

# Options for Taxation of the Financial Sector

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## Abstract

This paper surveys and evaluates three different options for increasing taxation of the financial sector: (i) bringing financial services more within the scope of VAT; (ii) the use of financial activities taxes; (iii) the use of bank levies. As regards (i), the most practical solution is probably the New Zealand approach of zero-rating financial services sold to VAT-registered customers. There are probably stronger arguments for using bank levies rather than FATs, as the former are better targeted to the reduction of excessive bank leverage.

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## 1. Introduction

The financial services sector is a large and growing part of any modern economy and the Netherlands is no exception. For example, the share of finance and insurance in value-added for the Netherlands in 2018 was 6.8%, one of the highest in the EU, only exceeded by the UK at 6.9% and Luxembourg at 26.5%.<sup>1</sup> Because of the technical difficulties of imposing VAT on some financial services, it has long been believed that this sector of the economy is under-taxed. This issue is of particular significance of the Netherlands, as its banking sector is relatively large: the ratio of bank assets to GDP in 2017 was about 370%, well above the EU average, and the largest five banks comprise 85% of that total.<sup>2</sup>

This concern about under-taxation has taken on new urgency since the financial crisis of 2008, and indeed new taxes such as bank levies, Financial Activity Taxes (FATs), and Financial Transactions taxes (FTTs) have been introduced in many countries. Finally, in several countries, reforms to the VAT have been recently introduced to bring financial services more within scope of VAT. For example, zero-rating, rather than exemption, of B2B supplies of financial services was introduced in New Zealand in January 2005.

This paper will provide an overview and evaluation of these recent developments. In Section 2, we first survey a range of options for dealing with the underlying problem i.e. that financial services are not fully within the scope of VAT. We then look more closely at the possible revenue consequences of bringing financial services within the scope of VAT.

We then turn to the entirely new taxes that have been introduced following the financial crisis. Both of them obviously have the practical attraction that they raise revenue, and also probably play a political role by demonstrating tough action against the banking sector. In Section 3, we will argue that some of the FAT taxes currently in use are close to an addition-based VAT, and suffer from the same problems. As regards the bank levy, we argue in Section 4 that there seems to be a strong conceptual and empirical case that excessive bank leverage imposes negative externalities on the rest of the economy. Whether the bank levy, as currently designed, is the right corrective tax, and whether it is preferable to regulation, is discussed further below.

## 2. VAT and Under-Taxation of Financial Services

### 2.1 Financial Services and the Under-Taxation Problem

In the discussion that follows, we define financial services to include payment services (credit/debit cards, electronic payments), savings intermediation, asset management, trading of stocks, bonds foreign exchange, and derivatives, and provision of insurance.

As is well-known, the difficulty in imposing VAT on these services is that many of these services are not conventionally priced, but are only implicitly priced by the margin charged by the financial institution as an intermediary (Ebrill, Keen, Bodin and Summers (2001)). The classic example is that of a financial intermediation between savers and borrowers. For example, consider a bank that (for example), pays 3% on deposits, and charges 5% on loans; so the total price of intermediation of (say) \$100 is  $0.02 \times \$100 = \$2$ . The fact that this price is not divided between the depositor and the borrower makes it hard – if not impossible – to charge VAT in the conventional way.

The value of margin-based services of this kind can be computed from national accounts data and is referred to as FISIM (financial intermediation services indirectly measured). Table 1 below gives some idea of the size of FISIM both relative to the total output of the financial services sector, and national GDP, for the Netherlands.

Table 1: FISIM in the Netherlands

	2012	2013	2014	2015	2016	2017
FISIM as a percentage of GDP	2.82	2.89	2.82	2.72	2.55	2.27
FISIM as a percentage of output of the finance and insurance sector	41.61	43.60	42.28	41.95	41.94	38.76

Source: Netherlands National Accounts and Author's Calculations

We see that for the Netherlands, almost half the value of output of the financial services sector is not explicitly priced and therefore certainly not subject to VAT. Of course, the fact that margin-based financial services are not currently subject to VAT does not imply, from a theoretical point of view, that they should be taxed. However, the theoretical literature on this topic is in fact unanimous that it is desirable to tax them, although there is some debate over the correct rate (Auerbach and Gordon (2002), Lockwood (2014)).

## 2.2 Options for the VAT Treatment of Financial Services

Assuming that it is desirable to apply VAT to all financial services, how can this be done? Table 2 below gives some possible options for the VAT treatment of financial services, and we will consider these options one by one. In each case, the Table comments on any tax distortion of producer and consumer choices, administrative complexity, and the revenue cost, all relative to the benchmark of fully imposing VAT on financial services at zero administrative cost. It should be emphasized that this benchmark is purely conceptual as there is currently no way of achieving it in practice.<sup>3</sup> It also gives countries where this method is used to tax financial services.

The first option is full exemption of margin and fee-based services. This is quite close to the regime for many countries in the EU, where the 6<sup>th</sup> Directive lists a number of financial services that must be exempt from VAT, and another list of financial services where individual countries have an option to tax. The first list is quite extensive and includes core financial activities such as the taking of deposits, granting of credit, and insurance<sup>4</sup>. So, all EU countries, except those that explicitly offer the option to tax, are close to full exemption.

The disadvantages of full exemption are well-known and are discussed in the first row of Table 2. First, there is under-taxation of B2C transactions, leading to financial services being under-priced relative to other goods and services that are subject to VAT. Second, there is the problem that financial services providers cannot reclaim VAT on inputs – so called *embedded VAT*. This embedded VAT is sometimes referred to as *input taxation*.

This embedded VAT gives rise to a number of economic distortions. First, financial services providers have an incentive to provide inputs, such as IT services, catering, or cleaning, themselves rather than purchase these services from other firms, even though other firms could provide these services at lower cost or higher quality. This is called *self-supply bias*. Second, there is the problem that financial services providers pass on embedded VAT to their customers in the form of higher prices. This will in turn distort the choices of firms who purchase financial services as inputs - so-called *tax cascading*. Finally, the cost of embedded VAT puts these financial services providers at a competitive disadvantage relative to other

providers that do not pay VAT or can claim back input VAT. This is a common complaint made by EU-based international banks.

Finally, even in the EU, some fee-based financial services are subject to VAT, the details varying by country.<sup>5</sup> So, banks and other providers will typically supply a mixture of exempt and non-exempt services. EU countries, and others, use *apportionment rules* to determine the share of the cost of inputs that can be allocated to non-exempt outputs and thus can be reclaimed. These rules are often complex and open to several interpretations, and thus impose an administrative burden.<sup>6</sup>

A second possibility, shown in the second row of Table 2, is the option to tax. The 6<sup>th</sup> Directive gives the member states of the European Union the right to introduce legislation that grants financial institutions the option of letting themselves be taxed in return for the possibility of deducting their input VAT. The member states have considerable leeway in designing such legislation<sup>7</sup>. The advantages and disadvantages of this option are given in the second row of Table 2. In principle, relative to full exemption, pricing distortions will be lower, and apportionment issues will be less severe, but there will be a loss of revenue due to the higher level of input VAT recovery. However, in practice, despite the existence of the option to tax, most member countries of the EU do not make use of it. Moreover, in the six countries that do use it, financial institutions often do not opt in. As a result, the prevailing VAT regime for financial services in Europe is close to exemption.

A third option is taxation of all fee-based services and exemption of margin-based services. The economic effects of this are similar to the option to tax; distortions are reduced relative to full exemption, and under-taxation of financial services is less than under full exemption. One difference however is that the option to tax only involves B2B customers, so relative to that, taxation of fee-based services will involve VAT being charged even on B2C transactions. This mitigates the under-pricing of financial services to final consumers.

One additional feature of taxation of option 3 in Australia and Singapore is partial input VAT recovery. In Australia, firms that make a relatively small amount of financial supplies, as compared to their taxable supplies or GST-free supplies, can claim full input tax credits for those inputs related to taxable supplies. Second, once over that limit, firms can claim a tax credit equivalent to 75% of the GST paid on a defined list of inputs acquired to make exempt

financial supplies. The credit's purpose is to mitigate the self-supply bias, but it does not address the problem of cascading or international competitiveness. Further, Poddar and Kalita (2010) questions the efficiency of the approach, noting that the definition of input services eligible for the 75% credit is not simple, somewhat arbitrary, and will likely require constant review as patterns of outsourcing evolve.

In Singapore, financial services are taxable if they are provided in return for a brokerage fee, commission, or similar form of compensation, while most core financial services are exempt. However, financial institutions can claim input VAT credits using two methods. The 'special method' requires segregation of financial services eligible for the zero rate from total services provided to all customers, similar to the New Zealand approach. The 'fixed input tax recovery method' relies on input VAT recovery rates that depend on the type of financial institution and reflect the mix of their business and non-business customers. The purpose of the method is to prevent cascading (and preserve the price competitiveness of the financial institutions). However, this method undertaxes financial services provided to consumers even more than pure exemption would do.

Table 2: Comparison of VAT methods for taxing financial services

Method	Distortion of choices of VAT-registered entities	Distortion of consumer choices	Administrative complexity	Revenue cost	Examples of countries where found
<b>Transactions-based</b>					
Full exemption of margin and fee-based services	Self-supply bias, cascading, loss of international competitiveness	Undertaxation of B2C services	Major definitional and apportionment issues	Large if apportionment rules generous	EU member states except those using the option to tax; non-SACU African countries
Option to tax B2B services and exemption of B2C services	Distortions reduced relative to full exemption	Under-taxation of B2C services	Definitional and apportionment issues mitigated depending on use of option	Larger than under full exemption	Austria, Belgium, Estonia, France, Germany, Lithuania
Taxation of fee-based services and exemption of margin-based services	Distortions reduced relative to full exemption, especially with partial input recovery	Under-taxation of B2C services, but less than under full exemption	Number of definitional and apportionment issues less than under full exemption	Less than under full exemption, but higher with partial input recovery	Australia, Singapore, Malaysia, Botswana, Namibia, South Africa, Tanzania
Zero-rating of B2B services and exemption of B2C services	Distortions minimized	Under-taxation of B2C services	Definitional and apportionment issues mitigated	Greater than under full exemption	New Zealand
Cash-flow approach with TCA	No distortions if pure rate of interest correctly estimated	No distortions if pure rate of interest correctly estimated	Substantial	None	Not implemented
<b>Accounts-based</b>					
Addition method	Cascading because input VAT cannot be reclaimed by purchasers of financial services	Distortions due to cascading	Cannot handle rate differentiation and exemptions	Extra revenue because of cascading	Iceland, Israel
Subtraction method	Cascading because input VAT cannot be reclaimed by purchasers of financial services	Distortions due to cascading	Cannot handle rate differentiation and exemptions	Extra revenue because of cascading	Japan (to some extent)

This table is based on Cnossen, S. (2019), Table 13.4, pp. 219-220.

A fourth option is zero-rating of B2B services and exemption of B2C services. This was introduced in New Zealand in 1 January 2005. Since then, supplies of financial services to GST-registered persons whose taxable supplies equal or exceed 75% of their total supplies

may be zero-rated, when the financial services provider elects to do so.<sup>8</sup> Clearly, a provider that takes this option will avoid all the biases associated with full exemption on their B2B sales. However, there will still be exemption on B2C sales, resulting in under-taxation of these. Finally, the revenue cost of this option will be relatively high as the government loses all the embedded VAT on inputs.

A fifth option is the cash-flow approach with tax calculation accounts (TCAs). Unlike all other options considered so far, this *directly* extends the invoice-credit method of levying VAT to margin-based transactions, essentially by dividing FISIM between the parties to the financial transaction, to create an artificial price to each party. It is explained in detail in Chapter 8 of the Mirrlees Review, who make a strong case for it (Mirrlees and Adam (2010)). This option has the advantage that it is fully consistent conceptually with existing VATs, but it is administratively complex and has thus far not been implemented in practice.

One particular problem is that dividing FISIM between (for example) a depositor and borrower requires a reference rate of interest, which is supposed to reflect the pure cost of funds to the bank. Modern national accounting standards do require sectoral allocation of FISIM (to households, government, firms etc.), and so definitions of this reference rate have been developed for this purpose.<sup>9</sup> However, views on the reference rate continue to evolve and any changes in this rate would affect the VAT liabilities of VAT registered depositors and borrowers under this method, creating considerable tax uncertainty.

A second problem is that currently, lending rates are not adjusted for default risk, and so generally overestimate the consumption of FISIM by borrowers. For example, in the UK, the Office of National Statistics calculated that in the aftermath of the financial crisis of 2008, FISIM output adjusted for default risk would be reduced between 15% and 33%. (Office for National Statistics (2017)).

The final two options take a different approach as they do not levy VAT on a transaction basis, but on an entity or taxpayer basis. The addition approach exploits the fact that value-added created by a firm i.e. the value of outputs minus the value of inputs, including capital inputs, is by definition equal to its wages paid plus cash-flow profit. Indeed, cash-flow profit is usually defined as residually as value-added minus wages (Ebrill, Keen, Bodin and



Summers (2001)). Then, a VAT on an addition basis taxes both cash-flow profits and wages at some rate of VAT. Currently, two countries have something close to this for taxation of the financial sector. In Israel, banks and other financial institutions currently pay taxes at the rate of 17% based on their total payroll and on profits. Iceland currently taxes the payroll of financial institutions at 5.5% and their profits at 6%, although these taxes are formally financial activity taxes rather than a VAT (KPMG (2017)).

Levying VAT on an addition basis gives rise to a number of new problems. First, as just noted, an addition-based VAT and a transaction-based one will have the same base for a given firm only if the profit base is cash-flow profit, which is not the case in either Israel or Iceland. Moreover, this kind of VAT, if used just for the financial sector, will lead to tax cascading. Specifically, if a financial services firm is subject to an addition-based VAT, there is no mechanism for the firms to which it sells to recover any addition-based VAT included in the price of its services. Finally, because this approach taxes at the level of the entity, not the transaction, this approach cannot easily cope with rate differentiation and exemptions.

The final method is the subtraction method, which works as follows. At the end of a reporting period, a business calculates the value of all taxable sales then subtracts the sum of all taxable purchases and the VAT rate is applied to the difference. In principle, a subtraction-based VAT used just in the financial sector, because it is entity rather than transaction-based, gives rise to exactly the same problems as an addition-based VAT. Japan uses a subtraction-method VAT, but for all entities, not just the financial sector, and it contains all the invoice requirements and rules of the credit-invoice method, so in practice it is not that different from the VATs used in other countries.

How does this discussion relate to the current situation in the EU, and in the Netherlands in particular? The 6<sup>th</sup> Directive of the EU currently exempts a very wide range of financial services. So, it seems desirable to move to a regime as in Australia or New Zealand where the list of exempt services is as small as possible. In addition, embedded VAT (VAT input taxation) creates a large number of distortions, which could be reduced by moving to the New Zealand approach of zero-rating B2B sales of financial services. This still leaves the problem that exempt B2C services are undertaxed. But, in principle, that can be partially resolved by the imposition of a FAT or bank levy. Both of these are discussed below.

### 2.3 Estimates of Revenue Gains

Table 2 above gives a general qualitative description of how we might expect revenues to decrease or increase, relative to a comprehensive VAT on financial services. Here, we discuss these effects in more depth, and briefly review some attempts that have been made to qualify them.

There are three possible effects of bringing financial services entirely in the scope of VAT. First, revenues *increase* because VAT is charged on final consumption of financial services. Second, revenues *decrease* as VAT on inputs to the financial services sector (“embedded” VAT) is now deductible. Third, revenues *further decrease* as the removal of “embedded” VAT will generally reduce the prices to final consumers of other goods and services that use VAT as an input. Note that, as observed by Ebrill, Keen, Bodin and Summers (2001), it is possible for the second and third effects to dominate the first, for example, if most financial services are consumed by VAT-registered entities rather than final consumers. In this case, VAT revenues will actually fall if when financial services are fully taxed. It should also be noted that the size of all effects will depend on behavioural responses. For example, households may demand fewer financial services when they become more expensive, dampening the first positive revenue effect described above.

Some early studies of the revenue gains from ending exemption on financial services ignore behavioural responses. A study by the European Commission, finds that ending exemption would increase EU-27 tax revenues by 15 billion Euro (European Commission (2011)). PwC (2011) finds that ending exemption within the EU would increase EU-27 tax revenues by 1-2 billion Euro, but could reduce it under some assumptions. These two studies have a common conceptual framework and common data (Eurostat sectoral accounts and input-output tables); the differences are driven by detailed assumptions, especially calculations of embedded input VAT and how this is passed through to prices<sup>10</sup>. Overall, these effects are small: for comparison, according to Eurostat, total tax receipts for the EU 27 in 2011 were about 5200 billion Euro.

More recently, Buettner and Erbe (2014) compute the effects of repealing the VAT exemption in Germany. Their baseline estimate indicates that tax revenues would increase by 1.2 billion Euro or 0.9% of VAT revenues. Again, these estimates exclude behavioural

effects, but as in PwC (2011), assume that the elimination of embedded VAT is fully passed through in the form of lower prices.

More recent studies use computable general-equilibrium models to take into account behavioural effects. For Australia, Murphy (2017) studies the effect of ending existing exemptions of the financial services sector in Australia. He finds that this has the favourable effect of raising additional revenue with only a slight excess burden for consumers. But again, the changes relative to overall tax revenue are quite small.<sup>11</sup> Chisari, Estache, and Nicodème (2013) study the application of a 15% VAT to the financial sector in Belgium. They do not look explicitly at revenue effects, but find that this reform has a small negative effect on GDP growth and welfare.

Two conclusions could be drawn here. The first is that these effects are relatively small, so there is no strong revenue argument for or against bringing financial services fully within the scope of VAT – assuming it could be done. In particular, this implies that the cost of the New Zealand option might not be that high. Second, there is considerable uncertainty surrounding the size of these effects, as there is with all revenue forecasting.

### 3. Financial Activity Taxes

In an influential 2010 paper, the IMF recommended that “Any further contribution from the financial sector that is desired should be raised by a Financial Activities Tax (FAT) levied on the sum of the profits and remuneration of financial institutions, and paid to general revenue” (IMF (2010)). Subsequently, a number of countries have introduced FATs. For example, as of 2017, Denmark imposes a tax of 14.1% on the total annual salary cost (pension, bonuses, labor market contributions, benefits, etc.) associated with VAT exempt activities. Iceland and Norway have similar taxes, with various provisions to ensure that only wages and profits arising from VAT-exempt activities are taxed (KPMG (2017)).

A first question is how does a FAT differ from VAT on addition basis, such as that used by Israel? As made clear in IMF (2010), this depends on how the base is defined. The base could include profits above a “normal” level and “high” remuneration, in this way targeting rents. If the FAT were applied to all remuneration, it is then similar to an addition-based VAT. So, While FAT taxes are an effective way of raising revenue from the financial services sector, they therefore are subject to the same problems as an addition-based VAT. Moreover, there

might be boundary issues in deciding which cash inflows and outflows reflect ‘real’ activities and which ‘financial’ activities if the FAT rate is different to the regular VAT rate. For example, in Denmark the standard rate of VAT is 25%, but the FAT rate is only 14%, so there is an incentive for financial services firms to re-classify activities as VAT exempt if they use few taxed inputs and are mostly B2C. So, overall, from an economic point of view, a FAT is a rather inferior way of dealing with under-taxation of the financial sector.

#### 4. Bank Levies

Since 2008, at least 14 countries have introduced bank levies i.e. taxes based on the liabilities of banks. (Devereux et. al. (2015)). In 11 of these countries, countries (Austria, Belgium, Cyprus, Germany, Netherlands, Latvia, Portugal, Romania, Slovakia, Sweden and the UK) taxes are based on measures of bank liabilities such as non-insured deposits. Two main arguments have been offered in support of such levies. First, a bank levy raises revenue which would be available for any future bailouts. The IMF (IMF (2010)) suggests that this revenue might be allocated to an earmarked bailout fund.

Second, it is now generally accepted that high bank leverage (the ratio of debt to assets), and investment in more risky assets at a given level of leverage, have negative external effects on the economy as a whole, and a bank levy can help lower leverage and/or investment in excessively risky assets. How big are these negative external effects? There are quantitative calculations of their size, which proceed by first calculating the effect of bank leverage on the probability of a financial crisis, and then multiplying that effect by the cost of a financial crisis, typically in percentage points of GDP.

For example, the OECD have recently estimated the median cost of the 2008 financial crisis across OECD countries at about 6% of GDP (Ollivaud, and Turner (2015)). As for the effect of bank leverage on the probability of crisis, de Mooij, Keen, and Orihara (2013), from their own estimates and the earlier literature, show that the effect of the aggregate leverage ratio of banks in a country on the probability of a crisis is highly non-linear. At realistic levels of the initial leverage (94%, roughly the median in their sample), the marginal effect of a 1 percentage point increase in the leverage ratio on the probability of a financial crisis can be between 1.5 and 7.3 percentage points. So, the overall effect of a marginal increase in leverage can be large, up to half a percentage point of GDP.<sup>12</sup>

Given that these externalities exist, how should bank levies be designed to mitigate them? One of the first papers on this topic was Keen (2011), which studied a simple model with one bank whose only choice variable is a capital to lending ratio. A low capital ratio raises the risk of the bank collapse and/or bailout. In this setting, it is shown that a tax on deposits (bank liabilities) increases the capital ratio of the bank. So, the behavior of the bank can be fully controlled by the bank levy. Further, in his model, a fall in the capital ratio imposes a negative externality on the rest of the economy either through bank collapse or through a bailout. Given that the bank levy controls the capital ratio, these externalities can be internalized by a Pigouvian tax on bank deposits.

However, Keen's model, while an important first step, suffers from some limitations. In particular, subsequent work in the area has clarified how the appropriate base for the tax depends on modelling assumptions. For example, Acharya et.al. (2017) allow, unlike Keen (2011), for multiple banks and multiple risky investment opportunities for each bank. They show that each bank's contribution to systemic risk can be measured by its *systemic expected shortfall* (SES), which the authors describe as "its propensity to be undercapitalized when the system as a whole is undercapitalized." The optimal Pigouvian tax is proportional to the SES, not borrowing. The SES depends positively on bank borrowing, but also on other factors, such as correlation in bank returns on assets.

The work of Acharya et.al. (2017) also implies that the SES will generally vary across banks. An implication is that (as in the textbook "polluter pays" case), the Pigouvian tax will generally be bank-specific, as a bank's contribution to systemic risk depends, on its leverage, its size, and its degree of interconnectedness with the financial system. So, in practice, any tax that is not bank-specific not fully internalise the negative externalities of leverage.

Finally, before turning to practical experience with bank levies, we mention two further issues. The first is that ultimately, one of the reasons for high bank leverage is that interest on debt is usually deductible from the CIT base. For example, de Mooij, Keen and Orihara (2013) find a strong positive association between the CIT rate and bank leverage. So, it could be argued that a better targeted tax reform would be to reduce or eliminate the debt bias of the CIT. While there are moves in this direction, they are slow and so a bank levy has the attraction of a quick fix.<sup>13</sup> It is also the case that *even if* the debt bias of the CIT could be eliminated, the Pigouvian externalities discussed above still remain.

A second issue is the role of bank regulation. For example, minimum capital requirements for banks are governed by the Basel III agreement, and currently impose a minimum ratio of equity to risk-weighted assets of 7% and a minimum leverage ratio of (only) 3%. One might then ask whether Pigouvian taxes are even necessary given this regulation instrument, when it is set optimally<sup>14</sup>. Keen (2011) shows theoretically that in the presence of uncertainty, there are conditions under which taxation is preferred to regulation. However, in practice, the choice is not between one or the other instrument but how to use both. In particular, as already remarked above, banks in practice will choose both total leverage and the allocation of borrowing to different risk classes of assets. Both of these decision margins may have negative externalities, so, in principle, both taxation and regulation may be needed to control these decisions.

Cannas et. al. (2014) provide some evidence here. Using a simulation model for the EU based on bank balance-sheet data, they calculate the correlation between individual bank contributions to systemic risk and the base of either a FAT or a bank levy. They approximate the current Basel III framework by assuming a capital to debt ratio of 8%. They allow for contagion effects in their modelling, i.e. that failure can be driven by the default of the other banks, using data on interbank exposures between banks. With contagion, bank levies outperform FATs (in the sense of a higher correlation), mainly because of their stronger correlation with the size of financial institutions, a prime determinant of risk. One interpretation of these results is that bank levies may be effective ways of controlling individual bank contributions to systemic risk, even when there is a minimum capital requirement.

However, Cannas et. al. (2014) does not model the behavioural responses of banks to the imposition of a FAT or bank levy in the presence of a capital requirement. This is a question addressed by Devereux et. al. (2015). They show theoretically that in the presence of a penalty for under-capitalization (a simple representation of the Basel III regime), an increase in a bank levy has two effects: it increases capital held by banks, as in Keen (2011), but, it also increases the riskiness of lending. The second, unintended effect arises because while the levy reduces the total amount of lending by the bank, this mechanically moves the bank further away from the capital requirement constraint, allowing the bank to choose a more risky but higher return portfolio of lending. They find empirical evidence in support of this

effect; in particular, bank levies have a significant positive effect on the capital to asset ratio, but at the same time increase measures of portfolio risk.

In practice, the base of the levy is usually some measure of bank liabilities, as in the Keen paper. This is the case for levies in 11 countries (Austria, Belgium, Cyprus, Germany, Netherlands, Latvia, Portugal, Romania, Slovakia, Sweden and the UK). While these levies are conceptually similar, they vary along several dimensions. First, most of the levies fall on total liabilities net of own funds and customer deposits that are guaranteed under a deposit insurance scheme, but two countries (Cyprus and Portugal) include insured deposits in the levy base. Second, most levies treat short-term and long-term liabilities symmetrically, but two countries (Netherlands and the UK) apply a reduced rate to liabilities with a maturity exceeding one year. Third, most of the levies apply a flat rate, but four countries (Austria, Germany, Netherlands and the UK) have a progressive rate structure where small banks are taxed at lower rates than large banks or not taxed at all. This is clearly an attempt to deal with the heterogeneity problem.

Finally, one concern for policy-makers is that banks may pass through the cost of the levies to households and firms, thus reducing the interest rates on deposits, and increasing the rates on loans. If this is the case, consumers and firms, rather than banks, will bear the burden of internalizing the externality, which may be undesirable from a distributional point of view. Kogler (2016), using bank-level evidence for 23 EU countries in the period 2007-2013, shows some pass-through of bank levies to lending and deposit rates, and net interest margins. Market characteristics and capital structure influence the magnitude: The lending rate strongly increases in concentrated markets, and the pass-through is weak for well-capitalised banks. Overall, though, the effects are modest, with pass-through to lending being no more than 5% of the tax on average.

## 5 Conclusions

This paper has evaluated three different options for increasing taxation of the financial sector: (i) bringing financial services more within the scope of VAT; (ii) the use of financial activities taxes; (iii) the use of bank levies. The degree to which financial services are exempt from VAT varies considerably, and best practice is probably the New Zealand approach of zero-rating financial services sold to VAT-registered customers. Financial activities taxes,

used in some countries, are effective revenue-raisers but a poor substitute for a transactions-based VAT on financial services, as they do not integrate well with invoice-credit VAT and give rise to additional distortions. There are probably stronger arguments for using bank levies rather than FATs, as the former are better targeted to the reduction of excessive bank leverage. There are strong theoretical arguments for some form of bank levy but the interaction of the levy with banking regulation needs to be considered.

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<sup>1</sup> These data are from <https://data.oecd.org/natincome/value-added-by-activity.htm>.

<sup>2</sup> These figures are from the European Banking Federation (<https://www.ebf.eu/the-netherlands/>).

<sup>3</sup> The cash-flow method, the sixth option on the table, eliminates all economic distortions but is administratively very costly.

<sup>4</sup> COUNCIL DIRECTIVE 2006/112/EC, Art. 235

<sup>5</sup> For example, in the UK, the list of services currently subject to VAT includes bookkeeping services, debt collection, depository and trustee services, equipment leasing, investment, finance and taxation advice, management consultancy, merger and take-over advice, and portfolio management.

<sup>6</sup> For example, in the case of the Netherlands, a survey in 2007 states the apportionment rule as follows: "only that part of the input VAT is deductible which corresponds to the ratio of the entrepreneur's total consideration derived from the other transactions to that derived from all transactions ("pro rata"). However, Article 11(2) of

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the VAT Implementing Order provides that, where it is found that, taken as a whole, actual use of the goods and services used for mixed purposes deviates from the pro rata, input VAT in respect of those goods and services is deductible on the basis of their actual use.” (IBFD (2006))

<sup>7</sup> For example, Austria restricts the option to only two types of transactions, namely credit for the purpose of acquiring a taxable good or service and certain credit card transactions. Germany allows financial institutions to apply the option on a transaction-by-transaction basis, but restricts it to taxable customers. Likewise, the rules in Belgium, Estonia, Lithuania, and France differ considerably.

<sup>8</sup> The GST is the Goods and Services Tax, New Zealand’s version of the VAT.

<sup>9</sup> For example, in the UK, the internal reference rate in sterling is now calculated using accrued interest receivable in sterling on loans by MFIs divided by the corresponding average stock on loans. The internal reference rate is comparable and slightly above the LIBOR sterling 3 month rate. (Office for National Statistics (2017)).

<sup>10</sup> First, the Commission implicitly assumes full pass-through of output VAT into prices but no pass-through of reduction in cost due to recovery of input VAT. In contrast, PwC (2011) assume full pass-through of both taxes, following Huizinga (2002). Second, the Commission ignores tax on tax/tax cascading effects, as a result of implicitly assuming no pass-through of the elimination of irrecoverable VAT in the form of a lower output price; (iii) The Commission has a lower estimate of the tax revenue lost from no longer collecting “embedded” input VAT. Empirically, Chiorazzo and Milani (2011) finds some evidence that input VAT is passed through to loan and deposit rates.

<sup>11</sup> According to Murphy (2017), “In particular, switching from a GST input tax to a GST consumption tax on the exempt financial services would raise an additional \$2.3 billion in annual revenue while reducing consumer welfare by only \$0.3 billion. ...By comparison, raising the same amount of additional revenue through an increase in the general rate of GST would leave consumers worse off by \$0.6 billion on an annual basis (a marginal excess burden of 24% applied to an additional \$2.3 billion in revenue).” For comparison, total tax revenue in Australia in 2016 was \$487 billion.

<sup>12</sup> De Mooij, Keen and Orihara use an earlier, much higher estimate of the cumulative output cost of financial crises of 23% , taken from Laeven and Valencia (2010), who measure the output loss relative to the pre-crisis tend, rather than to a more sophisticated counterfactual in the OECD study. This of course makes the externality even bigger.

<sup>13</sup> For example, Belgium, Cyprus, Italy, and Turkey have introduced an allowance for corporate equity (ACE). This retains the deduction for interest but adds a similar deduction for the normal return on equity (see Hebous and Klemm (2018)).

<sup>14</sup> Some have argued that the Basel III requirement is too low e.g. Admati and Hellwig in a letter to the Financial Times in 2010, say “Basel III is far from sufficient to protect the system from recurring crises. If a much larger fraction, at least 15%, of banks’ total, non-risk-weighted, assets were funded by equity, the social benefits would be substantial.” (<https://www.gsb.stanford.edu/faculty-research/excessive-leverage/healthy-banking-system-goal>)