

The influence of tax policy on the emergence of financial crisis

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Abstract

The 2008 financial crisis is the worst economic crisis since the Great Depression of 1929. This paper discusses the interactions between tax policy and this financial crisis. In particular, it reviews the existing evidence on the links between taxes and many characteristics of the crisis, investigates the effects of the tax system on the economic factors that triggered the financial crisis and examines a few cases in which the tax regime interacted with these factors, reinforcing them. This applies particularly to tax preference for corporate debt financing, taxation of financial institutions, tax preference for housing and for capital gains, widespread use of tax havens, tax competition and tax advantageous performance-based remuneration of managers, that favours immediate achieving high performance of the company before securing its long-term perspective.

Key words: tax preference, debt financing, housing, tax competition, performance-based remuneration
JEL codes: G01, G10, G20, G30, H20

1. Introduction

As regards the effect of the tax system on the emergence of financial crisis Slemrod (2009) considers as the most important elements of the tax system, which can affect financial crisis: the tax preference for corporate debt financing, the taxation of financial institutions, the tax preference for housing, the tax preference for capital gains, the incoherence of capital income taxation (tax arbitrage, tax clienteles, and derivative securities) and the use of tax havens to creating tax efficient securitization instruments. Giuli (2010) connects to them even more the tax competition and Ceriani at al., (2011) also the tax preference of the performance-based remuneration.

Although tax policy do not appear in the list of major culprits responsible for the financial crisis, some of its aspects can lead to increased risk-taking and growth of household, banks and companies debt. Tax incentives may indeed have exacerbated the behaviour of economic agents decisions.

This article in the next section explores those elements of the tax system, which could contribute to the financial crisis.

2. Tax preference for corporate debt financing

The income tax systems favour debt financing over equity financing because of the deductibility of interest payments and the non-deductibility of the cost of equity capital. To some extent this may be offset by preferential individual tax treatment of the returns to equity investments, but overall, a net preference for debt finance almost certainly prevails. To the extent that leverage is thereby higher than otherwise, so also is the susceptibility of the corporate sector to bankruptcy.

This tax distortion has gained more attention recently as the crisis has highlighted the fact that many companies have too high leverage ratios. This could lead to liquidity constraints, especially in times when banks tend to restrict their credit supply. To the similar conclusions has also come the IMF in a recent document on tax policy and the crisis (IMF, 2009).

Hemmelgarn and Nicodeme (2010) present empirical evidence that the leverage of companies is indeed influenced by taxes. Several other studies e.g. (Desai at al., 2004), analysed also this issue

and found that debt policy is consistent with tax considerations, Debt finance provides an incentive for corporations to choose especially risky projects that yield profits if successful but, if unsuccessful, lead to a bankruptcy whose costs are borne in part by creditors. Hindsight circa 2009 suggests that there was missing an examination of the contagion effects, or externalities, of bankruptcies in an economic climate like the current one.

According to (IMF, 2009) the tax advantage to debt appears to have been decreasing over time as a result of the generalised decline in inflation rates as well as statutory corporate tax rates across countries. But at the same time other tax factors may have led to an increased reliance on this form of financing such as the greater reliance on international capital markets where various forms of tax exempt investors dominate bond markets. The extent to which these developments have mattered varies from country to country.

An important principle of systemic relevance is also, that leverage ratios tend to be set to withstand external shocks based on historic experience. One area where such an approach may have given rise to potential problems in recent years is that of *leverage buyouts (LBO)*¹ which rose to historic highs in the build up to the crisis. The possibility of exploiting higher levels of leverage in target (and potential target) companies to achieve tax savings appears to have been in many instances a contributing motivation to the value the transactions. The benefits of the tax shield depended on the assumption that revenues would grow in line with past experience.

Leveraged buyouts, marked by especially heavy use of interest deductions, increased substantially up to mid-2007. Post-acquisition interest deductions can be so large as to eliminate corporate income tax (CIT) payments for several years. There is likely also to have been an indirect effect in encouraging other firms to increase their borrowing to defend against possible LBOs. Many LBOs cross national borders, moreover, and so are characterized by complex structuring intended to minimize tax liability and in some cases exploit opportunities for “*double dipping*”, i.e. a tax effective use of a structure that achieves a tax “advantage” in one jurisdiction that is doubled in another jurisdiction. Double-dip financing is an attractive tax-planning strategy in certain cases involving the use of conventional debt, depending on the effective tax rate on interest income in the home country, compared with the effective tax rate on profit in the host country. By (Alworth and Arachi, 2010) between 2003 and 2006, the amount raised by US private equity funds, which arrange most LBOs, increased about five-fold, to around US\$230 billion; and between 2000 and 2007 their share of merger and acquisition activity in the U.S. rose from 3 to nearly 30 percent.

The tax-related incentive to debt finance is worth another look. Note that it presumes that, in order to obtain the credit and thus tax advantages of interest deductibility, corporations must change the risk profile of their obligations to the providers of capital. This may not be true, though, if a corporation can obtain the tax advantages without altering the character of its obligations. In principle this could be done by issuing hybrid instruments such as *convertible debt* obligations². As Shaviro (2009) notes, corporations often favour hybrid financing that qualifies as debt for tax but not for accounting purposes, thereby generating deductions against taxable income but not against financial statement earnings.

¹ A *leveraged buyout (LBO)* occurs when an investor, typically financial sponsor, acquires a controlling interest in a company's equity and where a significant percentage of the purchase price is financed through leverage (borrowing). The assets of the acquired company are used as collateral for the borrowed capital, sometimes with assets of the acquiring company. Typically, leveraged buyout uses a combination of various debt instruments from bank and debt capital markets. The bonds or other paper issued for leveraged buyouts are commonly considered not to be investment grade because of the significant risks involved.

² A *convertible debt* is a debt obligation wherein the lender has the option to convert the debt into ordinary shares in the company rather than receiving repayment in cash. Convertible debt is becoming a popular investment model, mainly attracting savvy startup investors. Entrepreneurs are looking more closely into convertible debt as a financing option. One of the common terms in convertible debts is a discount or bonus upon conversion into equity, which benefits the entrepreneur.

3. Tax preference for capital gains

The U.S. income tax system, and that of most other countries, provides a tax preference to returns to investment that come in the form of capital gains. In the U.S. capital gains for individuals are subject to a special lower tax rate structure, are taxed upon realization rather than accrual (which offers deferral of tax liability), and are excused entirely from taxation upon the death of the asset owner because of the basis step-up rule. The U.S. tax treatment of capital gains on a principal residence is even more attractive, since 1997 exempting \$500,000 of gain for a married couple (Slemrod, 2009).

This raises the question, why capital gains are tax preferred. The main argument is that lower taxes on capital gains boost investment and promote entrepreneurship. The other arguments are that it protects asset owners against the effects of inflation and improves the efficiency of capital markets. But exist also other, maybe better, ways to spur investment, like the investment tax credit. Besides, lower taxes on capital gains reduce the tax bills of the rich relative to the rest of people, as the rich own most of the capital.

Most current tax systems favour also assets that are expected to appreciate their value, whose return can be classified as capital gains for tax purposes. In a world with no capital losses the preferential tax treatment of capital gains could automatically encourage investment in assets whose return come largely in the form of appreciation. But the absence of full loss offset against ordinary individual taxable income means that the expected tax consequences of a risky asset (i.e., one whose value might actually decline) are not as favourable as looking only at the taxation of gains would suggest. So we can't explicitly say, whether applied capital tax treatments, which encourage investment, whose return for tax purposes can be characterized as capital gains, encourage also more risky investment. As an ideal seems to be a tax regime, whose upside is taxed as a capital gain and whose downside is deemed to be ordinary income.

The tax preference for capital gains affects not only the relative attractiveness of assets, but also the relative attractiveness of some occupations, depending on whether the compensation can be characterized as capital gains. These gains can also reach those who focus their efforts on getting the house, in anticipation of growth of their sales prices. It can also be achieved by the general partners of private equity funds or hedge funds to the extent that the compensation for their effort is characterized as carried interest and therefore treated for tax purposes as capital gains. By granting preferential tax treatment, the capital gains preference thereby further encourages relatively risky activities. The realization-based tax on capital gains causes a "lock-in" incentive for investors to hold on to assets with appreciation and a "lock-out" inducement to sell assets with losses.

4. The role of taxation in the development of structured finance

The tax system contributes to some extent to the facilitating and encouraging the development of *structured finance*, the sector of finance specialized in risk transfer, which played a key role in the financial crisis. The spread of *financial derivatives* and *asset-backed securities*, designed to transfer exposure to credit risk with the aim of reducing (though here the effect can be reversed), paved the way for the diffusion of toxic assets and the rise of a "*shadow banking system*".

A *financial derivative* is a financial instrument with a value dependent upon underlying variables (e.g., equity derivatives, foreign exchange derivatives, interest rate derivatives, commodity derivatives, or credit derivatives). The term can refer to a contract, or its value, derived from the underlying assets, whose payoff depends on the behaviour of a benchmark.

A *credit derivative* is a derivative whose value is derived from the credit risk on an underlying bond, loan or any other financial asset.

An *Asset-Backed Security (ABS)* is a security whose value and income payments are derived from and collateralized (or "backed") by a specified pool of underlying assets. The pool of assets is typically a group of small and illiquid assets that are unable to be sold individually. Pooling the assets into financial instruments allows them to be sold to general investors (a process called *securitization*), and allows the risk of investing in the underlying assets to be diversified because each security will represent a fraction of the total value of the diverse pool of underlying assets. There are several kinds

of ABSs, depending on the type of asset sold by the originator. The most important are *mortgage-backed securities (MBSs)*.

Thus, one incentive for banks to create securitized assets is to remove risky assets from their balance sheet by having another institution assume the credit risk, so that they (the banks) receive cash in return. This allows banks to invest more of their capital in new loans or other assets and possibly have a lower capital requirement.

This securitization process has become increasingly popular over the last decade, with the simple versions of these structures being known as *Collateralized Debt Obligations (CDOs)*, a family of Asset-Based Securities which is backed by diversified debt obligations such as mortgages-backed securities, corporate bonds, bank loans, credit cards debt, etc. While a MBS is backed by mortgage payments, a CDO is backed by MBSs within a portfolio and represents therefore a re-securitisation (Baily et al., 2008). The advantage of a CDO is that it allows financial institutions to rearrange the securities into new compartments within the CDO and to transform low-rated MBSs into high-rated CDOs.

This securitization process was itself helped by the emergence of a new class of derivatives which allowed transferring the credit risk to a third party: the *Credit Default Swaps (CDSs)*. The principle is that a third party accepts to take the default risk of a specific asset in exchange of an income. This process allows the CDO issuer to shield from the risk and to increase the rating of its bonds.

The tax regimes in the most countries tax interest differently than dividends, and also capital gains tax differently than either interest or dividends. The incoherence has a number of consequences. One is that the effective tax rate on the income from real assets varies capriciously, creating an inefficient resources allocation. Another is that the incoherence generates the possibility of *tax arbitrage*, which arises when the same risk pattern of returns has different tax treatment depending on how it is packaged, or characterized. In the simplest example of tax arbitrage, a taxable individual borrows to buy a tax-exempt municipal bond. If both assets were risk-free, as long as the after-tax (i.e., accounting for the deductibility of interest expense) cost of borrowing was lower than the (pre- and post-tax) return to the municipal bond, a debt financed purchase of tax-exempt bonds produces a private tax saving, and a tax revenue loss.

This arbitrage forces down the return to tax-exempt bonds and forces up the interest rate on taxable securities. If everyone were in the same tax bracket, the pre-tax rates of return on the two types of assets would adjust to eliminate the arbitrage. But when there are wealth owners in different tax situations, this is impossible: there is no pair of pre-tax rates of return that will produce equal after-tax returns for both a fully taxable investor and, say, a completely tax-exempt investor. The result is the formation of tax clienteles, where certain securities are more likely to be held by certain parties based in part on tax attributes, and there are may be tax arbitrage opportunity for at least one party.

Eddins (2009) argues that collateralized debt obligations (CDOs) organized as pass-through entities became in U.S. especially attractive because their owners entered into CDS with sellers of these swaps that could treat default losses as ordinary loss, while the CDO has pass-through tax treatment and therefore would have to treat defaults as capital losses, which, under the local tax laws treated differently. The differential tax treatment allowed the CDO tranches to offer a higher after-tax expected rate of return because the expected losses effectively generated more tax offsets by attaching them to the mark-to-market seller of the swaps. The strategy was especially advantageous for the riskier tranches with higher expected default rates.

5. The taxation of financial institutions

Although the bankruptcy of prominent nonfinancial American corporations has received a lot of attention, the viability of financial institutions is closer to the core of the crisis. There is no question that the total system leverage of the financial sector increased markedly from about 2003 and this played an important role in increasing the severity of the crisis. But the role of the tax system in the level and growth of financial system leverage has not been addressed and, in general, the public finance community has not devoted enough attention to modelling and empirically analyzing the consequences of the special tax treatment of financial institutions. This is difficult, because financial

institutions are heavily regulated and so their behaviour, including their leverage, will depend on tax, accounting, as well as regulatory considerations.

Financial institutions face qualitatively the same tax considerations in balancing equity and debt finance (including deposits) as do non-financial corporations. Banks have traditionally been able to sustain very high debt ratios by virtue of having relatively safe assets, and implicit or explicit deposit guarantees reinforce this. Moreover, the high profitability of financial institutions in recent years will have made debt more attractive for them than for many non-financials, since the low probability of tax exhaustion it implies means a high effective corporate income tax rate.

The tax bias to debt runs counter to regulatory objectives. Banks face both an explicit tax advantage of debt and, through regulatory requirements, an implicit penalty—with evident risk of policy incoherence. Tax incentives towards high leverage may have undercut the effectiveness of regulatory requirements.

The tension between regulatory objectives is reflected in the emergence of already mentioned *hybrid financial instruments*, which are treated like debt obligations for tax purposes (i.e., interest payments are deductible), but they are treated as capital rather than liabilities under banking regulations.

Acharya and Richardson (2009) in their report on the regulatory response to the financial crisis stressed the negative externalities of large, complex financial institutions and recommended that policy makers quantify their systemic risk and tax their contributions to this risk. According to the Slemrod (2009) the tax should be implemented through capital requirements or deposit insurance fees, rather than by trying to apply a tax directly to a base associated with the negative externality.

The International Monetary Fund has drafted an interim report titled “A Fair and Substantial Contribution by the Financial Sector” (IMF, 2010), which proposes that governments impose two new taxes on financial institutions in order to fund the cost of any future direct government assistance to the banking sector. The first proposed tax, the “*Financial Stability Contribution*”, would be paid by all financial institutions and calculated as a percentage rate applied against a “broad balance sheet base”, including some off-balance-sheet items but excluding capital and insured liabilities. The rate would initially be a flat rate across financial institutions but would subsequently be risk-adjusted to address institutions’ contribution to systemic risk. The second proposed tax, the “*Financial Activities Tax*”, would be paid by a financial institution on the sum of its profits and remuneration paid to employees. The Report also suggested the establishment of “resolution agencies” that would promptly address failing financial institutions, including through placing them under “official administration”. Finally, the Report proposes reducing the tax bias in favour of debt financing and addressing more firmly aggressive tax planning in the financial sector.

6. Tax preference for housing

Housing, and in particular the collapse of the housing price bubble, has been singled out as a triggering cause of the crisis. In the U.S. the non-taxation of the rental return to owner-occupied housing, coupled with the deductibility of mortgage interest and home equity loan interest for itemizers and especially favourable statement of capital gains on housing, adds up to a substantial tax preference. This preference increases the attractiveness of home ownership, especially for predominantly high-income itemizers, subsidizes the amount of housing purchased, and encourages leveraged ownership of housing, a particular difficult asset out of which to diversify.

The beginning of the bubble did not closely follow any significant change in the tax treatment of housing in the U.S., nor has anyone claimed there is a clear correlation across countries between the extent of the tax preference accorded to housing (due, for example, to the fact there is no mortgage interest deduction in many countries) and the size of the housing price bubble or even the extent of home ownership. U.S. households received credits for consumption purposes on the assumption that the increase in house prices would be large enough to cover the outstanding credits. The house prices have really strong increased there since the end of last century, but since 2006 they have dramatic decreased. With the end of increasing house prices, these credits and especially the accompanying securitized products became toxic assets, leaving the financial sector with unknown risks in their balance sheets. This in turn led to a world-wide credit crunch as financial companies stopped lending money to each other since the risk that the trading partner would run out of liquidity had increased. At

the end of the process, credits to other economic actors (e.g. households, companies) were also sharply reduced.

There is a great diversity of housing tax regimes across countries.³ International comparisons are difficult because of the complexity of tax codes (in terms of deductions, exceptions, threshold limits, and so on). (Ceriani et al., 2011) present summarized information concerning the tax treatment of mortgage interest expense, imputed income of owner-occupied housing and capital gains on first-home selling for a set of countries comprising the US, UK, Italy, Spain, Ireland, Netherlands, Belgium and Germany. This information contains Table 1.

Table 1: The taxation of owner-occupied houses in some European states and the US

State	Taxation of imputed rents	Mortgage interest tax relief	Capital gains taxation
Belgium	YES	Tax deductibility with a limit	NO
France	NO	Tax credit for the first five years with a limit	NO
Germany	NO	NO	NO
Ireland	NO	Tax credit for the first seven years with a limit	NO
Italy	NO	Tax credit with a limit	NO
Netherlands	YES	Tax deductibility without limit	NO
Spain	NO	Tax credit with a limit on the amount of housing costs	NO
UK	NO	NO	NO
US	NO	Tax deductibility with a limit on the amount of mortgage principal (\$1 million)	NO (if CG < \$500,000)

Source: (Ceriani et al., 2011)

Table 1 shows that only Belgium and the Netherlands tax the imputed rent on owner-occupation. Mortgage interest costs attract tax relief in all countries except Germany and the UK. In the Netherlands, Belgium and the United States, interest expense is deductible from the tax base (but in Belgium the deduction is capped at a given amount of interest payments, whereas in the US refers to the amount of mortgage principal), so the tax advantage depends on the marginal tax rate of the owner. In the other countries the tax relief for financing costs mainly takes the form of a tax credit, often of limited duration. Finally, basically no country in this set taxes capital gains on owner-occupied housing.

From a theoretical point of view, under a comprehensive income tax, a fully neutral taxation of owner-occupation requires the taxation of imputed rents and capital gains on housing and the deductibility of mortgage interest⁴. Generally, tax systems are anything but neutral. Owner-occupation is tax-favoured with respect to renting in many countries, and with respect to most forms of return on personal savings. With only a few exceptions, imputed rents and capital gains on owner-occupied housing are not taxed; the tax relief on mortgage interest further reinforces the tax bias towards housing.

Mortgage interest tax relief encourages the build up of (gross) housing debt and there is evidence that countries offering more favourable tax treatment for home ownership do indeed have higher ratios of mortgage debt (Keen et al., 2010). There is also evidence that mortgages fell significantly relative to home value (in UK and US) after reforms reduced the value of mortgage interest relief (Scandinavia).

The spread of mortgages, in particular subprime loans, was largely helped by the development of new financial instruments, in particular the technique of securitization, mentioned above, which consists of pooling the loans into an investment vehicle and then selling securities backed by payments for these loans. The most common securitizations are Mortgage-

³ For a review of housing tax regimes in Europe see (Van den Noord, 2005) and (Hilbers et al., (2008).

⁴ See also (IMF, 2009) or (Van den Noord and Heady, 2001)

Based Securities (MBSs) whereby the claims of thousands of mortgages are pooled together in a Special Purpose Vehicle (SPVs).

7. Tax competition and financial crisis

The widespread belief that the issue of tax competition has nothing to do with the crisis stems mainly from the fact that the national, European, and international actions undertaken over the last years did not focus on it. Looking at the G20 summits, the only reference to international actions related to tax competition concerned with tax havens, though in a way still strongly based on bilateral agreements. Many issues have been neglected, but this does not mean that they are not connected to the genesis of the crisis.

The tax competition fosters income inequalities because increases specialization determining a reduction of the real income of unskilled workers, determines declining tax rates on the highest incomes, remaining constant on the lowest ones and cause declining tax revenues, which undermine the ability of governments to provide social security to the lowest incomes. There are different kinds of reactions to tax competition (increase taxation on non-mobile capital and labour to stabilize revenues, run higher deficits to keep the current level of public expenditure, cut government consumption or social security transfers) depending on the country's size, the level of immobile capital, the amount of public debt, the size of the public sector, the welfare state tradition, and the influence of the trade unions.

According to Plumper and Troeger (2009), the countries where the size of immobile capital is smaller can be considered as the “winners” of tax competition whilst other countries still relying on a strong industrial base (export-oriented economies) can be considered as the “losers”. The “winners” can cut taxes and attract mobile capital compensating the revenue losses through an expansion of the base, whilst the “losers” governments may paradoxically stabilize revenues by increasing the burden of immobile capital.

The “winners” countries, mostly the small countries with a relatively low immobile capital stock, weak labour market institutions, weak trade unions and low government debt can be considered as more likely to benefit from tax competition for the attraction of capital inflows. These countries have cut rates more aggressively. But at the same time, they experienced an increase of income differentials extremely more pronounced than the one experienced by the “losers”.

Similarly, Giuli (2010) argues that tax competition increased income inequalities primarily in the “winners” countries that mostly redistribute income through taxation, and in the same countries the level of households' debt moved along an unsustainable path. A reason for this he found in the fact that to prevent social unrest, the dismantling of welfare in the countries characterized by redistribution of income via taxation has been replaced by a considerable privatization of welfare. This has to do not only with private pension schemes or private health insurance, but even with the fact that easy credit allowed poor households to adopt unsustainable levels of consumption.

The countries which cut taxes more aggressively attracted a large amount of capital inflows which turned out to overheat asset inflation and worsen the trade balance especially among new EU member states. The experience of integration put EU in a very good position to start thinking about international taxation in terms of an international public good. It seems that without the establishment of a minimum level of pan-European taxation, tax arbitrage using different tax rates in individual countries could increase and so allow tax competition to become the significant factor of structural instability in EU.

8. An impact of financial crisis on the campaign against tax havens

Long before the 2008-9 crisis there was a lively debate among policymakers and academics about whether tax havens were “bad” or “good.” In the initial stage of OECD efforts against tax havens in the 1990s, the official progress reports used rhetoric that characterized the need to shut down tax havens as necessary for the purposes of protecting national revenue bases. But national delegates appeared to become uneasy with the problem of enforcing tax standards on other countries while espousing the general theme of autonomy and even sovereignty in tax matters. The rhetoric shifted, accordingly, to a focus on “fairness” and creating a “level playing field.” From the earliest stages of

this work, the OECD articulated a need for “global endorsement and global participation” with respect to its consensus.

The crisis has renewed policy attention on tax havens, and the April 2009 G20 meeting threatened multilateral sanctions against unreconstructed tax havens that do not accede to information exchange standards. As stated by Aldrick (2009) the six sanctions being considered in this context by the G20 include:

- increased disclosure requirements by companies and individuals using tax havens,
- withholding taxes on transactions with tax havens,
- a ban on the use of interest paid in a blacklisted country to offset tax,
- reviewing tax treaty policy,
- putting political pressure on global companies to withhold investment to a haven,
- a reduction in aid.

The prospect of imposing economic sanctions is a serious measure that raises difficult questions, which have not been addressed by the G20 or the OECD, regarding the rights of nations to enforce legal standards upon each other outside of a treaty or similar international agreement. It also raises questions regarding the implications of imposing sanctions on small, impoverished countries. Moreover, the G20 leaders did not explicitly state the connection between tax havens, money laundering, and other non-cooperative jurisdictions and the economic crisis, but noted that the purpose of focusing on tax havens is “so that countries can fully enforce their tax laws to protect their tax base.

Although most of policy commitments undertaken by the G20 member countries on further summit in Pittsburgh in September 2009 (G20, 2009) were centered on banking and monetary policy issues, such as capital and compensation standards and on trade protectionism and environmentally sustainable development, the G20 made also a single commitment to tax policy, stating that its priority was “to maintain the momentum in dealing with tax havens, money laundering,” and other “non-cooperative jurisdictions.”

However, there is no evidence that even the complete elimination of tax havens— an impossibility in any event—would fill the revenue gap created during (and before) the crisis. Few countries attempt to measure the estimated revenue impact of shutting down tax haven evasion, principally because “there is no agreed methodology to measure the gap.” As a result, it is not known how much of the global revenue shortfall problem would be solved if tax havens could be eliminated. Using various U.S. estimates, however, it appears that a complete elimination of tax havens would have a relatively modest impact on global revenue shortfalls.

The G20’s focus on tax havens may be seen, at best, as a modest and inadequate effort to counter declining national tax revenues, and perhaps as an issue around which countries can choose to coalesce in order to create a basis for further cooperation on tax policy matters. It would also be useful if this group is focused on the creation of alternative strategies aimed at increasing government revenues.

9. Performance-based remuneration and taxes

It is generally acknowledged that equity-based and other performance-related compensation plans at large financial institutions were one of the factors that led to ever great risk-taking and thus contributed to the financial crisis that began in 2007. The last two decades have seen an enormous rise in executive remuneration. As stated Ceriani (2011), in the United States, between 1990 and 2008, the average pay of the chief executive office (CEO) of a large corporation rose from 100 to nearly 400 times that of the average worker. A similar though less marked pattern can be found in Europe. The chief factors responsible for this huge gap are the various forms of performance-based compensation, most notably bonuses and stock options.

Finance began influencing firms’ governance in the early 1990s. Various forms of stock-based compensation became very popular, first in the United States and then in other developed countries, on the theory that they could motivate employees to act in the interest of the firm’s shareholders and align the interests of senior executives with the general interest of the firm. Many large firms paid a significant portion of total compensation in stock or similar instruments, with the stock-based portion typically greater, the higher the position of the employee.

The increased use of stock-based remuneration gave rise to ever great incentives to risk-taking that were not counterbalanced by employees' exposure to losses in the event of poor corporate performance, since other factors were in place. In fact, although vesting and other restrictions required employees to hold some newly granted stock for significant periods of time, the sensitivity of equity prices to short-term corporate performance and shareholders' frequent tendency to focus on short-term results spurred employees, and especially executives, to aim at maximizing stock-price increases in the short-term rather than the firm's long-term growth. The same factors also led employees to underestimate possible future downside risks.

The incentive to risk-taking arising from stock-based remuneration was particularly strong in the financial sector. Compensation practices at large financial institutions have generally been counted as one of the sources of the system of distorted incentives that led to the financial crisis. Here is the question now if the tax rules did favour remuneration schemes that rewarded high risk-taking or focused on short-term performance.

It is a common belief that stock options and other stock-based forms of remuneration are tax favoured compared with cash compensation. If this is true, then the tax system could be held responsible for contributing to the crisis through its effects by reinforcing a structure of incentives that led to excessive risk-taking.

The tax treatment of stock options is linked to a number of issues, such as the qualification of income (employment income or capital income), the applicable taxes and charges (income tax, capital gains tax and social security contributions), the timing of taxation (grant, exercise or disposal of shares) and the treatment at corporate level (whether or not the cost can be deducted from corporate income).

According to (Ceriani, 2011) stock options based remunerations enjoy only limited tax benefits compared with cash salary. Since stock options are considered a form of deferred compensation, in most OECD countries their benefits are treated as ordinary income for employees and taxed at progressive income tax rates. Taxation is usually applied at the time of exercise. The tax base is the increase in stock value accrued until exercise, i.e. the difference between the market price of the shares at the exercise date and the strike price. By contrast, the subsequent gain arising from disposal of the shares, i.e. the difference between the selling price and the market price of the shares at the exercise date, is usually taxed at the capital gains tax rates (but is exempt in countries where capital gains are not taxed).

Under given conditions (so-called concessionary schemes) stock options enjoy a preferential tax treatment at the employee level. The preferential treatment may consist in the possibility of deferring taxation until the disposal of the shares (Canada, Denmark, France, Iceland, Ireland, Italy, Slovak Republic, the UK and the US) and/or in tax rate reductions.

The latter often consist in the lower capital gains tax rates being applied not only to the gain accruing after exercise, but also to previous gains arising between the grant date and the exercise date, which would otherwise be taxed as ordinary income (Denmark, Iceland, Ireland, Italy, Japan, Spain, the UK and the US). Other countries give tax relief in determining the tax base. In many countries (including Denmark, France, Ireland, Italy, Japan, Spain, the UK and the US) preferential regimes also include exemption from social security contributions.

At corporate level, stock options usually give the right to a tax deduction on the difference between the market price of the shares at the exercise date and the strike price, i.e. for an amount exactly mirroring that taxed as personal income for the employee. In many countries (Denmark, Germany, Greece, Iceland, Luxembourg, the Netherlands, Portugal, Sweden, Switzerland, Turkey, the UK and the US) the deduction is granted, at least for some plans, even if the firm has not incurred an actual cash outflow (i.e. when employees are given newly-issued shares). In others (including France, Italy, Japan, Spain, and the US) or for some plans, the economic cost of stock options (the dilution in stock value when newly-issued shares are assigned to employees) is a non-deductible item. Finally, in some countries (Austria, Belgium, Hungary, Ireland, New Zealand, Poland and the Slovak Republic) deduction of stock option costs is never allowed. Consequently, from the point of view of companies, stock options can be tax-disadvantaged compared with cash salary.

Each country can provide for a different combination of employee and employer tax treatment of stock option plans, depending on the specific characteristics of the plans, i.e. on whether or not they fulfil the requirements of concessionary schemes. As a result, different tax provisions can combine in

a number of ways in each country, giving rise to an overall tax wedge on stock option benefits that can vary from plan to plan.

As stated by Ceriani (2011), the OECD study of 2005 calculated the marginal tax burden on the different types of stock option plans in OECD countries and compares them with tax wedges on ordinary salary. The calculation takes into account both employee- and employer-level taxation and social security contributions. The results showed that in some countries (e.g., Australia, Austria, Canada and Japan) the tax wedge on stock options, at least for certain schemes, is greater than that on ordinary salary. In many countries (e.g., Germany, Luxembourg, Sweden, Switzerland and Turkey) the tax treatment of stock options and cash salary is the same and so are the effective tax rates both for average and higher levels of income. In some cases (including Denmark, Greece, Italy, the UK and the US) neutrality between stock options and ordinary salary obtains only for schemes for which deductibility from the corporate income tax base is allowed.

Under certain conditions or for certain schemes, a number of countries (including Australia, Canada, Denmark, France, Italy, Japan, Korea, Portugal, Spain, and the UK) grant preferential tax treatment of stock options at the personal level while also allowing deductibility at the corporate level. In these countries, stock options are tax favoured compared with ordinary salary; often, the tax advantage of stock options increases with income. For high-income taxpayers, the tax advantage seems especially great for certain concessionary schemes in Belgium (more than 22 percentage points), Denmark (58.5 points), France (26.5), Italy (42.8), Spain (48.9) and the UK (30).

Other countries (e.g., Canada, Finland, Japan, Spain and the US) combine a preferential tax treatment at the employee level with non-deductibility at corporate level. Depending on individual cases, the tax wedge on stock options can be higher or lower than that on ordinary salary. However, at high levels of income, stock options tend to be tax-favoured in these countries.

Although preferential tax treatment of stock option benefits can dramatically lower the tax burden on equity-based remuneration, the importance of tax advantages is often limited by the conditions that must be fulfilled in order to allow the benefits. For example, in order to enjoy preferential tax treatment, the employee has to hold the shares for some time after exercise (at least one year in the US). In addition, the concessionary schemes quite often cap the amount of stock option benefits that can enjoy the favourable tax treatment. In the light of the foregoing facts one can not unambiguously confirm the general validity of the belief that stock options enjoy significant tax advantages compared with ordinary salary.

10. Conclusions

The burst of a housing bubble in the United States has led to a stop in confidence of investor towards all mortgage-based assets that had flourished in previous years and to uncertainties with regards to the financial exposure and liquidity of world major financial institutions. This banking crisis eventually spread to a stock market crash and to a credit crunch in the real economy. The rapid expansion of credit and the increasing degree of indebtedness and risk-taking behaviour of financial institutions has been a striking characteristic of the build-up to the crisis.

The crisis has drawn attention to a number of well known weaknesses in the taxation of the banking sector particularly in respect of loan loss provisioning, the relationship between financial and tax accounting, mark-to-market accounting and taxing their services by value added tax. These issues are by no means new. The crisis has added saliency to finding longer-term solutions. Unfortunately, after renewed attention to these questions the political climate no longer appears propitious to address the needed structural reforms.

In this context, one important policy question also is whether tax systems could create negative incentives, contributing to a crisis arises by the fact that favored risk. Several tax provisions in favour of homeownership may have led to increased purchases of houses in several countries. However, the available evidence is mixed when it comes to assess whether different tax treatments have led to different price developments, suggesting that lax monetary policy and increased risk-taking by lenders are more powerful explanations for the housing bubble. In turn, there is however some hints that this risk-taking behaviour may have been exacerbated by tax provisions on the treatment of

executive compensation and by tax arbitrage possibilities across different types of investors, albeit both relationships still need to be empirically validated.

Although there is little conclusive evidence that the tax system played a major role in triggering the tax crisis, there is growing support for making taxes play a prominent role in policy responses. A number of special taxes have been introduced and proposed to recover the cost of the —bailout. The ongoing debate has highlighted for example that taxation may be used as corrective instrument to complement prudential regulation of the banking sector. Some corrective tax proposals aim to curtail the activity in the financial sector on the grounds that a large number of transactions are either speculative or of no social use. No international consensus has emerged to date as to the most appropriate approach. Without some of global coordination such measures would inevitably create competitive distortions across countries and market segments as suggested by numerous past experiences.

The frequently discussed issue is also the neutrality of taxation systems. A promising avenue is the development of tax systems that are more neutral with regards to the source of financing as existing systems render debt more tax-attractive, possibly leading to too high levels of leverage.

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