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Tax expenditure and the treatment of tax incentives for investment

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Abstract
Governments use tax expenditures to boost investment, innovation and employment. However, these schemes are largely opaque, costly and often ineffective in reaching their stated goals. They also frequently trigger unwanted side effects. In order to improve the performance of these tools, the authors present three concrete policy proposals: First, governments should increase transparency on tax benefits. G20 members should take the lead on this with frequent and comprehensive tax expenditure reports. Second, G20 governments should improve the design of tax incentives with the aim of minimizing the generation of windfall profits and negative spillover effects within and across (in particular, on poorer) countries. Third, governments should phase out tax expenditures that are environmentally harmful, including tax incentives for fossil fuels and other schemes that promote an unsustainable use of natural resources.

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1 Introduction

Governments worldwide pursue different policy objectives including the creation of employment, the attraction of investment as well as support of innovation and R&D both through direct spending programs as well as tax expenditures.

The classical literature defines tax expenditures as "departures from the normal tax structure, designed to favor a particular industry, activity, or class of persons. They take many forms, such as permanent exclusions from income, deductions, deferrals of tax liabilities, credits against tax, or special rates" (Surrey and McDaniel, 1979). Obviously, tax systems differ in what constitutes the "normal" tax structure, making such mechanisms difficult to track, quantify, evaluate and compare. This paper holds, however, that much more could, and should, be done to increase the transparency of tax expenditures on an international scale.

Under certain conditions, a tax subsidy could be the most cost-effective policy instrument and, hence tax expenditures can sometimes be preferred to direct spending. As discussed by Toder (2000), tax expenditures may be preferred to direct spending when eligibility conditions are directly linked to tax return data, when it is more important to maximize the number of beneficiaries than to minimize excess claims or when the policy objective is to incentivize a clear and broadly defined activity by reducing its net price.[1]

This said, in general, tax expenditures are costly and usually ineffective as well as inefficient in reaching their stated goals. In the United States, tax expenditures are estimated to have cost the federal government more than 1.5 trillion USD in 2017 (US Treasury, 2018). In the UK, tax expenditures amounted to 117 billion GBP in 2015 – not accounting for roughly 1 billion GBP in "minor reliefs" and 218 reliefs for which figures are not available; and in Australia the largest 25 reported tax expenditures added up to more than 131 billion AUD in 2015 (Houlder, 2016 and Australian Treasury, 2016).

Strikingly, though, transparency on the magnitude of existing tax expenditures is limited, and new tax benefits are being introduced regularly without adequate scrutiny. For instance, out of the 43 G20 and OECD economies, 8 have not reported on tax expenditures in the last ten years, 26 have published a basic report (e.g. by providing estimates for a reduced subset of provisions or estimates based on aggregate figures only) in the last ten years, and only 9 countries have published a detailed and comprehensive report on a regular basis (Redonda and Neubig, 2018). The picture does not improve when looking at developing economies. Only eleven out of 54 African countries publish figures on tax expenditures, and in the East Asia and

[1] The US Earned Income Tax Credit (EITC) is a case in point. The EITC is a refundable tax credit seeking to strengthen incentives to work and increase children's economic opportunity by boosting the income for poor households. The EITC has effectively lifted more than 6 million people out of poverty since the observed positive long-term effects on high-school and college graduation, on employment and wages are largest for children from the poorest households (Bastian and Miclemore, 2018). Moreover, Bastian and Jones (2018) find that, besides being one of the largest provisions in the US – it distributes around 70 billion USD a year to almost 30 million lower-income families – the EITC "helps pay for itself". As shown by the authors, the EITC significantly increases labor supply, which then leads beneficiaries to pay more in taxes and receive less in public assistance, than they otherwise would have. When it comes to tax incentives for investment, there is evidence showing that some tax expenditures are effective in bringing the amount of investment on R&D and innovation closer to the socially desirable (see, e.g. Bloom et al., 2002; Rao, 2016 and Thomson, 2017).

Pacific region, only the Philippines and Papua New Guinea compute and report tax expenditure estimates (AfDB et al., 2017 and World Bank, 2015). In Latin America, 16 out of 23 countries provide at least some information (Peláez Longinotti, 2017).

Along with this general lack of transparency, tax expenditures are not (as a rule) subject to sound cost-benefit analyses. Indeed, while studies assessing the effectiveness and efficiency in reaching the stated goals of tax expenditures would be crucial, they remain rare.

Tax incentives for investment are a case in point. Most governments grant a myriad of tax benefits to stimulate investment. These include tax expenditures such as tax holidays, patent boxes, and special fiscal regimes offered in special economic zones (SEZs) to attract foreign direct investment (FDI). Nonetheless, these schemes usually have little visible impact on investment or growth. They do operate, however, as tax competition instruments that erode other economies' tax bases. This is a crucial issue not only for G20 economies, but also when it comes to domestic revenue mobilisation in developing economies. Clearly, more technical cooperation in this field is needed.

Tax expenditures whose real costs remain hidden and which do not fulfill their stated objectives are fiscally harmful, prevent governments from spending on other, more relevant policies and undermine the legitimacy of the tax system in general.

Moreover, tax expenditures are often also environmentally harmful. Tax exemptions for the production and consumption of fossil fuels provide a concrete example. Many further schemes incentivize an inefficient and unsustainable use of natural resources. Yet, the negative environmental externalities triggered by such tax expenditures are very often neglected and, hence they are hardly ever internalized to assess the true social cost of these schemes.

Against this background, and as recommended by the T20 last year, tax expenditure is an area on which the G20 can and should act urgently (Brosio et al. 2017).

2 G20 member countries should report systematically and comprehensively on the fiscal cost of tax expenditures

Improving reporting on tax expenditure by systematically estimating and publishing their fiscal cost is crucial for governments to better scrutinize the effectiveness and efficiency of these measures. It is also critical to enhance transparency and accountability.

In 2017, the T20 already called for more and better technical cooperation among G20 governments, including the "compilation and publication of reliable tax expenditure data" as well as the standardization of the reporting of tax expenditures (Brosio et al., 2017). Unfortunately, progress in the field has been rare and – if anything – was mainly based on unilateral initiatives rather than on a coordinated strategy among G20 governments.

We are aware that estimating and reporting the revenue foregone through tax expenditures is a relatively resource-intensive exercise which, in the case of poor economies, could be a barrier to increase transpareny in this field. Yet, we find it puzzling that some of the largest and richest economies in the world (China, Japan, Luxembourg and Switzerland) do not report on tax expenditures at all. In these economies, the lack of political will and the pressure by lobbying

groups (rather than a lack of resources) are likely to be the key determinants of the high level of opacity around tax expenditures. In Switzerland, for instance, the subsidies law requires a review of all financial support measures every six years. Yet, the government had only published a one-off official report on federal tax expenditures in 2011, which was based to a significant extent on 2005 figures from the canton of Bern, extrapolated to the rest of the country. The Swiss federal government recently received a parliamentary inquiry regarding the lack of an updated tax expenditure report and answered that a report is currently being prepared.[2]

We hereby propose a two-stage strategy to gain momentum. First, based on national tax laws and methodologies, governments should systematically estimate and report the revenue foregone through tax expenditures – ideally disaggregated by sector, tax base, policy objective, and as a percentage of GDP as well as of total tax revenue. In this context, pulling together existing official tax expenditure reports in a cross-country database is a low-hanging fruit that would make an important contribution towards transparency. There are, at least, three initiatives by international governmental organizations moving in this direction. The OECD/IEA Fossil Fuel Support Database[3] and the OECD Database on Tax Support for R&D and Innovation,[4] both provide cross-country data for particular policy fields, disaggregated by direct government support and tax expenditure. The Inter-American Center of Tax Administrations (CIAT, for its Spanish name) publishes a regional Database on Tax Expenditure (DBTE).[5] Following the recommendations included in the CIAT Handbook of Best Practices on Tax Expenditure Measurements, the DBTE lists a total number of just under 4500 tax expenditures included in the latest report of 16 Latin American economies (CIAT, 2011). Where available, the DBTE provides information regarding tax expenditure as a percentage of GDP for the 2005–2016 period (on average across countries, 3.5% in 2016). Schemes are classified by i) type of tax, ii) type of tax expenditure, and iii) sectors (Peláez Longinotti, 2017). In addition, this first stage should also include the design of a simple and standardized ("checklist" style) template to be used by those countries that currently do not report on tax expenditures at all. A step in this direction has recently been taken by UN and CIAT (2018). The joint publication – which seeks to provide tax policy makers and administrations with a methodology allowing them to assess the net benefits of tax incentive programs – includes a checklist for drafting tax incentives legislation enumerating several issues that should be considered and addressed to maximise clarity of scope and administration so that consistency between tax incentives and the underlying tax policy is ensured.

Second, governments should harmonize their methodologies to estimate the fiscal cost of tax expenditures. Measuring tax expenditures is a time- and resource-intensive task, which comes with significant methodological challenges, in particular regarding the above-mentioned choice of appropriate benchmarks. This said, efforts to standardize both the methodologies to

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[2] https://www.parlament.ch/de/ratsbetrieb/suche-curia-vista/geschaeft?AffairId=20181009 (in German).

[3] http://www.oecd.org/site/tadffss/.

[4] http://www.oecd.org/sti/rd-tax-stats.htm.

[5] https://www.ciat.org/tax-expenditures/?lang=en.

estimate tax expenditures as well as their reporting will increase international comparability and enable efforts to define best practices. In that context, it would be helpful to run simulations to assess how different methods affect the reporting of tax expenditures in the same country. This would illustrate which methods lead to low or high estimates. It would also establish a range where the "true" value of tax expenditures is probably located.

3 G20 member countries should improve the design of tax incentives for investment, avoid their use as tax competition instruments, and ensure policy space to appropriately adjust tax expenditures

Governments worldwide implement a myriad of tax incentives for a myriad of reasons. Often, these incentives are adopted with the stated objectives of attracting FDI. In addition to these "locational" schemes aiming to influence where investment occurs, tax incentives also seek to influence behaviour, such as whether investment takes place at all (e.g., whether a company decides to invest in R&D or other activities as opposed to holding its cash), and toward what activities the investment is directed (e.g., in fossil fuel-based or renewable energy projects).

In terms of the tools used, advanced economies usually grant benefits channelled through corporate income taxes (CITs), e.g. CIT credits and tax incentives for R&D. In contrast, developing countries tend to prioritize reduced tax rates and tax holidays for CIT, Value Added Tax (VAT) and excise taxes, sometimes bundled together in Special Economic Zones (SEZs) (IMF et al., 2015). Latin American countries mostly use CIT, import tariffs and VAT reductions/ exemptions to promote investment (Agostini and Jorrat, 2017).

There is conclusive empirical evidence regarding the positive effects of investment on employment, productivity and, ultimately, on inclusive economic growth (for instance, see UNCTAD, 2014). Thus, sound strategies to boost investment should be a priority for governments worldwide. This said, benefits of investment are not automatic, and government policies (and the resources to implement these policies) are crucial for ensuring that positive outcomes are maximized, and potential harm is minimized or avoided. In this context, the effective and efficient design of tax incentives for investment is critical. Their track record so far is misaligned with that objective.

Tax incentives for investment are usually poorly designed and ineffective. Hence, their impact on investment is often negligible and they are likely to trigger windfall gains for businesses which can be very costly for the public. Innovation or patent boxes are a case in point. Whereas they may have a considerable impact on attracting patents, their effect on real activity is minimal as they create incentives for multinational enterprises (MNEs) to shift the location of their patents rather than modifying their real investment decisions (Alstadsaeter et al., 2018). SEZs provide another example. Despite a few success stories – mainly in Asian economies such as China, South Korea and Taiwan – empirical evidence shows a significant lack of effectiveness, as SEZs often have a negligible impact on economic growth, employment creation, exports, and attraction of FDI. For instance, using micro data to evaluate Export Free

Zones in Costa Rica, El Salvador and Dominican Republic, Artana (2015) finds that tax incentives "are redundant, create incentives to artificially readjust projects to keep receiving those benefits and favour tax avoidance through strategic tax planning taking advantage of subsidiaries located in eligible zones".

Where tax incentives for investment have an impact, they often also have a sizable (though not always visible) price tag, thus limiting their efficiency. A 2017 study by the World Bank that uses firm-level data for the Dominican Republic finds a positive effect of SEZs on employment creation that, however, comes at the expense of a significant fiscal cost, which in turn affects the government's capacity to finance other investment and social services (World Bank, 2017). As discussed in a 2011 report for the G20's Development Working Group, "striking the right balance between an attractive tax regime for domestic and foreign investment, by using tax incentives for example, and securing the necessary revenues for public spending, is a key policy dilemma" (IMF, OECD, UN and World Bank, 2011).

The efficiency of tax incentives for investments is further limited through negative spillover effects on other countries. As discussed more in detail in the 2018 T20 Policy Brief on "Tax Competition", this is a crucial issue, as corporate income tax competition has been mounting in recent years. There exists, for example, a high level of political and economic uncertainty regarding the final outcome once Brexit has taken place. Uncertainty also regards fiscal policy and taxation as the UK has announced a reduction of its CIT rate from the current 19% to 17% for the year starting 1 April 2020. Likewise, many commentators have forecasted a new race to the bottom after the US government passed the Tax Cuts and Jobs Act. As a matter of fact, the German government currently debates additional tax cuts for the private sector, while explicitly referring to the impact of the US tax reform. Very likely, such a tax competition game will not only materialize in a reduction of statutory CIT rates but also in significantly lower effective tax rates, e.g. through the implementation of tax incentives for investment.

G20 governments should avoid using tax incentives for investment to exacerbate an already worrisome scenario in terms of international tax competition. Although important steps to mitigate these spillovers are already being taken – in particular through the OECD's Forum on Harmful Tax Practices (FHTP) to identify those schemes that "…facilitate base erosion and profit shifting, and therefore have the potential to unfairly impact the tax base of other jurisdictions" – negative spillover effects across countries continue to occur on a regular basis.

Moreover, whereas the definition of "harmful" used by the FHTP exclusively refers to external effects on other countries, tax incentives for investment are also likely to trigger efficiency issues and undesidered negative externalities within countries, e.g. horizontal inequities among different types of businesses. Such distortions are likely to affect the legitimacy of tax systems in general. Once taxpayers perceive that they are treated unfairly by their tax authorities, they will adjust their tax compliance behaviour accordingly and engage in tax avoidance and evasion practices, as shown by a growing number of experimental studies (for instance, see Mascagni, 2018). An assessment of potential domestic spillover effects in terms of e.g. employment creation or productivity gains in non-eligible sectors is therefore critical for a comprehensive review of tax incentives.

Against this background, G20 governments should improve the design of tax incentives for investment with the aim of minimizing the generation of windfall profits and negative spillover effects within and across (in particular, on poorer) countries. A peer review process similar to that of the FHTP based on a standardized methodology to estimate and report the fiscal cost of tax incentives (as discussed in Proposal 1) would contribute to a more responsible use of preferential tax regimes worldwide.

In that context, it is important to note that international investment treaties may limit, or be used to challenge, government efforts to reduce or eliminate tax incentives (Johnson, 2016). Even if an incentive program was not essential to an investor's decision regarding whether, where, or in what to invest, investment treaties may be interpreted as protecting that investor's ability to rely on the continued existence of such benefit. Consequently, governments may have to compensate foreign investors for changes to incentives schemes and offerings. While a few modern treaties such as the EU-Canada Comprehensive Economic and Trade Agreement (CETA) try to explicitly address this issue, the vast majority do not. Against this background, G20 members should anticipate and limit claims resulting from tax expenditure reforms by, for example, emphasing the legitimacy of government efforts to evaluate and modify such programs, and the importance of policy space to take such actions.

4 G20 member countries should reinforce efforts to phase out tax expenditures that are environmentally harmful, including tax incentives for fossil fuels and other schemes that promote an unsustainable use of natural resources

Tax expenditures have a wide range of environmental implications. Fossil fuel subsidies are the most evident case in point. The Inventory of Support Measures for Fossil Fuels provides an overview of the support that governments provide to the production and consumption of fossil fuels.[6] Roughly 60 per cent of these measures are tax expenditures, such as for instance reduced excise rates on aviation fuel in Australia, a special tax regime for goods used in the exploration and production of fossil fuels in Brazil, and an energy tax refund for diesel used in agriculture and forestry in Germany.

Despite this inventory being the most comprehensive source of cross-country information on fiscal support for fossil fuels, the lack of transparency is – once again – a crucial problem. As stated in the 2015 Companion to the Inventory, "a limiting factor in respect of tax expenditures relating to fossil fuels is the extent to which countries release such estimates already" (OECD, 2015).

Tax expenditures related to fossil fuels have been moving up agendas worldwide. Last year, the T20 explicitly called for G20 member economies "to reinforce their efforts in implementing the G20 commitment to phase out inefficient fossil fuel subsidies, including tax exemptions"

[6] http://www.oecd.org/site/tadffss/.

(Brosio et al., 2017). World leaders adopted a similar recommendation in the Sustainable Development Goals (SDGs).[7] Strikingly though, concrete measures are rare, and progress remains slow. As discussed by Van Asselt (2018), politics is certainly to blame for the lack of progress.

Moreover, tax incentives linked to the consumption and production of fossil fuels are not the only environmentally harmful schemes. G20 governments should remove tax benefits incentivizing an unsustainable use of natural resources – including deforestation – as they trigger undesired effects on resource allocation and the environment, among others.

Finally, many tax expenditures have less straightforward negative effects on the environment, which are, however, non-negligible and should thus be internalized. The mortgage interest deduction (MID), a scheme allowing mortgage interest payments to be deducted from personal taxable income to foster home ownership, is a case in point. It offers an incentive to acquire a larger and more expensive house with a bigger environmental footprint. As highlighted by the Tax Foundation, for instance, the US MID creates "negative externalities (i.e. pollution or greenhouse gas emissions) that likely exceed any positive external social benefit from marginally larger homes" (Prante, 2013). MID schemes are implemented in several countries including the US (where its fiscal cost is estimated to amount to more than 60 billion USD, hence being one of the largest federal tax expenditures in the country – see JCT, 2017), the Netherlands and Switzerland. In addition to its negative environmental impacts, empirical evidence indicates that the MID is also ineffective and highly regressive in promoting home ownership (see, e.g. Hilber and Turner, 2014).

The tax treatment of company cars and commuting expenses provides another example. As stated by the OECD, most member countries treat only 50% of the personal benefit to employees from company cars as taxable, which often creates incentives for employees to use company cars for personal use, and to drive longer distances than they might do otherwise. This has a negative impact on the environment, not only with regard to fossil fuel use, but also with regard to other pollutants and urban sprawl (see e.g. Heuermann et al., 2017). G20 governments should take concrete steps to comprehensively assess tax incentives including these kinds of negative externalities on the environment. Phasing out those schemes that have a significant negative effect on the environment would make a substantial contribution to shifting the economy to a low-carbon path that is aligned with the goal of fiscal sustainability and inclusive growth.

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[7] SDG 12 includes an explicit reference to fossil fuel subsidies through taxation: Target 12.C: "Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts…".

References

AfDB, IMF, and World Bank (2017). The G-20 Compact with Africa. A Joint Report for the G-20 Finance Ministers and Central Bank Governors Meeting. https://www.bundesfinanzministerium.de/Content/EN/Standardartikel/Topics/Featured/G20/2017-03-30-g20-compact-with-africa-report.pdf?__blob=publicationFile&v=2.

Agostini, Claudio, and Michel Jorratt (2017). Política Tributaria para Mejorar la Inversión y el Crecimiento en América Latina. In Juan Carlos Gómez Sabaini et al. (eds.), *Consensos y Conflictos en la Política Tributaria de América Latina*. https://www.cepal.org/es/publicaciones/5361-politica-tributaria-mejorar-la-inversion-crecimiento-america-latina.

Alstadsaeter, Annette, Salvador Barrios, Gaëtan Nicodème, Agnieszka Maria Skonieczna, and Antonio Vezzani (2018). Patent Boxes Design, Patents Location and Local R&D. *Economic Policy*, 33(93): 131–177, https://academic.oup.com/economicpolicy/article-abstract/33/93/131/4833998?redirectedFrom=fulltext.

Artana, Daniel (2015). The Effectiveness of Fiscal Incentives: The Case of the Export Free Zone of Costa Rica, El Salvador and Dominican Republic. In Osmel Manzano et al. (eds.), Partners or Creditors? Attracting Foreign Investment and Productive Development to Central America and Dominican Republic. Inter-American Development Bank. https://publications.iadb.org/en/publication/16921/partners-or-creditors-attracting-foreign-investment-and-productive-development.

Australian Treasury (2016). 2015 Tax Expenditures Statement. https://treasury.gov.au/publication/tax-expenditures-statement-2015/.

Bastian, Jacob, and Margaret R. Jones (2018). Do EITC Expansions Pay for Themselves? Effects on Tax Revenue and Public Assistance Spending. University of Chicago Working Paper. https://drive.google.com/file/d/1GbBeeQzfGH9fF9Y1u5rS55Sn3eStBWE7/view.

Bastian, Jacob, and Katherine Michelmore (2018). The Long-term Impact of the earned Income Tax Credit on Children's Education and Employment Outcomes. *Journal of Labor Economics*, 36(4):1127–1163. https://www.journals.uchicago.edu/doi/10.1086/697477?mobileUi=0&.

Bloom, Nick, Rachel Griffith, and John Van Reenen (2002). Do R&D Tax Credits Work? Evidence from a Panel of Countries 1979–1997. *Journal of Public Economics*, 85(1): 1–31. https://www.sciencedirect.com/science/article/abs/pii/S004727270100086X.

Brosio, Magali, Paddy Carter, Santiago Diaz de Sarralde, Mark Hallerberg, Martina Neuwirth, and Song Hong (2017). Tax Expenditures. Policy Brief, G20 Insights, http://www.g20-insights.org/policy_briefs/tax-expenditures/.

CIAT (2011). Handbook of Good Practices in the Measurement of Tax Expenditures. An Ibero-American Experience. Inter-American Center of Tax Administrations. https://biblioteca.ciat.org/opac/?v=4857.

G20 (2017). G20 Hamburg Action Plan. https://www.g20germany.de/Content/DE/_Anlagen/G7_G20/2017-g20-hamburg-action-plan-en.pdf;jsessionid=806F9CDE81307755096369B4926138EA.s7t1?__blob=publicationFile&v=4.

Heuermann, Daniel, Franziska Assmann, Philipp vom Berge, and Florian Freund (2017). The Distributional Effect of Commuting Subsidies-Evidence from Geo-Referenced Data and a Large-Scale Policy Reform. *Regional Science and Urban Economics*, 67: 11–24. https://www.sciencedirect.com/science/article/pii/S0166046217302697.

Hilber, Christian, and Tracy Turner (2014). The Mortgage Interest Deduction and its Impact on Homeownership Decisions. *Review of Economics and Statistics*, 96 (4): 618–637. https://www.mitpressjournals.org/doi/abs/10.1162/REST_a_00427?journalCode=rest.

Houlder, Vanesa (2016). Cost of UK Tax Breaks Rises to £117bn. Financial Times. https://www.ft.com/content/3c98dab8-b613-11e5-8358-9a82b43f6b2f.

IMF, OECD, UN and World Bank (2011). Supporting the Development of More Effective Tax Systems, Report to the G-20 Development Working Group. https://www.imf.org/external/np/g20/pdf/110311.pdf.

IMF, OECD, UN and World Bank (2015). Options for Low Income Countries' Effective and Efficient Use of Tax Incentives for Investment. Report to the G-20 Development Working Group. https://www.imf.org/external/np/g20/pdf/101515.pdf.

JCT (2017). Estimates of Federal Tax Expenditures for Fiscal Years 2016–2020. Joint Committee on Taxation. https://www.jct.gov/publications.html?func=startdown&id=4971.

Johnson, Lise (2016). Regulation of Investment Incentives: Instruments at an International/ Supranational Level. In Ana Teresa Tavares-Lehmann et al. (eds.), *Rethinking Investment Incentives: Trends and Policy Options*. Columbia University Press. http://www.universitypressscholarship.com/view/10.7312/columbia/9780231172981.001.0001/upso-9780231172981-chapter-12.

Mascagni, Giulia (2018). From the Lab to the Field: A Review of Tax Experiments. *Journal of Economic Surveys*, 32(2): 273–301. https://onlinelibrary.wiley.com/doi/abs/10.1111/joes.12201

OECD (2015). OECD Companion to the Inventory of Support Measures for Fossil Fuels 2015. OECD Publishing. https://www.oecd-ilibrary.org/energy/oecd-companion-to-the-inventory-of-support-measures-for-fossil-fuels-2015_9789264239616-en.

Peláez Longinotti, Fernando (2017). Overview of Tax Expenditures in Latin America, Main Statistics of the CIAT Database. WP-06-2017, Inter-American Center of Tax Administrations (CIAT). https://ciatorg.sharepoint.com/sites/cds/_layouts/15/guestaccess.aspx?docid=08cf7dedffc844f459d070d896b207821&authkey=Ab1Ww-TxjSarcFK5qBr8c1I&e=0224937d756044218531a54e15032dad.

Prante, Gerald (2013). Save the Environment: Repeal the Mortgage Interest Deduction. Tax Foundation. https://taxfoundation.org/save-environment-repeal-mortgage-interest-deduction/.

Rao, Nirupama (2016). Do Tax Credits stimulate R&D Pending? The Effect of the R&D Tax Credit in its first Decade. *Journal of Public Economics*, 140(C): 1–12. https://www.sciencedirect.com/science/article/abs/pii/S0047272716300482.

Redonda, Agustin, and Tom Neubig (2018). Assessing Tax Expenditure Reporting in G20 and OECD Economies. CEP DN 2018/3, Council on Econoimc Policies (CEP). https://www.cepweb.org/wp-content/uploads/2018/11/Redonda-and-Neubig-2018.-Assessing-Tax-Expenditure-Reporting.pdf.

Surrey, Stanley S., and Paul R. McDaniel (1979). The Tax Expenditure Concept: Current Developments and Emerging Issues. *Boston College Law Review*, 20(2): 225–369. https://lawdigitalcommons.bc.edu/cgi/viewcontent.cgi?article=1605&context=bclr.

Thomson, Russell (2018). The Effectiveness of R&D Tax Credits. *Review of Economics and Statistics*, 99(3): 544–549. https://www.jstor.org/stable/pdf/41789464.pdf?seq=1#page_scan_tab_contents

Toder, Eric J. (2000). Tax Cuts or Spending - Does It Make a Difference? *National Tax Journal*, 53(3): 361–371. https://www.jstor.org/stable/pdf/41789464.pdf?seq=1#page_scan_tab_contents.

UN and CIAT (2018). Design and Assessment of Tax Incentives in Developing Countries. United Nations and Inter-American Center of Tax Administrations (CIAT). https://ciatorg.sharepoint.com/sites/cds/Conocimientos/Publicaciones/Biblioteca/Estudios/2018_design_assessment_tax_incentives_UN_CIAT.pdf?slrid=8079539e-60d5-5000-8146-10d517f0ef81.

UNCTAD (2014). World Investment Report 2014. United Nations Conference on Trade and Development. http://unctad.org/en/PublicationsLibrary/wir2014_en.pdf.

US Treasury (2018). 2018 Tax Expenditures Statement. https://www.treasury.gov/resource-center/tax-policy/Pages/Tax-Expenditures.aspx.

Van Asselt, Harro (2018). *The Politics of Fossil Fuel Subsidies and their Reform* (Jakob Skovgaard, ed.). Cambridge: Cambridge University Press. https://www.cambridge.org/core/books/politics-of-fossil-fuel-subsidies-and-their-reform/B8CB7D383F33AD9AF9CC82EB50A74DE5.

World Bank (2015). Staying the Course. World Bank East Asia and Pacific Economic Update. http://documents.worldbank.org/curated/en/303611468188349154/pdf/100599-PUB-P155886-PUBLIC-Box393236B-EAP-Economic-Update-2015-10.pdf.

World Bank (2017). Hacía un Sistema Tributario más Eficiente. Evaluación de la Eficiencia Fiscal, Análisis de Costos y Beneficios de los Gastos Fiscales y Estudio sobre el Empleo Informal y sus Repercusiones en el Sistema Tributario", Documento del Banco Mundial (in Spanish). https://www.dgii.gov.do/informacionTributaria/publicaciones/estudios/Documents/HaciaUnSistemaTributarioM%C3%A1sEficiente-BancoMundial.pdf.