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A FAIR AND SUBSTANTIAL CONTRIBUTION BY THE FINANCIAL SECTOR

INTERIM REPORT FOR THE G-20

Prepared by the Staff of the International Monetary Fund

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EXECUTIVE SUMMARY

This is an interim response to the request of the G-20 leaders for the IMF to: “...*prepare a report for our next meeting [June 2010] with regard to the range of options countries have adopted or are considering as to how the financial sector could make a fair and substantial contribution toward paying for any burden associated with government interventions to repair the banking system.*”

While the net fiscal cost of government interventions in support of the financial system may prove relatively modest, this greatly understates the fiscal exposures during the crisis. Net of amounts recovered so far, the fiscal cost of direct support has averaged 2.7 percent of GDP for advanced G-20 countries. In those most affected, however, unrecovered costs are on the order of 4–5 percent of GDP. Amounts pledged, including guarantees and other contingent liabilities, averaged 25 percent of GDP during the crisis. Furthermore, reflecting to a large extent the effect of the crisis, government debt in advanced G-20 countries is projected to rise by almost 40 percentage points of GDP during 2008–2015.

Many proposals have been put forward to recover the cost of direct fiscal support—some of which have been implemented. Proposals for the government to recover these costs include levies related to selected financial sector claims and taxes on bonuses and specific financial transactions. The least distortionary way to recover the fiscal costs of direct support would be by a ‘backward-looking’ charge, such as one based on historical balance sheet variables. This would define a fixed monetary amount that each institution would owe, to be paid over some specified period and subject to rules limiting the impact on net earnings.

The focus of countries’ attention is now shifting to measures to reduce and address the fiscal costs of future financial failures, both through regulatory changes and through imposing levies and taxes on financial institutions. Measures related to levies and taxes should: ensure that the financial sector meets the direct fiscal cost of any future support; make failures less likely and less damaging, most importantly by facilitating an effective resolution scheme; address any existing tax distortions at odds with financial stability concerns; be easy to implement, including in the degree of international coordination required; and, to the extent desired, require an additional fiscal contribution from the financial sector in recognition of the fact that the costs to countries of crises exceed the fiscal cost of direct support. A package of measures may be needed to attain these objectives.

Measures that impose new costs on financial institutions will need to reflect and be coordinated with regulatory changes under consideration. This is critical for ensuring policy coherence, enabling market participants to plan accordingly, and avoiding adverse effects on economic growth from placing an excessive burden on the financial sector.

After analyzing various options, this interim report proposes two forms of contribution from the financial sector, serving distinct purposes:

- **A “*Financial Stability Contribution*” (FSC) linked to a credible and effective resolution mechanism.** The main component of the FSC would be a levy to pay for the fiscal cost of any future government support to the sector. This component could either accumulate in a fund to facilitate the resolution of weak institutions or be paid into general revenue. The FSC would be paid by all financial institutions, with the levy rate initially flat, but refined over time to reflect institutions’ riskiness and contributions to systemic risk—such as those related to size, interconnectedness and substitutability—and variations in overall risk over time.
- **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.**

International cooperation would be beneficial, particularly in the context of cross-border financial institutions. Countries’ experiences in the recent crisis differ widely and so do their priorities as they emerge from it. But none is immune from the risk of a future—and inevitably global—financial crisis. Unilateral actions by governments risk being undermined by tax and regulatory arbitrage. Effective cooperation does not require full uniformity, but broad agreement on the principles, including the bases and minimum rates of the FSC and FAT. Cooperative actions would promote a level playing field, especially for closely integrated markets, and greatly facilitate the resolution of cross-border institutions when needed.

Actions are also needed to reduce current tax distortions that run counter to regulatory and stability objectives. The pervasive tax bias in favor of debt finance (through the deductibility of interest but not the return to equity under most tax regimes) could be addressed by a range of reforms, as some countries already have done. Aggressive tax planning in the financial sector could be addressed more firmly.

More analysis will be undertaken to assess and refine these initial proposals. The final set of proposed measures, including more details on key design elements, will be delivered to the G-20 leaders for their June 2010 summit. This work will be guided by the discussions at the April 2010 ministerial meeting, further consultations as well as the joint IMF/FSB/BCBS work on the cumulative quantitative impact of regulation and tax burdens on the financial sector.

I. INTRODUCTION

1. **This report is an interim response to the request of the G-20 leaders, at the 2009 Pittsburgh summit**, for the IMF to: “...*prepare a report for our next meeting [June 2010] with regard to the range of options countries have adopted or are considering as to how the financial sector could make a fair and substantial contribution toward paying for any burden associated with government interventions to repair the banking system.*”

2. **The backdrop to this work is a fragile economic recovery and an active, full agenda for financial sector regulatory reform.** This makes it important that possible changes to tax arrangements for financial institutions be considered in conjunction with proposed regulatory reforms to ensure policy coherence, enable market participants to plan accordingly, and avoid adverse effects on financial intermediation and growth from placing an excessive burden on the financial sector.

3. **This interim report benefitted from survey responses from G-20 members, and discussions with officials, industry and civil society.** Section II assesses the costs of the *recent crisis*, with specific reference to the cost of direct fiscal support provided to the financial sector, and evaluates the measures adopted and considered by countries in its wake. Section III focuses on *future crises*, developing objectives against which to evaluate potential measures to limit and cover the fiscal cost of these crises, and assessing specific options. Section IV proposes a way forward. Material supporting and elaborating on this discussion is provided in Appendices (Box 1).

Box 1. Background materials

The appendices provide further detail on:

- The *fiscal costs of direct support to the financial sector during the crisis*, drawing on information provided by G-20 members (Appendix 1).
- *Contribution schemes adopted or proposed* by countries since the crisis (Appendix 2).
- The relative merits *of taxation and regulation* in dealing with financial sector externalities (Appendix 3).
- The *current tax treatment of the financial sector*—key features and current distortions (Appendix 4).

The final set of proposed measures, including more details on key design elements, will be delivered to the G-20 leaders for their June 2010 summit. This work will be guided by the discussions at the April 2010 ministerial meeting, further consultations, and the joint IMF/FSB/BCBS work on the cumulative quantitative impact of regulation and tax burdens on the financial sector.

4. **The final report will be prepared for the June 2010 G-20 leaders summit in response to Ministers’ comments.**

II. THE RECENT CRISIS: PUBLIC SUPPORT PROVIDED AND MEASURES TO RECOVER IT

A. Public Support Provided

5. **The financial crisis required many G-20 governments to provide extensive support to their financial sectors, especially in advanced countries.**¹ Measures included capital injections, asset purchase and protection schemes, guarantees, provision of liquidity and other support by central banks, and expanded deposit insurance coverage. Reflecting the origin of the crisis, advanced economies—and a few in particular—were more affected by the crisis than most emerging economies.

6. **For the advanced G-20 economies, pledged public support was massive, but was used only in part, and is in part being repaid.** Excluding guarantees (some 11 percent of advanced G-20 GDP), resources made available for direct government support averaged about 6.2 percent of GDP. Reflecting the return of market confidence that it helped encourage, however, much of this pledged support was not used, and the gross direct support amounted to 3.5 percent of GDP. This cost has been reduced by repayments and fees paid by banks (for example for asset protection schemes, and the provision of guarantees and deposit insurance). The fiscal cost of direct support, net of amounts recovered as of end-2009, is estimated to average 2.7 percent of GDP. Given the experience of gradual cost recovery in past crises, the medium-term net costs of direct support measures could be still lower in some cases. While net fiscal costs may prove relatively modest, this measure greatly understates the fiscal exposures experienced during the crisis. Moreover, while some countries were subject to very low or no fiscal cost, in other cases costs as yet unrecovered remain very high: 5.4 percent of GDP in the United Kingdom, 4.8 percent in Germany, and 3.6 percent in the United States.

7. **The wider fiscal, economic and social costs related to the financial crisis are much higher.** The general government debt of the G-20 advanced economies is projected to increase by almost 40 percentage points of GDP over 2008–15, an increase in large part related to the crisis. Looking to the wider economy, the cumulative output loss so far in those G-20 countries that experienced a systemic crisis is about 27 percent of GDP.²

¹ Appendix 1 provides a more detailed analysis.

² The output losses are estimated as the difference between trend and revised expected GDP for the 4-year period beginning with the crisis year, where trend GDP is estimated over the 20-year period prior to the crisis year and expected GDP is taken from the fall 2009 *World Economic Outlook* projections. Fiscal costs are essentially transfers, and so not directly comparable to output losses: the resource loss from the former corresponds only to the associated efficiency losses from the policies needed to finance them.

B. Measures adopted or considered

8. **To pay for the fiscal costs of the crisis, two main types of measures have been adopted by governments (or are under legislative consideration):** levies on selected financial sector claims, and taxes on bonuses.³

9. **The government of the United States has proposed a Financial Crisis Responsibility (FCR) fee to recover intervention costs.** Banks and thrifts, insurance and other companies that own insured depository institutions and broker dealers with assets of more than \$50 billion would be subject to an annual levy of 0.15 percent of covered liabilities (that is, total liabilities excluding FDIC-assessed deposits and insurance policy reserves). The FCR fee is estimated to raise \$90 to \$117 billion over a 10 to 12 year period. It will be left in place until the cost of the Troubled Asset Relief Program (TARP) is fully covered (consistent with the requirement of cost recovery in the TARP legislation). The proposal is currently under legislative review.

10. **The United Kingdom and France have introduced temporary bonus taxes.** The “Bank Payroll Tax” in the U.K., which expired on April 5, 2010, taxed at 50 percent all bonus payments in excess of £25,000 and is now projected to raise £2 billion. The scheme in France applied to bonuses paid during accounting year 2009, also charged at 50 percent above a broadly similar threshold, is projected to raise about €360 million. Unlike the FCR, these schemes are not intended to recover any specific amount.

11. **The public debate prompted by the crisis has produced many other proposals for cost recovery.** One, for instance, is to limit the use of tax losses built up by financial institutions during the crisis. Some advocates of a general tax on financial transactions (FTT) also view its potential for recovering the fiscal cost of the crisis as one of its merits. Many of these proposals, however, including for an FTT, are for permanent taxes—not simply cost recovery—and so are assessed in Section III on forward looking measures.

C. Assessment

12. **The least distortionary way to recover the fiscal costs related to the recent crisis would be by a ‘backward-looking’ tax,** meaning one assessed on some attribute—with balance sheet variables a logical choice—that was determined prior to the announcement of the tax. This would define a fixed monetary amount that each institution would have to pay, over some specified period and subject perhaps to rules limiting the impact on net earnings. The advantage of this approach is twofold: first, there would be very little scope for avoiding the tax (hence very little need for international coordination). Second, its incidence—the real burden of the tax—would likely fall largely on owners or managers in the financial sector, since the amount of tax due could not be affected by changing behavior. Care would be needed in selecting the base so as to avoid legal challenge as retrospective taxation. Other

³ Appendix 2 provides details of these schemes and of forward-looking mechanisms referred to later.

forms of cost recovery, in contrast, mean that the amount payable can be affected by decisions not yet taken, and so will potentially affect financial markets participants' behavior (including through avoidance).

13. **The focus of countries' attention is now shifting from recovering the direct fiscal costs of the recent crisis to reducing and addressing the costs of future financial failures and crises.** The rest of this report concentrates on these issues.

III. MEASURES TO LIMIT AND HELP MEET THE COSTS OF FUTURE CRISES

A. Objectives and Measures

14. **Regulatory changes under consideration by international standard setters are aimed at reducing the risks of financial failure.** This report acknowledges that these initiatives will address many of the risks in individual regulated institutions (such as over-leveraging and liquidity mismatches) that contributed to the recent crisis and its fiscal costs.⁴ These reforms should also help reduce systemic excessive risk-taking. It is also anticipated that the new regulatory standards and policies will be adopted by all G-20 members.

15. **However, even with strengthened regulation and supervision, there will be failures of financial institutions.** The potential costs of these failures should be borne by the financial sector.

16. **Measures to pay for and contain the fiscal costs related to future financial failures should be guided by two key objectives.** They should:

- **Ensure that the financial sector pays for the expected net fiscal costs of direct support** (in present value terms). Expecting taxpayers to support the sector during bad times while allowing owners, managers, and/or creditors of financial institutions to enjoy the full gains of good times misallocates resources and undermines long-term growth. The unfairness is not only objectionable, but may also jeopardize the political ability to provide needed government support to the financial sector in the future.
- **Reduce the probability and the costliness of crises.** Measures should reduce the incentives for financial institutions to become too systemically important to be permitted to fail. This requires, importantly, the adoption of *improved and effective resolution regimes*—to resolve weak institutions in a prompt and orderly manner, including through a process such as official administration (Box 2). Such regimes are

⁴ The Basel Committee (2009) has proposed a number of reforms to the regulatory framework to improve the soundness of individual institutions and to address deficiencies highlighted in the crisis. The Financial Stability Board has been tasked to deliver proposals for lowering the probability and impact of systemic financial institutions' failures through strengthened regulatory and resolution frameworks in ways that force these firms to internalize the externalities they impose on the system.

emphatically not for bail outs: the crisis has shown that they are essential to reduce the likelihood that governments will be forced to provide fiscal support to shareholders and unsecured creditors. Moreover, taxes and contributions can supplement regulation in *addressing the adverse externalities* from financial sector decisions, such as the creation of systemic risks and excessive risk taking.⁵

Box 2. How would an improved resolution scheme work?

An empowered resolution agency (which may be a function within an existing financial oversight agency) would intervene as soon as there is a determination (usually by the supervisor) that an institution is insolvent or unlikely to be able to continue as a going concern. Upon intervening, the resolution agency would take the failing institution into “official administration” and exercise all rights pertaining to the board of directors and shareholders (including by replacing managers, recognizing losses in equity accounts, and, as necessary, exposing unsecured creditors to loss). The objective would be to stabilize the institution, assess its true state, and contain loss of value. The role of a resolution agency would address the common failing in most countries that for financial institutions (particularly those that are systemically important) the public interest in financial stability, which often leads to the need for bailout, is not among the interests specified in insolvency legislation.

Liquidity support (which typically is made available to viable institutions) would not be the purpose of a resolution scheme that is meant to deal with solvency problems. A solvent institution that is facing liquidity problems would be expected to apply for liquidity support from the central bank only (not the resolution agency), provided it has adequate collateral.

The resolution scheme would allow the intervened institution to continue operating and to honor secured contracts; this would limit the disruption and value destruction of an ordinary bankruptcy procedure and limit spillovers to other parts of the financial system and the real economy. It would allow time for an orderly resolution, which may involve recapitalization, spin-offs of business lines, “purchase and assumption” transactions, and the liquidation of unviable units and business lines. The objective should be to return the institution’s viable operations rapidly to private ownership and control.

Working capital would be required in the course of the resolution process, notably for bridge financing. The gross financing needs can be sizable, and could come from fiscal sources, an industry-financed fund, or a combination of the two. If established, the industry-financed resolution fund—discussed in Section III.B—would be a first recourse for these cases. In addition, a government back-up line of credit should be available.

The necessity and scope of reforms to current resolution regimes would depend on the present system’s ability to handle quickly and efficiently (without the need for judicial intervention) the restructuring and/or bankruptcy of financial institutions. The resolution regime and deposit guarantee scheme should be closely integrated to support a holistic approach to failing financial institutions, particularly as there may be overlaps of stability and the protection of depositors. Moreover, the resolution regime should have application to at least those nonbank financial institutions that could be systemic, which would bring a new challenge given the differences in balance sheets and regulatory frameworks. In practice, experience with resolution of nonbanks is quite limited and confronts many legal complexities. Moreover, regimes ideally would be compatible across countries.

The United Kingdom has recently established such a Special Resolution Regime for banks (Brialey, 2009). The United States legislation is considering a special resolution regime that could be used for systemically important financial institutions (which would include nonbanks). Related to this work, the IMF (at the request of the G-20) is preparing a paper addressing issues pertaining to cross-border bank resolution.

⁵ As discussed, for example, Acharya et al (2009), Bank of England (2009), U.K. Treasury (2009), and Weder di Mauro (2010).

17. **Measures should be guided by three additional objectives.** They should:
- **Be reasonably easy to implement, requiring only a modest degree of international coordination on the core framework.** Countries have differing priorities and experiences as they emerge from the crisis, and measures will need to balance differences in national financial structures and sovereignty with the potential mutual gains from collective action. New measures need to be readily implementable across various classes of financial institutions, and avoid a large scope for tax arbitrage. To be compatible with closely internationally integrated financial markets, coordination of at least the principles underlying the measures will be necessary among major financial centers.
 - **Enable, if desired, a contribution of the financial sector to reflect the wider fiscal and economic costs of financial crises.** Some may feel recovery of direct fiscal costs to be too narrow a goal. Fairness also requires that tax payments not be undermined by unacceptably aggressive tax planning.⁶
 - **Address existing tax distortions, create few new ones, and consider the overall burden of regulation and taxation.** Ideally, new measures would address or mitigate existing tax distortions (notably the tax bias in favor of debt),⁷ thereby improving the efficiency of resource allocation and reducing excessive leverage. Furthermore, recognizing financial intermediation's special role in the economy, it is important that the design of new levies/charges take into account the expected costs of future regulatory policies. This is needed to avoid imposing, through both explicit and implicit taxation, excessive costs on financial institutions.
18. **No single instrument is likely to achieve all these objectives.** A package of measures may therefore be needed.
19. **Measures that are being considered can be grouped into two broad categories:**
- ***Levies on financial institutions:*** charged on financial institutions to cover the net fiscal cost of direct public support to financial institutions and help reduce excessive risk-taking.
 - ***Other tax instruments:*** to ensure a wider revenue contribution from the sector, to tax rents (i.e., payments in excess of the minimum competitively required), and/or to potentially address adverse effects of financial sector behavior.

⁶ The issue has been little studied, but recent work by Markle and Shackelford (2010) suggests that effective corporate tax rates tend to be lower for financial activities than in almost any other sector, and several G-20 tax administrations have taken initiatives specifically targeted at tax planning—on their own behalf and for others—by financial institutions.

⁷ This arises because, in general, interest is deductible against corporate tax while the return to equity is not.

B. Levies on Financial Institutions

20. **Several countries have established or proposed levies to help meet the cost of future crises.** The governments of Germany, France, the U.K., and the U.S. have proposed levies on their financial services industries, covering their banks, and in some cases other classes of financial institutions (such as insurance corporations) as well (Annex Table 1 provides an overview). Some of these proposals envisage that the proceeds of the levy would accumulate in a fund, others that they go to general government revenues.

21. **Any levy should be linked to an effective resolution regime to avoid the perception that the receipts would be used to support failing institutions** (see Box 2). The legislation setting out the resolution scheme needs to define the principles underlying the levy, including the implementing authority. With the levy tightly linked to the resolution mechanism, its monitoring and collection would likely best reside (subject to overarching guidelines) with the resolution agency.

22. **In designing a levy, several aspects are critical:**

- ***Perimeter of the levy:*** The perimeter (i.e., the institutions that would pay the levy) could be narrow (i.e., banks only) or broad (i.e., all types of financial institutions). A narrow perimeter would single out specific institutions and create incentives for systemic risks to migrate. A broad perimeter would address these concerns and might better cover institutions that could become systemic in the future. In addition, a broad perimeter would recognize that all institutions benefit from the public good of enhanced financial stability provided by the resolution scheme. Finally, singling out a narrow group of institutions to be part of the resolution scheme could worsen moral hazard by suggesting that they are less likely to fail than those outside the scheme. These considerations suggest that the levy should be imposed on all financial institutions.
- ***Base of the levy:*** This should reflect riskiness and systeminess, on both fairness grounds—those who are more likely to cause fiscal costs should pay more—and to encourage changes in behavior that will reduce these costs. Box 3 concludes that a broad balance sheet base, including some off-balance sheet items, but excluding capital (e.g., Tier one for banks) and insured liabilities would meet the objective of reducing risk, enhancing fairness, and raising revenues in a least distortionary way.⁸ For quick implementation, the levy might initially be a fixed-rate assessment on such a base, which will differ by institution type (e.g., an insurance company would have a lower base than a bank, reflecting the lower volatility of its funding). Over time, the levy could be refined to better capture risks to limit ex ante subsidies and to affect behavior, with principles for such risk adjustment to be coordinated internationally.

⁸ Excluding equity also goes some way to counterbalancing the tax preference for debt under the corporate tax.

- **Rate of the levy:** This needs to reflect the risks to be provisioned for and the need not to impose in the short run so high a burden on institutions that it harms their ability to strengthen their capital base while continuing to support growth. The rate of the levy could draw on experiences of past crises and their net direct fiscal costs, and should take into account the risk profile of the financial system (including its structure, regulatory, and legal framework). Past experiences suggest that for many countries provisioning for approximately 2–4 percent of GDP would suffice.⁹
- **Adjustment:** For ease of implementation, the rate initially could be uniform across financial institutions. Over time, the rate should be risk adjusted to address institutions' contribution to systemic risk (see Box 3).¹⁰ As regulatory reforms take hold in reducing systemic risk-taking, the rate should be reassessed in line with the reductions in both the likelihood and costliness of failures. Such a periodically-adjusted levy would maintain a beneficial corrective impact on the behavior of financial institutions.

23. **The proceeds of a levy could finance a resolution fund, or they could feed into general revenues** (Box 4). Proposals in several countries indeed link such a levy to the creation not only of a more effective resolution scheme but also to a fund. Legislation has been introduced in the United States to expand the resolution powers of the Federal Deposit Insurance Corporation by establishing a levy that will build a resolution fund for all systemically important financial institutions in the country. Sweden has established a financial stability fund capitalized by the financial sector. Germany is preparing legislation that will improve its ability to deal with failing financial institutions, including through imposing a levy on commercial banks to build a resolution fund.

24. **An advantage of a dedicated resolution fund is that it could help empower a resolution agency.** While in some countries this function is assigned to an existing agency, such as the deposit insurance agency or the central bank, others may wish to establish a newly empowered agency, with the financing coming via a fund, that could: (i) take on the duties of managing the resolution of failing financial institutions (e.g., temporary operation of institutions, the disposition of assets, sale of business units), and (ii) determining the application of the levy (e.g., establishment of the base, perimeter, and rate in coordination with the supervisor). Establishing a dedicated fund would help secure the necessary income to support these administrative functions while maintaining the necessary independence of such a function from the standard budget process.

⁹ For countries in which the financial sector is particularly large relative to GDP, the resources raised through the levy should be correspondingly higher. More generally, the rate of the levy should reflect differences in the structures of financial systems, e.g., as between emerging markets and advanced countries.

¹⁰ Since the purpose of the levy is to ensure that financial institutions face an appropriate cost structure, the amount of levy paid should be deductible, like any other, under the corporate income tax. (Account will need to be taken of this in setting the rate of the levy, since deductibility will lead to some reduction in corporate tax revenues). By the same token, while the incidence of the levy may well be passed to users of financial services, this is appropriately so, just as with any other cost.

Box 3. A levy on financial institutions: What is the appropriate base and rate?

Financial institutions differ in how much they contribute to systemic risk and consequently in the potential costs that they create for societies from failure. This different contribution should be reflected in the choice of the base and rate. How to achieve this is not without some complexity, which has to take into account also the interactions with deposit insurance and other regulatory reforms.

With respect to the **base of the levy**, the composition of the balance sheet of financial institutions captures risk considerations better than other variables (such as the volume of financial transactions or profitability). But what components of the balance sheet should be included? Two aspects are relevant: (i) whether the base should be represented by assets or liabilities; and (ii) whether it should be broad or narrow (e.g., include or not off-balance sheet items).

Regarding the choice between assets and liabilities, a consideration is that a levy on a base comprised of total assets or risk-weighted assets will more likely conflict with regulations also targeted at assets (e.g., the Basel Committee capital requirements largely consider the riskiness of a bank's assets). Furthermore, the costs from resolving systemic financial institutions arise from the need to support the liabilities. Thus, focusing on the liabilities seems to be preferable.

Regarding the breadth of coverage, a broad base is generally preferable as it allows a lower rate (thus being less distortionary). Thus, it should be applied to a broad set of liabilities. However, it would be important to exclude equity to reward capital accumulation, and insured liabilities to avoid double imposition. In principle, other liabilities could be excluded, such as subordinated debt, government guaranteed debt and intra-group debt transactions (an approach taken by Sweden). Indeed, the levy could be applied only on select liabilities (such as wholesale funding, short-term debt or foreign funding) with the explicit objective of discouraging such activities. However, the narrower the base concept, the higher the risks of arbitrage, evasion, and distortions.

Off-balance sheet items could be included to the extent they represent a significant source of systemic risk. Any treatment of derivatives and other qualified financial contracts should be consistent with the forthcoming Basel Committee guidelines related to the measurement of leverage ratios. Accounting standards should also be taken into account, though ideally this concern would be addressed through a converged accounting standard. For example, the treatment of derivatives under European IFRS causes balance sheets to be much larger than under U.S. GAAP.

In sum, a broad balance sheet base, including possibly off-balance sheet items, but excluding capital (e.g., Tier one for banks) and insured liabilities seems to be preferable.

Rate of the levy: A uniform rate has the benefit of ease of implementation, but it does not contribute to reducing riskiness and systeminess. A risk-adjusted rate could be designed to address the contribution to systemic risk. Ideally, the rate would vary according to the size of the systemic risk externality, e.g., based on a network model which would take into account all possible channels of contagion. In practice, however, existing models are not able to fully capture all propagation channels. Therefore, the degree of systemic relevance has to be estimated based on a series of indicators, as also contemplated by the Basel Committee in designing a capital add-on charge for systemic banks (see also IMF (2010)). As with some deposit insurance schemes, risk-differentiation could reflect both quantitative information (e.g., compliance with capital requirements) and qualitative assessments (e.g., a scoring system based on supervisory information). Quantitative indicators could include measures such as size, interconnectedness and complexity. When systemic risk can be identified to arise from specific activities (e.g., excessive reliance on short-term and wholesale funding), the rate could be adjusted accordingly.

Box 4. Should there be a fund?

It makes no substantive difference to the public sector’s financial position whether a levy accrues to general revenues or to a fund that invests in government securities. Payment to general revenue leads, in the absence of changes to other taxes or spending, to less need for the government to sell debt on the open market. Payment to a fund which then purchases government debt has the same effect. The only difference is that payment to general revenues reduces the gross amount of debt issued, whereas payment into a fund leaves gross debt unchanged, but with part of debt now held by a public entity—the fund. In both cases, *net* public debt—the net amount owed to the private sector by the government and the fund combined, which determines the interest burden—is lower, and by the same amount. The table below illustrates, for a levy of 100.

	Flows of Payments			Government debt	
	Private sector	Fund	Government Revenues	Gross debt	Net debt
No fund	-100	0	+100	-100	-100
Fund	-100	+100	0	0	-100

When failure occurs and cash is needed, the impact is again the same: with no fund, financing needs can be met by the government selling new debt on the open market; with a fund, financing needs are met by selling its own holdings of government debt or passing them to institutions which may sell them.

Other considerations, related to market and public perceptions, and institutional constraints, can favor either approach:

- If not tied explicitly to an effective resolution regime, a fund may worsen moral hazard by creating an expectation that institutions will receive support from the government through some combination of official support that pre-empts burden sharing by debt and equity holders—rather than being resolved. Payment into general revenue does not eliminate this risk (as was evident in the recent crisis). Hence the need for a strengthened resolution scheme in either case.
- If a fund becomes too large, it may be vulnerable to diversion to purposes other than financial stability. This can be limited by capping the size of the fund and ensuring the fund’s mandate is well established to guard its independence. Payments, however, could continue into general revenues.
- Payment to general revenues may risk receipts being spent rather than used to reduce government debt. This may happen if fiscal policy is focused on attaining certain deficit or gross debt targets that remain unchanged when the levy is collected. However, the extent to which setting up a fund would allay this risk depends on its institutional classification. On standard statistical conventions, the fund would be part of the “general government” if the government sets its broad policies. In this case, its receipts would be regarded as general government revenues and could be used to meet any fiscal rules at the general government level.
- In some countries (e.g., Germany), the constitution requires that the proceeds of a tax imposed only on some taxpayers be earmarked for their benefit.

25. **As gross financing needs can be large, there is a need for a contingent credit line.** As experienced in the recent crisis, the initial gross support needed in the short-run may substantially exceed the final net costs. As a result, the revenue raised through the levy may be insufficient with respect to the up-front financing needs. This requires that the resolution agency also has access to a credit line provided by the government to complement the resources collected through the levy (similar to pre-funded deposit insurance agencies). Such a credit line also would avoid the perception that governments' capacity to support the resolution of institutions during crises would be limited to the revenues collected through the levy. Because the availability of this credit line is a continuing commitment on the government's general resources, it requires that a separate additional fee—relatively small compared to the levy—be paid by industry, with (for simplicity) the same base as for the levy, and which should accrue to general revenues.¹¹

26. **In their design, levies, and funds if established, should be guided by an internationally accepted set of principles, especially with a view to facilitating the resolution of cross-border institutions.** These principles might cover the determination of the target size of the fund (if established), the level of annual levies and the base on which they are imposed, the treatment of foreign branches and foreign subsidiaries, and the treatment of different classes of creditors. This would facilitate cooperation across countries and help ensure a level playing field, including by avoiding double charging/taxation. Most importantly, it could facilitate resolution of cross-border institutions. The creation of a multi-country (e.g., pan-European) fund can be envisaged and is almost a necessity for closely integrated financial markets. It would provide a large impetus to addressing presently unresolved legal and operational issues—such as differing national insolvency regimes, lack of common action triggers and approaches to supervision, and varying deposit guarantee schemes across countries.

27. **Recovery charges, imposed after a crisis has occurred, could supplement the ex ante levy.** This would avoid the government having to sustain the cost of supporting the financial sector. Ex post recovery charges do have several drawbacks, however. First, they impose a burden only on industry survivors; failed institutions pay nothing. Second, ex post financing may be pro-cyclical, requiring the industry to meet costs precisely when it is least able to do so. Thus, while they should complement a system of ax ante charges, relying solely on ex post charges would be inappropriate. The base for such an ex post charge, when needed, could be similar to that of the levy.

C. Possible Additional Tax Instruments

28. **There may be reasons to consider additional tax measures, beyond a levy of the type just discussed, to finance the direct fiscal costs:**

¹¹ For ease of implementation, the resolution agency might collect both the levy and the fee, remitting the latter to government.

- The large fiscal, economic and social costs of financial crises suggest a contribution of the financial sector to general revenues *beyond covering the fiscal costs of direct support*.
- Various proposals have been made for taxes aimed at *correcting adverse externalities* arising from financial sector decisions and in international financial markets, such as the creation of systemic risks and excessive risk taking. Specific suggestions include for taxes on short-term and/or foreign exchange borrowing, on high rates of return (to offset any tendency for decision makers to attach too little weight to downside outcomes), and for corrective taxes related to notions of systemic risks and broader measures of interconnectedness. The presumption is that receipts from these taxes would go to general revenue, although they need not equal the damage—however defined—that they seek to limit or avert. Of course, explicitly corrective taxes (on systemic risk, for instance) would need to be considered in close coordination with regulatory changes (such as additional capital requirements for systemically important institutions). Appendix 3 elaborates on options for corrective taxation of this kind, and wider issues as to the relative merits of taxation and regulation in addressing financial market externalities.

The rest of this section focuses on two possible instruments directed largely to revenue-raising,¹² though in each case their behavioral impact, of course, cannot be ignored.

Taxing Financial Transactions

29. **The recent crisis has renewed interest in the possibility of a general tax on financial transactions.** It is important to assess the FTT on its policy merits. Proposals for an FTT differ, including in their goals and degree of detail; one particular form is for a ‘Tobin tax’ on foreign exchange transactions. The common feature, focused on here, is applicability of the tax to a very wide range of transactions. Advocates argue that an FTT could raise substantial amounts. For example, a tax of one basis point has been estimated to raise over \$200 billion annually if levied globally on stock, bonds and derivative transactions, and a 0.5 basis point Tobin tax on spot and derivative transactions in the four major trading currencies to raise \$20–40 billion

30. **The FTT should not be dismissed on grounds of administrative practicality.**¹³ Most G-20 countries already tax some financial transactions.¹⁴ Perhaps the broadest coverage is in Argentina, which taxes payments into and from current accounts, and Turkey, which taxes all receipts of banks and insurance companies. Other countries charge *particular* financial transactions, as with the 0.5 percent stamp duty on locally-registered shares in the

¹² There are other possibilities, including for instance a surcharge on the rate of corporate income tax applied to financial institutions (European Commission, 2010).

¹³ Staff working papers reviewing both policy and administrative aspects of the FTT will be completed shortly.

¹⁴ Appendix 4 reviews this and other aspects of the current tax treatment of the financial sector in the G-20.

U.K. Collecting taxes on a wide range of exchange-traded securities (and, possibly, derivatives) could be straightforward and cheap if withheld through central clearing mechanisms, as the experience with the U.K. stamp duty shows. Certainly the widespread use of a few clearance and settlement systems is helpful for the implementation of transaction taxes more generally. Of course, some important practical issues are not yet fully resolved. Questions remain, for example, as to whether such a tax might drive transactions into less secure channels. But implementation difficulties are not unique to the FTT, and sufficient basis exists for practical implementation of at least some form of FTT to focus on the central question of whether such a tax would be desirable in principle.

31. **There may indeed be a case to supplement a levy of the kind described above with some other form of taxation, but an FTT does not appear well suited to the specific purposes set out in the mandate from G-20 leaders** With multiple objectives potentially to be served, as discussed in Section III.A, some instrument additional to the levy set out above may be needed. But an FTT is not the best instrument for these purposes:

- It would *not be the best way to finance a resolution mechanism* of the kind discussed above, since the volume of transactions is a poor proxy for either the benefits it conveys on particular institutions or the costs they are likely to impose on it.
- It is *not focused on core sources of financial instability*. An FTT would not target any of the key attributes—institution size, interconnectedness, and substitutability—that give rise to systemic risk. (Adjusting the rate of tax to reflect such considerations would be possible in principle, but highly complex in practice; more generally, if the aim is to discourage particular types of transactions, this could be done more effectively by taxing or regulating them directly). Corrective arguments for an FTT instead are focused on rather different aspects of financial market performance (Box 5).
- Its *real burden may fall largely on final consumers rather than, as often seems to be supposed, earnings in the financial sector*. No doubt some would be borne by owners and managers of financial institutions. But a large part of the burden may well be passed on to the users of financial services (both businesses and individuals) in the form of reduced returns to saving, higher costs of borrowing¹⁵ and/or increases in final commodity prices. Indeed, this is more likely the more general the adoption of the tax, since that helps industry pass on the cost to its customers. Because it is levied on every transaction, the cumulative, ‘cascading’ effects of an FTT—tax being charged on values that reflect the payment of tax at earlier stages—can be significant and non-transparent. It is far from obvious that the incidence would fall mainly on

¹⁵ Schwert and Seguin (1993), for example, estimate that a 0.5 percent securities transactions tax in the U.S. would increase the cost of capital by 10–180 basis points.

either the better-off or financial sector rents.¹⁶ In sum, while the incidence of an FTT remains unclear—as with other taxes considered in this report—it should not be thought of as a well-targeted way of taxing any rents that may be earned in the financial sector.

Box 5. A corrective role for an FTT?

Several arguments have been made for an FTT as a way to improve financial market performance, but they remain problematic:

- ***“An FTT would reduce “wasteful” financial transactions.”*** Some stress the very large increase in the ratio of financial transactions to global GDP as suggestive of socially unproductive financial activity. But, even apart from data issues, quite what that ratio would ideally be is far from clear. While there are reasons to suppose the sector may in some cases be too large, they are best addressed by other means, as discussed in the next section.
- ***“An FTT would reorient financial transactions toward long-term investment based on fundamentals, and reduce speculative bubbles.”*** An FTT would indeed eliminate some short-term trading. And while some of this may well be felt to have little social value, it is difficult to distinguish ‘undesirable’ from ‘desirable’ short-term trading—or to assess their relative importance. Not all short-term trading is trend-following; some is contrarian. And it is not clear that lower transactions costs worsen cyclical market price swings: asset bubbles arise even in markets with very high transactions costs, such as real estate. If the aim is to discourage particular short-term transactions, this can be done more effectively through regulation or targeted taxes.
- ***“An FTT would reduce market price volatility.”*** It is now generally recognized that this is not always true in either theory (thinning of markets, for instance, can increase volatility) or practice (the empirical evidence suggesting that transactions taxes either do not affect price volatility or increase it).
- ***“An FTT would not distort real investment and hedging.”*** While an FTT would have the greatest impact on low-margin, short-term trading, it would also increase the cost of capital for all firms issuing taxed securities, since investors require higher returns to compensate them for reduced liquidity. The increase would be greater for issuers of more frequently traded securities, such as large corporations, since expected trading activity would be capitalized into security prices. Some find that these effects are quite large, and hence could have significant adverse impact for the long-term performance of the wider economy.

32. More widely, care should be taken in assessing the potential efficiency of an FTT in raising revenue:¹⁷

- It is a weakness of the FTT that it ***taxes transactions between businesses, including indirectly through the impact of the prices of non-financial products***. The argument that an FTT would cause little distortion because it would be levied at a very low rate

¹⁶ Most current proponents of an FTT do not envisage that its base would include current account bank transactions, but it is cautionary to recall that while some had advocated this as a relatively progressive form of taxation, such evidence as there is suggests the opposite: Arbeláez, Burman, and Zuluaga (2005).

¹⁷ See, for instance, Schmidt (2007), Schulmeister, Schratzenstaller and Picek (2008) and Spratt (2006).

on a very broad base is not persuasive: it is a central principle of public finance that if the sole policy objective is to raise revenue then taxing transactions between businesses (which many financial transactions are) is unwise: distorting business decisions reduces total output, so that more could be raised by taxing that output directly. A tax levied on transactions at one stage ‘cascades’ into prices at all further stages of production. This is why, for instance, most countries have found the VAT—which effectively excludes transactions between businesses—to be a more efficient revenue-raiser than turnover taxes.¹⁸ In pure revenue-raising terms, there are more efficient instruments than an FTT.

- Experience shows that—even leaving aside the question of whether transactions could, or would, escape the tax if imposed only by a few countries—financial transactions seem to be particularly vulnerable to *avoidance by engineering*: an example is the use of ‘contracts in differences’¹⁹ in the U.K. Looking forward, anti-avoidance rules would be needed to deal with notional principal contracts (such as swaps) more generally.

A Financial Activities Tax

33. **A Financial Activities Tax (FAT), levied on the sum of profits and remuneration of financial institutions, could raise significant revenue and be designed to serve a range of purposes.**²⁰ While, like the FTT, a FAT would tax business transactions—because no credit would be given to their customers for FAT paid by financial institutions—alternative definitions of profits and remuneration for inclusion in the base of the FAT enable it to pursue a range of objectives.

34. **A FAT would approximate a tax on rents in the financial sector²¹ if the base included only high levels of remuneration and with the profit component also defined appropriately,** to in effect exclude a normal return to capital. To the extent that this is achieved, it would be both non-distorting and meet equity objectives that have been prominent in public debate.

35. **A FAT could be designed in other ways, to serve other of the objectives above:**

- With inclusion of all remuneration, a FAT would effectively be a tax on value added, and so would partially *offset the risk of the financial sector becoming unduly large*

¹⁸ Under a turnover tax, tax paid on inputs ‘sticks’; under a VAT, a credit is provided for input tax that assures collection of the tax but, ultimately, does not affect the input prices that businesses face.

¹⁹ These reallocate the income associated with share ownership but without changing ownership itself.

²⁰ Broadly speaking, since value added is simply the sum of profits and wages, a FAT would bear the same relationship to an FTT as the VAT does to a turnover tax—a FAT in effect taxes *net* transactions of financial institutions, whereas an FTT taxes *gross* transactions.

²¹ Philippon and Reshef (2008) estimate that in recent years rents accounted for 30–50 percent of the wage differential between the financial sector and the rest of the economy in the U.S.

because of its favorable treatment under existing VATs. For technical reasons, financial services are commonly VAT-exempt—which means that, purely for tax reasons, the financial sector may be ‘too big.’²² (Appendix 4). Taxing value-added in the financial sector directly would mitigate this. To avoid worsening distortions, the tax rate would need to be below current standard VAT rates. The size of financial sector value-added in many countries suggests that even a relatively low-rate FAT could raise significant revenue in a fair and reasonably efficient way: in the U.K., for instance, a 2 percent FAT (with all salaries included in the base), might raise about 0.1–0.2 percent of GDP.

- With inclusion of profits only above some threshold rate of return, the FAT would become a tax on ‘excess’ returns in the financial sector. As such, it would *mitigate excessive risk-taking* that can arise from the undervaluation of losses in bad outcomes (because they are expected to be borne by others), since it would reduce the after-tax return in good outcomes.²³ There may though be more effective (tax and regulatory) ways to do this.

36. **A FAT should also be relatively straightforward to implement**, since it would draw on the practices of established taxes. Taxing profits and withholding on remuneration are everyday functions of almost every tax administration. Clearly there would be technical issues to resolve, but most are of a kind that tax administrations are used to dealing with. Indeed some jurisdictions already have taxes of this general type. And while there would be difficulties in potential shifting of profits and remuneration to low-tax jurisdictions, a low rate FAT might not add greatly to current incentives for tax planning—and indeed would not greatly change them if adopted at broadly similar rates in a range of countries.

37. **Like an FTT, a FAT would tend to reduce the size of the financial sector—but with less uncertainty as to its impact on the structure of financial markets, effective implementation and, to some extent, incidence.** While the FAT will fall on intermediate transactions, it differs from the FTT in not directly distorting activities of financial institutions. Insofar as it falls other than on rents, it would tend to reduce the size of the sector without changing its activities. Box 6 elaborates on the nature, incidence and implementation of a FAT.

²² Relative, that is, to a situation in which the VAT applied uniformly to financial services and all other commodities. This argument does not apply to the U.S. and Saudi Arabia, the only G-20 countries without a VAT (though for the former, financial services may benefit from relatively low taxation of services in general).

²³ The argument for progressive profit taxation on these grounds is developed by John, John and Senbet (1991).

Box 6. The nature, incidence and implementation of a Financial Activities Tax

The FAT has, in many respects, the *nature* of a VAT: as for VAT, there would be no direct impact on the structure of the activities undertaken by financial institutions themselves, as liability depends on profit, not on how it is earned or on the volume of turnover. Of course, one difference with respect to VAT is that the tax would also fall on businesses, and not just on final consumers.

The *incidence* of, and revenue from, the tax would depend on the definition of the base:

- The base could include profits above a “normal” level and high remuneration, in this way targeting rents. The closer the tax is to falling on rents, the less is the incentive for it to be passed on to customers rather than borne by owners and managers. Regarding profits, in order to tax “rents” the definition of profits would have to differ from that used for income tax purposes. It would indeed need to be closer to that implicit in the standard VAT.²⁴ Setting a higher reference rate of return converts the tax into one on ‘excess’ returns above that rate, as discussed in the text. Regarding remuneration, excluding remuneration above some critical level can be only a rough way of targeting rents, since it does not distinguish between rents and returns due to high productivity. Fairness may call for similar taxation of high remuneration in other sectors too, through the income tax, but a case might be made that the regulatory apparatus creates distinct scope for rents in the financial sector.
- If the FAT were applied to all remuneration, it would likely be passed on to purchasers of financial services, as business customers, like final consumers, would receive no credit for it. This would be appropriate if the objective were to correct for the light taxation of financial services. There are indeed precedents for taxing the sum of profits and remuneration in the financial sector. Israel applies such a tax; the province of Quebec in Canada has a related tax; Italy applies a tax with broadly similar structure to all activities, including finance and insurance. France levies an additional tax on remuneration for firms, including financial, whose output is largely untaxed under the VAT.

Issues of *implementation* include: whether the tax should be ‘border adjusted’ (to exclude earnings from exported financial services), and the related question of how it would be treated under double taxation treaties; whether the use of losses to reduce liability on remuneration should be limited; whether input VAT should be removed and, related, whether measures are needed to counter the incentive for employees to become self-employed contractually;²⁵ how to treat insurance (now often subject to special excises); and how best to include performance-related pay.

²⁴ The standard VAT is in effect a tax on wages and profits defined in terms of ‘cash flow’ (investment fully deductible, no depreciation or deduction for interest). An equivalent outcome can be mimicked under a FAT by defining taxable receipts and expenses to include principal amounts, by taxing only net distributions to shareholders, or by providing an allowance for both interest expense and a notional return on equity corresponding, in principle, to a risk-free rate of return (together with economic depreciation).

²⁵ This may be a benefit of the FAT, since exemption under the VAT discourages outsourcing (because the VAT that is then charged is unrecovered).

38. **While much detail remains, its potential merits are such that the combination of a FAT and a levy of the kind described above offers a coherent package for addressing objectives set out above.**

IV. A WAY FORWARD

Elements of reform²⁶

39. **The direct fiscal costs of financial sector failures should be contained and covered by a “Financial Stability Contribution” (FSC)** linked to a credible and effective resolution mechanism. The main component of this FSC would be a levy to provision for the net fiscal cost of direct support to the financial sector and help reduce excessive risk-taking; a second and smaller component would be a fee to pay for the availability of a credit line to ensure that the gross financing needs can be met even if the resources accumulated through the levy are insufficient. The first element could—but does not need to—feed a **resolution fund** that would put aside levies paid by the industry to cover the expected costs of resolutions of failed institutions. The second would go to general revenue. The rate of the FSC should be refined over time to reflect explicitly (systemic) risk. *The FSC would ensure that the industry helps meet the costs of any potential resolution and would reduce systemic risk. If designed properly, resolution mechanisms will avoid governments in the future being forced to bail out institutions deemed too important, too big, or too interconnected to fail.* The FSC could be supplemented, if needed, by a temporary ex post recovery charge.

40. **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. *Depending on its design, the FAT would ensure that the financial sector contributes to the wider fiscal costs associated with financial crises, addresses some equity concerns and/or helps offset tax distortions that may result in the financial sector being too large.*

41. **International cooperation would be beneficial given the importance and complexity of cross-border financial institutions.** The experiences of countries in the recent crisis differ widely and so do their priorities as they emerge from it. But no country is immune from the risk of future—and inevitably global—financial crisis. Unilateral actions risk being undermined by tax and regulatory arbitrage, and may also jeopardize national industries’ competitiveness. Coordinated action would promote a level playing field for cross-border institutions and ease implementation. Effective cooperation does not require full uniformity, but broad agreement on the principles, including on the base (adjusting for accounting differences), minimum rate, risk-adjustment, and on avoiding double taxation across countries. The need is likely to be less for the FSC than for the FAT: in principle at least, risk-adjustment of the levy would mean that countries which fear penalizing their own

²⁶ Annex Table 2 summarizes.

relatively safe financial sector would simply find that the levy could be correspondingly lower.

Other considerations and next steps

42. **While new instruments are clearly required, action is also needed to reduce current tax distortions that run counter to regulatory and stability objectives.** The pervasive tax bias in favor of debt finance could be addressed by any of a range of reforms to the corporate income tax, such as providing a tax deduction for some notional return on equity (and possibly limiting that for interest too), as several countries have already done. Aggressive tax planning in the financial sector could be addressed more firmly, perhaps building on the cooperation established in relation to tax havens.

43. **Implementation of these measures will need to be coordinated with that of the wider regulatory reform agenda and the effects on the wider economy to be carefully assessed.** Regulatory and tax policies towards the financial sector have been formed largely independently of each other. A more holistic approach is needed to ensure that regulatory and tax policies are properly aligned in both the incentives and the overall burden they imply for the sector. It is important that the reforms be carefully designed so as not to harm the industry's ability to rebuild its capital base, and ensure that shadow banking or other distortions are not encouraged by over-regulating or over-taxing some parts of the financial sector.

44. **More analysis is needed of the desirable forms, level and scope of any levies or taxes.** Key considerations include determining the scope of financial institutions subject to a levy, its base and appropriate rate, the nature of (systemic) risk-adjustment (by classes of financial institutions or activities), the phase-in, the size of a fund (if any), the magnitude of the credit line, and the design of a FAT. Furthermore, the interactions and consistency with regulatory reforms should be further analyzed.

45. **Next steps:** In preparing the final report to be delivered to the June 2010 G-20 leaders summit, the IMF's further work, developing and assessing proposals in more detail, will (i) be guided by the discussions at the April 2010 ministerial meeting, (ii) reflect further consultations and (iii) be undertaken in the context of the joint IMF/FSB/BCBS work on assessing the cumulative quantitative impact of regulation and tax burdens on the financial sector.

Annex Table 1. Current proposals for forward-looking financial sector contributions

	U.S. (House of Representatives Proposal)	U.S. (Senate Proposal)	Germany	Sweden
Source (status)	House Bill HR 4173 IH (Proposal)	Senate Bill (Proposal)	Cabinet decision (Proposal)	Act SFS 2008:814 (Active)
Features of Levy				
Perimeter	Financial institutions with min US\$50bln assets on a consolidated basis and hedge funds with min US\$10bln assets on a consolidated basis	Financial institutions with min US\$50bln assets on a consolidated basis	Banks	Domestically incorporated banks and their foreign branches.
Type	Ex-ante	Ex-ante. Suspended only when fund is at target level	Ex-ante	Ex-ante
Rate	ND	ND	ND	0.036 percent
Risk weighted	Yes. Institution risk profile	Yes. "Graduated assessment" based on assets (size), contribution to systemic risk and other factors determined by the Federal Deposit Insurance Corporation (FDIC).	Yes. Contribution to systemic risk	Not now. Yes in the future.
Base	ND	ND	ND	Uninsured liabilities
Destination	Fund	Fund	Fund	Fund
Fund	Yes	Yes	Yes	Yes
Size	About 1 percent of GDP (US\$150bln)	About 0.3 percent of GDP (US\$50bln)	ND	2.5 percent of GDP
Phase in	ND	5-10 years subject to legislative extension	ND	15 years
Investments	Non tradable debt	Non tradable debt	ND	Remunerated government account
Use	Special resolution regime.	Special resolution regime	Special resolution regime	Temporarily: capital injections, loan and guarantees. After 2011: deposit insurance (proposal)
Government Backstop	US150bln freely + US50bln with legislative approval	FDIC can borrow from Treasury up to the sum of: (i) amount left in the fund; and (ii) 90 percent of the fair value of the assets of each covered financial institution	ND	Unlimited
Special Resolution Regime	Yes	Yes	Yes	No

	U.S. (House of Representatives Proposal)	U.S. (Senate Proposal)	Germany	Sweden
Perimeter	Same as levy	Same as levy	Banks	NR
Authority	Systemic determination: Federal Reserve and relevant supervisor. Resolution: FDIC	Systemic determination: Treasury to request special judicial panel to rule that entity is to be resolved. Resolution: FDIC	Systemic determination: ND Resolution: Financial Stabilization Market Authority (FSMA)	Fund: National Debt Office
Cross border provisions	ND	ND	ND	ND
Key characteristics and outcomes	Losses imposed to shareholders and unsecured claimants; management removed. Bridge facility and purchase and assumptions	Losses imposed to shareholders and unsecured claimants; management removed. Bridge facility and purchase and assumptions.	Bridge bank facility	Open support

Notes: NR = not relevant; ND = not discussed.

Annex Table 2. Summary of Forward-Looking Contribution Proposal

Instrument		Objective	Frequency	Received by	Based on
Financial Stability Contribution	Ex-ante levy 1/	Pay for expected financing needs and costs of resolution, help reduce excessive risk-taking	Continuous, with reassessment over time in the light of other reforms aimed at reducing systemic risks	Resolution fund or general revenue	Risk of fiscal costs and externalities
	Ex-post charge	Pay for unexpected financing needs and costs of resolution	Temporary, post-crisis (until unexpected losses are recouped)	General revenue	Actual loss experiences
Financial Activities Tax 2/		Revenue raising/wider costs of crisis			
		Taxing financial sector rents	Continuous	General revenue	Profits and high remuneration
		Correct for under-taxation of the financial sector	Continuous	General revenue	Profits and all remuneration
		Discourage excessive (or non-optimal) risk-taking	Continuous	General revenue	Profits in excess of some return and high remuneration

1/ There would also be a charge for the availability of a credit line in case resources accumulated through the levy prove insufficient.

2/ The design of the FAT would differ according to the primary objective.

Appendix 1. Fiscal Costs of the Recent Crisis

In response to the global economic and financial crisis, many G-20 countries have provided significant support to their financial sectors.²⁷ While the magnitude and nature of support measures has varied across countries, with support in advanced countries being preponderant, interventions have been generally bold. Support measures have included recapitalizations, asset purchases and swaps, asset/liability guarantees, deposit insurance, and liquidity support.

Pledged support and initial financing requirement

The announced or pledged support for capital injections and purchase of assets varied significantly. As of end-December 2009, for capital injections and purchase of assets the advanced G-20 economies had pledged \$1220 and \$756 billion respectively: equivalent to 3.8 and 2.4 percent of GDP (Table A1.1). The corresponding amounts in the emerging G-20 economies were \$90 and \$18 billion, respectively: 0.7 and 0.1 percent of GDP (Table 1). Within both groups, there was significant variation in the announced amounts allocated in these two categories, with the bulk in advanced economies accounted for by Germany, Japan, the U.K., and the U.S., while others provided no support (see Table A1.4 at the end of this appendix for details).

Table A1.1. Amounts Announced or Pledged for Financial Sector Support
(In percent of 2009 GDP unless otherwise noted)

	Capital Injection	Purchase of Assets and Lending by Treasury	Direct Support	Guarantees	Asset Swap and Purchase of Financial Assets, including Treasuries, by Central Bank	Upfront Government Financing
	(A)	(B)	(A+B)	(C)	(D)	(E)
G-20 Average	2.6	1.4	4.0	6.4	4.6	3.1
Advanced Economies	3.8	2.4	6.2	10.9	7.7	5.0
In billions of US\$	1,220	756	1,976	3,530	2,400	1,610
Emerging Economies	0.7	0.1	0.8	0.0	0.0	0.2
In billions of US\$	90	18	108	7	0	24

Source: IMF staff estimates based on G-20 Survey. Columns A, B, C, D, and E indicate announced or pledged amounts, and not actual uptake.

Note: Column E includes gross support measures that require upfront government outlays and excludes recovery from sale of acquired assets.

²⁷ This appendix is based on responses to survey questionnaires sent to all G-20 members in early December 2009. Countries were requested to review and update staff estimates of direct support to financial sectors, consisting of recapitalization and asset purchases; liquidity support comprising asset swaps and treasury purchases; and contingent support consisting of deposit insurance and guarantees. The period covered was June 2007 to December 2009.

The amounts announced or pledged for guarantees, liquidity support and expansion of deposit insurance in the middle of the crisis have been even larger. Substantial funds were pledged for guaranteeing banks' wholesale debt and interbank liabilities, almost entirely in the advanced economies (10.9 percent of GDP) (Table A1.1). In addition, central bank support was provided primarily through the scaling-up of liquidity provisions, expansion of credit lines, widening the list of assets eligible as collateral, purchases of asset-backed securities and lengthening the maturities of long-term refinancing operations (7.7 percent of GDP). To maintain depositor confidence, several governments also expanded the coverage of deposit insurance to different types of deposits or raised the limits for the amounts covered.

While support amounts were large, financing requirements were more limited. The financing requirements largely reflected injection of capital and purchase of assets. Upfront commitment of such support is estimated at 5.0 and 0.2 percent of GDP for the advanced and emerging G-20 countries, respectively. Guarantees as well as central bank support and liquidity provisions do not require upfront financing in most cases, although they could lead to a significant build-up of contingent liabilities.

Utilized support

Estimates based on the survey indicate that the utilized amount of financial sector support has been much less than the pledged amounts. For the advanced G-20 economies, the average amount utilized for capital injection was 2 percent of GDP, that is \$639 billion, or just over half the pledged amount (Table A1.2). France, Germany, the U.S. and the U.K. accounted for over 90 percent of this (see Table A1.5 at the end of this appendix). For the advanced G-20 economies, the utilized amount for asset purchases was around 1.4 percent of GDP, less than two-thirds of the pledged amount. Similarly, the uptake of guarantees has been markedly less than pledged. The amounts utilized in the G-20 emerging market countries have been proportionately even lower.

Table A1.2. Financial Sector Support Utilized Relative to Announcement
(In percent of 2009 GDP unless otherwise noted)

	Capital Injection		Purchase of Assets and Lending by Treasury	
	Amount used	In percent of announcement	Amount used	In percent of announcement
G-20 Average	1.3	51.7	0.9	60.2
Advanced Economies	2.0	52.3	1.4	61.0
In billions of US\$	639	...	461	...
Emerging Economies	0.3	43.0	0.03	27.5
In billions of US\$	38.4	...	5.0	...

Source: IMF staff estimates based on G-20 Survey.

There are several reasons for the generally low utilized amounts. In part, the low utilization rates reflect the precautionary nature of initial pledges, which may have been large in part given the uncertainties prevailing at the time, and the need to err on the side of caution so as to increase market confidence. In part, the lower rates reflected more efficient use of government resources, e.g., using capital injections rather than asset purchases. They also reflected increasing stability of market conditions and improving bank liquidity (uptakes slowed down markedly after initial recapitalizations). In some cases, lags in implementation of programs for recapitalization and purchase of assets may have also played some role.

Recovery of assets and net cost of support measures

Many of the support arrangements were structured so that the financial sector pays, at least in part, for the cost of the support over time. Recoveries related to the capitalization efforts will reflect repurchases, dividends, and the sale of warrants. For asset protection schemes, banks paid to participate and were charged an exit fee for signing up and when exiting. Fees were also received for the provision of guarantees, and for deposit insurance funds, monies were sometimes recouped from special levies assessed on the banking sector.

As economic conditions and markets have stabilized, some recovery of assets has begun, but recovery to date has been relatively low. Survey responses²⁸ suggest that to-date, recovery—mainly through repurchase of shares, fees, and interest income, and to a very small extent the sale of assets—amounts to on average about 0.8 percent of GDP (that is, \$237 billion) (Table A1.3). Taking into account these data, the net direct cost of recapitalization and asset purchases are estimated to average 2.7 percent of GDP (\$862 billion) for the advanced G-20 economies and 1.7 percent of GDP for the G-20 as a whole. This gives a recovery rate *to-date* of 22 percent: while this is significantly lower than the average (55 percent) in past crises in advanced countries, historically recovery has occurred over a period of five to seven years. Total expenditures in public recapitalization to address the crisis have been only slightly below historical norms, while guarantee measures have been used more extensively.²⁹

²⁸ The information requested was for recovery projected for the next three years, but most authorities provided data only on recovery to-date.

²⁹ Bank recapitalization expenditure for countries undergoing a systemic crisis in the past has averaged 8 percent of GDP (Laeven and Valencia, 2008). According to their definition, only three G-20 countries experienced a systemic crisis in 2007-09 (U.S., U.K. and Germany) and their direct fiscal costs averaged 5.4 percent of GDP.

Table A1.3. Recovery of Outlays and Net Direct Cost of Financial Sector Support
(In percent of 2009 GDP unless otherwise noted)

	Direct Support		Recovery	Net Direct Cost
	Pledged	Utilized		
G-20 Average	4.0	2.2	0.4	1.7
Advanced Economies	6.2	3.5	0.8	2.7
In billions of US\$	1,976	1,100	237	862
Emerging Economies	0.8	0.3	-	0.3
In billions of US\$	108	43	-	43

Source: IMF staff estimates based on G-20 Survey.

Although uncertainties abound, the direct net budgetary cost appears to below historical norms. This reflects extensive use of containment measures that minimize the actual cost—historically, net cost of guarantees have tended to be much lower than that of capital injections or asset purchases. In addition, general fiscal support to the economy through automatic stabilizers and discretionary measures has helped stabilize the financial sector and prospects for recovery by limiting negative feedback loops between the financial sector and the real economy. In contrast, historically, many crisis countries, facing limited fiscal space, had to tighten fiscal policy.

Indeed, for those G-20 countries that experienced systemic crises, the costs are comparable to earlier episodes (5.4 percent versus 8 percent historically). And the broader measures of costs, referring to fiscal impact of induced recessions and real economic costs are estimated to be significantly higher and not that different than past crisis episodes.³⁰ Importantly, total debt burden have risen dramatically for almost all G-20. Moreover, uncertainties in the markets continue in part relating to the high risk exposures of sovereign balance sheets. This suggests that forward-looking tax measures should likely have a broader remit.

³⁰ Laeven and Valencia (2010) show the average increase in public debt to be about 24 percent of GDP and the output losses also to be about 27 percent of potential GDP for those countries which experienced a systemic banking crises in 2007-2009. These estimates are not significantly different from historical averages. They note that this time around, policies to address banking solvency were implemented much sooner than in the past, which may have contributed to keeping direct outlays relatively low.

Table A1.4. Amounts Announced or Pledged for Financial Sector Support
(In percent of 2009 GDP unless otherwise noted)

	Capital Injection	Purchase of Assets and Lending by Treasury 2/	Direct Support 3/	Guarantees 4/	Asset Swap and Purchase of Financial Assets, including Treasuries, by Central Bank	Upfront Government Financing 5/
	(A)	(B)	(A+B)	(C)	(D)	(E)
Advanced Economies						
Australia	0.0	0.0	0.0	13.2	0.0	0.0
Canada	0.0	9.1	9.1	0.0	0.0	9.1
France	1.3	0.2	1.5	16.9	0.0	1.1
Germany	3.4	0.0	3.4	17.2	0.0	3.4
Italy	1.3	0.0	1.3	0.0	2.7	2.7
Japan	2.5	4.1	6.6	7.2	0.0	0.4
Korea	1.2	1.5	2.7	11.6	0.0	0.8
United Kingdom	8.2	3.7	11.9	40.0	28.2	8.7
United States	5.1	2.3	7.4	7.5	12.1	7.4
Emerging Economies						
Argentina	0.0	0.0	0.0	0.0	0.0	0.0
Brazil	0.0	0.8	0.8	0.5	0.0	0.0
China	0.0	0.0	0.0	0.0	0.0	0.0
India	0.0	0.0	0.0	0.0	0.0	0.0
Indonesia	0.0	0.0	0.0	0.0	0.0	0.0
Mexico	0.0	0.0	0.0	0.0	0.0	0.0
Russia	7.1	0.5	7.7	0.0	0.0	1.9
Saudi Arabia	0.0	0.0	0.0	0.0	0.0	0.0
South Africa	0.0	0.0	0.0	0.0	0.0	0.0
Turkey	0.0	0.0	0.0	0.0	0.0	0.0
G-20 Average	2.6	1.4	4.0	6.4	4.6	3.1
Advanced Economies	3.8	2.4	6.2	10.9	7.7	5.0
In billions of US\$	1,220	756	1,976	3,530	2,400	1,610
Emerging Economies	0.7	0.1	0.8	0.04	0.0	0.2
In billions of US\$	90	18	108	7	0	24

Source: IMF staff estimates based on G-20 Survey.

1/ Columns A, B, C, D, and E indicate announced or pledged amounts, and not actual uptake.

2/ Excludes treasury funds provided in support of central bank operations.

3/ Includes some elements that do not require upfront government financing.

4/ Excludes deposit insurance provided by deposit insurance agencies.

5/ Includes gross support measures that require upfront government outlays. Excludes recovery from the sale of acquired assets.

Table A1.5. Financial Sector Support Utilized Relative to Announcement
(In percent of 2009 GDP unless otherwise noted)

	Capital Injection		Purchase of Assets and Lending by Treasury	
	Amount used	In percent of announcement	Amount used	In percent of announcement
Advanced Economies				
Australia	0.0	...	0.0	...
Canada	0.0	...	4.4	48.4
France	1.1	83.2	0.0	0.0
Germany	1.2	35.0	3.7	...
Italy	0.3	20.3	0.0	...
Japan	0.1	2.4	0.1	1.4
Korea	0.4	32.5	0.1	3.8
United Kingdom	6.4	78.5	0.1	4.0
United States	2.9	57.0	1.9	84.0
Emerging Economies				
Argentina	0.0	...	0.0	...
Brazil	0.0	...	0.3	43.5
China	0.0	...	0.0	...
India	0.0	...	0.0	...
Indonesia	0.0	...	0.0	...
Mexico	0.0	...	0.0	...
Russia	3.1	43.0	0.0	0.0
Saudi Arabia	0.0	...	0.0	...
South Africa	0.0	...	0.0	...
Turkey	0.0	...	0.0	...
G-20 Average	1.3	51.7	0.9	60.2
Advanced Economies	2.0	52.3	1.4	61.0
In billions of US\$	639	...	461	...
Emerging Economies	0.3	43.0	0.03	27.5
In billions of US\$	38.4	...	5.0	...

Source: IMF staff estimates based on G-20 Survey.

Appendix 2. Contribution-Related Measures Adopted or Proposed

This appendix describes six tax or contribution-related initiatives adopted since the crisis: the Financial Crisis responsibility levy proposed in the U.S., the temporary taxes on bonuses adopted in France and the U.K. (all pure tax instruments), the proposed levy in Germany and dissolution fund in the U.S., and the Swedish stability fund (all linked to initiatives on resolution).

A. The U.S. Financial Crisis Responsibility Fee

On January 14, 2010, the Obama Administration announced that it would seek to impose a 0.15 percent tax on the liabilities of large financial institutions to repay the budgetary expenditures associated with the financial crisis. Banks, thrifts, brokers, security dealers, insurance companies and U.S. holding companies of those entities with assets of more than \$50 billion would be subject to the “Financial Crisis Responsibility” fee (FCR) levied on the following basis: Total assets—tier one capital—insured deposits (or insurance reserves, as appropriate).

The Administration estimates that (net of corporate income tax, against which it is deductible) the FCR will raise \$90 billion during 2011–2020. The Congressional Budget Office (CBO) estimates that total the cost of the TARP will be about \$99 billion, plus \$200 million annually in administrative costs. Some \$47 billion of these costs were generated by bailouts of the three U.S. automakers, which will not be subject to the FCR fee. The Administration has said that the fee will be left in place until the TARP is fully paid off.

The CBO estimates that about 60 entities currently qualify for taxation under the FCR. A few of these, such as AIG, GMAC Financial Services, and CIT Group, generated TARP losses, but the majority either did not participate, or they are current or have repaid their TARP loans. All covered firms did, however, benefit generally from the financial system support provided by the bailout. The Administration anticipates that about 60 percent of FCR fees will be paid by the 10 largest institutions. U.S. corporations will be taxed under the FCR based on their worldwide consolidated assets, while foreign entities will be taxed based only on their U.S. assets.

The incidence of the FCR depends upon the level of competition in markets for financial products and resources. Because only a subset of large financial institutions will be taxed, competition from untaxed entities not subject to the FCR fee may prevent taxed institutions from passing along their costs to clientele. In this case, employees and/or current shareholders would bear the cost of the tax in the form of lower compensation and/or share values, respectively; if the market for financial skills were sufficiently competitive, the real cost of the fee would be borne solely by shareholders.

The CBO projects that due to the FCR's low rate, it will not have a significant economic impact. Affected financial institutions may reduce their debt slightly in response to the tax or become more dependent on deposits. However, the CBO notes that the fee could give an incentive to taxed institutions to assume more risk in order to recoup reduced profitability. Other commentators note that the effect of the fee could vary greatly among markets and products, with high-margin activities being little affected but low-margin activities, such as repurchase financing and foreign exchange trading, being sharply curtailed. It has therefore been suggested that repurchase financing be exempted from the tax base, but this would reduce it by as much as half, as well as excluding an important source of short-term financing risk that played a critical role in the recent financial crisis.

B. Bank Levy in Germany

On March 31, 2010, the German government announced plans to introduce a systemic risk-adjusted levy and a new resolution arrangement for banks and banking groups. The perimeter of the levy includes all banks and the rate of the levy will be set to reflect systemic risk. Systemic risk will be determined among others on the basis of the size of bank's liabilities excluding capital and deposits and its interconnectedness with other financial market participants. The purpose of the levy is to mitigate incentives for causing excessive systemic risk by internalizing the negative externalities of systemic relevance. Thus the bank levy is designed to be corrective (Pigouvian taxation) and likely to be permanent. The Federal Ministry of Finance is to monitor the level of the levy and the burden on German banks.

The levy is to be paid into a stability fund which will be used finance a special resolution regime for systemically relevant banks. The financial supervisors will obtain expanded legal powers to intervene in banks, and to transfer systemically important parts of a bank to a private-sector third party or to a state-owned bridge bank, in order to an enable and orderly wind down of non-systemic assets. Additional characteristics of the proposed resolution fund and process are: (i) resolution powers will include the ability to provide capital injections, guarantees and reorganization/restructure to preserve the ongoing concern of the institution; (ii) the state-owned bridge company could then be sold to the private sector or liquidated, depending on the outcome of the restructuring process; (iii) the fund is not going to be used to provide liquidity support with such measures being provided ex ante through the mutual support arrangements in the three pillar system; and (iv) the size of the fund is not yet determined.

The fund and the special resolution regime will be entrusted to the Federal Agency for Financial-Market Stabilisation (FMSA). The FMSA was created in 2008 to manage the recapitalization and restructuring of failing financial institutions during the financial crisis. The FMSA is now planned to become a permanent financial restructuring and resolution agency. The FSMA will be in charge of collecting the levy.

Discussions are ongoing that anticipate that there will be a government backstop.

However, at present there is still no decision on whether it will be explicit and for what size, or whether it is going to be implicit on a case by case basis.

C. The U.K. Bank Payroll Tax

The U.K. announced effective December 9, 2009, a new tax on bonuses paid to bank employees, the “Bank Payroll Tax” (BPT). The temporary tax expired on April 5, 2010. The stated objectives of the BPT were to address “remuneration practices that contributed to excessive risk-taking by the U.K. banking industry” and “encourage banks to consider their capital position and to make appropriate risk-adjustments when settling the level of bonus payments.” The measure was intended to cover the period until the U.K. introduces new financial regulation legislation to better regulate remuneration practices.

The BPT applies at a (tax-exclusive) rate of 50 percent to all bonus payments in excess of £25,000 made by banks and building societies to their employees until April 5, 2010. U.K. branches and subsidiaries of foreign-owned banks are liable to pay the tax, as well as U.K. chartered banks. The tax rate, which is net of tax, is charged to amounts in excess of the threshold. The gross bonuses will remain subject to income tax and social security contributions, resulting in higher effective marginal rates on compensation subject to the new tax (between 64 and 70 percent, depending upon the employee’s underlying compensation). Payments are not deductible against the corporate income tax. The tax is to be remitted by the firms on or before August 31, 2010. Anti-avoidance rules were included in an attempt to prevent banks bypassing the tax—for example, by use of loans which are in substance earnings, or by deferral of bonus payments. Bonuses paid in the form of certain types of approved shares or share options are not subject to the new tax.

Originally forecast to raise £550 million (0.04 percent of GDP), the BPT is now projected to raise about £2 billion. The initial estimate was apparently based upon the assumption that introduction of the tax would radically curb the grant of bonus payments—in other words, that the burden of the tax would ultimately be borne, at least in large part, by the employees. At the introduction of the tax, many observers were of the opinion that the banks’ protests were accurate, however; they expected that the banks would bear the incidence of the tax themselves, based on the opposite assumption (that the market for financial talent really is competitive), rather than significantly reducing their bonus payments.

D. The Bonus Tax in France

France has implemented a temporary tax on bonuses granted in the accounting year 2009 (including deferred bonuses, bonuses awarded as shares and guaranteed bonuses). The tax applies only to those employees operating in France whose activities may significantly affect the risk exposure of their companies and those who have control over those

enterprises. It applies to credit institutions and investment firms—except asset management companies—located in France, including branches of foreign institution.

The tax is levied at 50 percent (tax-inclusive) on the excess of bonuses over €27,500. The rate is tax-inclusive, and the tax is deductible against corporate income tax.

Revenue is projected to be €360 million. This will be passed to a public agency supporting innovation and growth of SMEs.

E. The U.S. Systemic Dissolution Fund

Design of the fund

The U.S. systemic dissolution fund is foreseen in Bill HR 4173 IH. It would be established within the Treasury, managed by the FDIC, and invest in non-tradable government debt. Its purpose would be to facilitate the orderly dissolution of any covered financial company.

Covered financial institutions are all large and potentially systemic financial companies. Financial companies with at least USD50 billion, and hedge funds with a least USD10 billion, in consolidated assets adjusted for inflation. These include banks, thrifts, insurance companies, other companies that own insured depository institutions and broker dealers.

The fund has both a minimum and maximum sizes. The minimum size has not yet been defined and the maximum size is USD150 billion. This is roughly 1 percent of U.S. GDP and it has been defined as the size of the fund that would have been necessary to dissolve the systemically important institutions in the autumn of 2008 that instead had been deemed too big to fail at that time.

Use of the fund

The dissolution fund is conceived within a new extra judiciary (administrative) and fast track resolution regime to dissolve systemically important financial institutions that were deemed “too big to fail” during the recent crisis. The traditional regimes in the bankruptcy code (chapter 11 and chapter 7) remain the default exit mechanisms for all ailing companies. The new regime is similar to that existing for FDIC-insured banks and it is intended to instill confidence, both in the market and with policymakers, that closing systemically important institutions will not lead to a systemic collapse. In particular, the regime leverages on the rule making powers of the FDIC and on the use of a bridge company with its own access to liquidity to provide continuity during the receivership process, while better preserving the value of financial assets for the benefit of creditors.

The use of a bridge company is key to the proposed resolution regime. This tool allows the receiver to transfer assets and contracts from the failed firm to the bridge institution in order to retain franchise value and to avoid fire sales of financial contracts on the markets. Under the proposed resolution process, financial market contracts could be transferred to the bridge institution run by the governmental receiver without triggering netting and liquidation rights. This could prove vital to avoid panic. The bridge financial institution can also maintain other systemically significant functions such as payments processing, securities lending, and the settlement of ongoing government securities or other transactions. Most critically, the bridge financial institution allows time to avoid a sudden loss of critical services and promotes market confidence.

The dissolution fund is used as working capital for the bridge company and cannot be used to provide open support to ailing companies. The bridge financial institution option, and the continuity it can provide, requires access to liquidity for ongoing operations. To achieve this, the proposed special resolution process includes ready access to liquidity for the bridge financial institution from a resolution fund provided from assessments paid by the industry. The fund can only be used to cover the receivership costs incurred by the FDIC in overseeing or acting as a receiver and the costs associated with the operations of the bridge company for the dissolution of covered financial institutions under the new extra judiciary, administrative, dissolution regime.

Assessment fee

The fee would take several factors into account: (i) actual or expected losses to the fund; (ii) risk factors represented by the financial company to the financial system in order to make the assessment risk based; (iii) other assessments eventually paid by the institution for deductibility purposes (under the FDIC Act, the SIPC Act, the FCU Act, and relevant State insurance rehabilitation, restructuring and insolvency proceedings); and (iv) general economic conditions affecting financial companies for introducing a countercyclical element in the assessment.

The details for the calculation of the assessment are yet to be defined. It is unclear how the assessment will vary according to the actual or expected losses to the fund, the risks posed by the covered financial institutions and the general economic conditions. Only general risk criteria for basing the assessment are defined in the draft law including: (i) on and off-balance sheet concentration risk; (ii) activities of companies and affiliates; (iii) market share; (iv) exposure to sudden calls on liquidity; (v) amount and nature of leverage; (vi) amount and nature of financial obligations to and claims on other financial companies; (vii) amount and nature of reliance on short term and other sources of funding; (viii) company's relevance as a source of credit to the real sector and liquidity to the financial sector; (ix) amount and nature of the company's liabilities; and (x) other factors that the FDIC may determine as appropriate.

The assessment fee would continue to be paid once the targeted amount of the fund is reached, then go to general revenues.

Borrowing authority from the State

The FDIC can borrow from the Treasury but up to a ceiling. The FDIC can freely borrow from the Treasury up to the maximum size of USD150 billion. The FDIC can also borrow for an extra USD50 billion, however such request needs forwarding by the President of the United States to the legislative for approval.

The government has priority claims on dissolution proceeds. Amounts realized from the dissolution of any covered financial institutions will be used to repay funds borrowed from the Government and to re-capitalize the dissolution fund.

F. The Swedish Financial Stability Fund³¹

The Swedish financial stability fund is one of five instruments available to the Swedish government to protect financial stability. The other four instruments (some temporary) include: (i) bank guarantees; (ii) capital injections; (iii) emergency support; and (iv) deposit insurance.

Use and design of the financial stability fund

The financial stability fund is managed by the National Debt Office and is the financing vehicle of the aforementioned schemes. It was introduced with Act SFS 2008:814 on state support to credit institutions which gives the government a broad mandate to deal with situations that would risk causing a serious disturbance to the Swedish financial system. The National Debt Office has been appointed as Support Authority and can intervene on behalf of the government.

Coverage

The scheme covers deposit taking institutions incorporated in Sweden. It is thus essentially limited to banks, and includes all foreign branches of Swedish deposit-taking institutions and local subsidiaries of foreign banks, while excluding foreign subsidiaries of Swedish deposit-taking institutions and local branches of foreign deposit-taking institutions.

Size of the fund and government backstop

³¹ A more detailed description of these instruments is contained in “State Aid N533/2008 Support Measures for the Banking Industry in Sweden. European Commission C (2008) 6538.

The fund is targeted to reach 2.5 percent of GDP in 15 years. Initially, the government allocated public resources to the fund in the amount of 0.5 percent of GDP. Whether the fee will continue to be paid once this cap is reached has not yet been determined.

The fund is supported by an unlimited government back stop. Since it is conceived as an emergency financial stability measure, the fund is supported by the full credit of the government and the National Debt Office has wide powers to access additional government resources should the fund prove to insufficient.

The fund is expected to merge with the deposit insurance fund in 2011. The systemic financial stability fund was conceived as a funding vehicle for temporary financial stability schemes introduced in the aftermath of the recent financial crisis. Current bank support schemes are to expire in 2011. At that date, the systemic financial stability fund is expected to merge into the deposit insurance fund. No details are currently available on whether the stability fund will add to or gross up the deposit insurance fund.

The stability fee

Covered institutions pay a flat-rate fee levied on a portion of their liabilities. The fee rate is 0.036 percent, payable annually, but transition rules allowed banks to pay only 50 percent of the prescribed rate for the years 2009 and 2010. The fee base is represented by all liabilities other than: (i) equity capital; (ii) junior debt securities that are included in the capital base according to capital adequacy rules; (iii) group internal debt transactions between those companies within the group that pay stability fees; and (iv) an average of the (government) guaranteed liabilities. Thus, institutions do not have to pay twice; both for the explicit guarantee and the more general charge for financial stability.

The fee will be risk based from 2011. No details are available about how risk weighting will be implemented and how it will be merged with the deposit insurance fee.

Appendix 3. Corrective Taxation and Prudential Policy

Policy and academic debates have paid little attention until recent to the potential use of corrective taxation from a prudential policy perspective, and to its interaction with regulation. Taxation has long played a central role in addressing a range of externality problems, notably but not only, environmental. The special features and problems of the financial sector, however, have been mostly been addressed through regulatory tools. While well accepted, the reasons for this have rarely been articulated or investigated. This leaves open the question of whether corrective taxation could at least complement regulation in helping achieve improved outcomes in the financial sector, while also providing fiscal support.

The roles of regulation and taxation can be considered in relation to both micro-prudential (individual institution) and—of more practical importance to the current effort—macro-prudential (systemic) risk. Regulation has been the dominant response at the micro-prudential level, while tax policies towards the financial sector have largely been guided by the general principle of neutrality across sectors (special aspects are analyzed in Appendix 4). In relation to micro-prudential objectives, a better conceptual understanding could usefully clarify the tradeoffs and complements between regulation and taxation. But, in practice, the prospects of changing the focus of current micro-prudential approaches away from regulation are clearly remote. In relation to macro-prudential policies, however, the debate is—or at least should be—more open. In this area, the failings of the regulatory and supervisory system and consequent strong impact on public finances have prompted wide interest in the potential for sector-specific tax measures.

This appendix reviews possible corrective tax measures for the financial sector, and highlights the tradeoffs and potential complementarities between taxation and regulation in addressing prudential and systemic concerns. It starts by identifying the negative externalities that regulation and taxation need to address. It then outlines a number of corrective tax measures (mostly macro-prudential) that have been suggested by recent research and in policy debates. Finally, it discusses some dimensions in which regulation and supervision may differ as to their effectiveness in reaching the goals of a stable financial sector and cost-efficient financial intermediation.

Financial sector externalities

The rationale for regulatory or corrective tax measures in the financial sector is to address externalities arising from market failures.³² In this context, it is important to make a broad distinction between micro-prudential and macro-prudential externalities.

³² Regulatory or tax measures may also be applied to the financial sector for other reasons, such as consumer protection, or for reasons not distinct from those applied elsewhere (say profit taxes). These are not considered

(continued)

Micro-prudential externalities are predominantly driven by the incentive effects of limited liability. Losses to creditors in excess of equity capital (or more precisely in excess of the bank's charter value)—whether insured or not—are of no direct concern to owners or managers (though they may be an indirect concern in so far as their potential is reflected in borrowing costs), leading to excessive risk-taking. The effects of limited liability can be amplified by explicit or implicit government guarantees that reduce the market discipline exercised by providers of funds, including (retail) depositors. The net effects are that market forces alone cannot correct the excessive risk taking and consequent miss-allocation of resources. Existing bank (and insurance and other financial institutions') regulation responds to these micro-prudential externalities through a series of capital and liquidity requirements (and other regulations), coupled with in-depth supervision and ability to impose corrective measures.

Macro-prudential externalities are of various kinds. One type arises when the failure or distress of one institution has domino effects on other institutions or clients. There are a number of channels for this (see Brunnermeier et al 2009): direct financial exposures, financial market exposures (when leverage and funding constraints at many institutions lead to fire-sales and downward asset price spirals), or reputational exposures (when asymmetric information causes creditors to run from many financial institutions when faced with uncertainty). Additionally, externalities may arise in forms of 'excessive' volatility of asset prices, including exchange rates (where in turn deviations of prices from fundamental values may hamper investment and growth),³³ and related excessively volatile financial and capital flows (Shin, 2010). Establishing, however, analytically and empirically the degree to which there might be excessive volatility in asset prices or capital flows has been challenging (Brunnermeier, 2001 and Shiller 2005 review).

Recent experiences have shown that negative externalities, both among financial institutions and from the financial sector to the real economy, can operate especially powerfully during a crisis. The nature of macro-prudential externalities implies that the overall effects on the financial system and the real economy can be significantly larger than the initial shock (as was evident when troubles in the relatively small U.S. subprime mortgage market generated disproportionately wide and deep repercussions). Moreover, as the crisis has demonstrated, some activities of financial institutions may impose risks on others, while leaving their own balance sheets relatively un-exposed. This can happen, for example, when a financial institution is an active participant in market clearance operations (e.g., makes markets in OTC derivatives) or is a distributor of risky financial innovations (e.g., complex securitizations). The final fiscal and economic costs of these negative

here. Furthermore, the focus is on negative externalities in the financial sector, though there is also much evidence of positive externalities on financial sector development on the real economy, as reflected in the general enhanced economic performance of financial systems that are deeper (see Levine, 2005 for a review).

³³ Schulmeister (2010) develops this argument.

externalities arise when there is a systemic financial crisis. The fiscal costs of such crises include expenses for direct fiscal support, and the wider fiscal costs (for automatic stabilizers and possible discretionary stimulus programs). The ultimate economic costs are a cyclical loss of output and possibly an impact on potential future economic growth.

Two factors can amplify financial sector externalities, particularly macro-prudential ones:

- ***The first is the inherent pro-cyclicality of the financial system.*** In the upswing of a business cycle risk is typically “under-priced”. This underpricing is reflected, among others, in rapid asset price appreciation. It also presents itself in financial institutions taking on additional exposures, often funded by non-core and short-term liabilities, including in foreign exchange and through “carry-trade.” During this upswing, financial institutions build up leverage and risk without considering sufficiently the fallout for the rest of the financial system and the real economy of the adjustment that will become necessary when markets eventually do correct.
- ***The second amplification mechanism is associated with large and complex financial institutions.*** So severe are the costs of their failure that financial markets will typically expect governments to support these financial institutions to avoid further adverse consequences. This leads to moral hazard and the shifting of risks and costs to the public sector. Ex-ante, financial markets are distorted, leading to funding advantages to such financial institutions. And ex-post, bailouts entail fiscal costs. Much of the current policy agenda is consequently aimed at reducing the risks that these financial institutions present to the global financial system, economy, and public sectors.

Tools to address macro-prudential externalities are still limited. While the recent crisis has highlighted the potentially daunting costs of macro-prudential externalities, there is a growing understanding that existing regulatory structures are predominantly micro-prudential oriented, and even then often partial—in that individual failures occur often more than desirable. Distinctly novel types of policy may be needed to help reduce macro-prudential externalities and systemic risks in the financial system. And even on a micro-prudential level, existing regulatory arrangements are still insufficiently strong at controlling risk-taking behavior of equity-holders and key employees.

There is an increasing interest in the use of taxes as corrective tools in the financial sector. So far, macro-prudential tools have mostly been regulatory and institutional infrastructure oriented. Some contemplated policies, such as introducing counter-cyclical aspects to bank capital regulation or limiting certain risky activities of banks (such as OTC clearance or proprietary trading) are regulatory in nature, but have yet to be implemented. Yet, there is now more focus on the role taxes can play, not simply as a source of revenue, but also as a corrective tool. It is therefore important to understand more closely the

relationship between regulatory and tax tools, particularly as related to macro-prudential policies. To make this analysis more concrete, it is useful to review the most prominent suggestions made in the academic and policy debate regarding corrective tax tools. This will help to provide a perspective on the subsequent analysis of the balance between regulation and taxation.

Specific options for corrective taxation in the financial sector

Broadly speaking, two tax- (or fee-) related options for corrective policy in the financial sector have been proposed:³⁴

- ***A systemic risk tax.*** A number of academic studies have suggested imposing a tax based on the expected marginal contributions of individual financial institutions to systemic losses incurred in a financial crisis. Two specific examples are: the Co-Value-at-Risk (CoVaR, defined as the value at risk of the whole financial sector conditional on an institution being in distress; Adrian and Brunnermeier, 2009); and the Marginal Expected Shortfall (MES, expected share of an institution's loss in overall financial sector loss when in a situation of a crisis; Acharya et al., 2009). These two proposals acknowledge that the statistical measurement of marginal contributions to systemic risk may be too complex for direct use in taxation or indeed regulation. To address this, they propose to link the tax to regulatory ratios that explain a large share of variation in marginal systemic risk contributions. Specifically, they identify size, leverage, maturity mismatch (associated with the use of short-term funding), as well as the standalone investment banking business model as important metrics.
- ***A tax on short-term wholesale funding.*** The over-reliance of financial institutions on wholesale funding, particularly short-term but also in foreign exchange, has been identified as one of the key sources of vulnerability during the recent crisis (Ratnovski and Huang, 2009, Brunnermeier 2010, Perotti and Suarez, 2010, Shin, 2010). While wholesale funding allows lenders to expand the supply of credit, there seems to be little economic reason for a routine reliance on its very short-term (say, below one year) form. Yet the use of such funding prevalent before the crisis exposed institutions to extreme risk of a sudden dry-up of wholesale-funding markets. To discourage the use of short-term wholesale funding, at least by depository and systemic financial institutions, a corrective tax can be appealing because the institutions' incentives to use such funding are mostly price-related: short-term funding tends to have lower cost in normal times. By imposing a tax on funding of less desirable short maturity (for example, below one year), at a rate calibrated to, say, the difference between short-term and acceptable medium-term borrowing costs

³⁴ This does not represent an exhaustive list of policies that might be used to tackle macro-prudential risks.

in normal times, short-term borrowing would be discouraged. Such a tax would discourage the routine reliance on short-term funding, but would not prevent financial institutions from using short-term funds should such a need arise (say in times of a financial crisis).

The concept of corrective taxation also underlies some recent policy proposals. For instance, the purpose of the levy announced by the German government (see Appendix 2) is explicitly to mitigate incentives towards creating excessive systemic risk, by internalizing the negative externalities of systemic relevance. The bank levy proposed by the US administration, the Financial Crisis Responsibility Fee, has also some corrective elements as it is designed to be levied on the debts of financial firms with more than \$50 billion in consolidated assets, providing some deterrent against excessive leverage for the largest financial firms. Because the proposed fee does not appear to be high enough to cause financial institutions to significantly change their financial structures or activities, however, it seems unlikely to have a significant impact on the stability of financial institutions or significantly alter the risk that government outlays will be needed to cover future losses.

Complementarities among, and tradeoffs between, taxation and regulation

Taxation and regulations are both possible tools to address externalities. In a simple world, anything that could be achieved by regulation could in principle be achieved by (a sufficiently complicated) pattern of taxes.³⁵ For example, capital could be maintained above some level by imposing a stiff enough tax if it is not, rather than imposing capital adequacy requirements by regulation and subsequent supervising implementation. Comparing and balancing regulation and taxation becomes more complex in the presence of uncertainty and imperfect information in relation to financial activities, and practical questions of implementability also arise. Determining the best balance between and design of the two possible approaches in addressing externalities, including reducing the likelihood and costs of crises, and helping fund crisis costs, is then more complex—though there are some broad commonalities and potential complementariness each face (Appendix Box 1).

³⁵ Strictly, this is true only if certain conditions are satisfied: otherwise some outcome may be achievable by restricting quantities (regulation) but not by controlling prices (tax). The argument also presumes revenue from any tax is returned to those paying it (typically not the case of course, with implications discussed below).

Appendix Box 1. Regulation and taxation: Common challenges

There are some important similarities in the design problems faced in designing regulatory and tax policies: incidence, perimeter, calibration, and coordination.

Incidence—Who bears the real incidence of regulation and taxes in the financial sector? This matters for assessing the fairness of alternative measures. (Importantly, incidence is arguably less important in efficiency terms: what matters is the impact of policy on the marginal private costs of particular actions, with the precise working out of that on market prices immaterial). Such issues would include, for instance, the question of how far the real burden of any of the potential taxes discussed below would fall on rents earned in the financial sector and how far it would be passed on to customers.

Perimeter—The set of firms to be taxed or regulated needs to be defined when designing the scope of prudential rules or taxes. One key aspect is ensuring that institutions transferring risk are adequately supervised or taxed. Issues arise too as to the extent to which measures aimed at the financial sector can or should be ring-fenced from the rest of the economy: whether, for instance, debt bias in financial activities can coherently be addressed without addressing it for all companies.

Calibration—Determining the appropriate corrective action requires understanding how the financial sector will respond to policy, and determining how large the relevant externalities are (to what degree, for instance, they should include wider costs to the real economy). The need for this, and the consequent difficulty of doing so, is made explicit by the tax approach; it arises too for regulatory policies, though it may then be less visible.

International coordination—The effectiveness of possible measures is likely to depend on the extent of international cooperation in their design and enforcement. The sophisticated and globalized nature of the financial sector leads to substantial international spillovers from both regulatory decisions (as experienced with the extension of deposit insurance schemes) and tax differentials (including through the use of low-tax jurisdictions). Not only realizing opportunities but also avoiding mutual damage may call for significant policy cooperation in revisiting the taxes and charges applied to financial sector.

Uncertainty

A key issue is whether policy errors that will inevitably arise are more costly under taxation or under regulation. Since policy needs to be set with less than full understanding of how the private sector will react and has to face a variety of possible circumstances, either regulation or taxation can be preferred. Regulatory measures have particular appeal when small misjudgments of private sector responses can result in large adverse consequences, and/or when the costs to the private sector of adapting to the regulation are relatively low. This may, for example, be the case when monitoring the behavior of economic agents is very difficult or costly. Tax or pricing measures have appeal in the opposite case.³⁶ The non-linear nature of financial stress—with periods of calm, at times erupting in financial turmoil and crises—suggests that both approaches can be useful in different ways and at different periods in time, but with a special role for regulatory measures (such as direct capital or leverage

³⁶ See Weitzman (1974). Note that the uncertainty as to the magnitude of potential social damage stressed above is not directly relevant to the choice between tax and regulation, since it must be faced in calibrating either instrument.

constraints, or the preclusion of certain activities) in averting disaster. But the question has yet to receive definitive analysis, and there is little experience (specific to the financial sector) to guide policy through these tradeoffs.

Buffers—private or public?

Regulation and taxation differ importantly in how they create buffers to absorb shocks.

Regulation (say, capital adequacy requirements) forces financial institutions to create buffers at the individual institution level. Taxation (say, systemic risk levies) generates fiscal revenues and can thereby provide a system-wide buffer. This means that taxation and regulation may be better at dealing with different types of risks. Capital requirements may be best to absorb low-impact, uncorrelated risks, when the buffer is sufficient for equity holders to fully absorb the impact. Capital would be less effective in addressing higher-impact, but lower probability risks because, due to limited liability, there are limits to the costs that can be imposed on equity holders, and there are costs to maintaining spare capital or raising new capital quickly. Tax mechanisms may be preferred for such shocks, and when there is scope for pooling resources across banks and generations—taxation today to set aside funds for a future calamity.³⁷

As with other forms of insurance, moral hazard issues arise with government-provided buffers. The familiar tradeoffs arise between the scope for risk-pooling and the moral hazard arising from government insurance. While deposit insurance funds, for example, can have benefits when shocks have relatively low correlations, they have also been found to lead to greater risk taking that cannot easily be fully corrected for (by adjusting fees for risks or otherwise).³⁸ Related, the scope for intergenerational transfers, has to be traded-off against the risks of dynamic inconsistency—the money being already spent when the calamity arises. In contrast, capital requirements raise fewer such issues as they force equity holders to absorb more of the impacts of shocks, and thereby may create greater incentives to manage risks properly.³⁹

Asymmetric information

Financial companies will generally have better information about their own

circumstances than those trying to tax or regulate them. The problem then becomes that of designing schemes that differentiate between firms appropriately according to this private information. Regulation may in some respects be better than taxes for this. In many cases, for

³⁷ Explicit limits may work best for extreme events with a high impact and a high correlation across agents. For example, if one accepts that certain activities greatly increase the risk of severe systemic events, there is a case for them to be explicitly limited.

³⁸ Demircuc-Kunt, Kane and Laeven (2008).

³⁹ The theoretical effects of higher capital adequacy requirements on risk taking are actually ambiguous since they may lead financial institutions to take more risk to offset the costs: Hellman, Murdock and Stiglitz (2002).

example, authorities seeking to reduce risks will be faced with only imperfect, non-verifiable or at best market-based information. It may be hard to use taxes in such circumstances, though the extent to which relatively soft information is used in assessing tax should not be under-estimated.

When faced with information asymmetries, a combination of regulation and taxation may be attractive, similar to insurance contracts which use varying deductibles and premia to deal with adverse selection and moral hazard. Some may choose to maintain extra capital buffers as a device for signaling their low risk, for instance, whereas others would prefer to prefer to pay higher taxes. The design of such menus of tax and regulatory options from which firms might choose remains, however, in its infancy,

Need for international coordination

Financial services activities are fungible and mobile, with some instruments more vulnerable to arbitrage than others. In response to (more) taxation or regulation, equivalent or new, but more lightly taxed or regulated products could be used more or emerge. Or financial services provision could move to more lenient jurisdictions. Both regulatory or tax initiatives should be undertaken with the degree of a realistically possible international coordination in mind—the less, ideally, the better. This consideration may affect the relative merits of alternative instruments: taxes seen by financial institutions as conveying some benefits in terms of overall costs (perhaps in the form of access to improved resolution mechanisms) may induce less movement abroad than outright regulatory rules.

International coordination is well established on the regulatory side, but is far less developed for tax measures. Inter alia, through the Basel Committee and, more recently, FSB processes, many regulations have been harmonized. This would suggest a preference for regulatory measures. The G-20's recent actions on tax havens, however, indicate a potential willingness to act collectively on tax measures and, by fostering international information exchange, may facilitate actions at national level. Importantly, full harmonization is likely unnecessary to address the most significant distortions: broad agreement on the base, and minimum tax rates (as now familiar in the EU), for example, may be enough.

Targeting and flexibility

While regulation and taxation can both be targeted to the specific activities deemed to be socially costly, their underlying institutional traditions and practices are very different. For neutrality reasons, taxation is commonly applied to a wide set of enterprises and transactions, so, in the context of financial sector measures, is well-suited to drawing a wide perimeter of included firms. Regulation, in contrast, commonly focuses on a relatively small number of enterprises. This also means that regulators often possess deeper understanding and greater experience of financial sector specifics than do tax authorities. The

difference should not be over-stated—financial companies have been such important taxpayers (and now in many cases have such large tax losses to deploy) that tax administrations generally pay them particularly close attention. Nevertheless, the imposition of risk-adjusted taxes in the financial sector would be a significant innovation for many tax administrations.

Regulation may allow greater scope for discretion, and more use of soft information, than does taxation. This has familiar advantages and potential weakness. It may allow for more timely interventions, when tax rules would require lengthy legislative approval (or prior approval of potentially complex state-contingent tax rules).⁴⁰ Against this, the exposure of legislative measures to public scrutiny may make taxation less vulnerable to regulatory capture and forbearance at the level of the individual financial institution (although it could be more exposed in the overall lobbying process). In practice, both regulation and taxation require a good deal of judgment and consequently differences may be limited in this dimension.

⁴⁰ For the near term, however, experience indicates that new tax devices may be introduced more quickly than fundamental regulatory reform.

Appendix 4. Current Taxation of the Financial Sector

A. Overview

Financial companies are subject not only to taxes of general applicability (such as income tax and social contributions) but also, in some G-20 members, to sector-specific taxes. Leaving aside taxes introduced in the wake of the crisis (Appendix 2), countries levy a number of taxes on financial transactions and incomes, but many of them raise only small amounts of revenue. Among the larger relative revenue raisers is the stamp duty on trades in shares of locally-registered firms in the U.K., the bank debit tax in Argentina, the banking and insurance transactions tax in Turkey, and several transactions taxes in Brazil.

Prior to the crisis, the financial sector accounted for a substantial share of all corporate income tax (CIT) revenues (Table A4.1): about one-quarter in Canada, Italy, and Turkey; about a fifth in Australia, France, U.K. and U.S. It emerges from the crisis, however, with extensive tax losses—many tens of billions of dollars in the most affected countries—with the potential to substantially reduce CIT payments for some years to come.

Table A4.1. G-20. Corporate Taxes Paid by the Financial Sector
(in percent)

	Period	Share of Corporate Taxes	Share of Total Tax Revenue
Argentina	2006 – 2008	6.0	1.0
Australia	FY2007	15.0	2.8
Brazil	2006 – 2008	15.4	1.8
Canada	2006 – 2007	23.5	2.6
China			
France	2006 – 2008	18.0	1.9
Germany			
India			
Indonesia			
Italy	2006 – 2008	26.3	1.7
Japan			
Mexico 1/	2006 – 2008	11.2	3.1
Russia			
Saudi Arabia			
South Africa	2007 – 2008 FY	13.7	3.5
South Korea	2006 – 2008	17.7	3.0
Turkey	2006 – 2008	23.6	2.1
United Kingdom	2006 – 2008 FY	20.9	1.9
United States	2006 – 2007 FY	18.2	1.9
Unweighted Average		17.5	2.3

Source: IMF Staff estimates based on G-20 survey.

1/ Shares of nonoil CIT revenue and total nonoil tax revenue.

Other significant taxes on the financial sector in the G-20 include:

Argentina: Since 2001, there is a tax on credits and debits on current accounts. This raises significantly more than CIT on financial institutions, and over the period 2006–2008 raised about half as much as CIT collections on all sectors.

Brazil: Until the end of 2007, Brazil levied a bank debit tax (The Provisional Contribution on Financial Transactions), that raised about three times the amount raised by the CIT on financial companies. This tax was replaced by a higher rate for financial firms for the Social Contribution on New Corporate Profits (15 percent, compared to a standard rate of 9 percent) and an increase in the tax on financial operations (IOF). For 2008, these two taxes raised again about three times the revenue raised by CIT on financial institutions.

Turkey: The Banking and Insurance transactions tax falls on all transactions of banks and insurance companies. It raises about as much revenue as CIT on financial companies, and about 2 percent of total tax revenue.⁴¹

U.K.: The stamp duty on secondary sales of shares and trusts holding shares raised over the three years on average about 40 percent as much as the CIT on financial institutions.

Several countries reported significant VAT revenue from the financial sector, which accounted for about 12 percent of VAT revenue in Australia, 6 ½ percent in Canada and about 7 percent in Mexico. This revenue reflects both any VAT charged on fee-based financial services and VAT paid on inputs that—due to the exemption of the sector discussed in the next further—is not recovered.

B. Issues

46. **Though generally agreed not to have triggered the crisis,⁴² deep-rooted tax biases in most G-20 tax systems may run counter to financial stability concerns.** They may result in financial firms taking on too much risk, including by being over-leveraged, and, perhaps, in the sector being too large.

Debt bias

47. **The deductibility against corporate income tax (CIT) of interest on debt, but not the return to equity, creates a tax preference for debt over equity finance.⁴³** There is strong evidence that this leads to noticeably higher leverage for non-financial companies.⁴⁴ While there is no comparable body of analysis for financial institutions, there is also little

⁴¹ In addition, there is levied on financial companies a Resource Utilization Support Fund (classified as nontax revenue), that raises about ¾ as much as the CIT on financial companies.

⁴² Hemmelgarn and Nicodeme (2010), IMF (2009), Lloyd (2009), Slemrod (2009) and McDonald and Johnson (2010).

reason to suppose the effect to be any less: even regulated institutions commonly hold a buffer of capital beyond regulatory requirements, leaving scope for tax effects. The proliferation prior to the crisis of hybrid instruments⁴⁵ attracting interest deduction yet allowable (subject to limits) as regulatory capital, strongly suggests tax incentives at work, conflicting with regulatory objectives.

48. There are several ways in which current CIT favoring leverage could be reduced or eliminated:⁴⁶

- *Thin capitalization rules*, which deny interest deduction once debt ratios or interest payments exceed some threshold, are becoming more widespread (in terms of both the countries deploying them and the circumstances to which they apply). They can reduce the bias towards debt, albeit with the weakness that they make little if any allowance for enterprise's distinct circumstances.
- A *Comprehensive Business Income Tax* would deny interest deductibility for CIT altogether. Symmetrically, it would exempt interest received (to avoid multiple taxation within the corporate sector). The transitional problems in moving to a CBIT would be significant (in relation to debt issued in full expectation of deductibility, for instance). It would also result in financial institutions paying little or no CIT (having no tax due on interest received, but non-interest deductible costs), though in aggregate terms this might be more than offset by increased payments by other companies.
- An *Allowance for Corporate Equity* (ACE) would retain interest deductibility but also provide a deduction for a notional return on equity. There is experience with such schemes: Brazil has had a CIT with these features for many years, Belgium has recently adopted one, and Austria, Croatia and Italy have all had CITs with elements of an ACE. There is evidence that such schemes have indeed reduced leverage.⁴⁷ While the adoption of an ACE would mean a revenue loss, this can be limited by transitional provisions. (The gain would also be less for financial firms than others, since they tend to be much more highly geared). It can be further limited by applying the same notional return (which strong arguments suggest should approximate some risk-free return) to equity as

⁴³ This could in principle be offset by taxes at personal level (relatively light taxation of capital gains favors equity, for instance). In practice, however, the importance of tax-exempt and non-resident investors, the prevalence of avoidance schemes focused on creating interest deductions, and the common discourse of market participants suggest that debt is often strongly tax-favored.

⁴⁴ Weichenrieder and Klautke (2008).

⁴⁵ Such as Trust Preferred Securities: Engel, Erickson and Maydew (1999).

⁴⁶ There are possibilities beyond those listed here, such as movement to 'cash-flow' forms of CIT.

⁴⁷ Staderini (2001) and Pricen (2010). Wider experience with the ACE is reviewed by Klemm (2007); overviews of design issues are in OECD (2007) and IMF (2009b).

well as debt,⁴⁸ which would then eliminate any distinction between debt and equity for tax.

49. **Fundamental CIT reform, needed to address the fundamental tax bias to excess leverage, could be an important part of a package for better taxation of the financial sector.** The reforms just sketched would need to be far-reaching to be useful. Application only to financial institutions might seem tempting, but would create tax arbitrage problems (providing ACE treatment only for financial firms, for instance, would require anti-avoidance rules to prevent non-financial business being held by financial firms). Accompanying changes to individual taxation may also be needed. These would be difficult reforms, but the payoff to reducing a fundamental bias to excess leverage could be substantial.

The indirect taxation of financial services

50. **It is common practice to ‘exempt’ financial services (other, to varying degrees, than those charged for as an explicit fee) under the VAT,** meaning that that tax is not charged to the purchaser but tax paid on related inputs is not recovered. Financial services are in this sense ‘input-taxed.’⁴⁹ The reason for the widespread use of exemption lies in the conceptual difficulty that arises when payment for service is implicit in a spread (between borrowing and lending rates of interest, for instance): taxing the overall spread may be easy, but proper operation of the VAT requires some way of allocating that tax between the two sides of the transaction so as to ensure that registered businesses receive a credit but final consumers do not.

51. **Exemption means that business use of financial services tends to be over-taxed, while use by final consumers is under-taxed.** The prices charged by financial institutions will likely reflect the unrecovered VAT charged on their inputs, so that business users will pay more than they would have in the absence of the VAT. Normally, the credit mechanism of the VAT ensures that prices paid by registered businesses on their purchases are not affected by the VAT; exemption means that this is not so either for financial institutions themselves, or their customers (or, through further cascading, the customers of their customers). This runs counter to the principle, underlying the VAT, that transactions between businesses should not be taxed unless doing so addresses some clear market failure. For final consumers, on the other hand, exemptions likely means under-taxation, since the price they pay does not reflect the full value added by financial service providers, but only their use of taxable inputs. Views differ, however, as to whether or not a low rate on the use of financial services by financial consumers. Some argue for taxation of financial services at a relatively low rate, because, for instance, their use frees time for paid work, so that

⁴⁸ As proposed by Kleinbard (2007).

⁴⁹ Insurance premiums are commonly subject to additional excises, so that the argument which follow do not apply with the same force.

favorable treatment helps counteract the general tendency of taxation to discourage work effort.

52. **The net impact of exemption is likely to be less tax revenue and a larger financial sector.** The differing impacts on business and final use make the impact of exemption on the overall level of VAT revenue, and the extent of financial activity, ambiguous. The evidence is, however, that revenue would be increased by taxing (only) final use of financial services at the standard VAT rate (Huizinga (2002), Genser and Winkler (1997)). The effect on the size of the sector depends on relative price sensitivities of business and final use, but the same evidence creates some presumption that the exemption of many financial services under current VATs result in the financial sector larger than it would be under a perfectly functioning, single-rate VAT.

53. **It is now understood how, in principle, to dispense with exemption—but no country does so.** Treating all inflows to financial institutions (including of principal) as taxable sales and all outflows as taxable receipts achieves this.⁵⁰ Understanding of this remains relatively new, however, and such approaches are untried in practice. And reforms of VATs have proved difficult in general, as the slow progress in improving the VAT treatment of financial services in the EU indicates. As noted in the text, some countries have found more *ad hoc* responses to the distortions created by exemption to be appropriate.

⁵⁰ For example, the government then receives positive tax, in present value, from a consumer depositing funds in a bank to the extent that the interest rate on that deposit is below the governments' discount rate. For any transaction with a VAT-registered business, there is an offsetting credit for every liability, so that implementation can be simplified by excluding such transactions from tax ('zero-rating' them): see Poddar and English (1997), and Huizinga (2002).

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