**Abstract**

Tax expenditures are used widely by governments across the world to pursue different public policy goals including boosting innovation and R&D, job creation, greening the economy as well as mitigating inequality and tackling poverty. Yet, besides their stated goals (which are often aligned with a sustainable agenda), these provisions are costly and usually ineffective as well as inefficient in reaching their policy objectives.

The impact of tax expenditures on inequality is a case in point. Whereas some tax expenditures are explicitly designed to tackle inequality, others pursue different policy goals but trigger externalities that indirectly affect the distribution of income and wealth. Against this backdrop, estimating and reporting the fiscal cost of tax expenditures would enhance transparency and accountability and, at the same time, would allow governments worldwide to evaluate the effectiveness and efficiency of these provisions. The latter is crucial in order to better target their policy objectives as well as to ease budget constraints which, in turn, would contribute to financing the 2030 Agenda for Sustainable Development.

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1 Introduction

Fiscal policy has significant effects on any sustainable development strategy since it affects not only the environmental, but also the economic and social dimensions of sustainability. Against this backdrop, many strands of literature study the impact of taxation and government expenditure on the behaviour of economic agents with a particular focus on sustainability. Research on the use of market-based instruments such as carbon taxes to foster the transition to a green economy is a case in point. Tax incidence literature provides another example. The ability to shift the final tax burden on to different taxpayers has a direct distributional impact and thus significant repercussions for social sustainability. Also, the pass-through of corporate income taxes (CITs) to wages has notable economic implications, in particular, for the labour market and, ultimately, for economic growth and sustainability.

The Sustainable Development Goals (SDGs) are another case in point. First, taxation is crucial as one of the main sources of revenue to fund and support the SDGs in general. This is particularly relevant for low- and middle-income economies in the context of domestic revenue mobilization (DRM), as indicated in Target 17.1: Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection, as well as in Indicator 17.1.2 Proportion of domestic budget funded by domestic taxes. In addition, besides the importance of taxation as a source of revenue, other aspects of fiscal and tax policy are crucial in the context of the SDGs. For instance, SDG 10: Reduce inequality within and among countries includes an indicator that urges adopting policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality. In addition, even if not explicitly covered within the different SDG targets and indicators, the potential of fiscal and tax policy to achieve, e.g. SDG 1 on poverty reduction and SDG 8 on sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all, is indisputable.

Yet, whereas a myriad of actors scrutinize taxation as well as direct government spending with regard to their impact on sustainability, a key feature of fiscal policy has only partially hit...

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5 In 2015 the United Nations (UN) General Assembly adopted the 2030 Agenda for Sustainable Development and the 17 UN SDGs, calling on all countries to improve the lives of people everywhere. More detailed information on the SDGs is available at https://www.un.org/sustainabledevelopment/development-agenda/ (accessed 30 Dec. 2019).
the radar screens in the sustainability debate, i.e. tax expenditures. Tax expenditures (TEs) are benefits granted through preferential tax treatment that lower government revenue and the tax burden of the beneficiary taxpayer. TEs are used widely by governments across the world to pursue different public policy goals, including boosting innovation and R&D, job creation, greening the economy as well as mitigating inequality and tackling poverty. Yet, besides their stated goals (which are often aligned with a sustainable agenda), TEs are costly and usually ineffective as well as inefficient in reaching their policy objectives.

Against this background, the goal of this note is twofold: first, to discuss four aspects (fiscal cost, transparency, effectiveness and efficiency) that are crucial to better align TEs with a broad sustainability agenda (section 2), second, to provide an overview of the impact of TEs on inequality, a key dimension of economic as well as social sustainability (section 3). An overall conclusion will close this chapter (section 4).

2 WHY CARE ABOUT TAX EXPENDITURES

2.1 THE TAX EXPENDITURE CONCEPT

TEs – also called tax benefits, tax reliefs, tax incentives, tax breaks or simply spending through the tax system – are benefits, granted through preferential tax treatment, that lower government revenue as well as the tax burden of the beneficiary taxpayer.

These provisions take different shapes and forms including exemptions, deductions, credits, rate reliefs or deferrals, and can target a specific group of taxpayers as well as specific activities or regions. They are present across the entire fiscal system, going from reduced and zero rates in the context of value added tax (VAT) and other consumption taxes, to deductions of commuting and child-care expenses that reduce personal income tax (PIT) liabilities, and including, for instance, several corporate income tax credits and deductions seeking to boost R&D and innovation.

Whereas the TE concept was introduced by Stanley Surrey in the 1960s, the debate on what should and should not be considered a TE is still ongoing. For instance, whereas tax deferrals are classified as TEs in most of the countries, Argentina and Brazil only consider as a TE those provisions that trigger a permanent loss of revenue and, hence, do not include deferrals in their TE reports.7

More in detail, TEs are usually defined as departures from the normal tax structure, i.e. as deviations from a usually country-specific benchmark. The lack of an unanimously accepted definition of the different benchmarks against which TEs should be compared is a crucial issue.

in the TE field. This has, up to a large extent, explained the opacity in the field, particularly when it comes to the lack of cross-country comparable data. CO2 taxes provide a nice illustration. Most of the countries taxing CO2 emissions grant a myriad of exemptions or reduced rates for energy-intensive firms in order to mitigate the so-called competitiveness effect. At the same time, many countries apply a different benchmark since they do not tax CO2 emissions at all and thus no TE is in place. Simply comparing the revenue foregone through TEs under these two alternative scenarios would certainly lead to misleading conclusions.

In addition to the debate around the definition and benchmarking of TEs, why should governments and the different stakeholders in the society care about TEs? TEs can be an effective policy instrument. Indeed, under certain conditions, TEs could be more cost-effective than direct spending and may therefore be the best option to pursue a specific public policy goal. As discussed by Toder, TEs 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.

Yet, TEs may have a significant fiscal cost and impact on government budgets and they are opaque and very often not subject to the same level of scrutiny in the budget process as direct spending. Moreover, many of these provisions are ineffective as well as inefficient in reaching their stated goals, triggering significant concerns regarding their net impact on sustainability.

### 2.2 Fiscal Cost

TEs result in a significant reduction of public revenues worldwide. In the United States, the federal government is estimated to have foregone more than USD 1.5 trillion in 2017, an amount equal to 37% of direct federal spending and roughly 8% of GDP. Tax reliefs in the United Kingdom reduce government revenues by more than GBP 400 billion every year, a significant figure when compared to total government spending around GBP 800 billion. The latest OECD Survey for Italy highlights that the country’s revenue foregone through the implementation of the 466 TEs listed in the 2018 TE report amounted to EUR 54 billion, with TEs related to PITs accounting for 66% of the total.

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In general, TEs are also used widely in low- and middle-income economies, which turns out to be crucial in the context of DRM. In 2017, the Inter-American Center of Tax Administrations (CIAT) updated its TE database (DBTE) based on the latest official report made available by 16 countries in the region. On average, TE as a percentage of GDP amounted to 3.5%, ranging from 0.7% in Colombia and 1.7% in Bolivia as well as Paraguay to 6.3% in Uruguay and 6.6% in Dominican Republic.\(^\text{13}\)

In a recent paper, Kassim and Mansour review TE reporting in 26 low- and middle-income economies.\(^\text{14}\) In most of the cases, the revenue foregone through these provisions is significant. Without considering the countries covered by CIAT’s DBTE, TE as a share of GDP ranges from 1.38% in Burkina Faso and 1.4% in Ivory Coast to 4.69% in Poland and 6.13% in Ghana. Some countries also report the share of TE with respect to total tax revenue and the figures are also impressive, e.g. 27.8% in Poland, 41.67% in Ghana and 58% in Mauritania.

These figures are quite surprising in view of the fact that DRM is a fundamental component of any sustainable development strategy.\(^\text{15}\) This is particularly relevant in developing countries, where low DRM levels are often one of the most important obstacles for inclusive economic growth. Indeed, whereas external financing including, for example, social development assistance and foreign direct investment (FDI) is a crucial source of revenue for many developing economies, there is a broad consensus regarding the key role of DRM to support inclusive and sustained economic growth.\(^\text{16}\)

Indeed, DRM through taxation is vital for many reasons. Revenues collected through the tax system are generally more stable and predictable than those coming from foreign aid or domestic non-tax sources, e.g. royalties from the minerals sector. Moreover, the contribution of taxes can strengthen the social contract between citizens and their government and thus have a positive effect on governance. Yet, the status quo is worrisome. While the average tax-to-GDP ratio for advanced economies is, on average, 26%, about half of low-income countries have tax-to-GDP ratios below 15% – a threshold usually accepted as the minimum required to allow these countries to take off economically.\(^\text{17}\)

Against this backdrop, phasing out ineffective TEs is a low-hanging fruit. For instance, governments often grant a myriad of tax holidays and tax exemptions that have little impact on investment or growth and significantly reduce the availability of public funds.\(^\text{18}\)


\(^{15}\) The inclusion of Target 17.1 and Indicator 17.1.2 in the context of SDG 17 provides an illustration — see https://sustainabledevelopment.un.org/sdg17 (accessed 30 Dec. 2019).


back TEs would broaden tax bases and, at the same time, allow countries to reduce marginal
tax rates and/or save resources that, in turn, could be allocated to more productive uses or
more effectively targeted to tackle social issues such as reducing poverty and inequality.

In addition to (and in spite of) their significant fiscal cost, TEs remain highly opaque in most
low- and middle-income countries but also in many advanced economies. Indeed, as
discussed in the next section, whereas several countries do not report at all on TEs, many
others publish very partial and poor-quality reports. Hence, the fiscal cost estimates discussed
above should be used cautiously and, in most of the cases, seen as a conservative proxy of
the real magnitude of these provisions.

2.3 TRANSPARENCY

TEs are opaque and very often not subject to the same level of scrutiny in the budget process
than other government spending programmes. As acknowledged in the Greek TE report,
there is also a significant difference between direct expenditures and tax expenditures: while
the former are subject to yearly debate and approval by the House through the budget
process, the latter are debated and approved once the budget is implemented. Likewise,
according to the US Congressional Budget Office, TEs in the United States are generally not
subject to annual re-authorization and are thus considerably less analysed and evaluated than
direct spending. In the United Kingdom, several observers highlight a world of difference
between the scrutiny of expenditure and that of tax expenditure, even when both policy
instruments are used for similar objectives and their effects on the budget and on income
distribution are equal. In Switzerland, the last comprehensive federal report on TEs dates
back to 2011. It identifies more than 100 provisions and provides an estimate of the
resulting revenue foregone for a third of them. Even more worrisome, the fragmentary
estimates are based to a significant extent on 2005 figures from the canton of Bern,
extrapolated to rest of the country since, for the remaining cantons, federal authorities largely
lack the data.

Against this backdrop, the IMF has recently published a “How to” Note aiming to advise
governments in low- and middle-income economies on how to account for TEs and use that

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19 Congressional Budget Office (CBO), Tax expenditures have a major impact on the federal budget (2012).
21 TE reporting by subnational governments is significantly less transparent than in the case of federal or national governments – see, for
example, L. Villela, A. Lemgruber & M. Jorratt, Tax expenditure budgets concepts and challenges for implementation, IDB Working Paper
131, Inter-American Development Bank (IDB) (2010).
22 A few figures have been added since the publication of the official report in 2011, including tax reductions of CHF 1.6 billion in the context
of regional policy, as well as exemptions from the petroleum tax amounting to CHF 1.5 billion.
information in fiscal management. In line with the IMF Fiscal Transparency Code, the authors argue that: (i) the estimation of the fiscal cost of TEs should be required by law and presented to the parliament either with the annual budget or early in the budget cycle and (ii) the estimates should be presented in accordance with the laws that triggered the provision and disaggregated by line ministry responsible or the ministry in charge of implementing the law in order to ensure an acceptable level of fiscal transparency.

Yet, in most of low- and middle-income economies, TE reporting is in its infancy because of several reasons, including data constraints, insufficient human and financial resources as well as weak institutions. For instance, many of these economies do not have tax policy units in their Ministry of Finance. This, in turn, exacerbates the fragmentation of tax policy frameworks since line ministries have incentives to grant sectoral tax incentives without estimating and reporting their fiscal cost. According to the World Bank, the percentage of countries where TEs are periodically estimated amounts to 33% in Latin America and the Caribbean, 21% in Sub-Saharan Africa, 14% in South Asia and 10% or less in Middle East and North Africa, Europe and Central Asia, as well as East Asia and the Pacific. Kassim and Mansour assess TE reporting in 26 developing and emerging countries and show that, in most of the cases, TE reporting quality remains considerably weak in several areas. More in concrete, only about half of the reviewed countries have a legal requirement to report on TEs, only three countries provide forecast estimates of the revenue forgone through TEs for future years and roughly half of the countries provide a discussion of the benchmark system in their reports. Africa is one of the regions where TE reporting needs to improve the most. Out of 53 African countries reviewed by Redonda et al., 32 (60%) do not provide public information on TEs. In addition, among the 21 countries that do report on TEs, eight provide only overall estimates of the revenue foregone through them, without publishing any complementary information (e.g. description, policy goal, beneficiaries, time span) that would significantly help to better understand and assess these provisions.

Moreover, even more strikingly, besides a few exceptions worth mentioning, including Canada, Germany, the Netherlands and South Korea, TE reporting lags behind best practice also in many advanced economies. In a recent discussion note reference before, Thomas Neubig and I follow Kassim and Mansour (cited above) to assess the official TE reports of the 43 G20 and OECD economies. Our assessment is based on nine key dimensions that reflect good practice in TE reporting and shows that, overall, there is significant room to improve TE reporting: whereas eight economies have not reported on TEs in the last 10 years, 26 have

24 World Bank (WB), World Bank East Asia and Pacific Economic Update: Staying the course.(2015).
25 Lanre & Mansour, supra n. 15, at pp. 113-167.
published a basic report (e.g. by providing estimates for a reduced subset of TEs or estimates based on aggregate figures only) during the same period, and only nine have published a detailed and comprehensive TE report on a regular basis.

Even among those countries that report on TEs on a regular basis, transparency is often an issue since many governments tend to explicitly or implicitly under-report the number of existing provisions. Across the 32 countries that publish a report on TEs, the number of estimated provisions ranges from 10 in New Zealand to 321 in Latvia. Moreover, whereas some countries (e.g. India, Mexico, Spain, South Africa and the United States) only report those TEs that were effectively estimated (light and dark bars of the same size in Figure 1), others (e.g. Australia, Canada, France, Germany and Korea) list a larger number of provisions, i.e. not only those for which they estimate revenue losses but also provisions for which no estimate is reported (countries with larger dark than light bars in Figure 1). As a result, the share of estimated TEs with respect to listed provisions is 100% for the former group of countries. On the other hand, among the latter group, the ratio ranges from 17% in Greece and 20% in New Zealand to 92% in Korea and 94% in Brazil. Obviously, a larger ratio of estimated/listed provisions does not necessarily mean that the report is more comprehensive since it is very difficult to know how close the report is to reality, i.e. the share of provisions included in the report (estimated or listed) with respect to the number of TEs effectively implemented by the government.27

**Figure 1:** Estimation of Tax Expenditures (Number of Provisions)

![Figure 1: Estimation of Tax Expenditures (Number of Provisions)](image)


Reporting on TEs is not only crucial to improve transparency and accountability but also as a necessary (though not sufficient) condition for TE evaluation. Since TE estimates are the main input to assess the effectiveness as well as efficiency of these provisions, e.g. through the

27 Id.
implementation of cost-benefit analysis,\textsuperscript{28} TE reporting is vital to better align the use of TEs with a sustainability agenda.

2.4 EFFECTIVENESS

As mentioned before, TEs can be an effective policy instrument. The US earned income tax credit (EITC) is an example. The EITC is one of the largest TEs in the United States. In recent years, around USD 70 billion a year have been distributed to almost 30 million low-income families. This refundable tax credit has been proven to lift more than 6 million people out of poverty. Moreover, since the EITC is implemented as a refundable tax credit that requires that recipients work, there is evidence showing that the EITC also increases employment\textsuperscript{29} and earnings of lower-income mothers.\textsuperscript{30}

Yet, unlike the EITC, TEs are generally poorly targeted and hence show a striking lack of effectiveness in reaching their stated objectives. Tax incentives for investment are a case in point. Most governments implement several tax benefits to stimulate investment and attract FDI. These benefits include tax holidays, patent boxes (PBs) and preferential fiscal regimes offered in special economic zones (SEZs). The impact of these provisions on investment or growth is doubtful at best (as illustrated, for instance, by Gale and Harris and Galletta and Redonda).\textsuperscript{31} Indeed, TEs for investment often operate as simple tax competition instruments that erode other economies’ tax bases, a strategy that is at the heart of the current discussions regarding harmful tax competition, e.g. in the context of the G20/OECD Base Erosion and Profit Shifting (BEPS) package.\textsuperscript{32}

Whereas low-income countries seem to prioritize reduced tax rates as well as tax holidays in the context of corporate income, value added and excise taxes as well as SEZs,\textsuperscript{33} advanced economies instead usually grant benefits channeled through CITs, e.g. CIT credits and tax incentives for R&D.\textsuperscript{34} Indeed, PBs have been gaining momentum in advanced economies, particularly in Europe. The number of PBs in EU Member States jumped from two in 1995 to 11 in 2015 and keeps increasing. Italy has introduced a PB in 2015. More recently, Switzerland has approved a comprehensive tax reform package, the Federal Act on Tax Reform and AHV (Old-Age and Survivors Insurance) Financing (TRAF), aimed at securing the attractiveness of

\textsuperscript{28} IMF, supra n. 19.
\textsuperscript{33} IMF, supra n. 19.
\textsuperscript{34} Å. Hansson & C. Brokelind, Tax Incentives, Tax Expenditures Theories in R&D: The Case of Sweden, 6 World Tax J. (2014), Journal Articles & Papers IBFD.
the country as a business location while, at the same time, restoring the alignment of the Swiss tax system with international standards. Among other measures, the package introduces a compulsory PB regime at the cantonal (state) level through which net profits from domestic and foreign patents are to be taxed separately with a reduction of between 70% and 90%. Yet, the empirical evidence is conclusive that PBs are ineffective in boosting innovation. By definition, PBs grant tax benefits based on a patent and, thus, an intangible good that is already protected. This reduces the elasticity of R&D with respect to the tax benefit granted through PBs. As a result, governments need to apply very low effective tax rates in order to increase the registration of patents and, hence, face significant revenue losses. As discussed by Griffith, although the countries that introduce PBs attract more new patents, the increased share is not sufficient to outweigh the effect of the lower tax rate. With all four patent box policies in place, revenues are less than half of their previous levels in these countries. Even more worrisome, PBs may attract patents but their impact on R&D is less clear. Skonieczna et al. use firm-level data for three sectors – pharmaceuticals, cars and information and communication technology (ICT) – to estimate the impact of PBs on the patent filling strategies of firms. Their results indicate that PBs have a considerable impact on attracting patents. However, PBs do not change real activity in the country because multinational enterprises (MNEs) seem to shift the location of their patents without shifting their research operations.

When it comes to low- and middle-income economies, tax incentives generally rank low in investment climate surveys and are reported to be redundant, i.e. firms would have invested even if no TE was in place – and hence to end up triggering costly windfall gains. As discussed by James, the redundancy ratio of tax incentives in a selected group of low-income countries is above 80% in Thailand (81%) and Vietnam (85%); above 90% in Tanzania (91%), Guinea (92%) and Uganda (93%) and as high as 98% in Rwanda (see Figure 2). Indeed, since these figures are based on investors’ surveys, they should be considered as conservative estimates.
The lack of effectiveness does not only regard tax incentives for businesses’ investment. For instance, there is empirical evidence showing that several TEs to boost home ownership,\textsuperscript{39} pension savings\textsuperscript{40} as well as tax credits aiming to green the economy\textsuperscript{41} are also ineffective. Some of these provisions will be discussed throughout the next sections.

2.5 EFFICIENCY

As discussed by the IMF,\textsuperscript{42} governments should not only evaluate TEs’ effectiveness in reaching their stated goals, but also seek to assess whether their social benefits exceed the associated social costs. The latter include, for example, the opportunity cost entailed by the reduction in public revenue as well as administrative and compliance costs. It also includes the negative externalities that can be triggered by TEs.

For instance, several tax incentives are environmentally harmful. This is an issue that is also covered for instance by SDG 12: Ensure sustainable consumption and production, which

\textsuperscript{42} IMF, supra n. 19.
includes a target explicitly calling to “rationalize inefficient fossil fuel subsidies that encourage wasteful consumption”. Yet, according to the OECD, fossil fuel subsidies (FFSs), i.e. government support for the production and consumption of fossil fuels, both through direct spending as well as through the tax system, amount to roughly USD 500 billion a year with roughly 60% of total FFSs being granted as TEs.\textsuperscript{43} Although their objectives may include boosting employment, ensuring energy security or mitigating the so-called competitiveness effect that energy taxation (for instance in the context of CO\textsubscript{2} taxes) is said to have on energy-intensive firms, FFSs have an undesired impact on the environment that should be accounted for. Indeed, once the environmental, health, fiscal and economic costs are considered, the estimated cost of FFSs is significantly higher than the one provided by the OECD. Estimates by the IMF amount to USD 4.9 trillion (2013) and USD 5.3 trillion (2015), i.e. roughly 6.5% of global GDP in both years.\textsuperscript{44}

### 3 Tax Expenditure and Inequality

#### 3.1 General

Another externality that is often triggered by TEs is inequality, which is one of the key dimensions of sustainability and explicitly mentioned as SDG 10: Reduce inequality within and among countries.

Interestingly, in recent times, the debates around fiscal and tax policy design have been moving away from the traditional trade-off between efficiency and equity to a more inclusive perspective, where growth and distributional concerns are put on an equal footing. The publication of the 2016 OECD Tax Design for Inclusive Economic Growth as well as the 2017 IMF Fiscal Monitor on Tackling Inequality are cases in point.\textsuperscript{45}

Against this context, this section aims at shedding light on the interconnections between TEs and inequality. Whereas some TEs are explicitly designed to tackle (and hence have a direct effect on) inequality, others pursue different policy goals but trigger externalities that indirectly affect the distribution of income and wealth.

\textsuperscript{44} D. Coady et al., How Large Are Global Fossil Fuel Subsidies?, 91 World Development C, pp. 11-27 (2017).
3.2 DIRECT EFFECT

Some TEs are explicitly designed to tackle inequality. For instance, tax-free allowances applied in the context of PIT as well as estate or inheritance taxes are designed to avoid that the burden of those taxes hit the poor.46

Likewise, several tax credits aim to increase household income for disadvantaged families. The US EITC is a case in point. As mentioned in section 2.4, 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. This provision has effectively lifted more than 6 million people out of poverty since the observed positive long-term effects on high school and college graduation, and on employment and wages are largest for children from the poorest households.47 Hence, the EITC is not only effective in increasing short-term (women) and long-term (children) labour force participation, but also has a significant inequality reducing effect. Moreover, Bastian and Jones find that, besides being one of the largest provisions in the United States – it distributes around USD 70 billion a year to almost 30 million lower-income families – the EITC helps pay for itself.48 As shown by the authors, the EITC significantly increases labour supply, which then leads beneficiaries to pay more in taxes and receive less in public assistance than they otherwise would have. Korea has a similar provision in place. Interestingly, the government has expanded it to cover also elderly workers. In Korea, older people are pushed to accept jobs of poor quality, with low job security and wages, and limited access to social insurance and, hence, the share of the poor aged 50-75 in Korea is significantly higher than in most of the other OECD economies. Against this context, the OECD argues that expanding tax benefits like the EITC to cover also elderly workers has been a good move and the government should raise EITC payments for people aged 50 and above as well as improve its coverage, particularly when it comes to older self-employed workers.49

Consumption taxes provide further illustration. VAT is widely seen as regressive because the marginal propensity to consume is higher for lower-income households. Hence, TE proponents argue that reduced VAT rates for necessity goods (mainly for food but also, for example, for transportation services) contribute to mitigate this effect and increase the affordability of those goods and services for the poor. Yet, there are two features that significantly undermine the effectiveness of TEs granted in the context of VAT (and other consumption taxes) and hence hinder the potential inequality-reducing impact of these provisions: tax incidence and the targeting of beneficiaries.

46 There is an open debate whether tax-free allowances should be considered a TE or rather a structural component of the tax system. In the United Kingdom, for instance, it is not considered as TE – G.D. Myles et al., The definition, measurement and evaluation of tax expenditures and tax reliefs, Technical Report, National Audit Office Technical Paper. (2014).
The incidence of a tax regards the question who ultimately bears its burden and, in this context, who ultimately benefits from a TE. If the reduced VAT rate on necessity goods is not passed on to consumers but rather captured by producers, the effectiveness of such a provision in making those goods more affordable for lower-income households would be significantly hindered. In a recent paper, Benzarti and Carloni show how a VAT cut on sit-down restaurant meals in France was mainly captured by restaurant owners instead of reaching the target group, i.e. employees and consumers.\textsuperscript{50} The authors show that, following subsequent tax increases, restaurant owners increased prices by four to five times more than they had decreased prices following the original tax cut. Likewise, Kosonen exploits a tax reform targeted at labour-intensive services that created a natural experiment set up in Finland.\textsuperscript{51} The reform introduced a reduced VAT rate of 8\% for hairdressers whereas the standard tax rate of 22\% was kept in place for beauty salons (the control group). The author shows that Finnish hairdressers only reduced their prices by half of what a full shift would have implied.

The other feature that hinders the effectiveness of these provisions in reducing inequality is the difficulty in practice to target the beneficiaries. In other words, these provisions would effectively reduce inequality if their benefits were fully captured by the target group, e.g. the poor. Yet, in reality, VAT preferential treatment usually applies to all consumers and, since high-income earners consume more in absolute terms, the absolute tax benefit is higher for high-income households than for low-income households. Some governments have recently started to implement new technologies such as biometric tools to, among other objectives, better target social programmes’ beneficiaries including those implemented through the tax system. For instance, in South Africa, 17.2 million beneficiaries of social grants receive biometric smart cards. In Mexico, the 55.6 million beneficiaries of Seguro Popular (a public health insurance for the poorest citizens) must provide their biometric data to the authorities.\textsuperscript{52} However, the implementation of these new technologies does not come without challenges. First, VAT is relatively easy to administer. This is a crucial feature for low-income countries, which often rely more on VAT revenue than advanced economies. Better targeting TEs’ beneficiaries through the implementation of biometric identification or other alternatives would certainly increase the effectiveness of these provisions but, at the same time, would significantly increase the administrative costs. In addition, as recently discussed by Sepúlveda Carmona, the implementation of these new technologies could trigger concrete risks, particularly in countries with a poor institutional framework, where data privacy is likely not yet regulated as it should be.\textsuperscript{53}

Finally, this note is mainly focused on the distributive impact of TEs affecting differently rich and poor individuals, but the gender impact of some provisions can be significant as well and the debate around this issue has been gaining momentum worldwide. The so-called tampon tax is a case in point. In California, for instance, Assemblywoman Cristina Garcia has been pushing the state to exempt sanitary napkins, tampons, menstrual sponges and menstrual cups from all state and local taxes, a measure estimated to cost about USD 20 million a year. Similar debates have recently taken place in Canada and Australia, where the tampon tax has already been scrapped. Likewise, in the United Kingdom, where sanitary protection products currently face a reduced 5% VAT rate compared to the 20% standard rate, campaigners have been pushing to have those products fully exempted.\(^5^4\)

Moving beyond consumption taxes, several TEs granted in the context of PITs are also likely to affect differently men and women. The Canadian Ministry of Finance has recently published a report assessing the redistributive impact of the 2016 federal PIT system by gender.\(^5^5\) Using tax return data, the report examines the impact of several federal PIT measures (including TEs) on the distribution of income between men and women. The results show that, overall, the Canadian federal PIT system reduces pre-existing income inequality between men and women, which is mainly due to differences in labour market participation and outcomes. More in concrete terms, whereas the share of income held by women after the application of the federal tax system (43.5%) was 1.9 percentage points higher than their share of pre-tax income, while the share held by men was 1.9 percentage points lower (56.5% compared to 58.4%). Interestingly, men and women benefit differently from the different TEs. Whereas men benefit relatively more from deductions, women benefit relatively more from refundable credits such as the Canada Child Benefit. When it comes to exemptions and non-refundable credits, the impact is mixed. Women benefit relatively more from the non-taxation of social assistance benefits as well as from the various non-refundable credits related to the care of dependents, age, health and educational participation. Men instead, benefit more from the Lifetime Capital Gains Exemption as well as from non-refundable credits related to being in a couple, charitable donations, political contributions or the purchase of a first home.

\(^{3.3}\) **INDIRECT EFFECT**

Besides the direct effect, several TEs seeking other policy goals, such as supporting home ownership or boosting pension savings, are often designed as upside-down subsidies, providing larger benefits to higher-income families than to low- and middle-income


households and, hence, triggering significant regressive effects on the distribution of income and wealth.

The mortgage interest deduction (MID) is the second-largest housing-related TE in the United States (and one of the biggest among all TEs in the country). The MID subsidizes the debt incurred to purchase (or renew) an owner-occupied home by allowing taxpayers to deduct mortgage interest payments on (i) debt used to purchase or refinance a primary or secondary home (up to USD 1 million) and (ii) debt not used to buy, build or improve a home, called home equity debt (up to USD 100,000). Empirical evidence shows that the MID has a negligible impact on home ownership since, if anything, this provision only boosts home ownership tenure among higher-income households. Around 50% of homeowners with mortgages in the United States – mainly those from middle- and lower-income households – receive no benefit from the MID. Moreover, the value of the deduction for a taxpayer is based on their marginal tax rate, i.e. the deduction is worth more for taxpayers in higher tax brackets. The Washington-based think-tank, Tax Policy Center, estimates that more than 70% of the benefit of the MID is captured by the highest-earning 20% of households.56 Likewise, Hilber and Turner find that the MID has the expected positive effect on home ownership in less-regulated cities (i.e. with highly elastic housing supply) but only for higher-income sectors. On the other hand, in more-regulated markets it has an adverse effect on home ownership and no effect when it comes to lower-income earners, no matter the regulatory status of the city in which they reside.57

Tax incentives to boost pension savings are another case in point. Governments worldwide have been trying to increase replacement rates by boosting private savings for pensions in order to deal with the sustainability of pension systems in the context of aging societies.58 SDG Target 1.3: Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable includes older persons as one of the explicitly mentioned target groups within Indicator 1.3.1. Against this background, tax incentives for pensions have been implemented worldwide. The Australian Treasury estimates that the revenue foregone through superannuation (the compulsory system through which Australians place a minimum percentage of their income into a fund to support their retirement) tax concessions amounts to AUD 36 billion, which accounts for more than 9% of total tax revenue.59 Likewise, UK pension tax reliefs cost GBP 24 billion in relation to income tax and GBP 17 billion in National Insurance receipts.60 Yet,

57 Hilber & Turner, supra n. 40.
the impact of these provisions in raising pension savings is often marginal and they disproportionally benefit the rich. Whereas individuals in higher personal income tax brackets are more likely to have the means to save for retirement, poorer households struggle to finance their consumption in the short term. Moreover, as in the case of the MID, pension TEs are often granted as deductions or exclusions from taxable income, which exacerbates their negative impact on inequality. As highlighted by Duflo et al., this design feature entails that the value of these provisions is negligible for families with low marginal income tax rates, and significantly more valuable as income and, thus, marginal tax rates go up.\(^{61}\) In South Africa, pension-related tax benefits are the largest TE in the country amounting to ZAR 72.991 million (i.e. 35% of total TEs and 68% of total TEs granted through PIT) in 2016. In addition, the distributional impact of these provisions seems to be a crucial issue since barriers to a more effective tax incentive regime are the complexity of the current regime (three different tax dispensations apply), as well as the fact that the regime is open to abuse through excessive contributions by employers and high-income earning individuals, the tax exemption has no nominal monetary cap in the case of higher-income employees, allowing them to make tax-exempt contributions way in excess of the amount required to maintain a reasonable standard of living in retirement.\(^{62}\)

Under certain circumstances, moving from deductions to tax credits could mitigate the distributive concerns triggered by TEs.\(^{63}\) Yet, some of these provisions granted as tax credits have also been proved to be highly regressive. For instance, Borenstein and Davis show how several green tax credits in the United States are disproportionally captured by higher-income households.\(^{64}\) The authors show that the bottom three income quintiles receive about 10% of all credits, while the top quintile captures roughly 60% of the total. The most extreme among all provisions assessed by the authors is the Qualified Plug-in Electric Drive Motor Vehicle Credit, with the top income quintile receiving around 90% of all benefits.

Finally, TEs can also have an impact on horizontal equity. For instance, in the context of CITs, several tax incentives target a specific group of businesses and hence trigger significant economic distortions. The preferential tax treatment of SMEs or specific sectors such as the reduced excise rate on diesel for trucks in some European economies, are cases in point.\(^{65}\)


\(^{64}\) Borenstein & Davis, supra n. 42.

Estimating and reporting the fiscal cost of TEs should be a priority for governments worldwide. First, this would enhance transparency and accountability. Second, TE estimates are a necessary input to evaluate the effectiveness and efficiency of these provisions, which should help governments to better target their policy objectives. The significant potential that a better design of TEs has as an instrument to mitigate inequality is a case in point. Finally, moving in this direction would contribute to easing governments’ budget constraints, which is crucial in the context of DRM in developing countries as well as for the implementation of the 2030 Agenda for Sustainable Development.