

General Economic Report

Taxation of the financial sector

Preliminary draft report prepared for the Nordic Tax Research Council's seminar 2013

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Introduction

This draft report is mainly based on information presented in the draft national reports from each of the Nordic countries. The scope and selection of methods of taxation is thus based on those that are present in the national reports. Taxation of the financial sector is a subject that has been more and more visible in the general debate since the crisis. In the immediate aftermath of the financial crash of 2008 there was a need for crisis management and short-term solutions. In time however, the debate started focusing on more long-term solutions. New and improved regulation was the first key element to a better functioning financial sector. The other key element and focus of this report, taxation, followed soon after. New regulation and better taxation was meant to solve the deficiencies of the financial markets. As of 2013, there are now several different measures of taxation implemented as a result of the crisis, and other measures are currently hotly debated in several countries. In that respect, a Nordic discussion on financial sector taxation is well placed in time.

In this report, we first discuss the two main arguments most often found in the international debate on reformed taxation of the financial sector; raising revenue and/or to curb excessive risk-taking in the sector. In the general debate following the financial crisis of 2008, both arguments have been used extensively and often in conjunction when motivating new proposals for taxation of the financial sector. The following sections follow the national reports and discuss specific types of taxation and in what way the measures can fulfill the two arguments for reformed taxation of the financial sector.

1. Raising revenue

Common arguments for further taxation of the financial sector in terms of raising additional revenue have usually been in two categories: That the financial sector should pay for costs that occurred during the previous financial crisis and that the financial sector currently is under taxed compared to other sectors of the economy.

The financial crisis of 2008 showed that some firms in the financial sector have systemic importance; some big banks are “too big to fail”. A result of this is that creditors to large banks have come to expect that the large banks will be bailed out if there is another crisis in the future. The risk of giving credit to these banks is lower than it would have been if the bank’s default risk was accounted for fully. This implicit guarantee from the government can be said to subsidize large banks and the financial sector as a whole and would thus be an argument for increased taxation of the financial sector. Stability and balance fees are methods of taxation used in the Nordic countries that seek to address the issue of implicit guarantees and costs of future crises.

The financial sector already contributes tax revenues through general taxes on corporate income and taxes on wages and payrolls. As is argued in the Norwegian national report, the relatively high Norwegian corporate income tax captures part of the higher profits the Norwegian financial sector have seen since the start of the millennium (with the exception of the crisis years around 2008). In the Nordic countries there are also special taxes on some of the financial instruments used by the sector, either as taxes on the purchase and sales of these instruments or taxation of their rate of return. There is however one large source of tax revenue in the economy as a whole that the financial sector's products is more or less exempt from, compared to products from other sectors. The fact that the financial sector's products in large are exempted from VAT is often used as an argument for increased taxation of the sector. Sales to other VAT-eligible firms will on the one hand be over taxed as it is not possible for the buyers to credit VAT from the purchase, on the other hand, sales to other customers will be under taxed as there is no VAT affecting the price. The absence of VAT on financial services increases demand relative to other goods and services which are usually taxed with VAT. Higher demand on the financial sector's products leads to a larger share of the economy producing financial services and/or higher profits in the financial sector. An introduction of VAT on the financial sector is thus often put forward as a way to make taxation in the economy as a whole more neutral, as more purchases would entail the same tax costs and the financial sector would lose the relative tax advantage compared to other sectors.

In the debate following the financial crisis of 2008 the most used argument internationally for increased taxation of the financial sector was that the sector seemed to be responsible for the crisis, and should thus have to pay for part of the cost to the real economy. The methods to "punish" the financial sector for earlier misconduct are difficult to attain. There is no guarantee that the incidence of a new tax will fall on those responsible in the financial sector that did take excessive risk and had a part in forming the crisis. For many of the methods of increased taxation of the financial sector proposed since 2008, the financial sector will be able to pass on the costs to customers. There is also no guarantee that owners and shareholders of financial firms are the same now as they were during or before the crisis.

2. Curb excessive risk-taking in the financial sector

In the international debate, it has long been well known that there are incentives for excessive risk-taking in the financial sector. The reason is that limited liability for financial firms shield financial firms if investments turn out bad. At the same time there is an implicit or explicit guarantee to the bank's creditors, so creditors have no incentives to discipline a bank. If investments turn out good the upside of a risky investment is fully owned by the firm. For this reason, positive outcomes carry too high weight in the bank's profit optimization decisions, and the incentives of banks will be distorted.

The financial sector is subject to sector-specific regulations. Capital requirements in various forms constitute an important feature of this regulation. However, the tool-box includes many other possible instruments. Capital controls in order to limit exchange rate risk, quantitative limits to exposure to certain kind of risks, dividend payment limitations, regulation of compensations schemes (e.g. back loading of pay-offs), just to mention of few.¹

A natural question to ask, from an economist's point of view, is when taxes are preferable to regulation, or works as a complement to regulation. It is beyond the scope of this paper to answer that question, but when relevant we try to compare taxes versus regulation for specific questions.

2.1 Taxes and risk-taking

In general, risky assets yield higher expected profits, but also exhibit a higher variance in the outcome. Risk taking can be taxed *ex ante* or *ex post*. The preferable choice from a theoretical point of view is *ex ante* taxation, i.e. taxing risk taking when the risky investment is made. In practice, there are problems with measuring *ex ante* risk, although these problems should not be overstated. The whole Basel III framework builds on estimates of *ex ante* risks, where assets with large risk require larger equity in banks. Deposit fees and balance fees and FAT are usually not primarily intended to reduce risk, but they may affect the size of the financial sector, and also, depending on exact design, have some effects on risk-taking. All of above measures affect risk-taking in an *ex ante* way. FTT is also aims to decrease risk-taking *ex ante*, whether this is really achieved with an FTT is discussed below.

Taxing risk taking *ex post* is less complicated than taxing risk *ex ante*. *Ex post* taxation use only objective measures, and is thus less subject to subjective interpretations of risk. However, *ex post* taxation of risk is less precise than *ex ante* taxation, since a very high, or very low, profitability may be the outcome of a low-risk strategy combined with an unusually large amount of luck or misfortune. In practice, *ex post* taxation of risk means that unusually high, as well as unusually low profits, should be taxed at a higher rate. A higher tax on high profits can, from a theoretical point of view, be achieved with a progressive corporate income tax. Taxing very low profits is a bit trickier. One possibility would be to reduce or abolish the possibility for banks to carry forward losses.

As has been noted in some of the national reports, progressive corporate income tax would reduce the incentives for banks to take on (excessive) risk. Tax incentives could also be used to achieve fewer incentives for decision-makers within the bank to take on risk. A tax on bonuses is such a tool. This is an indirect way of reducing risk-taking. In principal it makes it more expensive for the owners of a bank to provide incentives to

¹ See e.g. Galati and Moessner (2011) for an overview.

the employees to take on risk. To model the choice between affecting the incentives directly or indirectly with a tax on bonuses goes beyond the scope of this paper. Intuitively, we feel that the indirect approach probably is a second best, but we leave the question open as a possible subject for further analysis/research.

3. Evaluate different measures

3.1 Financial transaction tax

Financial transaction taxes are usually described as a group of taxes that share a common feature which is the taxing of trading in financial instruments such as shares and bonds and of trading in derivatives thereof. But they may nevertheless differ considerably, depending on the products and markets covered. What they have in common is that on individual transactions, typically the selling and buying of a financial instrument or of a derivative contract, a tax is levied as a share of the value of the transaction. In contradiction to the perception of the general public, a FTT is typically not levied on all financial transactions (such as paying bills or transferring money), but only on transactions with well-identified financial products, especially those that are commonly found on various financial exchanges or used in OTC trading between firms in the financial sector.

Sweden introduced a transaction tax on the sale and purchase of equity securities and bonds 1 January 1984. The tax was abolished 1 December 1991. Liable to tax were stockbrokers (though only for intermediation transactions) and parties with a turnover related to trade in these instruments exceeding a certain amount and both parties of a taxable transaction. In March 1986 the Swedish Government proposed an increased tax rate. A doubled tax rate, i.e. 2 percent for a round-trip transaction, entered into force 1 July 1986. The tax base was at the same time broadened to options for shares and convertibles. In spring 1987 the tax base was suggested to be broadened to derivatives on share indexes and convertibles. These changes entered into force 1 July 1987.

There were legal problems in defining which financial instruments to tax, and, as is explained in the Swedish national report, the tax base showed signs of eroding. There were strong indications that the tax base was very elastic – transactions subsequently relocated to the London Stock Exchange first and foremost, or shifted to non-taxable assets. During 1992, 56 percent of the total trading in Sweden stocks took place at the Stockholm Stock Exchange. The distortions resulting from the tax were considerable, as trading migrated to other jurisdictions or untaxed substitute assets.

The marginal increase in government revenues from the doubling of the tax rate (1986) and the broadened tax base (1987) was less than projected due to the mobility of the tax base and movement of trading activity to London Stock Exchange. Likewise, the actual revenues from taxing fixed-income instruments (1989) were less than projected.

Nevertheless, the revenues from the transaction tax were not negligible and amounted at its peak in 1987 to 1.2 percent of the total government tax revenues.

Sweden was not the only Nordic country to implement a financial transaction tax during the 1980's. Both Norway and Denmark had transaction taxes as well. Norway's most recent transaction tax was in force for a single year, in 1988, before it was abolished. Denmark abolished their transaction tax on shares in 1999.

Eleven Member States in the European Union are engaged in an enhanced cooperation on a tax on financial transactions. The enhanced cooperation was initiated when it became clear that it would not be possible to gain unanimity in EU on the Commission's proposal for a financial transaction tax. None of the Nordic members of EU are participating in the enhanced cooperation. Compared to the Swedish financial transaction tax, The Commission's proposal taxes transactions both by the issuance and residence principle, thus better solving issues of tax evasion. The fact that it is a lot more difficult to evade the tax by relocation in the European Commission's proposal, does however entail that the cost of capital increases more (relative to a tax where relocation is easier), which is the main negative side-effect of a transaction tax.

It should also, briefly, be mentioned that there are countries such as the United Kingdom which has had a transaction tax for a long period of time. Purchases in financial instruments in the United Kingdom are taxed based on the issuance of the instrument. It is not relevant where a buyer of a financial instrument issued in the UK is located. France has a relatively newly introduced transaction tax. In addition to taxing a percentage point of the value of purchases of shares in large French firms, it also includes a tax on cancellations of orders to curb excessive speculation and automated trading. Fees for excessive numbers of cancellations are present on many stock exchanges; The Oslo Stock Exchange has a system which tries to identify orders which improve market quality and liquidity. There is no fee if there is no strain on the market infrastructure. A fee on cancellations is a more specified method of targeting speculation, without increasing cost of capital on all financial transactions.

3.1.1 Raising Revenue

The Swedish experience of a FTT showed that the tax base was highly mobile and that it was difficult to forecast future tax revenues. It did however bring in substantial revenues, up to 1.2 percent of all tax revenues in 1986. The institutional framework and the financial markets have however changed dramatically since the Swedish FTT was in force, the problems of relocation would most likely be considerably larger today than 30 years ago.

One of the main reasons that the European Commission proposed a financial transaction tax was their assessment of the revenues from the tax. A transaction tax, due to the large amount of transactions taking place, is perhaps the method of taxation

of the financial sector that has the potential to generate most revenue, especially if most derivatives are taxed as well as shares and bonds. However, the revenue-generating goal of a financial transaction tax must be put in perspective to other goals of the tax. Transactions deemed not to improve the functioning of the market and transactions that are beneficial, both for investments and risk-reduction, are taxed in the same way. The revenue generated from a transaction tax will not be collected from, what is commonly called, purely speculative transactions. Speculative transactions and transactions with low spreads will cease to be profitable. A financial transaction tax can thus lead to a large reduction in trade and thus potential revenues.

3.1.2 Risk taking

The purpose of a financial transaction tax is to create distortions. This is justified by saying that the tax can correct for so-called negative externalities and that it therefore improves the workings of the financial market. The tax will then be a second-best solution that corrects for one distortion by introducing another distortion. From this point of view, a transaction tax is similar to environmental taxes or to so-called sin taxes on items such as alcohol and tobacco. Unfortunately, designing a tax on the harmful aspects of financial transactions is not as straightforward as for example an optimal carbon tax where the tax level is sought from the optimal reduction in emissions. In comparison, financial activity have many distinct aspects where externalities may emerge, such as excess or lack of liquidity, solvency, riskiness of trades, complexity and size of market and the effect of a tax on the interconnectedness of the market.

One argument that is sometimes put forward is that short-term and speculative transactions damage the workings of the financial markets. High-frequency trading is often mentioned as an example of such transactions. A transaction tax would then be justified because it reduces transaction volumes and thus improves the functioning of the financial markets. However, the link between transaction volumes and the workings of the markets is unclear. A market can be considered to be functioning well if it is liquid and effective, that is if the turnover is substantial and single transactions do not affect the market price to any great extent and if prices reflect all the relevant and available information. A further development of the effectiveness argument is that volatility should be in proportion to the volatility of the economic fundamentals that the market reflects.

The argument has been made that excessively large price movements arise because some investors speculate that an observed price change will continue in the same direction. Small price movements may then be temporarily reinforced in a way that is not justified by the fundamental economic variables. In such a situation, a transaction tax may reduce volatility, if long-term investors are more prone than short-term investors to base their investments on economic fundamentals and also on average conduct fewer transactions. In practice, however, it is difficult to distinguish between

short-term and long-term investors. Theoretical models of the micro structure of financial markets have not conclusively showed any beneficial relation between transaction taxes and volatility. Empirical studies provide no clear evidence that transaction taxes reduce volatility. Studies of high-frequency trading indicate that these transactions probably help to reduce volatility, although it cannot be ruled out that they may have a negative impact on the workings of the market during more turbulent periods.²

The three main arguments for a transaction tax as a means of reducing volatility are: volatility on the financial markets is greater than is economically optimal; volatility decreases if transaction volumes decrease and a transaction tax lead to lower transaction volumes.

Even if the first argument is correct, the second argument concerning the relation between volatility and transaction volumes is at best a hypothesis, both theoretically and empirically, and the last argument presupposes that the transaction volumes do not migrate to other countries or to untaxed investment instruments. As is noted in the Swedish national report, volatility on the Stockholm Stock Exchange increased during the transaction tax era.

It should also be noted that a larger transaction volume usually means greater liquidity on the financial markets. This can be regarded as positive, as liquidity improves risk management and enables an efficient supply of capital. If a transaction tax reduces trading volumes it can be seen as a tax on liquidity rather than on volatility. On highly-liquid markets, asset prices are not affected by the size and frequency of trading, while trading can have a significant impact on prices on less liquid markets. A transaction tax therefore increases, rather than reduces, volatility on the market to the same extent that it reduces liquidity.

3.2 Financial activities tax

In essence, a financial activities tax (FAT) would be levied on the sum of profit and remunerations of financial institutions. A FAT seeks to tax the value added in firms, which in principle go either to shareholders in terms of higher profit (dividends or capital gains) or to workers (via higher remunerations).

FAT can be categorised in mainly three ways, following the categorisation by IMF³:

FAT as an improvement to the taxation of financial services. This type of FAT tries to closely mimic the standard consumption-type VAT, being a tax on sales of real goods and services less purchases of non-labor inputs, is in a way a tax on the sum of wages and 'profits' defined in cash flow terms (that is, with full expensing of investment and

² See e.g. Brogaard (2010)

³ See e.g. A Fair and Substantial Contribution by the Financial Sector, Final Report for the G-20, IMF, 2010

no deduction for financial costs). A key feature of this form of profit taxation is that it is neutral with respect to marginal financing and investment decisions.

FAT as a tax on rents. This form of FAT is intended as a tax on any returns to capital and labor in the financial sector above the minimum their providers require.

FAT as a tax on risk-taking. This form of FAT is intended to change behavior, discouraging risk-taking by taxing high returns more heavily than low.

Denmark has a tax similar to the first type of FAT, the *lønsumsafgift*. The base for the payroll tax on financial sector is the sector's total labour costs. Included is any kind of wage payment to the employed including supplements regardless whether they are a wage element or granted separately. The financial sector is not the only sector subject to the payroll tax. Other sectors that are exempt from VAT are also liable to an increased payroll tax. The Danish FAT only taxes remunerations and is not as high as the VAT taxation, so sectors liable to pay FAT are still not taxed neutrally compared to other sectors. The tax rate of the Danish FAT is as of 2013 10.9 percent in the financial sector. For further details, see the Danish national report.

Iceland has a relatively new tax on financial activity, at first inspired by the Danish FAT. However, the Icelandic FAT also takes into account the profits of the financial sector, and is thus closer to the generalized example of a FAT for revenue purposes presented above. The Icelandic FAT is currently 6.75 percent on total remunerations paid to employees and an increased corporate income tax of 6 percent on corporate incomes in excess of 1 billion ISK. For further details, see the Icelandic national report.

3.2.1 Raising Revenue

The usual reason cited for the need of FAT in various jurisdictions is the financial sector's VAT exemption. A FAT can however not be as high as potential VAT-taxation as such taxation would induce firms to pay for services and external labour instead of using their own employees. On the other hand, a VAT-exempt sector will be inclined to produce a larger share of services in-house, so there might be a distortion already in place without FAT concerning the financial sector. A FAT should, to be effective and not distort the relationship between labour and capital, include some taxation of profits as well as remunerations in the sector. Another reason to at least include some part of profit taxation in a FAT is that in general profits have increased more than wages in the financial sector from 2000 till today. As noted in the Norwegian national report, a FAT on wages only might have been a good method of taxation in an earlier historical setting, but as it is profits that have increased relatively more; a significant part of the value added of the financial sector is represented by profits.

3.2.2 Risk taking

Depending on the design, a FAT can specifically target risk taking in the financial sector. Compared to a FAT for raising revenue, a FAT on risk-taking would be

progressive; taxing profits over a certain level or “extraordinary large” remunerations. The progressive design could be implemented together with a lower FAT on wages and profits. Any progressive taxation must however include a judgment on which profit level should be deemed as identified with too much risk-taking. The downside of risk-taking, excessive losses, is not addressed with a FAT on profits and wages over certain levels.

3.3 Financial services’ VAT exemption

Financial services are in general exempt from VAT. The most common rationale for the exemption is that the value-added of specific financial transactions are difficult to estimate.

As is noted in the national reports, the VAT exemption for the financial sector has the likely consequence that, assuming that some input VAT is irrecoverable and passed-through into prices, the price of financial services for business users is higher than what it would be under a VAT system with deductible output VAT, while the price of financial services for final (individual) users is lower than if VAT would be applied. For the latter, this also means that sales from the financial sector are under-taxed compared to sales from non-financial sectors.

The Nordic EU members (Denmark, Finland and Sweden) are bound by EU directives that exempt a large part of financial services from VAT. Norway and Iceland, and also commonly in other countries with VAT systems, exempts financial services as well. Services where the cost or payment of the financial service is either part of the interest rate or not clear from the onset (such as risk-hedging activities) are difficult to price and adjust to existing VAT systems.

3.3.1 Revenue potential

The extent to which applying VAT to the financial sector (and its clients) would raise additional tax revenues and thus the extent to which the exemption constitutes a tax advantage for the financial sector is still undecided. The exemption means that the financial sector does not charge VAT on most of its output, on the other hand the financial sector cannot deduct the VAT charged on its inputs. This is known as the 'irrecoverable VAT problem'. Arguments have been put forward that claim that irrecoverable VAT is the largest tax burden for the sector. However, most analyses of the problem, though rough approximations, indicate that the argument that the VAT exemption of financial services might be an advantage for the financial sector. Estimations of the potential tax advantage centres around 0.15 percent of GDP for the European Union.⁴

The Norwegian national report gives an example of when introducing VAT on financial services would not result in raising more revenue from the financial sector. A partial

⁴ See for example the European Commission’s proposal for a FTT (2011)

introduction of VAT on some of the services provided, such as fees and commissions which are more similar to pricing of other goods and services, would enable firms in the financial sector to credit a large part of VAT on inputs, thus negating the current burden of VAT on the sector. The loss in profits due to higher commissions and fees with VAT included would perhaps not be as large as the lessened burden of non-recoverable VAT. To make VAT a credible method of raising new tax revenues from the financial sector, it is important that VAT is applied to most of the financial sector's sales, especially the large income sources from spreads on interest rates between loans and depositions.

3.3.2 Risk taking

An introduction of VAT to the financial sector is not about reducing risk per se. It has however been argued that the exemption from VAT has made the financial sector relatively larger than other sectors of the economy, and a smaller financial sector (due to added VAT burden) can potentially have less risk of affecting other sectors in case of a future crisis.

3.4 Progressive corporate income tax in the financial sector

A frequently discussed way to align the incentives of the bank with the social costs of risk-taking is to tax profits from risky activities higher than other profits. In general, an unusually high profitability, or an unusually low profitability, is correlated with risk taking. To tax high profits (rate of returns to equity) is not that problematic from a practical point of view. To tax very low (negative) profits may be harder. A huge loss is an indication that a bank has taken on excessive risk. However, to punish the bank by taxing it harder in this situation would raise the probability of default. Bank defaults are to be avoided, at almost any cost. It has been noted in the literature that such punishment may therefore be time-inconsistent, and therefore non-credible. An alternative that may be more credible might be to exclude banks from the system of loss carry-forward. In that case, the punishment will not be carried out when the bank loses money (and facing possible bankruptcy). The punishment will take effect only when the bank has returned to profitability. One drawback of this solution is that the absence of loss carry-forward would still affect the banks solvency in a crisis to some extent, since losses that are carried forward has an economic value.

Increased taxation on risky outcomes may imply that the total taxation of the financial sector becomes too high, from a societal point of view. It is important to keep in mind that the financial sector performs many important and socially valuable functions, see the Swedish national report for an overview. One way to provide incentives for less risk taking, while not increasing taxation of the financial sector (too) much, is to combine a progressive corporate income tax with an ACE. In an ACE system companies get an allowance for imputed interest on equity (ACE = Allowance for Corporate Equity).

The Danish national report provides an interesting outline of a system that combines progressive corporate income tax with an ACE for the banking sector. From the Danish national report it appears that such a system may have relatively large effects on the incentives for risk-taking in the financial sector. When comparing banks (high risk) with housing credit institutes (low risk) it turns out that the tax primarily hits high risk activity.

One practical aspect of an ACE-system is that it is very hard to determine the imputed interest rate on equity. Clearly, the economically correct interest rate varies widely over time, over the yield curve, and also between companies. If the imputed interest rate is set too high, it will open up for tax arbitrage. An example: say that the imputed interest rate is 8 percent. Further a bank borrows a large amount of money from a company, at an interest rate of 3 percent. Now assume that the loan is converted to equity, and that the dividend amounts to 3 percent of equity. From the perspective of the lender nothing has happened. Previously the lender got 3 percent in return on the loan. Now the lender instead gets the same return in form of dividends. The bank gets an ACE-allowance of 8 percent. On the other hand it loses 3 percent in interest deductions, since the loan is converted to equity. Still the bank has gained a net of 5 percent in deductions. One solution to this problem would be to set the imputed interest rate very low. Another solution might be to complement an ACE with some rules that counteract possible abuse of an ACE. The practical problems should not be overstated. Almost all reforms face problem with implementation, but often these can be solved. The Danish exercise in section 6.1.3 shows that this is an interesting avenue to explore.

3.4.1 Nordic experiences

Iceland has a progressive corporate income tax for banks, as part of their taxation on financial activity. An additional 6 percent corporate income tax is levied on profits above 1 billion ISK. Theoretically, a progressive income tax should be related to the rate of return on equity, not on the absolute value of profits. Still, Iceland constitutes an interesting case, not least since it seems that the European Commission has not had any objection raising the corporate income tax for a specific sector

3.4.2 Excessive risk-taking

Theoretically a progressive corporate income tax for the financial sector should reduce risk-taking. There are to our knowledge no empirical studies of the question though.

3.4.3 Revenue effects

The revenue from a progressive corporate income tax for banks depends on the set-up. If it is combined with an ACE (see the Danish national report) it can be constructed to be revenue-neutral.

3.5 Balance fees

Balance fees can in principle be levied on the asset or liability side of the balance sheet. The most common is to levy the balance fee on the liability side, and only on liabilities not on equity. This is the case in Iceland, Norway, and Sweden. Finland on the other hand levies the fee on the asset side. On average balance fees raise about 0.2 percent of GDP in the countries that have introduced such fees. From a government revenue perspective, it is not important whether balance fee is levied on asset or liabilities. If the aim of the fee is to reduce excessive risk-taking, there are arguments that could be put forward to levy the fee on either side of the balance sheet. Assets vary widely in risk, and to levy the fee on the asset side therefore makes sense. Assessing the risk of different assets can be done with some precision, by using the existing Basel-based risk measures. On the liabilities side short term financing is more risky than long term financing. The safest form of financing is of course equity. The Norwegian system lets the balance fee vary with the share of equity in banks. Thus the Norwegian system provides some incentives for less risk taking.

It is often argued that the cause of financial crises usually is found on the asset side. A high level of equity is of course helpful if a crisis occurs, and it is also a way of disciplining risk taking on the asset side (since owners lose more in case of a default if the share of equity is high. Whether balance fees should be levied on the assets or liabilities side of the balance sheet is a question that may merit further analysis in the future.

Regardless of which side of the balance sheet being subject to the fee, there are some practical problems with balance fees. One question is how to measure total assets/liabilities. The most common solution from implementations of balance fees seems to use year-end book values. This solution has two drawbacks. First, it can be manipulated by moving some items out of the balance sheet (to assets that are not included in the tax base), or out of the country (e.g. to foreign subsidiaries). How much of a problem this is, is an open question. Bank fees are modest in size and some assets and liabilities are not that movable, for example household deposits and loans. The second drawback is that if balance fees are not properly risk-adjusted they may actually increase risk-taking. For high-yielding assets the balance fee constitutes a smaller fraction of expected return. Such a balance fee may therefore actually increase excessive risk-taking. Again, there is no empirical evidence on the practical importance of the theoretical result. This is a reason to choose the Finnish system, which takes riskiness of assets into account.

One fundamental question is whether balance fees, even if properly risk adjusted, are part of the optimal solution to excess risk-taking in the financial sector. The Basel framework aims to regulate the risk level in banks. A balance fee based on Basel risk weighted assets would therefore duplicate the regulation. To answer the question of taxes vs. regulation goes beyond the scope of this chapter. However, for a government who wants to decrease the risk-taking in the financial sector more than the Basel framework achieves, we see no strong reason for not doing this with a risk-weighted balance fee.

3.5.1 Nordic experiences

The Nordic experiences of balance fees are summarized in the table below.

Table 1. Balance fees in the Nordic countries.

	Rate	Revenue	Destination	Incentives
Denmark	-	-	-	-
Finland	0.125*	170 million euro or about 0.09 percent of GDP	Fund	Yes, on the asset side of the balance sheet
Iceland	0.041 (+ 0.0875 in 2012-2013)	0.06 percent of GDP	Government	No
Norway	0.03125-0.066**	n/a	Fund	Yes, on the liability side of the balance sheet
Sweden	0.034	n/a	n/a	No

Footnote: *Finland: 0.125, of risk-weighted assets, temporary 2013-2015. **Norway: With equity of 8 percent the fee is 0.05 percent.

3.5.2 Excessive risk-taking

The effects on risk-taking are most likely modest, but it is important to note that bank fees are usually designed primarily to raise revenue and ensure that it is possible to solve future financial crises with less damaging effects on public finances.

3.5.3 Revenue effects

In the Nordic countries, the bank fees raises somewhat below 0.1 percent of GDP annually.

3.6 Deposit insurance fees

Deposit fees aim to finance a deposit insurance (of about € 100 000 in most countries, but € 270 000 in Norway). A deposit fee is usually allocated to a special deposit insurance fund.

Deposit insurances aim to prevent bank-runs. A drawback of a deposit insurance is that lenders to banks don't have to worry about the solvency of their bank. This opens up the possibility of abusing the system, by setting up a bank and finance risky investments with deposits from the general public. Of course, this is usually illegal, but

may still happen. Since the public don't have to worry about the solvency of banks, banks don't have to worry about bank-runs. The optimal deposit insurance, and the optimal deposit insurance fee, is therefore hard to design. A part of the optimal deposit insurance fee may be that the insurance should only apply to deposits with interest below some reasonable ceiling. Interest rates on deposits above the interest rate a solvent bank would get when borrowing from other banks is not logical, since financing from deposits requires more administrative work than financing via borrowing. A very high interest rate on deposits is a clear sign that a bank can't find other financing on the market. High costs of financing on the market are caused by a perceived risk of default, i.e. that the banks takes on too much risk.

3.6.1 Nordic experiences

The Nordic experiences of deposit insurance fees are summarized in the table below.

Table 2. Deposit insurance fees in the Nordic countries.

	Rate	Revenue	Destinatio n	Incentives
Denmark	-	-	-	-
Finland	-	-	-	-
Iceland	-	-	-	-
Norway	0.10	n/a	Fund	No
Sweden	0.10	n/a	Fund	No

3.6.2 Excessive risk-taking

Deposit insurance fees are not designed to decrease the risk-taking of banks. In fact, they may open up a source of financing for banks that taking excessive risks.

3.6.3 Revenue effects

If the deposit fees are allocated to a special fund there are no direct effects on government revenue. However, if a bank defaults, and the government has to take over the bank's liabilities the deposit insurance covers some of the costs.

3.7 Bonus tax

Taxing bonuses would make it more expensive for shareholders to provide incentives for risk-taking to managers. An alternative to taxing bonuses would be to regulate the use of bonuses. For example, bonuses could be paid out only after a certain period of time. In that way the managers would get increased incentives to avoid bankruptcy during that period. We will not go into the question of regulations vs. taxes here. We just note that in a comprehensive analysis this question needs to be addressed.

Another question is whether incentives are best adjusted at the owner or manager level. If the incentives are put right for the owners, they should in theory not provide managers with incentives to take on excessive risks.

A bonus tax is a complicated issue from the point of view of economic theory. To our knowledge no one has tried to analyze a bonus tax within the framework of a formal model encompassing the relevant aspects of a bonus tax, but it may be a suitable subject for future research.

3.7.1 Nordic experiences

No Nordic country has levied a bonus tax. To speculate from an economist's point of view, it may be because of the relatively high progressivity of the income tax in the Nordic countries combined with bonuses being classified as income from employment (wage) in the Nordic tax systems. Thus bonuses are already quite highly taxed.

3.7.2 Excessive risk-taking

Bonus taxes should, according to the international literature, reduce risk-taking. The question is whether it is better to adjust incentives within the company, or adjust the incentives at the company level.

3.7.3 Revenue effects

In the UK, a temporary bonus tax was introduced in 2009. The tax was levied on bonuses above £25,000 in the banking industry. The tax rate was 50 percent, non-deductible and paid by the employers. The bonus tax raised £3.5 billion gross (and estimated 2.3 billion net, when adjusted for behavioral effects). The gross income from the bonus tax corresponds to approximately 0.2 percent of GDP, and the net to 0.1 percent. The UK temporary bonus tax is probably not representative of what a similar tax in a Nordic country would yield. The financial sector is larger in the UK, and the temporary nature of the tax seems to a large extent to have led banks to simply paying the tax the single years it was in place. A permanent tax may have larger negative effects on the tax base.

4. Conclusions

In the aftermath of the banking crisis 2008-2009, regulation of the financial sector has received a lot of attention. Different kinds of taxes has been levied on the financial sector, sometimes with a view to raise revenue, and sometimes with a view to reduce risk-taking in the financial sector, and thereby the probability of future crises.

The Nordic countries have seen the introduction or increase of various types of taxes on the financial sector. The most far-reaching initiatives have been taken by Iceland, the country that was also hardest hit by the crisis in the banking sector. Iceland has introduced a FAT, levied on both wages and profits (with an element of progressive corporate income taxation in tax on profits) and a balance fee. Denmark's FAT goes a long way back in time, but has been increased following the crisis. Finland has introduced a temporary balance fee and Sweden a permanent one. Norway has reformed the rules regulating the balance fee in a way that in effect raises balance fee payments.

The reasons for the different measures in the Nordic countries vary. Raising revenue often plays a part, but concerns for the risk level in the financial sector are also common. The question of taxation of the financial sector is complicated. Taxation is one part of the institutional setting for the sector, but there are other very important parts as well, in the form of different kind of regulations. The regulations mainly aim at reducing the level of risk, with capital requirements being a prominent instrument. It seems reasonable that the effectiveness of regulations of risk-taking should affect how much weight risk reduction should receive, compared to revenue considerations, in the design of taxation of the financial sector.

To sum up, taxation of the financial sector is developing at a comparatively fast pace, not least in the Nordic countries. As is shown in the national reports, much analysis of possible further reforms is undertaken in the Nordic countries. To document and compare current and possible future reforms provides a valuable input to a better understanding of the pros and cons of various form of taxation of the financial sector.

References (incomplete)

Broogard, Jonathan A. (2010), High Frequency Trading and its Impact on Market Quality, Kellogg School of Management working paper.

European Commission (2011), Proposal for a Council Directive on a common system of financial transaction tax and amending Directive 2008/7/EC, COM(2011) 549.

Galati and Moessner (2011), Macroprudential policy – a literature review, BIS Working Paper No 337.

IMF (2010), A Fair and Substantial Contribution by the Financial Sector, Final Report for the G-20.

Umlauf, Steven R. (1993), Transaction Taxes and the Behavior of the Swedish Stock Market, *Journal of Financial Economics* 33:227-240.