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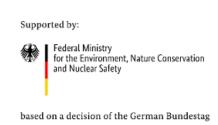
ABOUT 2° INVESTING INITIATIVE

The <u>2° Investing Initiative</u> (2DII) is an independent, non-profit think tank working to align financial markets and regulations with the Paris Agreement goals.

Globally focused with offices in Paris, New York, Berlin, Brussels, and London, we coordinate the world's largest research projects on climate metrics in financial markets. In order to ensure our independence and the intellectual integrity of our work, we have a multi-stakeholder governance and funding structure, with representatives from a diverse array of financial institutions, regulators, policymakers, universities, and NGOs.

ABOUT THIS REPORT

This report is part of 2DII's long-term risk management research program, which aims to integrate long-term risks, especially those related to climate change, into financial markets and supervisory practices. The program combines a number of current and past research streams, including the Tragedy of the Horizons research project (2015-2017), 2DII's work on climate and sustainability stress-testing, and its broader research initiatives on integrating long-term risks into private sector and government practices. The program is part of the International Climate Initiative (IKI). The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) supports this initiative on the basis of a decision adopted by the German Bundestag. This project has received funding from the European Union's Life NGO program under Grant Numbers LIFE20 NGO/SGA/DE/200040 and LIFE19/NGO/SGA/DE/100040. The paper reflects only the author's view and that the Agency and the Commission are not responsible for any use that may be made of the information it contains.





Executive Summary

Since the Global Financial Crisis, policymakers around the globe have focused increasingly on financial sector taxes as a mechanism to generate revenue and improve social welfare. At the same time, a range of environmental policy measures, such as carbon pricing and fuel taxes, have been introduced.

However, there has been little focus on ways to use these tax instruments to support sustainability objectives.

Three kinds of taxes in particular are most relevant to the sector:

- Tax incentives on saving schemes and pension funds, which are widely distributed and generally aimed at eradicating poverty in old age. Most, if not all, tax incentives for savings and pension products provide some control over the type of increases that are "eligible" for the tax incentives.
- Bank levies, which were largely introduced after the Global Financial Crisis as a revenue-generating mechanism to pay for the cost of the crisis and as a source of revenue for stability funds in preparation for future crises.
- Financial Transaction Taxes (FTTs) also became famous after the Global Financial Crisis, though FTTs are not implemented on a global level. The idea of the tax is to charge only on specific transactions that are designated as taxable.

In order to rectify this gap, this paper focuses on three main ways to "green" these types of financial sector taxes:

- The implementation of a tax incentive on green saving schemes. This includes two potential routes for green policy intervention: 1) introducing eligibility requirements related to the sustainability of financial products to benefit from existing tax incentives (or removing tax incentives for non-sustainable products), and 2) introducing more generous tax incentives relative to current baselines based on the sustainability performances of financial products. We examine the first option with a case study on Individual Savings Accounts (ISAs) in the UK, which will be explored in-depth in an upcoming 2DII report.
- The adjustment of the bank levy on green / high-carbon assets. We find that levies offer two potential areas for green policy intervention; 1) increasing the bank levy on high-carbon assets or as a function of portfolio-level limits related to high-carbon assets and 2) reducing the bank levy on low-carbon assets or as a function of portfolio-level exposures related to low-carbon assets.
- The introduction of a FTT on high-carbon assets or exempting green assets from a FTT: the report finds scope for green policy intervention in two areas; a) tax incentive on 'stamp duties' related to green buildings/real estate, and b) exemptions for green assets in the context of FTTs.

While this paper does not make specific recommendations, it does highlight the enormous potential that lies in mobilizing financial sector tax systems in the service of "greening" finance and the economy. Through three case studies on the greening of financial sector taxes, the report shows that adapting existing tax incentives to green financial sector taxes can make a critical contribution to achieving climate and broader sustainability goals.

Introduction

Since the Global Financial Crisis, financial sector taxes increased in prominence. However, largely missing from this policy toolbox is the consideration of these tax instruments as a mechanism to support sustainability objectives.

Environmental taxes focus on creating (dis)incentives across the economic supply chain, from primary energy taxes to pricing of carbon in the production process and ultimately taxes at the point of consumption (e.g. fuel tax). While a range of policy measures have been introduced to boost climate and environmental objectives in the finance sector, taxes have largely been missing from this policy debate, with rare exceptions. The 4,876 climate policies collated by the New Climate Institute across 192 countries do not reference a single direct tax incentive for financial institutions.

Tax incentives are also largely missing on the agenda of expert groups like the 'Sustainable Finance Beirat' in Germany or the legislative initiative in France (GOV France, 2015), despite a number of different research reports considering the issue.

That is not to say they do not exist. Brazil provides a tax exemption for the financing of wind projects. "Green" municipal bonds also enjoy a tax break in the United States. However, these incentives are few and far in between and frequently target the "issuer" (e.g. company) to set up a certain financing vehicle rather than the investor or bank (Climate Bonds, n.d.).

This paper explores potential pathways through which financial sector taxes could contribute to climate and sustainability goals. Specifically, it reviews different mechanisms to "green" financial sector taxes focusing on the primary policy levers currently deployed with regard to financial sector taxes.

- Implementing a tax incentive on green savings schemes. This policy option involves adjusting the capital gains tax or creating tax deduction options for savings products based on the sustainability criteria of the product. This option could either be implemented by eliminating the tax incentive for certain high-carbon savings instruments or creating additional incentives for 'sustainable' products;
- Adjusting the bank levy on green / high-carbon assets. This policy option involves reducing the bank levy for assets on banks' balance sheets satisfying certain sustainability criteria and/or increasing the bank levy for certain assets that grossly violate sustainability criteria, either at asset or bank level;
- Introducing a Financial Transaction Tax (FTT) on high-carbon assets or exempting green assets from a FTT. This policy option involves introducing either a new or additional FTT on the transaction of certain high-carbon / 'non-sustainable' assets or reducing the tax on 'green assets'. Given the limited application of FTTs in Europe, it seems more intuitive to imagine this policy intervention focused on high-carbon assets.

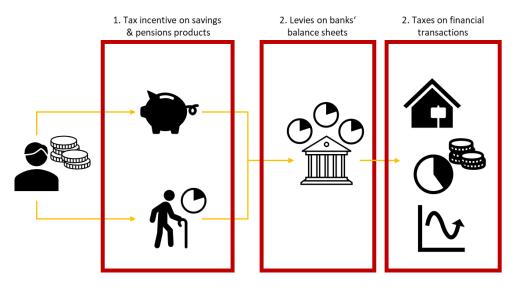
The report will first give an overview of financial sector taxes in general (Section 2). The report will then dive deeper into the above-mentioned types of financial sector taxes, exploring avenues to green them and applying the ideas to case studies in the UK, Netherlands and Spain (Section 3-5). Section 6 concludes.

Primer on financial sector tax schemes

While there are a range of tax instruments targeting the financial sector, the three most prominent types can be categorized as follows:

- Tax incentives on savings and pension products are incentives designed to support citizens in saving either as a way to increase the stock of savings in the economy or specifically to support the accumulation of wealth for retirement and thus reduce old-age poverty. With these schemes, savings contributions may be deductible from income and/or interest earned or dividends may be tax-exempt.
- Bank levies or taxes are payable on the stock of financial assets. Bank-specific levies or taxes currently exist in 11 European countries, all implemented after the Global Financial Crisis.
- FTTs are taxes payable as part of a transaction of financial instruments. These types of taxes are popularly known as a "Tobin Tax", although there are different instruments with different mechanisms, not all of which are consistent with the original vision laid out by Tobin. While over 40 countries around the world have some form of FTT, they are generally relatively limited in terms of the scope of transactions being targeted.

Figure 1: Financial sector taxes or levies can generally be categorized into three buckets, although there is of course a broader universe of potential tax interventions. (Source: Own).



Following the Global Financial Crisis in 2008, the scope of financial sector taxes was expanded significantly, notably in the form of "bank levies". These levies were designed to serve two objectives:¹

- 1) Finance a stability fund or related instrument to support future government responses to an upcoming financial crisis
- 2) Change the incentives within the financial sector around which activities to finance, usually to make these activities more "productive" (i.e. directing capital towards policy-supported activities).

¹ Note: The review of tax instruments in this section builds largely on Devereux et al. 2019.

These two objectives frequently act in concert in informing the policy intervention. The UK government, for example, highlighted in 2010 the role of levies "to ensure that banks make a contribution that reflects the potential risk to the financial system" and "to encourage banks to move away from riskier funding" (HM Treasury 2010). In the Netherlands, the bank levy is asset-specific and higher for short-term unsecured lending (less than 1 year) than more long-term lending (more than 1 year).

In addition to taxes and levies, there are also finance-sector specific tax incentives.

In Germany, private contributions to the so-called "Riester Pension" are tax-deductible (Zinnecker, 2020). In France, tax incentives on savings instruments span a broad range of social goals, including culture, small-medium enterprise (SME) lending, social housing, and "long-term" savings (2DII, 2017).

Moreover, there is a range of other policy instruments that can be considered functionally equivalent, like changes to capital requirements. While these instruments are fundamentally different in terms of how they are applied, capital requirements are a type of tax in the sense that they represent a cost to financial institutions. Here, changes to requirements like the SME Supporting Factor introduced in 2012 could be considered similar to a fiscal incentive insofar as it reduces a cost to financial institutions. However, for the discussion here, the paper will only focus on bank-specific levies or taxes and exclude tax-like policy incentives where they are not technically a tax.

Financial sector tax incentives and revenues can play a significant role in the overall tax take of governments.

In the United Kingdom, bank levies and tax relief on individual savings accounts and pension plans represent around 3-4% of GDP. Thinking broader, taxes on financial transactions in the real estate space could also be considered. The German real estate tax ("Grunderwerbssteuer") for example represents about 1.8% of the German government revenues.

While these taxes can be significant, climate or sustainability adjustments to tax systems need not necessarily significantly adjust tax revenues. Estimates related to Financial Transaction Taxes for example differ as to their materiality for the overall tax take, but most if not, all suggest it would be relatively marginal. As will be outlined in the paper, some policy adjustments are likely to have negligible revenue effects.

In addition to the current slate of bank taxes and levies, there continues to be a broad policy debate, reinitiated as a result of the global COVID-19 pandemic, around introducing new taxes and levies at EU level focused on the banking sector and/or corporate sector more generally.

The EU Budget Commissioner recently called for the need for new revenue streams, proffering the idea of a levy for access to the Single Market (Fleming, 2020). Although such a levy would not technically be a tax specific to the financial sector, it speaks to the general desire to generate revenue at the EU level. The analysis here won't engage on this specific question of revenue generation for the EU, but simply highlights the linkages that exist between this policy debate and the discussion here.

Taxation on savings and pension products

Tax incentives on savings and pension products are an ubiquitous feature of most countries' tax systems.

They generally serve the exact opposite purpose of consumption taxes — incentivizing savings by citizens as a way to mobilize capital and investment. When focused on pension products, they also seek to incentivize inter-temporal consumption smoothing by consumers — a fancy way of saying they seek to prevent poverty in old age. They exist in some variation in every G20 country and all EU countries.²

On the whole, tax incentives in this space will provide for reduced (or eliminated) capital gains tax and/or the ability to deduct savings from the regular employment tax bill. In the United Kingdom, for example, pension contributions are deducted from the income tax (pension relief), whereas so-called Individual Savings Accounts allow for tax-free earned interest, dividends income, and no capital gains taxes (up to certain limits). In the United Kingdom, these two tax incentives alone represent over GBP 30 billion in foregone tax revenues, according to UK Treasury estimates for 2016-2017 (GOV UK, 2016).

Most if not all tax incentives on savings and pensions products provide for some steer on the nature of investments 'eligible' for the tax incentives.

In Germany, the so-called "Riester Pension" involves a tax incentive and additional state contribution by the government on private pension savings. Products eligible for this incentive have to be certified by the tax authority and fulfil several criteria primarily focused on issues related to consumer protection (Riester-Informationen n.d.). There are currently over 6,000 "Riester-Products" certified in Germany (BZST 2020). Certification is not at the level of the financial product (e.g. funds), but at the level of the "contract" behind which different funds can be chosen. Given these rules around guarantees in relation to the amount paid into these contracts, Riester contracts contain some form of restrictions on asset allocation strategies, even if they are not necessarily explicit. Riester pension products are unlikely to be invested in venture capital funds for example.

While the control of "eligible" investments is generally quite broad, France is a notable exception, with a wide range of tax incentives for savings products based on their specific objective, from social housing to SMEs to cultural and energy objectives. A sweeping review of these incentives by 2DII (2013) concluded that — despite their goals — incentives are currently poorly targeted and primarily have an end focus on large-cap listed companies rather than filling "investment gaps". This work suggests that it may be difficult to create an effective policy incentive in this area.

Based on the above, we see two potential areas for green policy intervention:

- Introducing eligibility requirements related to the sustainability of financial products to benefit from existing tax incentives (e.g. remove tax incentives for a non-sustainable product);
- Introducing more generous tax incentives relative to current baselines based on the sustainability performance of financial products

² Note, this prominence is partly driven when considering tax incentives related to savings in pension accounts. Tax incentives on personal savings products are less widely adopted, albeit still a regular feature in most major jurisdictions.

Case study United Kingdom — Individual Savings Accounts and sustainability performance

Individual Savings Accounts (ISA) were introduced in 1999 and are one of the most important saving schemes having 67.5 billion GBP subscribed in 2018/2019.

The popularity of the ISA can be shown in the figure below which displays the amounts subscribed by adults during each tax year. As the graphic shows, in 2018/2019, GBP 67,500 billion was subscribed to ISAs which is more than twice the amount subscribed in the introduction year 1999/2000. This is likely to be based on a number of factors in addition to increasing popularity, for example ISA investment limits for each tax year have increased strongly since 1999.

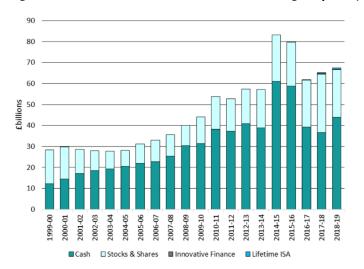


Figure 2: Amounts subscribed to Adults ISAs during the year. (Source: HM Revenue and Customs (2020))

Adults in the UK can save up to 20,000 GBP in these accounts per annum. ISAs are exempt from capital gains taxes, taxes on dividends, and interest earned. Estimates by the UK Treasury suggest that ISAs represent around 3.3 billion GBP in foregone tax revenue (HM Revenue & Customs, 2019), a benefit accrued by around 21 million individuals (or one-third of the population) (HM Revenue & Customs, 2020).

Based on typical asset allocation associated with ISA products, a significant part of this tax relief effectively accrues as a function of investments in fossil fuels. Put differently, the UK government currently decides to forego significant tax revenue related to investments in fossil fuels — effectively creating a fossil fuel subsidy.

Note that this linkage is indirect since tax incentives do not go directly to fossil fuel companies but to households and employers. At the same time, a fossil fuel subsidy arising from a tax relief going to households and employers' investments in fossil fuels could be considered misaligned with policy goals. 2Dii is currently developing research quantifying the scale of the tax relief as part of an upcoming report.

The ISA tax incentive could be adjusted to reflect the greening finance aim of UK Green Finance strategy and be limited to investment products that satisfy certain minimum environmental or climate standards, redirecting savings to green investments.

Banks' levy and taxes

The second categorization of financial sector taxes is bank levies. Bank levies were introduced in most jurisdictions after the Global Financial Crisis, designed both as a revenue-generating mechanism to pay for the cost of the crisis and — in some jurisdictions — as a source of revenue for stability funds in preparation for future crises.

The key distinction between bank levies relative to financial transaction taxes (further outlined below) is that bank levies are a tax on the stock of financial assets. They thus create a different incentive. The table below summarizes the level of bank levies across European Union member states and the calculation base.

Beyond the objectives related to the revenue generated, except for Netherlands and United Kingdom bank levies do not currently explicitly contribute to broader policy objectives.

The Netherlands and the United Kingdom are the only two countries reviewed for this report that integrate specific broader policy objectives in the design of these bank levies, specifically goals related to short-term vs. long-term assets (see case study below). In this respect, they approach or at least relate to the issues of turnover and short-termism that the FTT also addresses.

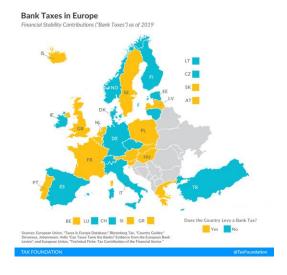
While such configurations are limited, the functional equivalent is broadly considered in the form of a "Green Supporting Factor" in the area of capital requirements. Capital requirements — while clearly a different policy instrument — act as a kind of tax on banks' activities. There is an active policy debate around adjusting capital requirements to consider green issues, building on previous experience in introducing an "SME Supporting Factor" (Thomä and Gibhardt, 2019; Thomä et al. nd).

Bank levies can be calibrated to take into account the climate friendliness of the financial assets being taxed and/or based on the overall tax rate that in turn is based on the overall portfolio composition of banks.

Based on the above, we see two potential areas for green policy intervention:

- Increasing the bank levy on high-carbon assets or as a function of portfolio-level limits related to high-carbon assets;
- Reducing the bank levy on low-carbon assets or as a function of portfolio-level exposures related to low-carbon assets;

Figure 3: Countries with bank-specific levies or taxes. (Source: Tax Foundation 2019).



Case study Netherlands – bank levy and sustainability performance:

The Dutch bank levy was introduced in 2011. In 2018, the bank levy generated ~€500 million in revenue for the Dutch government (~0.2% of the total governmental revenue) (PwC, 2009). As outlined above, the tax is adjusted based on the time horizon of the credit instrument. A rate of 0.044% applies to short-term non-secured debts (less than 1 year), whilst a rate of 0.022% applies to long-term non secured debts, although the 2021 tax plan envisions a one-off increase of the levy to pay for the COVID-19 relief.

Moreover, the tax rates increase by 5 % if the variable remuneration of at least one member of the Bank's Executive Board exceeds 100 % of the fixed remuneration. There is also a size threshold (€20 billion) in terms of which banks are affected and a limit of the levy to licensed banks. Interestingly, there is a specific double taxation treaty between the UK and Netherlands for example to avoid double taxation arising as a result of this levy (Legislation GOV UK, 2015).

We identify 4 potential options to "green" this tax instrument, summarized in the table below and further elaborated on the next page. None of them is likely to have dramatic fiscal effects in terms of changes to the overall tax revenues of the Netherlands. That is not to suggest that their application could not be considered material for banks from a signalling perspective and the relative profitability of different activities in a low-interest-rate environment. Bank-level policy interventions are likely to be more effective in signalling, whereas asset-level interventions may influence the cost of capital considerations to a larger extent. Data availability would allow for the implementation of all options, albeit not necessarily across all sectors and asset classes (notably limited to real estate and climate-related corporate lending). Thresholds could be defined by the Dutch Central Bank (DNB) or related institutions as part of the broader climate risk work mandated to the DNB.

Figure 4: Overview of four options to introduce a bank levy.

Туре	Fiscal effects	Estimated fiscal effect (in €)	Political challenge	Likely impact	Options in terms of application
Bank-level, heterogenous (5% tax increase)	+	+ €0-10 million	Medium /	Signalling	
Bank-level, homogenous (5% tax increase)		+ €0-10 million	high	Digitatinig	PACTA, real estate labels
Security level, high-carbon (100% tax increase on high- carbon assets		+ €0-25 million	Medium	Relative	
Security level, low-carbon (tax elimination on low-carbon assets)	-	- €0-10 million	Low	costs	PACTA, real estate labels, taxonomy disclosure

Option 1 and 2 focus on the balance sheet of banks. The idea is to set a bank levy on carbon-intensive assets. Both options would have a signalling effect on real investment since carbon-intensive companies might start realising that it becomes more expensive for banks to give them credits compared to other non-carbon intensive companies.

Option 1 — Bank-level exposures, heterogeneous thresholds: The first option would be to implement heterogeneous thresholds. In that case, each bank could have time to reduce their exposure to carbon-intensive assets to a certain amount. If unsuccesful, banks would need a penalty. The tax would be phased in by 2024 to allow for a two-year adjustment window. The tax would be administered across all assets with a penalty increase of 5% should the year-on-year reduction thresholds not be met. The December 2019 exposure to high-carbon sectors is calculated based on the % of real estate lending to mortgages classified as C or worse. For corporate lending, the % exposure could be estimated using the PACTA methodology³ and defining high-carbon thresholds as all loans to companies with at least 30% of their physical assets linked to coal, oil, or natural gas activities (including petrol & diesel vehicles). The scope could be expanded to other transport and manufacturing sectors. The aggregate lending volume at timestamp 2019 would have to decline in absolute terms to reach zero by 2050 (and an interim date in line with Dutch climate goals). First estimates show that the fiscal effect of such a tax is low with €0-10 million profit for the government. The political challenge would be medium to high since penalties are always pictured as more difficult than incentives.

Option 2-Bank-level exposures, homogenous thresholds: The second option would be similar to Option 1 but instead of defining a reduction path in terms of lending it would define general limits (which would also have to decline over time, but which all banks would have to meet). For example, a tax could be implemented only for those banks that own more than 10% high-carbon assets, thus 10% would be here the homogenous threshold. First estimates show that the fiscal effect of such a tax would be low with \$0-10 million profit for the government. The political challenge would be similar or perhaps even higher than with Option 1 since it faces the same challenges as it is a penalty but also having hard homogenous thresholds means that banks do not have time to adjust for the situation. Option 3 and 4 operate at the security level, with option 4 the only one implementing an incentive and not a penalty. Both options will affect relative costs — making carbon-intensive securities more expensive compared to non-carbon-intensive companies.

Option 3—Security level exposures, high-carbon penalty: Here, the tax would be applied only to a specific sub-set of assets that do not meet certain sustainability criteria. These could be the same as defined under Option 1 and 2, however, the tax itself would only be payable as a function of the asset exposure rather than on the overall tax rate across all assets. Similar to the 'doubling' of the tax for short-term vs. long-term assets, for the application to be effective, it would likely require similarly a doubling of the tax rate on these types of assets. First estimates show that the fiscal effect of such a tax is low with 0-25 million profit for the government. The political challenges are similar to those of Option 1, although unlikely to be high.

Option 4 — Security level exposures, low-carbon incentive. Under Option 4, the bank levy tax would be eliminated on assets that qualify as low carbon. In principle, this tax system could adopt the EU Taxonomy rules, however, data for a large number of corporate exposures are likely to be unavailable in the medium-to long-term. The most effective approach here is likely to relieve banks of paying the tax for those assets that qualify. However, the options would have no or even a negative fiscal effect, according to initial estimates of \mathfrak{C} 0-10 million loss. Tax breaks are likely to be politically more palatable than tax rises and thus the political challenges are lower.

³ Please see the website for information on the PACTA methodology.

Financial Transaction Tax

Financial transaction taxes (FTT) — also known as "Tobin taxes" — are designed to throw sand into the gears of a financial transaction.

By creating a tax on the purchase and sale of assets, the tax creates a cost for such activities. FTT also gained in currency after the financial crisis, with various points at which the G20, IMF, and others considered their introduction. Ultimately, a global coordinated FTT was not implemented. Nevertheless, several countries at the national level have continued exploring this instrument with Spain perhaps the most recent in introducing such a tax set to come into force in July 2021 (KPMG, 2020).

While momentum on the Financial Transaction Tax at least at the international level has faded, further analysis shows that such taxes are more widespread than perhaps expected.

The concept of a "transaction tax" is widely applied in developed tax systems. A sales tax is a type of transaction tax, as are so-called "stamp taxes" or "real estate taxes" (in Germany for example the "Grunderwerbssteuer").

While real estate taxes are generally not considered "financial sector taxes", they are underpinned by the same concept — that of the transfer of 'capital', in the one case financial, in the other land. This link is clear in the UK tax system where there is both a "Stamp Duty Land Tax" when a property is bought or transferred and a "Stamp Duty Reserve Tax", payable on the paperless purchase of shares (GOV UK, 2020). The UK also has a Stamp Duty tax for shares bought on a stock transfer form. The tax raised GBP 3.5 billion in 2017/18 (White, 2019). In Germany, a similar tax dating back to 1881 was abolished in 1991. In the United States, individual states have introduced such a tax which is a flat fee of 5 cents per share, capped at 350 USD. A study from 2010 highlights that these types of taxes were abolished in most EU countries in the 1990s and early 2000s (DGB, 2009).

Based on the above, we see two potential areas for green policy intervention:

- Tax incentive on 'stamp duties' related to green buildings / real estate;
- Exemptions for green assets in the context of Financial Transaction Taxes

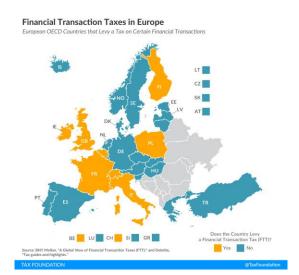


Figure 5: Financial Transaction Taxes in Europe (Source: Tax Foundation 2020).

Case study Spain — financial transaction costs and sustainability performance

Spain introduced a Financial Transaction Tax in October 2020, set to go into force in July 2021. As summarized by KPMG, "the financial transaction tax would, very generally, be a new indirect tax imposed at a rate of 0.2% on transactions for the acquisition for consideration of shares in Spanish companies, irrespective of the place of residence of the parties to the transactions, but provided that the companies are listed on regulated markets and have a market capitalisation value of over €1 billion. In this situation, the taxable person (*sujeto pasivo*) would not be the transferor or the acquirer of the shares, but the financial intermediary conveying or executing the acquisition order (i.e., investment services companies or credit institutions performing acquisitions for their accounts)" (KPMG, 2020).

Interestingly, the tax already provides for some carve-outs for certain types of transactions, notably those seen as necessary "for the proper functioning of the markets", certain transactions qualifying for special rules related to mergers, spinoffs, etc. and transactions of entities forming part of a group. Interestingly, exempt as well are transactions in the primary market.

This final rule is designed to prevent the tax from creating a disincentive for the raising of capital in primary markets. This is an area where a "greening" tax could be considered. For example, the tax relief could be withheld when capital is raised for "unsustainable" activities. Of course, an exception in secondary markets could also extend to the transactions of "sustainable" assets. In theory, such a tax relief can increase the liquidity of "sustainable assets", although the specific policy benefits would require further review, given the indirect nature of the incentive.

Case study Germany

Germany has a real estate tax ("Grunderwerbssteuer"), raised by the federal states. The tax has different levels in each state, ranging from 4.5% in Hamburg and Saxony-Anhalt to 6.5% in Saarland, Brandenburg, and Thuringia. While not strictly speaking a "financial transaction" tax in the sense of relating to financial assets, real estate represents a significant part of financial portfolios of institutional investors and there is a range of real estate investment trusts, etc. Thus, this is a tax paid by real estate investors and a tax incentive could be adjusted specifically for certain investor classes.

As outlined above, taxing the transaction is not at first glance the intuitive place to set a green incentive. However, one potential policy avenue is to reward the refurbishment of buildings or the purchase of climate-neutral homes through reductions in the tax. Here the tax would not reward simply the resale of "green" buildings but create an additional reward increasing the value of the asset in the context of a resale (given that the tax saving could be passed on to the buyer). Of course, such an incentive only materializes if there is a resale. Even such a policy — while targeting specific green behaviour — seems particularly indirect since the benefit is deferred and only materializes at the point of sale. First, evidence in the Netherlands already suggests that energy efficiency is factored in the housing market — with a "green premium" of 7,000 EUR (DeNederlandscheBank, 2019).

Conclusion

This paper provides an exploratory review of potential mechanisms to "green" financial sector taxes.

Crucially, the use of existing financial sector taxes to steer capital allocation is widespread. All tax mechanisms reviewed in this report were applied with specific policy goals in mind, also beyond incentives for savings, at least in some jurisdictions. An introduction of sustainability objectives in many cases would thus be a natural extension of these policy frameworks.

Our preliminary research shows marginal effects on the taxes raised if these were greened. However, there is still a range of policy levers given the widespread application of financial sector taxes.

The academic and 'grey' literature is very limited in terms of providing empirical insight into the potential overall effect of considering green or sustainability issues in the context of financial sector taxes. As a result, it is difficult to identify the potential scale of impact of potential policy adjustments, also given the more indirect nature of taxes in terms of their impact on capital allocation in the real economy.

Despite those caveats, however, the brief review showed that revenue effects of introducing sustainability criteria on taxes would likely be limited. In other words, greening such tax incentives would be unlikely to dramatically shift governmental revenue derived from these taxes.

However, while evidence on impact is limited, one finding of the paper is that tax incentives in particular on savings' and pensions' products can be said to represent a significant fossil fuel subsidy.

When savings and pension contributions are invested in fossil fuel companies, the tax incentive is concretely on "fossil fuel investments" whether the investment is done by the fossil fuel company or a third party, as households and employers. A separate analysis in an upcoming 2Dii report will calculate the tax incentives on savings and pensions that create an implicit fossil fuel subsidy in the UK.

While this paper does not make specific recommendations, it highlights the huge potential to mobilize financial sector tax systems in the service of 'greening finance' and greening the economy.

Even if the impact is unclear, coherence in policy frameworks across all policymaking areas can make a critical contribution to the broader achievement of climate and sustainability goals. Currently, they frequently implicitly represent either a fossil fuel subsidy or a tax on sustainable investments. Adjusting these could further harmonize financial sector tax systems with climate and sustainability goals.

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