competitive" rules to support their domestic industries' efforts to engage in cross-border activities.[30] For this reason, governments around the world pass tax laws to effectively subsidize the international operations of their resident taxpayers who, it is thought, will be in a better position to compete with foreign firms.[31] Similarly, governments may heed taxpayers who advocate that

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28. *See* discussion *infra* notes 55–59.

29. *See* Shima Baradaran, Michael Findley, Daniel Nielson & Jason Sharman, *Funding Terror*, 162 U. PA. L. REV. 477, 493–494 (2014) (discussing the potential use by terrorists of offshore tax haven intermediaries). *But see* Richard Gordon, *Response: A Tale of Two Studies: The Real Story of Terrorism Financing*, 162 U. PA. L. REV. ONLINE 269, 281 (2014) (claiming that no studies have shown usage by terrorists of tax havens as financial intermediaries).

30. For instance, some observers claim the United States should modify its tax laws to exempt foreign active business income from taxation. *See* Mihir A. Desai and James Hines Jr., *Evaluating International Tax Reform*, 56 NAT'L TAX J. 487 *passim* (2003) (arguing that the United States should move toward an exemption tax system to maximize national and global welfare). Notably, there was also significant policy and academic opposition to the reform on the basis that a reformed residence-based system would better serve US economic interests as well as promote a fairer system based on ability-to-pay principles. *See, e.g.*, J. Clifton Fleming Jr. et al., *Designing a U.S. Exemption System for Foreign Income When the Treasury is Empty*, 13 FLA. TAX REV. 397 *passim* (2012) (elaborating on the design contours of an exemption system, assuming effective reform of the residence-based tax system is not politically feasible); Lawrence Lokken, *Territorial Taxation: Why Some U.S. Multinationals May be Less than Enthusiastic about the Idea (and Some Ideas They Really Dislike)*, 59 SMU L. REV. 751, 770–71 (2006). Critics of the tax competitiveness criterion state that it is not grounded in any substantive tax policy and should not serve as a guide to international tax policy. *See* Paul R. McDaniel, *Territorial vs Worldwide International Tax Systems: Which is Better for the U.S.?*, 8 FLA. TAX REV 283, 285 n.3 (2007).

31. While many governments appear to have similar international tax policy positions on the surface, they maintain special rules to give tax breaks to multinational firms. For instance, while the United States ostensibly maintains a residence-based system that strives to tax foreign source active business income, various loopholes actually promote 'self-help territoriality' that enables multinational firms to reduce global tax bills. *See* OFF. OF TAX POL'Y, U.S. DEP'T OF THE TREASURY, APPROACHES TO IMPROVE THE COMPETITIVENESS OF THE U.S. BUSINESS TAX SYSTEM FOR THE 21ST CENTURY 55, 57 (2007). The main loophole is that US tax law does not tax foreign source active income generated by a related non-resident corporation until the income is repatriated hence enabling tax deferral.

enhanced EOI will unduly raise compliance and other costs, and harm firm competitiveness.

In addition to offering special tax breaks for multinational firms, some governments subvert global financial transparency through their financial secrecy laws to encourage more inward foreign direct and portfolio investments. These governments face a moral hazard as EOI initiatives may make their countries less attractive to nonresident investors who wish to maintain anonymity (out of fear of sanctions from the home country).

For instance, US state corporate laws at times allow taxpayers to mask the identity of the beneficial owner of shares of business entities (e.g., Delaware limited liability companies).[32] Under this view, certain governments are purposefully undermining global financial transparency initiatives by raising transaction costs for other governments, making it difficult or impossible for them to enforce their domestic tax laws over income generated abroad (see also Part III.C).

In summary, governments around the world face different and often conflicting incentives surrounding possible EOI reforms. These mixed incentives have contributed to a mishmash of complex recent EOI reforms.

B. *Overview of Recent Reforms*

The modern EOI system was initiated by the League of Nations in the post-World War I environment. A report by the famed "group of four" tax economists laid the foundation for the modern international tax regime by setting out which country should be entitled to tax

32. In terms of ranking countries according to how much financial secrecy they provide foreign investors, the United States is ranked at number 3, Germany at 8, Japan at 12; these countries are ranked above others than certain tax havens, including Barbados at 22, Bahamas at 25, and Liechtenstein at 36. Other OECD countries such as Canada (ranked at 29) and the United Kingdom (ranked at 15) also maintain financial secrecy laws and policies that offer stronger secrecy protection than many so-called tax havens. TAX JUSTICE NETWORK, FINANCIAL SECRECY INDEX 2015: METHODOLOGY 75–79 (2015). The matter becomes more complicated because federal countries such as the United States and Canada grant constitutional powers to subnational units (that is, states and provinces) to develop corporate and tax laws. For example, Delaware and certain other US states deploy corporate laws that enable secrecy by making it difficult or impossible to obtain the names of individual shareholders. A report from Global Financial Integrity also found that the United States was the world's foremost destination for foreign capital, with over $2 trillion in private, non-resident deposits. The United States has also been characterized as "noncompliant" with global financial standards under the Financial Action Task Force because the owners of US limited liability companies are hidden from public view. *See* Ann Hollingshead, *Privately Held, Non-Resident Deposits in Secrecy Jurisdictions*, GLOBAL FIN. INTEGRITY (2010), http://www.gfintegrity.org/storage/gfip/documents/reports/gfi_privatelyheld_web.pdf [http://perma.cc/8XCU-9YH9] (archived Sept. 24, 2017).

cross-border transactions and hence enjoy the resulting tax revenues.[33] In addition, the report recommended the adoption of bilateral tax treaty provisions that would contemplate sharing tax information to inhibit "fiscal evasion" (now generally referred to as "offshore tax evasion").[34] Earlier League of Nations model tax treaties eventually evolved into the OECD model tax treaty, first put into place in 1963.[35] There are now over three thousand bilateral tax treaties in the world that contain an exchange of information (EOI) provision similar to Article 26 of the OECD model.[36]

The following discussion overviews four recent key EOI developments: a unilateral effort by the United States commonly known as the Foreign Account Tax Compliance Act (FATCA); the promotion of bilateral Tax Information Exchange Agreements (TIEAs); a multilateral effort to share taxpayer information called the CRS; and another multilateral reform advocating cross-border sharing of multinational firm tax and financial information called CBCR.

1. Unilateralism via US FATCA

All US citizens and residents must pay US taxes on their worldwide income.[37] US policymakers worry that many of these individuals fail to report this income, leading to revenue losses of billions of dollars each year.[38] In particular, US citizens living abroad may not be complying with tax obligations.

Accordingly, legislation commonly known as FATCA was passed in 2010 to raise revenues from taxing undisclosed offshore income

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33. *See generally* Professors Bruins, Enaudi, Seligman and Sir Josiah Stamp, *Report on Double Taxation Submitted to the Financial Committee* (1923).

34. *Id.* at 8. A subsequent report recommended that model treaties should build on earlier bilateral tax treaties within Europe. *See* LEAGUE OF NATIONS, TECHNICAL EXPERTS TO THE FINANCIAL COMMITTEE OF THE LEAGUE OF. NATIONS, DOUBLE TAXATION AND TAX EVASION: REPORT AND RESOLUTIONS 12–15 (1925).

35. *See* ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, MODEL TAX CONVENTION ON INCOME AND ON CAPITAL 7–9 (2010), http://www.oecd-ilibrary.org/taxation/model-tax-convention-on-income-and-on-capital-condensed-version-2010_mtc_cond-2010-en [https://perma.cc/GDP9-TD6P] (archived Oct. 15, 2017) (subscription required) [hereinafter OECD model tax treaty]. For background discussion, see Michael J. Graetz & Michael M. O'Hear, *The "Original Intent" of U.S. International Taxation*, 46 DUKE L. J. 1027, 1066–89 (1997).

36. *See* Victor Thuronyi, *Tax Cooperation and a Multilateral Tax, Treaty,* 26 BROOK. J. INT'L L. 1641, 1641 (2001) (discussing the influence of the OECD model tax treaty on the global network of bilateral tax treaties).

37. *See* I.R.C. § 61(a) (2010) ("[G]ross income means all income from whatever source derived.").

38. U.S. Senate, *supra* note 15, at 1; Martin A. Sullivan, *U.S. Citizens Hide Hundreds of Billions in Cayman Accounts*, 103 TAX NOTES 956, 958 (2004) (reviewing an estimate of $70 billion in revenue losses from individual tax evasion).

generated by US citizens and others.[39] Under FATCA, foreign banks must provide financial information concerning any account-holding "US person" (including citizens and residents living abroad) directly to the Internal Revenue Service (IRS). If the foreign banks do not cooperate, the United States threatened to impose a punitive withholding tax on cross-border bank transactions from foreign countries.[40] More technically, under FATCA any foreign financial institution affiliated with a US financial institution that does not cooperate will be subjected to a 30 percent withholding tax on all payments.[41] From a practical perspective and due to the importance of US banks to the global financial community, most foreign banks must comply or they may be effectively prevented from conducting business in many circumstances.

To enter into compliance, many foreign governments agreed to an intergovernmental agreement (IGA) with the US government to implement FATCA.[42] For instance, Canada signed an IGA with the United States where Canadian banks must collect financial information concerning any identified US persons and send this first

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39. The initial legislation, entitled the *Foreign Account Tax Compliance Act* (FATCA), was not enacted. H.R. 3933, 111th Cong. (2009). The legislation was subsequently passed within a large omnibus legislative package that was mainly directed at job creation. *See* Hiring Incentives to Restore Employment Act, Pub. L. No. 111-147, § 501, 124 Stat. 71 (2010). The provisions to implement FATCA are now contained in sections 1471 to 1474 of the *Internal Revenue Code* (Sup. 2011). FATCA is estimated to raise less than $9 billion in ten years. JOINT COMM. ON TAXATION, ESTIMATED REVENUE OF THE REVENUE PROVISIONS CONTAINED IN SENATE AMENDMENT 3310, THE "HIRING INCENTIVES to RESTORE EMPLOYMENT ACT," UNDER CONSIDERATION BY THE SENATE, JCX-5-10 (Feb. 23, 2010), Doc. 2010-3977, 2010 TNT 36-20.

40. For discussion, see Susan C. Morse, *Tax Compliance and Norm Formation under High-Penalty Regimes*, 44 CONN. L. REV. 675, 693–700 (2012) (claiming the United States should develop a norm that encourages financial institution transparency).

41. Non-US financial institutions must report to the US government about their accounts held by US persons. The rules apply to payments of investment income or gain made from the United States to "foreign financial institutions" (FFIs). I.R.C. § 1471 (2010). A 30% withholding tax applies to payments to FFIs unless they have agreed to obtain and report information about the account holders and submit to "verification and due diligence procedures." I.R.C. §§ 1471(b)(1), 1473 (2010). If the FFI has entered into an agreement with the US government then the 30% withholding tax only applies to accounts held by "recalcitrant account holders" who refuse to provide the information necessary to identify them as US persons and/or who do not waive bank secrecy law hurdles to the disclosure of their identity. I.R.C. § 1471 (2010).

42. For discussion and critique of FATCA, see Scott D. Michel & H. David Rosenbloom, *FATCA and Foreign Bank Accounts: Has the U.S. Overreached?*, 62 TAX NOTES INT'L 709 *passim* (discussing background and implications of FATCA and then the prospect of repealing FATCA or dealing with it in an alternative way); Allison Christians & Arthur J. Cockfield, *Submissions to the Department of Finance on FATCA* 22–32 (March 10, 2014), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2407264 [http://perma.cc/9UBL-LVTW] (archived Sept. 24, 2017).

to the Canadian tax authorities for subsequent transfer to the IRS.[43] By January 1, 2017, 113 countries had agreed to an IGA.[44] FATCA arguably encouraged other countries to pursue the automatic exchange of tax information.[45]

2. Bilateralism via Tax Information Exchange Agreements

As mentioned in the Introduction, the more recent push for enhanced EOI began with the OECD Harmful Tax Competition Project in 1998 (it would later be named the Forum on Harmful Tax Practices).[46] The report encouraged the adoption of agreements between OECD countries and low or nil tax jurisdictions (commonly referred to as tax havens although sometimes termed "international financial centers"). In 2002, the OECD developed a model TIEA to serve as a template for these new treaties.[47] By January 1, 2017, over seven hundred bilateral TIEAs had been signed.[48]

A major drawback of TIEAs is that they operate on the basis of "information on request." For instance, if the UK government wanted to find out about the dealings of a UK resident taxpayer with a Singaporean bank, then the UK authorities would need to identify the relevant bank and specify the name of the taxpayer and the nature of the information they need. This places governments in a catch-22 position because offshore monies are typically held in anonymous accounts and the tax authorities do not have sufficient information to request the relevant taxpayer information in the first place. The most comprehensive analysis of TIEAs to date suggests that, while TIEAs helpfully established international norms surrounding EOI and global financial transparency, they largely

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43. The IGA was based on a model agreement. *See* U.S. TREASURY DEPT., *Model Intergovernmental Agreement to Improve Tax Compliance and to Implement FATCA*, https://www.treasury.gov/resource-center/tax-policy/treaties/Pages/FATCA.aspx [http://perma.cc/HZA4-USZV] (archived Sept. 24, 2017).

44. *Id.*

45. *See* Itai Grinberg, *Beyond FATCA: An Evolutionary Model for the International Tax System* 2 (Georgetown Working Paper, Draft, 2014); *Commitment Projector, supra* note 16, at 101–04.

46. For discussion, see Robert T. Kudrle, *The OECD and the International Tax Regime: Persistence Pays Off*, 16 J. COMP. POL. 201 (2014) (claiming OECD institutional processes effectively promoted EOI reforms via horizontal diffusion of policy).

47. OECD GLOBAL FORUM ON TRANSPARENCY AND EXCHANGE OF INFORMATION, MOVING FORWARD ON THE GLOBAL STANDARDS OF TRANSPARENCY AND EXCHANGE OF INFORMATION FOR TAX PURPOSES 4 (2009).

48. OECD, TAX INFORMATION EXCHANGE AGREEMENTS (TIEAS), http://www.oecd.org/tax/exchange-of-tax-information/taxinformationexchangeagreementstieas.htm [http://perma.cc/3RW9-X45M] (archived Sept. 24, 2017).

failed to reduce offshore tax evasion or aggressive international tax planning.[49]

3. Multilateralism via the Common Reporting Standard

The OECD reforms were later joined by the G20 to more broadly represent countries that would be subject to EOI obligations.[50] The OECD and the G20 supervise the Global Forum on Transparency and Exchange of Information for Tax Purposes, which at this writing has 135 participating countries.[51] Both the OECD and the G20 came to view the TIEA approach as deficient, especially with respect to the "information on request" approach noted above.

Importantly, in 2013 with the G20 Summit at St. Petersburg, the G20 and OECD endorsed the CRS as the global standard.[52] A related multilateral agreement contemplates the automatic sharing of bulk taxpayer information across borders.[53] Under this approach, a participating country such as Singapore is supposed to pass laws that mandate the automatic collection by banks of foreign investor tax information, then transfer this information to other participating countries such as the United Kingdom. Through peer review processes, the Global Forum tries to ensure that its members implement and comply with promised EOI standards and obligations.

As of July 2016, 101 countries have agreed to implement the CRS.[54] The United States so far has refused to sign on, preferring to focus on its domestic initiatives such as FATCA.

4. Multilateralism and Tracking Multinational Firm Tax Payments

The policy push for the next EOI reform—called Country by Country Reporting (CBCR)—began in 2002 with a related effort by

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49. *See* DAVID KERZNER & DAVID CHODIKOFF, INTERNATIONAL TAX EVASION IN THE GLOBAL INFORMATION AGE 344 (2016).

50. For background, see ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, AUTOMATIC EXCHANGE OF INFORMATION: WHAT IT IS, HOW IT WORKS, BENEFITS, WHAT REMAINS TO BE DONE (2012) [hereinafter AUTOMATIC EXCHANGE] (surveying different national approaches to automatic exchanges).

51. *Id.*

52. ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, STANDARD FOR AUTOMATIC EXCHANGE OF FINANCIAL INFORMATION IN TAX MATTERS (2014), http://dx.doi.org/10.1787/9789264216525-en [http://perma.cc/CT6J-GPMM] (archived Sept. 24, 2017). A second edition was released in 2017.

53. ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, CRS MULTILATERAL COMPETENT AUTHORITY AGREEMENT (2014). The OECD agreement in turn is based on Article 6 of an earlier multilateral agreement. *See* ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, CONVENTION ON MUTUAL ADMINISTRATIVE ASSISTANCE IN TAX MATTERS art. 6 (1998).

54. OECD GLOBAL FORUM ON TRANSPARENCY, AEIO: STATUS OF COMMITMENTS (2016).

the Extractive Industries Transparency Initiative (EITI).[55] EITI encourages governments and extractive industries (that is, companies involved with mining and other resource extraction) to provide more financial disclosures to the public. The purpose behind this initiative is to inhibit the "resource curse," mentioned in the Introduction, whereby developing countries often collect little to no tax revenues when multinational firms exploit their natural resources.[56]

Participating companies and national governments can voluntarily adopt EITI transparency measures that include country-by-country reporting whereby taxpayers disclose where, and how much, taxes are paid. At this writing, thirty-one countries have complied with EITI standards.[57] The implementation of EITI led to calls by nongovernmental organizations and others for more comprehensive financial reporting by multinational firms.

Another important development surrounds the passage of the US Dodd-Frank Act of 2010 that called for mandatory reporting of geographic earnings for all listed companies involved in the extractive sector (with the exception of the logging industry).[58] In August 2012, the Securities and Exchange Commission (SEC) adopted implementing rules to ensure that public companies followed the new regime.[59]

In 2013, the OECD also began an ambitious plan to counter "base erosion and profit shifting" (BEPS) by multinational firms. BEPS refers to the many international tax avoidance plans that firms adopt to legally reduce their global tax liabilities, often by shifting paper profits to tax havens.[60] After three years of reform efforts, the

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55. Information concerning this program is set out at the Extractive Industries Transparency Initiative website at https://eiti.org/ [http://perma.cc/SNP2-PHBU] (archived Sept. 24, 2017). For discussion of EITI initiatives as well as their rationales and potential effectiveness, see Christians, *supra* note 7, at 1385–89, 1398–1402. We discuss the arguments for and against CBCR along with possible extension to limited public disclosures. *See* Cockfield & MacArthur, *supra* note 17, at 640–44, 657–60.

56. Although there are some early indications that the EITI has been at least partially successful, the overall results of empirical studies have been mixed given the relatively short time period since the founding of the EITI. *See, e.g.*, Caitlin C. Corrigan, *Breaking the Resource Curse: Transparency in the Natural Resource Sector and the Extractive Industries Transparency Initiative*, 40 RES. POL'Y 17 *passim* (2012).

57. *Implementation Status*, EXTRACTIVE INDUSTRIES TRANSPARENCY INITIATIVE, https://eiti.org/countries [http://perma.cc/CCU8-3BVB] (archived Sept. 24, 2017).

58. *See* Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203 (2010); *see also* THE WHITE HOUSE AND U.S. DEP'T. OF TREASURY, THE PRESIDENT'S FRAMEWORK FOR BUSINESS TAX REFORM 7–8, 13–15 (2012) (discussing the need for reform to inhibit the usage of aggressive cross-border tax planning that reduces US tax revenues).

59. *See* Disclosure of Payments by Resource Extraction Issuers, 81 Fed. Reg. 49359 (July 27, 2016) (to be codified at 17 C.F.R. pt. 240, 249) (indicating taxpayers must comply with the new rules by 2018).

60. *See* discussion *supra* note 26. The fact that aggressive tax planning is on the rise is supported by empirical research by accounting academics. *See, e.g.*, Kenneth

OECD produced its final recommendations, including for all participating countries to adopt CBCR.[61]

Under CBCR, multinational firms for the first time would need to disclose to home and foreign tax authorities their tax and other payments in every country where they operate.[62] Pursuant to the current tax law and securities law regime in the United States and many other countries, these multinational firms generally only disclose tax information in the country where they reside.[63] CBCR also only applies to very large multinational firms with annual consolidated group revenues that exceed EUR 750 million (or roughly USD 850 million).[64]

CBCR is mainly directed at helping governments audit aggressive international tax avoidance to reduce revenue losses in high tax countries. Under the proposed approach, a parent corporation files a CBCR report following an OECD template; the report will then be shared with other countries that are participating in automatic information exchanges.[65] It is hoped tax authorities will be able to identify important indicators such as their country's relative share of global tax revenues.[66] As of January 27, 2017, fifty-

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Klassen & Stacie Laplante, *Are U.S. Multinational Corporations Becoming More Aggressive Income Shifters?*, 50 J. ACC. RES. 1245, 1248 (2012) (concluding that US multinational firms have increased income shifting over last twenty years in part due to changing regulatory costs). On the other hand, certain perspectives in tax economics suggest that multinational firms are not becoming more aggressive over time with respect to their tax planning and income shifting initiatives, which in any event only lead to modest revenue losses. *See, e.g.*, James R. Hines Jr., *How Serious Is the Problem of Base Erosion and Profit Shifting?*, 62 CAN. TAX J. 443, 448–52 (2014).

61. CBCR falls under action 13 of the OECD BEPS action plan. *See* ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, ACTION PLAN ON BASE EROSION AND PROFIT SHIFTING, at Action 13 (2013), https://www.oecd.org/ctp/BEPSActionPlan.pdf [https://perma.cc/CA78-WU2X] (archived Oct. 15, 2017).

62. For discussion of the political push for CBCR, see Dries Lesage and Yusuf Kaçar, *Tax Justice Through Country-by-Country Reporting: An Analysis of the Idea's Political Journey*, in TAX JUSTICE AND THE POLITICAL ECONOMIC OF GLOBAL CAPITALISM, 1945 TO THE PRESENT 262–63 (Jeremy Leaman & Attiya Waris eds., 2013).

63. For discussion of how current U.S. tax law compares with other countries, see OFF. OF TAX POL'Y, *supra* note 31. At times, multinational firms report on foreign revenues and taxes paid on a regional basis instead of a country-by-country basis.

64. ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, GUIDANCE ON THE IMPLEMENTATION OF TRANSFER PRICING DOCUMENTATION AND COUNTRY-BY-COUNTRY REPORTING 4 (Feb. 6, 2015). It is, however, estimated that these large firms control approximately 90% of the world's corporate revenue. *Id.*

65. Public interest groups such as OXFAM and the BEPS Monitoring Group have advocated for public disclosure of CBCR information. OXFAM, COMMENT LETTER ON OECD BASE EROSION REPORT (2014), https://www.oecd.org/ctp/transfer-pricing/volume3.pdf [http://perma.cc/C8GV-JF5U] (archived Sept. 24, 2017); *see also* THE BEPS MONITORING GROUP, OECD BEPS SCORECARD 12–13 (2014), https://bepsmonitoringgroup.files.wordpress.com/2014/10/oecd-beps-scorecard.pdf [http://perma.cc/RXZ5-MY3V] (archived Sept. 24, 2017).

66. Concerns have been raised by tax authorities that CBCR may promote high taxpayer compliance costs, which could hinder its adoption. *See* Lee A. Sheppard, *Country Reporting Burdensome, HMRC Official Says*, 73 Tax Notes Int'l 589 (2014).

seven countries had signed a related multilateral agreement where they agreed to implement CBCR.[67]

C. *Summary*

As things currently stand, the global financial system can be characterized as opaque, as tax authorities generally know little to nothing beyond taxpayer self-disclosure. Accordingly, a tax authority finds itself at a distinct informational disadvantage, especially regarding purposeful nondisclosures relating to offshore tax evasion. While there appears to be increasing policy and academic support for EOI initiatives that promote global financial transparency, the current international tax regime, with its high transaction costs for taxpayers and tax authorities, does not seem particularly amenable to producing optimal outcomes.

In particular, governments are boundedly rational in the sense they have imperfect information to discern whether their international tax laws and policies promote sought-after national interest objectives. On the one hand, they want to promote firm competitiveness via preferential tax treatment of foreign income. In addition, many countries maintain financial secrecy laws to encourage inward investments. On the other hand, governments want a fair tax system that maximizes revenue collection. These mixed political incentives reduce the potential for welfare-maximizing cooperative moves among governments.

Nevertheless, in recent years worries about revenue losses from offshore evasion and aggressive international tax planning have brought governments to the bargaining table. The complex network of tax treaties, TIEAs, and IGAs, as well as larger multilateral reforms focusing on CRS and CBCR, reflect this state of affairs, raising transaction costs for all parties.

All of these efforts seek to provide governments with more and better tax information and reduce costs through agreement on underlying EOI rules and principles. The reforms, however, largely do not address how financial secrecy laws subvert global financial transparency initiatives. Nor do they address legal technical complexity that raises transaction costs, and makes it even harder for

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67. ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, SEVEN MORE JURISDICTIONS SIGN TAX CO-OPERATION AGREEMENT TO ENABLE AUTOMATIC SHARING OF COUNTRY-BY-COUNTRY INFORMATION (Jan. 27, 2017), http://www.oecd.org/tax/seven-more-jurisdictions-sign-tax-co-operation-agreement-to-enable-automatic-sharing-of-country-by-country-information-beps-action-13.htm [http://perma.cc/Y8U5-N44C] (archived Sept. 24, 2017); *see also* ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, MULTILATERAL COMPETENT AUTHORITY AGREEMENT FOR THE AUTOMATIC EXCHANGE OF COUNTRY-BY-COUNTRY REPORTS (2014), http://www.oecd.org/tax/automatic-exchange/about-automatic-exchange/cbc-mcaa.pdf [http://perma.cc/P6BL-YP8H] (archived Sept. 24, 2017).

low and middle income countries to implement and enforce EOI. While the EOI reforms are positive steps, governments are still generally faced with high transaction costs and an opaque global financial system as they struggle to address key policy challenges, a topic to which the Article now turns.

III. ASSESSING THE CENTRAL LEGAL AND POLICY CHALLENGES

This Part emphasizes how, to promote enforceability, the ideal EOI system delivers high quality tax information while providing needed taxpayer privacy legal protections.

A. *Information Quality*

A key issue in cross-border tax information exchanges involves the quality of exchanged taxpayer information.[68] The CRS and other initiatives emphasize the automatic exchange of so-called bulk taxpayer information. According to the OECD, for example, automatic exchanges of bulk taxpayer information are the most effective way to help assist tax authorities with enforcing their cross-border tax laws.[69] As suggested by tax compliance writings, however, more information is not necessarily better.[70] Tax authorities may be overwhelmed with data and may not have the resources to parse through it to identify helpful leads. As subsequently explored, high quality information is tax and non-tax data that is available, useful, and verifiable.

1. Available Information

Available information is tax and non-tax information that is potentially accessible by governments for EOI purposes. A tax authority must first identify a taxpayer and related offshore income before it can conduct risk analysis that accounts for factors such as size of the taxpayer and industry in which the taxpayer works. Writings on tax compliance emphasize how tax authorities can tap

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68. *See, e.g.*, Robert Couzin, *Imposing and Collecting Tax*, *in* THE TAXATION OF BUSINESS PROFITS UNDER TAX TREATIES 171, 186 (Brian J. Arnold et al., eds., 2003) ("The key is an integrated [cross-border] information system that can tolerate the volume of input and produce *useful output*.") (emphasis added).

69. *See* ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, *Module on Automatic (or Routine) Exchange of Information*, *in* MANUAL ON THE IMPLEMENTATION OF EXCHANGE OF INFORMATION PROVISIONS FOR TAX PURPOSES 1, 3 (2006).

70. For discussion, see Wei Cui, *Information Reporting and State Capacity* 5 (Mar. 18, 2016) (preliminary draft), https://www.ntanet.org/wp-content/uploads/proceedings/2016/058-cui-information-reporting-state-paper.pdf [https://perma.cc/7JXT-QRYF] (archived Oct. 15, 2017) (questioning the link between information reporting and tax compliance).

into existing information streams to bolster and confirm a taxpayer's disclosed income.[71] In particular, third party reporting and tax-withholding disclosures can provide information to tax authorities to allow them to better gauge risks of offshore tax evasion and aggressive international tax planning.

Third party reporting of tax and financial information can be cross-matched with transferred tax information to support information quality. Empirical studies generally suggest that third party reporting (that is, information provided by someone other than the taxpayer such as a bank reporting interest income) goes a long way to addressing the "tax gap."[72] Even self-assessment systems, such as the one deployed in the United States, are broadly supported by third party reporting efforts (e.g., employers report to tax authorities how much income was paid to an employee).

In addition to third party reporting, *effective tax withholding* is an important element of tax administration. For instance, different types of withholding account for roughly 75 percent of personal income tax revenues for OECD countries.[73] Value-added taxes (VATs) are sometimes thought to be superior to income taxes from an administrative perspective in part because VATs provide rebates to taxpayers (other than final consumers) and hence operate in a similar fashion to a creditable withholding tax. Similarly, "traditional" withholding taxes on cross-border passive income (that is, rents, royalties, dividends, and interest) help to enforce tax laws by imposing the disclosure and withholding obligations on the payor.

The most prominent example of information exchange and withholding for cross-border purposes is the European Union's Savings Directive where member countries automatically exchange information about portfolio nonresident interest payments (alternatively, if an exchange of information does not occur then the country where the investment takes place will tax the interest and send the bulk of the resulting tax revenues to the residence country).[74] This EOI measure ensures tax payment via withholding

71. *See, e.g.*, Leandra Lederman, *Reducing Information Gaps to Reduce the Tax Gap: When Is Information Reporting Warranted?*, 78 FORDHAM L. REV. 1733, 1739–41 (2010) (discussing six factors to evaluate whether information reporting is likely to be efficient).

72. The tax gap is the amount of revenue loss between the amount of tax required to be paid under tax law and the amount that is actually paid by taxpayers. *See* INTERNAL REVENUE SERVICE, THE TAX GAP (2017), https://www.irs.gov/uac/the-tax-gap [https://perma.cc/MGM9-8C78] (archived Sept. 24, 2017) (estimating the 2010 tax gap at roughly $458 billion).

73. IMF, *Current Challenges in Revenue Mobilization: Improving Tax Compliance*, Staff Report 18 (Jan. 2015), https://www.imf.org/external/np/pp/eng/2015/020215a.pdf [https://perma.cc/EB45-ZXFQ] (archived Oct. 15, 2017).

74. Since the Directive was issued in 2003, heightened information sharing has been promoted among EU governments as well as some non-EU European tax havens such as Luxembourg. In addition, one EU country (Austria) and five non-EU countries

or provides the government with another source of information to contrast against the taxpayer's tax filings. The Directive was repealed in 2015 in favor of pursuing automatic cross-border tax information exchanges under the OECD's CRS outlined in Part II.B.3.[75]

A similar measure to the older Savings Directive may be needed to promote effective EOI at the global level. As Reuven Avi-Yonah has explained, as long as there is one non-participating country then undisclosed investment monies can flow to this outlier.[76] His proposed solution resembles the EU Savings Directive as it would impose a withholding tax on these monies whenever they flow to a noncooperative country. Building on these views, I previously outlined how online technologies—an extranet among participating countries—could be used to impose such a withholding tax.[77]

Another major barrier to effective EOI is that many countries, especially tax havens, simply do not track these tax information sources so that they are unable to exchange this information when called upon to do so. As subsequently discussed, many low and middle income countries also lack the administrative resources to collect and transfer this information (see Part III.C).

2. Useful Information

Not all tax information is created equal. From a tax administrator's perspective, some sources of information, or relationships among different sources, are superior to others. Governments should hence focus on ensuring that available information is useful for tax authorities.

To start, the information exchanged needs to be *relatable* to other recipient country taxpayer information. The most frequently touted solution is for countries to agree on a *common taxpayer identification number*.[78] This number could be matched against the unique one provided by each government; a software program could readily identify whether the taxpayer had disclosed all of his or her sources of foreign income.

(Andorra, Liechtenstein, Monaco, San Marino and Switzerland) currently maintain a separate regime where they tax the cross-border investment (at rate of 35%) and pass on 75% of the receipts to the country of residence. *See generally* Council Directive 2003/48/EC, 2003 O. J. (L 157/38).

75. *See* Council Directive 2014/107/EU, 2014 O.J. (L 359/1). This Directive entered into force on January 1, 2016.

76. Reuven S. Avi-Yonah, *Globalization, Tax Competition, and the Fiscal Crisis of the Welfare State*, 113 HARV. L. REV. 1573, 1667–69 (2000).

77. Arthur J. Cockfield, *Transforming the Internet into a Taxable Forum: A Case Study in E-Commerce Taxation*, 85 MINN. L. REV. 1171, 1235–63 (2001).

78. *See generally* ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, AUTOMATIC EXCHANGE PORTFOLIO: TAXPAYER IDENTIFICATION NUMBERS (2017), https://www.oecd.org/tax/automatic-exchange/crs-implementation-and-assistance/tax-identification-numbers/ [https://perma.cc/UL5Z-HDMN] (archived Sept. 24, 2017).

Another need is for transferred information to identify *the beneficial owner* of an offshore asset (that is, the ultimate human being who owns the asset). One of the main barriers to effective EOI is the lack of information in this area as a result of financial secrecy laws that mask the identities of beneficial owners (see also Parts II.C and IV.B).[79]

In addition, the ability of tax authorities to engage in taxpayer segmentation (that is, separating taxpayers into different risk groups) is increasingly seen as a necessary step to better identify risks. Hence *transferred information that enables taxpayer segmentation* promotes information quality. For example, many OECD governments have created audit groups that focus on high net worth individuals, which seems appropriate given their larger share of resources and potential contribution of tax revenues.[80] High net worth individuals also tend to be more mobile internationally and to engage in more aggressive tax planning structured by tax advisors.[81] Governments have also expanded information reporting for entities owned by these individuals along with broader disclosure of foreign assets and transactions.[82]

Another way tax authorities are looking to bolster the quality of transferred information is by *cross-indexing it against non-tax data* (see Part IV.A for a discussion of data analytics and non-tax data). For an example of an initiative to reduce tax cheating, Greek auditors took satellite photos from Google Earth as well as aerial photos from helicopters to collect images of pools, luxury cars, and villas to help sustain audits against taxpayers who disclosed few assets or little income; one such audit revealed that Athenian suburbs did not have 324 swimming pools, as had been disclosed by taxpayers, but rather 16,974.[83]

Finally, promoting *disclosures by smaller offshore financial intermediaries* (e.g., trust, finance, and other offshore service providers) will also promote information quality and help tax authorities understand the nature and amount of offshore investments held by their residents. Current reform efforts, including by the Financial Action Tax Force (FATF), focus on enhancing

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79. *See* OHCHR, *supra* note 4, at 20, 22.

80. Countries with such audit groups include Canada, the United States, France, Ireland, the United Kingdom, New Zealand, South Africa, and Japan. *See* THE TAXATION OF BUSINESS PROFITS UNDER TAX TREATIES, *supra* note 68, at 27. The top one percent in the UK and the US now account for approximately one quarter and one third, respectively, of personal income tax revenues. IMF, *supra* note 73, at 26.

81. *Id.* at 27.

82. *Id.*

83. *See* Daniel Steinvorth, *Finding Swimming Pools with Google Earth: Greek Government Hauls in Billions in Back Taxes*, DER SPIEGEL (2011), http://www.spiegel.de/international/europe/finding-swimming-pools-with-google-earth-greek-government-hauls-in-billions-in-back-taxes-a-709703.html [https://perma.cc/G32D-ZAUW] (archived Sept. 24, 2017).

disclosure obligations for financial intermediaries to report on offshore assets maintained by foreigners.[84]

As revealed by an analysis of tax haven data leaks, a major vulnerability in these efforts is the lack of reporting by hundreds of offshore service providers, such as trust, finance, or other financial service providers based in tax havens.[85] In many cases, these offshore service providers at times did not report accurate tax and financial information on cross-border investments as required by FATF recommendations.[86] Noncompliance resulted from a lack of due diligence, willful neglect, and legal insulation through indemnification agreements between the offshore service provider and the nonresident investor.

Yet even these smaller players often have funds transferred to larger financial institutions, which generally strive to comply with FATF requirements (or, more technically, the domestic legislation that implements these requirements). Reporting obligations can be cross-referenced against amounts transferred to and from the larger institutions to smaller banks with help from offshore service providers.

Moreover, offshore service providers often manage monies on behalf of individuals and organizations engaged in offshore tax evasion (by, for instance, forming a corporate trustee for a nonresident trust that holds legal title to the illicitly earned monies).[87] Tracking the offshore service provider's name along with any prior compliance problems would provide another important piece of information for tax and law enforcement authorities (see also the discussion of a global financial registry in Part IV.C).

3. Verifiable Information

There are several related issues surrounding data verifiability. Governments need to feel confident that the transferred information has so-called data integrity.[88] First, tax authorities need to know who owned the transferred data that had been collected. Some countries have laws that provide governments with direct access to a taxpayer's database while others do not.

Second, governments need assurances that the transferred information accurately represents the underlying information (e.g.,

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84. FINANCIAL ACTION TASK FORCE, TRANSPARENCY AND BENEFICIAL OWNERSHIP 40 (Oct. 2014).

85. *See Big Data, supra* note 5, at 519–522.

86. *See id.* at 519.

87. *Id.* at 520.

88. *See* PROJECT SAGE, DATA STANDARDS, DATA INTEGRITY AND SECURITY GUIDELINES 7–11(2014); *see generally* OECD, COUNTRY-BY-COUNTRY REPORTING XML SCHEMA: USER GUIDE FOR TAX ADMINISTRATIONS AND TAXPAYERS (March 2016) (setting out standardized reporting guidelines in part to encourage data integrity).

sales receipts) that gave rise to the data. Evidence should be collected to show the data was not tampered with by the taxpayer or some third party. As touched on below, data integrity is related to the issue of data security in that outside hackers may illegally access, change, or delete taxpayer information.[89]

B. *Taxpayer Privacy*

As I explored in another work, there are two discrete but related elements surrounding effective EOI.[90] First, the cross-border tax information exchange should be efficient in that it should promote low enforcement and administrative costs for tax authorities and low compliance costs for taxpayers. Second, the exchange must be fair in that any transferred information will attract a requisite level of legal protection for taxpayer privacy and other rights. The two issues are related in that a tax authority will be reluctant to engage in automatic bulk information exchanges if it worries that its taxpayers' privacy and other rights will be harmed. This subpart touches on how taxpayer privacy concerns serve as an ongoing barrier to effective EOI, as well as how reforms can address this challenge.

1. Taxpayer Privacy as a Human Right

Privacy can be portrayed as a critical human right in a free and just society.[91] This human right protects an individual's right to freedom of expression, freedom of mobility, freedom to engage in political dissent, and so on. Accordingly, Article 12 of the United Nations Universal Declaration of Human Rights maintains, "No one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honour and reputation. Everyone has the right to the protection of the law against such interference or attacks."[92]

In privacy law writings, financial information privacy, including taxpayer information, is typically cited as one of the most sensitive forms of privacy because it can provide a detailed profile of an individual's identity and behavior (e.g., an individual's tax return

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89. *See infra* note 104 and accompanying text.

90. *See* Arthur J. Cockfield, *Protecting Taxpayer Privacy under Enhanced Cross-border Tax Information Exchange: Toward a Multilateral Taxpayer Bill of Rights*, 42 U.B.C. L. Rev. 419, 454 (2010) [hereinafter *Protecting Taxpayer Privacy*].

91. Charles Fried, *Privacy*, 77 YALE L. J. 475, 477–78 (1968) (claiming that privacy grounds fundamental relations of love, friendship and trust).

92. G.A. Res. 217 (III) A, Universal Declaration of Human Rights (Dec. 10, 1948). In December 2013, the United Nations General Assembly adopted resolution 68/167, which expressed concern at the negative impact that surveillance and interception of communications may have on human rights. While the resolution focused on mass surveillance techniques, it would also apply to the possible misuse of bulk tax information exchanged across borders.

includes information on donations, health matters, income levels, disability status, names and ages of any dependents, and so on).[93] Taxpayer privacy has been protected for reasons that include personal security as criminals might be tempted to kidnap the children of individuals whose wealth was revealed by tax disclosures.[94] In addition, individuals may wish to conceal their financial dealings to protect against envy or political reprisals.[95]

National financial privacy rights and laws vary around the world in part because certain cultures are more sensitive to perceived incursions into financial privacy, potentially as a result of historical developments. For instance, historical taxpayer privacy concerns—where a home could be searched, assets seized, and taxpayers improperly imprisoned without due process protections—served as a catalyst for the earliest Western laws, including the Charter of Liberties of 1100 and the Magna Carta of 1215, that sought to bind the power of the king.[96] In part because of historical developments, the United States and other countries pass laws to protect against the improper collection, use, or disclosure of tax information.[97] In certain countries such as the United States and Canada, privacy interests are additionally protected by constitutional guarantees that cannot generally be violated by state action (e.g., the right to be free from an improper search or seizure).[98]

All of this has led to serious government concerns that transferred tax information will not be protected to the extent provided by the law of the transferring country.[99] Relatedly, governments worry about the possible misuse of transferred information where countries sanction taxpayers for political reasons, potentially violating human rights.[100] Another area of concern is the

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93. *See generally* PHILIP BAKER & ANNE-MIEKE GROENHAGEN, THE PROTECTION OF TAXPAYERS RIGHTS—AN INTERNATIONAL CODIFICATION (2001); *see also* Adrian J. Sawyer, *A Comparison of New Zealand Taxpayers' Rights with Selected Civil Law and Common Law Countries—Have New Zealand Taxpayers Been 'Short-Changed'?*, 32 VAND. J. TRANSNAT'L L. 1345, 1348 (1999).

94. Cynthia Blum, *Sharing Bank Deposit Information with Other Countries: Should Tax Compliance or Privacy Claims Prevail*, 6 FLA. TAX REV. 579, 603–04 (2004).

95. *Id.*

96. *See generally* Arthur J. Cockfield & Jonah Mayles, *The Influence of Historical Tax Law Developments on Anglo-American Law and Politics*, 3 COLUM. J. TAX L. 40 (2013) (discussing English and American tax law developments that promoted values of liberalism and republicanism).

97. *See, e.g.*, I.R.C. § 7213 (providing for criminal penalties for unauthorized disclosure of taxpayer information by federal employees).

98. *See* Daniel J. Solove, *Digital Dossiers and the Dissipation of Fourth Amendment Privacy*, 45 SO. CAL. L. REV. 1083, 1121 (2002).

99. *See generally* Blum, *supra* note 94 (providing a comprehensive discussion of taxpayer privacy concerns).

100. *Id.* at 638–39.

possible triggering of so-called false positives that target innocent taxpayers based on flawed data.[101]

In addition, there have been ongoing apprehensions surrounding the interaction between technology and taxpayer privacy for some time, from concerns surrounding the usage of electronic records in the 1970s, the movement from analog to digital storage in the 1980s, online return filing and software audits in the 1990s and, more recently, collecting taxpayer information to tax global digital goods and services in the 2000s.[102] A major barrier to enhanced EOI is the worry that new technologies, which enable the mass storage and transmission of detailed taxpayer information, will violate privacy laws, policies, and interests.[103]

These worries have gained credence as a result of data leaks such as WikiLeaks that demonstrated how governments, including the United States and Canada, conduct surveillance efforts to collect "economic intelligence" by stealing corporate secrets from overseas competitors.[104] The related tax worry is that governments will misuse transferred tax and financial information to help domestic companies and undermine foreign ones.

Finally, the data security of transferred information remains a significant concern. For instance, the IRS experiences one million attempts every week to hack its information technology systems.[105] If countries do not adopt appropriate network security safeguards and protocols then transferred information is at risk of illegal collection, use, and disclosure.

For all of these reasons, privacy researchers tend to emphasize theories and analytical frameworks that broadly protect privacy interests.[106] These researchers argue for an expansive definition of privacy to reduce the chance that privacy rights and interests will be eroded. The policy outcome is often broad protections for taxpayer privacy rights in the domestic and international context, which can serve as a barrier to EOI reforms.

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101. *Id.* at 605.

102. For discussion, see ARTHUR COCKFIELD, WALTER HELLERSTEIN, REBECCA MILLAR & CHRISTOPHE WAERZEGGERS, TAXING GLOBAL DIGITAL COMMERCE 515–18 (2013).

103. *Id.*; *see* Dean, *supra* note 11, at 668–670.

104. WikiLeaks not only revealed the NSA information collection practices, but also provided evidence that Canadian spies, including the Communications Security Establishment of Canada (CSEC), were (bizarrely) spying on the Brazilian mining ministry. *See* Colin Freeze & Stephanie Nolen, *Charges that Canada Spied on Brazil Unveil CSEC's Inner Workings*, THE GLOBE AND MAIL (Oct. 7, 2013), https://beta.theglobeandmail.com/news/world/brazil-spying-report-spotlights-canadas-electronic-eavesdroppers/article14720003/?ref=http://www.theglobeandmail.com& [https://perma.cc/NB6U-GVXA] (archived Sept. 24, 2017).

105. Steve R. Johnson, *The Future of American Tax Administration: Conceptual Alternatives and Political Realities*, 7 COLUM. J. TAX L. 5, 17 (2016).

106. *See, e.g.*, Solove, *supra* note 98, at 1114.

2. Addressing Privacy Challenges

While this matter has been understudied since the push for enhanced EOI began in the late 1990s, more recent reform efforts have tried to explicitly engage with taxpayer privacy concerns.

For example, under the Country-by-Country Reporting (CBCR) reforms noted in Part II.B, governments must agree to provide and enforce legal protections to maintain the confidentiality of reported information equivalent to the protection under an income tax treaty or other EOI agreement.[107] Further, the automatic transmission of CBCR information is limited to those countries that satisfy these requirements. The OECD plans additional reforms to monitor compliance with the taxpayer privacy commitments.[108]

In another work, I suggested these EOI efforts could be bolstered via a multilateral taxpayer bill of rights to provide assurances that transferred tax and financial information will attract a minimal level of legal and policy protection.[109] In particular, this bill of rights could incorporate widely accepted fair information practices (FIPs) (e.g., accountability, notice, choice, access, and security) that serve as the basis for domestic privacy laws (e.g., Canada's federal privacy law), international privacy laws (e.g., the European Union's data protection directive), and administrative guidelines (e.g., the US Federal Trade Commission's data privacy guidelines).

These FIPs are used to smooth over conflicts caused by the interaction of different national privacy laws when personal information crosses borders. FIPs also strive to promote data integrity and data security. A recent example of their usage is the 2016 European Union-United States Privacy Shield that is designed to protect individuals' privacy rights when personal data is transferred from European companies to US ones.[110]

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107. As discussed, the OECD is pursuing a Multilateral Competent Authority Agreement on the Exchange of Country-by-Country Reports: the purpose of this agreement is to set forth the rules and procedures for governments to automatically exchange the CBCR-mandated information. An Annex to this agreement provides a questionnaire concerning confidentiality and data safeguards to ensure participating nations have adapted acceptable privacy and confidentiality practices. *See* ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, GUIDANCE, *supra* note 64.

108. *See id.*

109. *See generally Protecting Taxpayer Privacy*, *supra* note 90, at 410.

110. Under this agreement, the United States provided the EU with binding assurances that the access by US government authorities of transferred personal information for national security purposes will be subject to clear limitations, safeguards and oversight mechanisms. In addition, EU citizens are offered a mechanism to seek redress if their rights appear to be violated and an annual joint review will monitor the implementation of the commitments. *See generally* EUROPEAN COMMISSION, GUIDE TO THE E.U.-U.S. PRIVACY SHIELD 9–19 (2016) http://ec.europa.eu/justice/data-protection/document/citizens-guide_en.pdf [https://perma.cc/D8FJ-L7WX] (archived Sept. 24, 2017).

Beyond these pragmatic policy responses, researchers need to do a better job addressing conceptual questions surrounding the use of privacy law as a barrier to EOI reforms. Consider, for instance, the distributive justice implications of the current regime: The main beneficiaries of a lack of global financial transparency are multinational corporations and high net worth individuals (along with criminals).[111] The main bearers of the cost of the regime are average taxpayers and citizens as a result of the revenue losses associated with offshore tax evasion and aggressive international tax planning. Most distressingly, global financial opacity allows corrupt elites to move and hide stolen monies offshore and encourages devastating consequences for some low income countries, including starvation and other human rights violations (see Part I).

In response to similar concerns, privacy researchers have examined distributive concerns of privacy laws through different theoretical lenses.[112] Under one perspective, privacy researchers should be wary of conceptual tools that lead to privacy law being used as a weapon to promote unbalanced outcomes that protect the interests of the more powerful at the expense of the more vulnerable. Allen, for instance, discusses how common law notions of "a man's home is his castle" historically protected household privacy against police intrusion at times at the expense of vulnerable children and/or women who were subjected to abuse.[113]

The analytical approach seems particularly relevant for EOI reforms as a key purpose of tax systems is to enhance the overall welfare of citizens and residents, including the promotion of human rights. Under the International Covenant on Economic, Social and Cultural Rights, a multilateral treaty adopted by the United Nations General Assembly, participating countries promise to encourage the adoption of economic, social, and cultural rights, including the rights to education and to an adequate standard of living.[114] To pursue these goals, governments need to adopt a fair tax system that collects revenues from wealthy taxpayers, including multinational firms, and prevents elites from hiding their monies in offshore tax havens.

In particular, broader conceptions of the "social value" of privacy consider the overall impact of privacy laws and policies on privacy

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111. The state of affairs actually incentivizes taxpayers to engage in offshore tax evasion by lowering the transaction costs they face. *See* Lee Benham, *Licit and Illicit Responses to Regulation*, *in* HANDBOOK OF NEW INSTITUTIONAL ECONOMICS 591, 599 (Claude Ménard & Mary M. Shirley eds., 2008) (describing how regulatory solutions can incentivize illegal activities).

112. *See generally* ANITA ALLEN, WHY PRIVACY ISN'T EVERYTHING: FEMINIST REFLECTIONS ON PERSONAL ACCOUNTABILITY (2003); Jane Bailey, *Towards An Equality-Enhancing Conception of Privacy*, 31 DALHOUSIE L. J. 267 (2008).

113. ALLEN, *supra* note 112 at 6.

114. United Nations International Covenant on Economic, Social and Cultural Rights, Dec. 16, 1966, 993 U.N.T.S. 3.

rights of both individuals and communities.[115] These views call for more nuanced analysis in situations where privacy rights protect powerful taxpayers with foreign investments (along with criminals) at the expense of the interests of average taxpayers.

C. *Enforcement*

As discussed throughout this Article, governments are currently trying to fight two main international tax battles against offshore tax evasion and aggressive international tax avoidance. Success in these battles will result in more tax revenues. As Walter Hellerstein notes, however, success will only be achieved if governments are able to link their enforcement jurisdiction with their existing legal jurisdiction.[116]

1. Reducing the Underground Economy

With respect to the first battle, much of offshore tax evasion is related to a country's underground economy (for instance, an off-grid, cash-only restaurant where the owner squirrels away undisclosed income in an anonymous offshore account). A variety of incentives have been discussed to inhibit the underground economy, including the greater usage of value-added taxes, electronic fiscal devices (e.g., electronic cash registers that are certified by the government), lotteries where consumers can turn in receipts, tax reductions for proof of payment, and tax rebates for the use of credit/debit card (to reduce cash transactions).[117] According to the International Monetary Fund, these efforts have led to mixed results, at best.[118]

More recently, works have recognized the importance of less tangible cultural forces in promoting taxpayer compliance (the cultural forces and social norms are sometimes collectively termed "taxpayer morale").[119] These factors influence compliance behavior, including whether a resident taxpayer feels patriotic toward her country and whether she thinks she is getting a roughly fair return on a tax payment.[120] Accordingly, it may be difficult for tax law and

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115. These conceptions typically rely on an extension of Westin's famed discussion of information privacy. ALAN WESTIN, PRIVACY AND FREEDOM 7 (1967); *see also* PRISCILLA M. REGAN, LEGISLATING PRIVACY: TECHNOLOGY, SOCIAL VALUES AND PUBLIC POLICY (1995); Arthur J Cockfield, *Protecting the Social Value of Privacy in the Context of State Investigations Using New Technologies*, 40 U.B.C. L. REV. 41, 66 (2007) (discussing how the 'social value' of privacy can assist with legal analysis to gauge reasonable expectations of privacy).

116. *See* Walter Hellerstein, *Jurisdiction to Tax Income and Consumption in the New Economy: A Theoretical and Comparative Perspective*, 38 G.A. L. REV. 1, 65 (2003).

117. For discussion, see Joseph Bankman, *Eight Truths about Collecting Taxes from the Cash Economy*, 117 TAX NOTES 506, 506–08 (2007).

118. IMF, *supra* note 73.

119. *Id.* at 21.

120. *Id.*

enforcement reforms alone to change taxpayer compliance conduct in a significant way.

Nevertheless, in the international sphere, whistleblowing initiatives appear to offer hope to uncover global financial crimes such as the UBS bank scandal. There is emerging evidence that whistleblowing programs can have a material impact on revenue collection: as a result of the UBS whistleblower, the US government forced the Swiss government to transfer information concerning over two thousand anonymous accounts maintained by Americans. In the United States, whistleblowing rewards have been steadily growing to roughly $501 million in 2015.[121]

2. Financial Secrecy Laws and Misaligned Incentives

Countries have historically jealously guarded their rights to develop tax and financial privacy laws as they wish.[122] Accordingly, tax havens and many other countries passed financial secrecy laws to anonymize the identity of the ultimate owner of investments (see Part II.A.2). The end result has been the traditional near anonymity offered by global capital markets for private financial and, in many cases, non-financial wealth (e.g., a Manhattan condo). Up to roughly fifteen years ago an investor who placed his or her money in an offshore bank account could be reasonably confident that nobody would learn of its existence. This state of affairs greatly increases transaction costs facing tax authorities that seek information regarding offshore transactions.

Tax authorities also face significant bargaining costs if their audit involves the international criminal aspects of a taxpayer's activities: investigations and prosecutions can take years to complete with potentially weak sanctions if the taxpayer is ever convicted. For this reason, taxpayers engaged in offshore tax evasion are sometimes offered different forms of relief through voluntary disclosure programs, including amnesty from criminal prosecutions, should they disclose their offshore assets and income in a timely fashion.[123]

The main enforcement challenge is a lack of international cooperation due to misaligned political incentives.[124] Elites within low and middle income (often nondemocratic) countries use international financial secrecy as an exit strategy that allows them to move and hide monies offshore (to preserve their family wealth and

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121. *See* INTERNAL REVENUE SERVICE, IRS WHISTLEBLOWER OFFICE FISCAL YEAR 2015 REPORT TO CONGRESS 4 (2016) (noting that the UBS whistleblower was paid roughly $100 million in compensation by the IRS).

122. *See* Arthur Cockfield, *Tax Integration Under NAFTA: Resolving the Conflict Between Economic and Sovereignty Interests*, 34 STAN. J. INT'L L. 39, 57 (1998).

123. *See, e.g.*, CANADA REVENUE AGENCY, INFORMATION CIRCULAR IC00-1R5 (2007).

124. *See Big Data*, *supra* note 5, at 535–38.

security). Tax havens, even if they are forced into binding agreements such as TIEAs, have incentives to subvert the system (e.g., by developing new business and legal entities that may fall outside of current disclosure obligations) and shirk responsibility (e.g., by not meaningfully enforcing EOI agreements by ensuring they do not maintain necessary records subject to a transfer request).

Low income countries additionally may not have the human resources and physical infrastructure to enforce their own domestic tax laws, let alone engage in effective EOI.[125] Foreign aid and other resources need to be directed at bolstering the tax administration efforts for these low income countries. This effort would promote global financial transparency and reduce transaction costs faced by the tax authorities in high income countries, as they would be in a better position to track the cross-border investments of their own citizens and residents.

A problem is that wealthier OECD countries also benefit from global financial opacity because they are net recipients of trillions of dollars in capital flight leaving other countries.[126] For instance, the three largest OECD economies—the United States, Germany, and Japan—are ranked by Tax Justice Network in the world's top twelve financial secrecy jurisdictions along with tax havens such as Switzerland and Luxembourg.[127] Even lower-ranked countries such as Canada maintain laws that enable anonymous investments by nonresidents.[128] These wealthier countries face a moral hazard because efforts to promote global financial transparency may actually reduce overall foreign investment within their economies.

As a result of these misaligned incentives, countries cannot agree, for instance, on a binding supranational agreement that would abolish all financial secrecy laws. Notably, taxpayer privacy concerns serve as perhaps the main plausible rationale for refusing to enter

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125. *See* ALEX EASSON AND DAVID HOLLAND, ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, TAXATION AND FOREIGN DIRECT INVESTMENT: THE EXPERIENCE OF THE ECONOMIES IN TRANSITION 40 (1995); Timothy Besley & Torsten Persson, *Why Do Developing Countries Tax So Little?*, 28 J. ECON. PERSPECTIVES 99, 104 (2014); OHCHR, *supra* note 4, at 21 (recommending the provision of resources and technical assistance to support low income countries' tax administrations).

126. The first major tax haven data leak revealed over 20,000 offshore accounts maintained by Chinese individuals, primarily for purposes of cross-border investments. Over USD$1 trillion in capital is estimated to have fled China in the last ten years. *See* Marina Walker Guevara et al., *Leaked Records Reveal Offshore Holdings of China's Elite*, INT'L CONSORTIUM OF INVESTIGATIVE JOURNALISTS (Jan. 21, 2013), https://www.icij.org/offshore/leaked-records-reveal-offshore-holdings-chinas-elite [https://perma.cc/Q82G-HRBM] (archived Sept. 24, 2017).

127. *See supra* note 32 and accompanying discussion.

128. *See* Dave Seglins, *'Tax Haven' Canada Being Used by Offshore Cheats, Panama Papers Show*, CBC NEWS (Jan. 24, 2017), http://www.cbc.ca/news/investigates/panama-papers-canada-tax-haven-1.3950552 [https://perma.cc/9N74-U9WD] (archived Sept. 24, 2017) (discussing how federal and provincial corporate laws permit anonymous foreign investments).

into such an agreement, highlighting the need to protect privacy interests to encourage enforcement (see Part III.B).

D. *Summary*

Many governments now have over two decades' worth of experience with automatic tax information exchange. Most recently, governments have signed onto the CRS to promote automatic bulk exchanges. While automatic bulk EOI is a worthy goal, improving the quality of the exchanged information is the next area of obvious focus.

Data availability, usefulness, and verifiability are three components of high quality information that can help governments pursue their cross-border investigations and audits. In particular, transferred information should be relatable to domestic tax identification measures and checked against third party reporting and withholding tax disclosures. Once this is done, governments can conduct analysis to determine audit risk by focusing on issues such as taxpayer segmentation, dealings between the taxpayer and offshore service providers, and cross-indexing of tax and financial information against non-tax data (e.g., insurance policy disclosures).

Against this desire for high quality tax information stands taxpayer privacy concerns. The apprehensions arise from the varied levels of domestic legal protection afforded to privacy rights, along with the risk of abuse or misuse of transferred information. Accordingly, broader multilateral agreement on privacy protections is likely a prerequisite to effective EOI. This hoped-for cooperation is hindered by the fact that many countries refuse to abolish their financial secrecy laws, which stands as one of the main barriers to optimal reform.

IV. ADDRESSING KEY CHALLENGES THROUGH DATA ANALYTICS

As a result of ongoing reforms, governments are increasingly amassing "bulk" taxpayer information provided by other governments. As discussed above, however, more information is not necessarily better (see Part III.A). As explored below, the collection of big data and use of big data analytics enhances information quality and has the potential to reduce transaction costs by better identifying risks for audit and enforcement purposes.

Prior to proceeding with the analysis, it might be helpful to offer definitions of big data and data analytics. Big data normally connotes the following three factors: (a) the data set is large and diverse; (b) the information is being generated on an ongoing basis (versus a static data set); and (c) the data is normally capable of being subjected to data analytics.[129] The factors are sometimes referred to as the three "Vs": volume, variety, and velocity.[130]

Data analytics in turn is the computer analysis of big data to reveal patterns or other information that is useful to governments, businesses, or other analysts. The basic idea is that, while different data points from different sources may appear unrelated, data analytics can potentially provide insights by combining all of the data points to reveal new information and connections that had been previously undetected. The subsequent discussion focuses on how EOI initiatives should account for the possible application of data analytics.[131]

A. *Information Quality and Risk Analysis*

Tax authorities are increasingly deploying data analytics to help fight tax fraud and evasion.[132] For example, US state governments, including those of Connecticut, Georgia, Indiana, and New York, have used data analytics to identify tax schemes used to trigger fraudulent refunds. Under this approach, the taxpayer's tax refund request is cross-referenced against billions of records from public and commercial databases to catch the cheaters. New York's Department of Taxation and Finance, for instance, decreased revenue losses by $1.2 billion in 2010 through the use of data analytics.[133]

The application of data analytics to transferred tax information as well as domestic sources of tax and non-tax data can also assist in flagging the risk of offshore tax evasion and noncompliant

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129. The definition of the term "big data" remains unsettled within social science perspectives in part because of the relative newness of the concept. For discussion of big data and regulations, see VIKTOR MAYER-SCHÖNBERGER & KENNETH CUKIER, BIG DATA: A REVOLUTION THAT WILL TRANSFORM HOW WE LIVE, WORK, AND THINK 73–78 (2013).

130. *See* Michael Alles and Glen Gray, A Framework for Analyzing the Potential Role of Big Data in Auditing: A Synthesis of the Literature 9 (Sept. 14, 2015) (unpublished manuscript) (on file with author).

131. For discussion of US tax authorities' reforms to expand financial information sharing to combat non-compliance and evasion, see Andrew T. Buckler, *Information Technology in the U.S. Tax Administration, in* SCIENCE, TECHNOLOGY AND TAXATION 159, 171–75 (Robert F. van Brederode ed., 2012) (describing how new analytical tools and processes allow for the identification and analysis of large amounts of unstructured data).

132. Accounting firms have already devised sophisticated software programs to manage and exploit 'big data' for tax compliance, planning and other purposes. *See, e.g.*, ERNST & YOUNG, *Diagnostic Tools and Data Analytics*, http://www.ey.com/GL/en/Services/Tax/VAT--GST-and-other-sales-taxes/EY-managing-indirect-tax-data-in-the-digital-age-2-diagnostic-tools-and-data-analytics [https://perma.cc/7JHL-A65N] (archived Sept. 24, 2017).

133. JoAnne Bourquard & Cassandra Kirsch, *Big Data = Big Benefits*, STATE LEGISLATURES (Sept. 1, 2014), http://www.ncsl.org/research/telecommunications-and-information-technology/big-data-big-benefits.aspx [https://perma.cc/XX9T-TWRT] (archived Sept. 24, 2017).

international tax planning. Big data thus far has not been used extensively for international tax purposes, although there has been analysis concerning the amount of bulk taxpayer information shared between governments.[134] Governments exchange bulk taxpayer information mainly to ensure that resident taxpayers are reporting their global income for tax purposes.[135]

1. Sources of EOI

As discussed previously, high quality information is promoted by using available sources of data, cross-indexing it against other sources, and ensuring the data is verifiable. If possible, high quality information should include "big tax data" in that it has sufficient volume, variety, and velocity so that can it be used with data analytics to help with audits and investigations.[136]

With respect to evasion, governments can amass and cross-index domestic and cross-border tax information and non-tax information concerning:[137] (a) automatic tax and financial information provided in bulk by other governments; (b) common taxpayer identification numbers or ones that are relatable to domestic tax identification numbers; (c) reports of cross-border financial flows provided by financial intelligence units (e.g., the Treasury Department's Financial Crime Enforcement Network (FinCEN)), including suspicious activity reports and suspicious transaction reports; (d) resident taxpayers' tax returns, including non-disclosures of offshore assets or income; (e) disclosures of taxpayers' dealings with offshore service providers and related financial dealings; and (f) resident taxpayers' domestic consumption patterns (e.g., purchase of Italian sports cars).

As a result of privacy concerns, perhaps the most controversial data source is the final one: non-tax data. At times, countries pass laws to restrict government transfers among different agencies or impose restrictions on the collection of potentially unrelated personal information.[138] Such sharing generally violates fair information

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134. *See* Keen & Ligthart, *supra* note 9 (noting, among other things, how the gross amount of tax information shared between the Netherlands and certain other countries grew on average by 43 percent a year from 1993 to 2001).

135. *See* Dean, *supra* note 11, at 637–46 (discussing policy reasons that lead to the greater usage of cross-border tax information).

136. *See* Brigitte Unger & Frans van Waarden, *How to Dodge Drowning in Data? Rule- and Risk-Based Anti-Money Laundering Policies Compared*, *in* RESEARCH HANDBOOK ON MONEY LAUNDERING 399, 399–425 (discussing the advantages and disadvantages of using risk-based approaches versus rule-based approaches).

137. *See Big Data*, *supra* note 5, at 500–502.

138. Under fair information practices, the 'limiting collection' criterion means that personal information should only be used for reasons that were specified at the time of collection hence personal information in say an insurance policy can normally only be used for insurance purposes. The limiting collection criterion hence restricts the ability of a government to transfer personal information to another government

practices (FIPs), touched on earlier in Part III.B.2, because the information is used for a different purpose from the one intended when it was initially collected (e.g., the Federal Trade Commission guidelines that, in some circumstances, limit the personal information collection, use, and disclosure policies of federal government agencies).[139]

For an example of a current administrative practice, the Australian Taxation Office cross-indexes insurance policy records and asset value reports against taxpayers' disclosed sources of income.[140] If a taxpayer discloses, say, a multi-million dollar work of art in an insurance policy while disclosing very little income, then data analysis could trigger an investigation or audit. Governments can also transfer non-tax data as long as their tax treaties provide for such transfers: in 2005, the OECD model tax treaty was amended to enable the transfer of such non-tax data for tax and other purposes (e.g., pursuing global terrorist financiers).[141]

With respect to tax avoidance, governments could collect and run matches against: (a) information on tax filings in foreign countries (perhaps collected under the proposed common template under CBCR);[142] (b) information on "boilerplate"' cross-border tax structures that are marketed to multiple clients to reduce global tax liabilities;[143] (c) information on transfer prices charged by taxpayers in related industries;[144] and (d) non-tax data revealed by public company filings (e.g., number of employees in each country) or via the CBCR template (see Part II.B).

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agency when the information was initially collected for a specific purpose. *See supra* text accompanying notes 108–09.

139. FED. TRADE COMM'N, PRIVACY ONLINE: FAIR INFORMATION PRACTICES IN THE ELECTRONIC MARKETPLACE 18 (2000).

140. *See* AUSTL. TAXATION OFFICE, *Lifestyle Assets 2013-14 and 2014-15 Financial Years Data Matching Program Protocols*, https://www.ato.gov.au/general/gen/lifestyle-assets-data-matching-program-protocol/ [https://perma.cc/55W5-QAAW] (archived Sept. 22, 2017) (last modified Feb. 15, 2016).

141. ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, COMMITTEE ON FISCAL AFFAIRS, MODEL TAX CONVENTION ON INCOME AND ON CAPITAL art. 26.

142. *See supra* text accompanying note 65.

143. The proposed system would provide national tax authorities with more information concerning cross-border tax planning structures that do not comply with tax law. At times, aggressive tax planning has resulted in serious sanctions against industry players who promoted the planning. For discussion, see U.S. S. PERMANENT SUBCOMM. ON INVESTIGATIONS, COMM. ON HOMELAND SEC. AND GOV'T AFFAIRS, REP. ON THE ROLE OF THE PROFESSIONAL FIRMS IN THE U.S. TAX SHELTER INDUSTRY, S. REP. NO. 109–54 (2005) (discussing fines assessed against KPMG for improper tax shelters).

144. *See generally* Cockfield, *supra* note 77 (discussing how online technologies and an intranet accessible by tax authorities can facilitate EOI, including exchanges of bulk transfer pricing information).

2. Sources and Data Analytics

Once the data has been collected, governments can design software programs to try to identify correlations that point to specific risk factors.

Compared with governments, accounting firms and other members of the private sector have more aggressively embraced data analytics for compliance, audit, and other tax purposes. Data analytics is being used to automate multi-jurisdictional tax compliance, reduce tax errors, find tax savings opportunities, and reduce administrative costs.[145] Initial efforts are also being directed at generating tax law advice by sifting through large data sets of case law, legislation, and administrative practices.[146] By identifying helpful or problematic aspects of particular cases, data analytics hence will one day potentially inform a government prosecutor's decision on whether to prosecute offshore tax evasion.

Private sector auditors are also using data analytics to improve audit quality and detect fraud. As discussed by Christine Early, this development has occurred in part because the population of the tested transactions has also increased.[147] Like tax authorities, auditors previously used risk-based models that focused on sample transactions to determine if a taxpayer is accurately stating his or her account balances. In contrast, all of a firm's transactions (that is, 100 percent of the tested population) can be tested using data analytics. The hope is that each year's data analytics-assisted audit will identify problem areas as well as vulnerabilities then learn from experience to better target subsequent fraud as well as unintentional errors to reduce false positives.[148]

Governments could move in this direction by requesting all transaction details instead of a summary of this information for tax return purposes.[149] In theory, the government can collect and store this vast amount of tax and financial information in the cloud with its seemingly near-limitless storage ability.

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145. *See* Christine E. Earley, *Data Analytics in Auditing: Opportunities and Challenges*, 58 BUS. HORIZONS 493, 495 (2015).

146. *See generally* Benjamin Alarie, Anthony Niblett & Albert Yoon, *Using Machine Learning to Predict Outcomes in Tax Law* (Working Paper, Oct. 16, 2016), https://ssrn.com/abstract=2855977 [https://perma.cc/9QZ6-ZSHT] (archived Sept. 22, 2017).

147. Earley, *supra* note 145, at 495–496.

148. *Id.*

149. For a review of the ways that technology affects tax administration and design in developing countries, see Richard M. Bird & Eric M. Zolt, *Technology and Taxation in Developing Countries*, *in* 40 SCIENCE, TECHNOLOGY AND TAXATION 121, 130–133 (Robert F. van Brederode et al. eds., 2012) (discussing the importance of technologies to track the identities of taxpayers and provide accurate information reporting to tax authorities).

Note that as governments deploy data analytics to determine risks, taxpayers will presumably try to reverse engineer these moves through their own data analytics. They will do this to proactively manage their tax filings to reduce the risk of audit.

3. Data Analytics with Integrated Risk Analysis

Finally, the proposed data analytics systems can also be linked to existing "integrated risk analysis" that tries to correlate different taxpayer risk factors such as use of home offices. Under the Compliance Risk Management (CRM) approach, initially designed by the Australian Taxation Office (ATO), tax authorities first seek to measure and understand the causes of compliance gaps and then to allocate resources to different taxpayer segments.[150]

According to the ATO, the next step is to deliver mitigating and tailored responses to different compliance gap issues, emphasizing ways to facilitate compliance and/or deter further unwanted activities.[151] The tax authorities can then target for audit or investigation the taxpayers identified as having a higher risk of tax evasion as well as avoidance schemes that do not comply with tax laws. Finally, under CRM, governments should measure the impact of any actions taken.

B. *A Global Government Financial Registry*

1. The Proposals: Public versus Government Access

In recent years, there have been calls for the creation of a global financial registry, searchable by the public and/or governments, of business entities (e.g., corporations and limited liability companies) and legal entities (e.g., trusts and foundations).[152] In addition, some proposals would seek to list within this public or government registry the names of the ultimate or beneficial owners of the business and legal entities.

A fully searchable public financial registry would be highly problematic as it would overly intrude on taxpayer privacy rights and potentially inhibit global capital flows, reducing overall economic growth. As mentioned in Part III.B, taxpayer privacy is an interest protected by domestic, constitutional, and international law.

150. IMF, *supra* note 73, at 42–43.

151. *Id.* at 43.

152. For discussion, see, for example, Gabriel Zucman, *Taxing Across Borders: Tracking Personal Wealth and Corporate Profits*, 28 J. ECON. PERSPECTIVES 121 (2014) (advocating a world financial registry to respond to ongoing increases in offshore tax evasion and aggressive international tax avoidance).

Moreover, the broader category of privacy is recognized by the United Nations and many countries as a fundamental human right.

There are also efficiency worries related to a possible database that could be searchable by members of the public. Efficient private bargaining in many circumstances is promoted by anonymizing commercial and individual identities. Business people may prefer to conduct their transactions in private to avoid giving up competitive advantages, trade secrets, and commercially confidential information.[153] Finally, the reform could backfire if other business people "reverse engineered" the public information about offshore investments to engage in even more aggressive revenue-depleting tax planning.[154]

Moreover, the international cooperation needed for a registry might be difficult or impossible to generate: many governments have passed privacy and other laws that prohibit the publication of government information such as tax and financial information or, in many cases, the transfer of such information to foreign governments.[155] As discussed, certain countries or subnational jurisdictions additionally continue to offer financial secrecy (e.g., via Delaware LLCs) and would view a public registry of tax and financial records as an unacceptable intrusion into their fiscal and political sovereignty (see Part III.C).

2. Promoting Information Quality via a Government Registry

Nevertheless, a global financial registry accessible only by government tax authorities might be politically feasible. Such a registry would lower transaction costs facing government

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153. For discussion see, for example, GILLIAN K. HADFIELD, *The Many Legal Institutions that Support Contractual Commitments*, *in* HANDBOOK OF NEW INSTITUTIONAL ECONOMICS 175, 181 (Claude Ménard & Mary M. Shirley eds., 2005).

154. Joshua D. Blank, *Reconsidering Corporate Tax Privacy*, 11 N.Y.U. J. L. & BUS. 31, 37 (2014).

155. Governments have 'signalled' that taxpayer privacy is important in part to encourage long-term investment, and reneging on this commitment may hence reduce this investment. *See* Brian Levy & Pablo T. Spiller, *The Institutional Foundations of Regulatory Commitment: A Comparative Analysis of Telecommunications Regulation*, 10 J. L. ECON. & ORG. 201 (1994) (noting the importance of stability with respect to government signalling concerning expropriation of property and other matters). For discussion of addressing international tax challenges via OECD cooperative processes, see generally Hugh J. Ault, *Reflections on the Role of the OECD in Developing International Tax Norms*, 34 BROOK. J. INT'L L. 757 (2009) (discussing how OECD reforms influence the development of international tax norms); Arthur J. Cockfield, *The Rise of the OECD as Informal World Tax Organization Through the Shaping of National Responses to E-Commerce Tax Challenges*, 8 YALE J. L. & TECH 136 (2006) (claiming the OECD's institutional setting encourages cooperation); Diane Ring, *Who is Making International Tax Policy: International Organizations as Power Players in a High Stakes World*, 33 FORDHAM INT'L L. J. (2010) (reviewing how OECD institutions seek to attract consensus).

investigators by addressing one of the main information disadvantages facing governments, namely their inability to identify the human beneficial owners of cross-border investments (see Parts II.A and III.C). In addition, the registry would help governments determine if their resident firms had paid tax on worldwide income (as most so-called territorial tax systems tax the foreign source passive income of resident taxpayers with a few exceptions to this rule, such as Hong Kong, which does not seek to tax such income).[156] Through the use of data analytics, governments could combine the information within the registry with other tax and financial data to, as discussed above, help identify and address risks.

Governments might consider relaxing their financial secrecy laws to allow for the government-to-government exchange of entity and ownership information if they were provided with sufficient privacy safeguards (see Part III.B).[157] Still, noncooperative states would presumably develop new business or legal entities that would not be covered by the new disclosure obligations. In addition, the entity and ownership information is often recorded by offshore service providers and tax haven governments do not currently have access to this information.[158] Nor do many low income countries have the needed human and information technologies resources for effective collection, use, and disclosure within an EOI regime (see Parts III.A and III.C).

C. *Deputizing Private Sector Actors*

A final tentative idea is for government law and policy to support deputizing members of the private sector to apply data analytics to publicly available tax and non-tax information to fight noncompliant aggressive international tax planning.[159]

As discussed in Part II.A, tax authorities often find it difficult to police transfer pricing because taxpayers enjoy an information advantage over tax authorities (in that taxpayers better understand the application of tax rules to their unique cross-border investments and transactions). Large taxpayers often deploy significant resources to design, implement, and, if needed, defend international tax

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156. Under the US approach, which is consistent with the rules in place in many countries, tax laws ensure that any "passive" foreign source income (e.g., interest or royalties) is taxed on an accrual basis. *See, e.g.*, I.R.C. §§ 951–965 (2007) (Subpart F).

157. Zucman, *supra* note 152, at 145 (noting that many countries already maintain central securities depositories that track ownership of equity and debt instruments).

158. *See supra* text accompanying notes 83–86.

159. This idea is a result of a conversation between the author and Murray Rankin, NDP Minister of Parliament for Victoria, British Columbia and former member of the Parliamentary Standing Committee on Finance (House of Commons, Canada).

avoidance strategies. In contrast, many tax authorities are struggling to keep up with these developments.

Even tax authorities that have traditionally led technology developments can face an uphill battle. According to a recent account, "as a result of its own poor performance and lean budgets, the IRS is forced to rely on aging, outmoded IT systems that sometimes do not interface with each other."[160] For low and middle income countries, the situation is much direr, as writings suggest that many such countries already struggle to collect needed information to enforce existing domestic tax laws as well as to fulfill treaty obligations (see Part III.C).

To the extent that reforms one day generate publicly available tax information (beyond current public company financial disclosures mandated by securities laws), private sector taxpayers could harness this information to design and implement data analytics applications to inform government investigations and audits.

In essence, governments could "deputize" individuals and private sector businesses to help identify untaxed income.[161] Assuming CBCR-mandated information one day becomes available to the public, private sector actors could conduct data analysis on issues such as profits per employees in different jurisdictions, how transfer prices vary from existing comparables in similar industries, and whether intangible assets are being shifted to low or nil tax jurisdictions without paying compensatory royalties to the country of initial development. The analysis could then be sent to the government, and the deputized firm would be offered some financial reward such as a percentage of any additional taxes recovered.

D. *Summary*

Data analytics can take high quality information and make it even more useful by generating insights through the computer analysis of seemingly disparate and disconnected data. In particular, by subjecting mass tax and non-tax data to data analytics, previously obscure relationships can reveal anomalies and expose ways to better target tax audits and investigations. EOI reforms should account for the possibility of data analytics and be designed to generate tax and financial information with sufficient volume, variety, and velocity so that it can be used with such analysis. Information within a global financial registry could also be subjected to data analytics.

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160. Johnson, *supra* note 105, at 17.

161. *But see* Bankman, *supra* note 117, at 8 (rejecting deputizing taxpayers to go after tax cheats as "unseemly"). It bears mentioning that common law countries like the United Kingdom, Canada, and the United States (under state but not federal law) have traditions where 'private prosecutors' (private sector lawyers) are hired to prosecute criminal offences in different circumstances.

Governments could also consider deputizing private sector firms to conduct data analytics of publicly available information to help identify untaxed income.

V. CONCLUSION

A lack of global financial transparency permits corrupt elites and others to drain their countries of financial resources and then hide these monies offshore. In some cases, such as the South Sudanese example in the Introduction, much of the remaining population suffers from starvation and other human rights violations. In other situations, developing countries provide multinational firms with tax breaks that allow these firms to exploit resources and reap significant profits—while paying little to no tax. In addition, complex cross-border tax planning structures can subvert the intent of tax laws by lowering global financial tax liabilities for wealthy taxpayers and multinational firms. All of these forms of under-payment or non-payment of taxes to governments deprive the state of monies needed to deliver on its human rights obligations through the provision of public goods and services, from a functioning judiciary to health care, education, environmental regulation, housing, and adequate standards of living.

To fight against offshore tax evasion and aggressive international tax avoidance, governments increasingly turn to cross-border exchanges of (tax) information (EOI). More and better information could promote global financial transparency and address information asymmetry problems that raise transaction costs and bedevil enforcement efforts. The last ten years have witnessed a number of related reforms, including a US unilateral effort known as the Foreign Account Tax Compliance Act (FATCA) and OECD initiatives to promote bilateral tax information exchange agreements and multilateral agreements regarding the Common Reporting Standard (CRS) and Country by Country Reporting (CBCR).

As countries build on these initiatives and deploy new ones, they are increasingly studying optimal EOI laws and policies. While ongoing reforms emphasize exchanges of "bulk" or mass taxpayer data, less attention has been paid to promoting high quality tax information exchanges to support government audits and investigations. High quality information is information that: (a) can be accessed and cross-indexed by governments against other information sources; (b) is useful for tax administration purposes; and (c) is verifiable to ensure data integrity. The exchange and usage of high quality tax information would reduce transaction costs for tax authorities as they could more readily identify taxpayers engaged in offshore tax evasion and aggressive international tax planning.

Yet there are ongoing barriers that inhibit the exchange of high quality tax information. Taxpayer privacy remains a concern, given the varied national and international rules that protect taxpayer privacy interests, along with disagreement on appropriate safeguards. Tax havens and other countries sometimes maintain financial secrecy laws that make it difficult or impossible to determine the ultimate owner of cross-border investments. Moreover, many low income countries lack the human and physical resources to engage in automatic EOI, let alone ensure the transferred information is of high quality.

Nevertheless, countries with sufficient administrative resources can promote enforcement through the greater adoption of data analytics and its application to transferred "big tax data." Data analytics can potentially help tax authorities identify risks of noncompliant taxpayer behavior by identifying relationships that would otherwise be obscured. In addition, data analytics applied to the tax and financial information within a possible global financial registry could help governments investigate and audit taxpayers. A final tentative idea is to "deputize" private sector actors to sift through big tax data and other sources to identify untaxed income and assist tax authorities in their effort to collect more revenues.