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Debt Bias and Other Distortions: Crisis-Related Issues in Tax Policy

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Executive Summary

Tax distortions are likely to have encouraged excessive leveraging and other financial market problems evident in the crisis. These effects have been little explored, but are potentially macro-relevant. Taxation can result, for example, in a net subsidy to borrowing of hundreds of basis points, raising debt-equity ratios and vulnerabilities from capital inflows.

This paper reviews key channels by which tax distortions can significantly affect financial markets, drawing implications for tax design once the crisis has passed. Tax rules vary widely across countries, but some general conclusions emerge:

- Corporate-level tax biases favoring debt finance, including in the financial sector, are pervasive, often large—and hard to justify given the potential impact on financial stability. There is a strong case for dealing more decisively with this bias; for example, by also allowing a deduction of an imputed equity cost (which for regulated financial institutions would be akin to an allowance for Tier 1 capital).
- Continued favorable treatment of housing in many countries has supported high housing prices, while mortgage interest relief—where it remains—may have encouraged heavy household leverage. The risks in distorting a market so central to financial stability reinforce long-standing efficiency and equity arguments for more neutral taxation.
- The development and use of complex financial instruments is generally driven by non-tax considerations, but is in part a response to, and shaped by, underlying tax distortions (such as relatively favorable treatment of capital gains, and cross-country tax differentials). Moreover, securitization and other devices can amplify the economic costs of those tax distortions (for example, by reducing the cost of subprime financing), and their use to secure favorable tax treatment contributes to opaque financial arrangements. Solutions are not simple, given the profundity of the underlying tax distortions.
- Divergences in national tax rates, bases, and practices create substantial opportunities for international tax arbitrage, further increasing opacity and reinforcing tax biases to debt. Recent progress on 'tax havens' addresses issues of evasion but not fundamental ones of tax avoidance. Measures to address the latter that are both politically acceptable and technically coherent are hard to identify, but need to be explored further.
- Tax measures can have significant effects on asset price dynamics, but are unlikely to be the best way to deal with bubbles.

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Acronyms and Glossary

ACE	Allowance for Corporate Equity: a form of corporate income tax that allows deduction of both interest expense and an imputed return on equity
CBIT	Comprehensive Business Income Tax: a form of corporate income tax that does not allow deduction of interest expense
CFC	Controlled Foreign Corporation
CGT	Capital Gains Tax
CIT	Corporate Income Tax
Double dipping	Taking two interest deductions on what is effectively one loan
EATR	Effective Average Tax Rate
Hybrid entity	A business entity that different countries regard as having different legal form
Hybrid instrument	A financial instrument whose economic features diverge from its formal characterization, commonly one that has many features of equity but is treated for tax purposes as debt or is treated for tax purposes differently in different jurisdictions
LBO	Leveraged Buyout
LTV	Loan to Value ratio
METR	Marginal Effective Tax Rate
PV	Present Value
REIT	Real Estate Investment Trust
SPV	Special Purpose Vehicle
TruPS	Trust Preferred Security

I. INTRODUCTION

1. **This paper considers channels by which tax distortions are likely to have contributed to excessive leveraging and other financial market problems that came to the forefront during the crisis.** As stressed in IMF (2009a), most tax systems embody strong tax incentives for corporations (including banks and other financial institutions) to use debt rather than equity finance—interest is deductible against corporate tax but equity returns are not—and, in some cases, for individuals to do so too. Tax distortions have also encouraged the development of complex financial instruments and structures, including extensive use of low-tax jurisdictions.[1] Some argue that taxation, including of executive compensation, may have contributed to excessive risk-taking. Of course tax distortions did not trigger the current crisis, in the sense that there are no obvious tax changes that explain, for instance, rapid *increases* in debt in recent years. But tax distortions are likely to have contributed to the crisis by leading to *levels* of debt higher than would otherwise have been the case. Early alleviation of these distortions could have helped offset the factors that over the last few years led to higher leverage and other financial market problems.

2. **The paper draws broad lessons for structural tax reform once more pressing concerns have subsided**, **arguing for firmer action on long-standing (and deep-rooted) distortions**. These distortions have mostly long been recognized, but few countries have acted on them decisively. There remains much to learn, but one lesson of the crisis may be that the benefits from mitigating them are far greater than previously thought. The paper comments too on broad sequencing issues:[2] some possible reforms could worsen the immediate outlook—but in other respects the present conjuncture may be favorable to desirable structural reforms. The analysis focuses mainly on higher income countries, which were at the epicenter of the crisis, but also has implications for other Fund members.

3. **The benchmark for the analysis is neutrality in the tax treatment of alternative financial arrangements.** Financial markets are marked by extensive informational asymmetries and other imperfections, so there may in theory be scope for corrective taxation. Some would argue, for example, that non-tax factors create an inherent tendency toward excessive leverage and that the tax system ought therefore to actively disfavor debt. But there is no consensus on the precise nature and magnitude of such inefficiencies, or on the relative merits of tax and regulatory responses in addressing them. Neutrality of tax arrangements remains a core benchmark for policy evaluation and design in this as in other areas of tax design, and provides useful organizing framework for the discussion.

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[1] The terms 'tax haven' and 'low tax jurisdiction' are not used here synonymously: the former has come to be associated with illegal concealment of income, the latter term is used to highlight the perfectly legal avoidance opportunities that low tax rates (and/or narrow bases) may create: see Section IV.B.

[2] It does not however address in any detail the transitional issues that fundamental reforms would raise.

4. **The paper is structured as follows**: Section II focuses on potential tax biases favoring the use of debt at corporate level, and Section III on the housing market. Tax effects on the use of complex financial arrangements, including use of low-tax jurisdictions, and on risk-taking, are examined in Section IV. Section V considers tax effects on asset prices. Section VI raises issues for discussion.

II. Debt Bias and Other Key Tax Distortions to Corporate Finance

5. **Tax is one of many determinants of corporate financial policies**. In a world of complete markets, perfect information, and no taxation, the parceling of returns between equity and debt claims has no real consequence. Informational imperfections, however, introduce considerations that can lead to a determinate choice. Issuing debt, for instance, can help constrain managers in their self-interested use of free cash flow (though there may be other better-targeted incentive structures to achieve that). But tax considerations are also critical: with interest payments deductible against the corporate income tax (CIT) while equity returns are not, firms have an incentive to issue debt until the expected tax benefit is just offset by the increase in expected bankruptcy costs. While the focus in what follows is on the debt bias this can create, taxation can distort other margins of financial choice too—such as whether and when to realize capital gains or losses—and some of the issues this creates are also considered.

A. Assessing Tax Distortions to Financial Policies

6. **The heart of the issue is the almost ubiquitous practice of allowing interest payments, but not the cost of equity finance, as a deduction against CIT.**[3] Leveraged buyouts (LBOs) are a prominent instance of the use of interest deductibility (Box 1), but the potential tax incentive to debt finance applies more generally. The consequent bias towards debt finance is greater the higher is the effective CIT rate, since this means more tax saved as a result of the deduction. It will thus be lower, for example, for firms that are, or expect to be, in a tax loss position: since losses are not carried forward with interest, any future reduction in tax liabilities has lower present value (PV) than an immediate deduction.

[3] The original rationale for this was a legalistic one, the view being that the corporation is so entwined with its shareholders that payments to them should not be deductible whereas payments on debt are to true third parties and so should be. In economic terms, of course, both kinds of payment represent a return to capital, and it is their combined treatment at corporate and personal levels that matters. Shaviro (2009) discusses further.

Box 1. Leveraged Buyouts

Leveraged buyouts, marked by especially heavy use of interest deductions, increased substantially up to mid-2007. Post-acquisition interest deductions can be so large as to eliminate CIT payments for several years. There is likely also to have been an indirect effect in encouraging other firms to increase their borrowing to defend against possible LBOs. Many LBOs cross national borders, moreover, and so are characterized by complex structuring intended to minimize tax liability and in some cases exploit opportunities for 'double dipping' (described in Appendix 2). Between 2003 and 2006, the amount raised by private equity funds,[4] which arrange most LBOs, increased about five-fold, to around US$230 billion; and between 2000 and 2007 their share of merger and acquisition activity in the U.S. rose from 3 to nearly 30 percent.

7. **Personal taxes on interest, dividends and capital gains may also affect the choice between debt and equity finance** (with a distinction, in the latter case, between finance by retaining earnings and by selling new shares). Box 2 provides detail and illustrates, key conclusions being:

- The taxation of interest income at personal level offsets to some degree the tax advantage at corporate level.

- Finance by retained earnings, since it leads to an appreciation of the share price, is less attractive the higher is the effective rate of capital gains tax (CGT). Commonly, however, the effective CGT rate is low, largely because gains are typically taxed when they are realized rather than as they accrue, so that the tax liability can be reduced in PV by deferring realization (the 'lock-in' effect).[5]

- Dividend taxation raises the cost of new equity finance. It does not in principle affect that of retention finance: comparing (1) retaining current profits and distributing them later, and (2) distributing them now, the dividend tax has to be paid in either case, and so—though it reduces shareholders' net income—does not affect the relative attractions of the two. The dividend tax matters for new equity finance, however, since the funds to be invested are not already trapped within the corporation. Many countries allow some integration of personal and corporate taxes to mitigate this

[4] Private equity and hedge funds are partnerships, so are taxed not at entity level but by 'flow through' to the partners (raising issues related to the tax treatment of the general managers that are discussed in section IV.D). Hedge funds typically do not push debt down to corporations, so this leverage issue does not arise.

[5] In addition: (1) capital gains are often charged at a lower statutory rate the longer assets are held (as in the U.S., and until 2008 in the U.K. and Germany); and (2) in the U.S., CGT can be avoided by holding assets until death.

effect, by providing an explicit credit (as under imputation systems)[6] or charging a lower rate than is applied to interest income.

Box 2. Taxation and the Cost of Capital

Comparing the after-corporate tax rate of return ρ that a company needs to earn in order to generate the post-tax return required by those investing in it, when the gross interest rate is *R*:

- For ***debt finance***, interest deductibility means that to pay lenders interest of *R* the company need only earn an after-CIT return of

$$\rho = (1 - T_C)R \ , \tag{1}$$

where T_C is the rate of CIT.

- For ***retention finance***, it is shown in Appendix 1 that the company needs to earn

$$\rho = \left(\frac{1 - T_R}{1 - T_G} \right) R \, , \tag{2}$$

where T_R is the shareholder's personal tax rate on interest income (relevant because their alternative to leaving money in the firm is to lend it out) and T_G the effective rate of CGT (relevant because of the gain that retaining earnings will generate).

- For ***new equity finance***, it is also shown in Appendix 1 that

$$\rho = \left(\frac{1 - T_R}{1 - T_D} \right) R \ , \tag{3}$$

where T_D is the rate of tax on dividends at personal level.

In practice, a key margin of choice is that between borrowing and retaining earnings. Comparing (1) and (2), borrowing will be tax-preferred to retention if $1 - T_C < (1 - T_R)/(1 - T_G)$, or

$$T_C > (T_R - T_G)/(1 - T_G) \, . \tag{4}$$

For instance, at a CIT rate if 30 percent, and with interest taxed at 40 percent and CGT at 20 percent, debt is preferred. Retentions would be preferred, however, if gains were taxed at 14 percent or less.

[6] These were common in Europe, but have become less so in recent years, partly because of complexities in dealing with cross-border investments but also as decisions of the European Court of Justice have suggested that the Community's nondiscrimination rules require member states to provide credit for CIT paid in other member states. Australia and New Zealand retain full imputation, and Canada partial.

8. **While high-income individuals may prefer equity finance, for others—including tax-exempt institutions and non-residents—the corporate-level tax advantage to debt dominates.** Tax-exempt investors—pension funds, charitable foundations and, in many cases, sovereign wealth funds—clearly prefer debt finance: for them indeed there is a clear arbitrage gain in lending to tax-paying corporations and taking the interest untaxed. In addition, for non-resident investors, not liable to domestic personal taxes, the deductibility of debt finance is critical. Tax-exempts are quantitatively important. In the U.K., pension funds and insurance companies held around 30 percent of all equities in 2006, and non-residents—likely subject only to withholding taxes—held 40 percent. Direct holdings by resident individuals were only 13 percent. Some put the comparable figure for tax-exempt equity holdings in the U.S. at around 50 percent. The scale and active management of the tax exempts may give their tax interests heavy weight in corporate financial decisions.

9. **These distortions create advantages to the use of debt measurable in hundreds of basis points.** Table 1 shows, for G7 members, the costs of the three sources of corporate finance in 1990 and 2008; the upper panel relates to investors facing top marginal tax rates and the lower to tax-exempt investors—the two extremes. It gives the proportion of the gross return that a company needed to earn, after CIT, to meet the after-tax return required by investors. At a ten percent interest rate, for instance, in 1990 a Japanese corporation needed to earn 6.25 percent after CIT to finance borrowing (if its marginal shareholder paid at the highest marginal rate) but 8.42 percent on retained earnings. Even for top-rate taxpayers, debt is cheaper than new equity finance in almost all cases, and except in Canada, Germany, and the U.K., it was cheaper than retention finance too. For tax exempt investors, of course, debt is always tax-preferred.

10. **The tax advantage to debt finance has in most cases fallen since 1990, but (especially for tax exempts) remains substantial—and may have become easier to exploit**. The trend reduction in statutory CIT rates—the (weighted) OECD average has fallen by 9 percentage points since 1990—has raised the cost of debt finance. Changes in personal tax rates, however, have had more mixed effects, and the overall impact for top rate taxpayers varies across countries: in both the U.K. and the U.S., the relative tax advantage of debt for top-rate taxpayers has been reduced, in France it has increased. Lower CIT rates have reduced the tax advantage of debt finance for tax exempts—but it remains substantial. It may be, moreover, that the trends in the relative importance of tax exempts and the use of complex financial arrangements, including through low tax jurisdictions, have meant more aggressive exploitation of the remaining tax advantages of debt.

Table 1. Required Post-CIT Rates of Return, 1990 and 2008
(in percent of the interest rate)

	1990			2008		
	Debt	Retained earnings	New equity	Debt	Retained earnings	New equity
	Top-rate personal investor					
Canada	62.0	58.5	78.5	62.0	56.9	70.5
France	63.0	45.0	66.7	66.7	76.1	100.0
Germany	64.0	47.0	64.0	75.0	55.0	71.0
Italy	64.0	70.0	82.4	72.5	75.4	83.4
Japan	62.5	84.2	100.0	70.0	84.2	88.9
United Kingdom	65.0	66.7	75.0	72.0	62.8	80.0
United States[1]	66.0	77.4	100.0	65.0	67.5	76.5
	Tax-exempt investor					
Canada	62.0	100.0	100.0	62.0	100.0	100.0
France	63.0	100.0	100.0	66.7	100.0	100.0
Germany	64.0	100.0	100.0	75.0	100.0	100.0
Italy	64.0	100.0	100.0	72.5	100.0	100.0
Japan	62.5	100.0	100.0	70.0	100.0	100.0
United Kingdom	65.0	100.0	100.0	72.0	100.0	100.0
United States[2]	66.0	100.0	100.0	65.0	100.0	100.0

Source: Staff calculation.

[1] Federal taxes only.

11. **The empirical evidence suggests that tax distortions have caused leverage to be substantially higher than it would have been under a neutral tax system.** Econometric work tends to confirm that taxation significantly affects financial structure (Box 3), one recent survey[7] concluding that a 10-point increase in the CIT rate increases the debt-asset ratio by 1.4 to 4.6 points. As a rough order of magnitude, the debt bias from a CIT at 20 percent (ignoring personal taxes) would then be to increase a debt-equity ratio that would otherwise be 40 percent, to 45 or 60 percent.

[7] Weichenrieder and Klautke (2008).

Box 3. Tax Effects on Leverage—The Evidence

Significant tax policy effects on leverage are found in studies covering different regions and using different methodologies. For the U.S., MacKie-Mason (1990) finds that, as the arguments above imply, the probability of issuing debt is comparatively low for firms with large losses carried forward and for unprofitable firms with large investment tax credits. Recent work on a panel of European medium-sized enterprises (Cheng and Green, 2008) finds that tax policy has a significant impact on debt ratios. Reviewing the evidence, Graham (2003) comes to the same conclusion, while Auerbach (2002) also reads it as confirming an impact at firm level.

Tax effects on the debt-equity ratios of subsidiaries of multinationals are particularly strong. For the U.S. multinationals, Desai and others (2004) find that leverage is higher in high tax countries: a 10 percent increase in the tax rate boosts the debt-asset ratio by 2.6 percent. Very similar results have been obtained for European multinationals (Huizinga and others (2008), Büttner and others (2006), Mintz and Weichenrieder (2005)). At a more aggregate level, Devereux et al (2006) note that the proportion of inward direct investment taking the form of debt is greater the higher the statutory CIT rate.

Little is known of the welfare costs of these distortions. Weichenrieder and Klautke (2008) estimate a deadweight loss from tax distortions to financial decisions of 0.05 to 0.15 percent of in invested capital (at an interest rate of 5 percent). This though reflects only the loss relative to what would otherwise be the firm's optimal financing choice, so ignores any consequences external to the firm itself. Importantly, even small tax distortions can have large welfare effects if they act on large preexisting inefficiencies, reflecting for instance adverse externalities from the use of debt.

12. **These distortions imply a marginal *subsidy* to debt-financed investment if the tax system provides accelerated depreciation allowances for physical assets, as it commonly does.** A system that allowed deduction of both financing costs and true economic depreciation would have no effect on investment decisions, since it would enable full recovery of all costs over the lifetime of a project. Tax would then be levied only on supernormal profits: the marginal effective tax rate (METR)[8] would be zero. Allowing more than true economic depreciation along with interest deductibility costs thus amounts to a (marginal) subsidy: at the margin, unprofitable projects can become profitable, purely for tax reasons, if financed with debt. Equity-financed investments, enjoying no corporate level deduction, are tax-discouraged. Table 2 reports METRs on alternatively-financed investments, showing that these effects have been sizeable. In France, for instance, debt finance received a 36 percent subsidy at the margin while equity financed investment faced a 20 percent tax.

[8] Defined, more precisely, as the proportion by which the pre-tax return on a project that the investor just finds worthwhile exceeds the post-tax return they require.

Table 2. Effective Marginal Tax Rates
(selected countries, 2005, in percent)

	France	Germany	Italy	U.K.	U.S.
Equity	20	29	19	20	24
Debt	-36	-37	-48	-28	-46

Source: Updated data from Devereux et al. (2002), available at www.ifs.org

13. **Hybrid instruments blur the distinction between debt and equity—which can in any event be hard to make—and potentially ease the cost of tax discrimination between the two: but they create revenue and other difficulties.** A focus of financial innovation has been constructing instruments with many features of equity but enough features of debt to attract interest deduction. Hybrids of this kind (such as convertible bonds and preferred securities)[9] have come to play a large part in corporate financing,[10] exploiting the intrinsic difficulty of making firm distinctions between the two.[11] To the extent that such instruments enable what is really equity to attract the same treatment as debt, hybrids may ease the inefficiencies created by differential tax treatment of the two. But this comes at some cost: a loss of CIT revenue, and increased complexity and opacity of financial arrangements.

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

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

[9] The former give the holder the option to convert to equity (and sometimes the issuer the option to call the bond), the latter pay distributions at a fixed rate but allow the issuer to defer payment.

[10] Devereux et al (2006) report a survey of finance officers as indicating that anti-avoidance legislation adopted in the U.K. in 2005 has substantially reduced the use of hybrid entities and instruments.

[11] Shaviro (2009) notes, for instance, that the U.S. Congress instructed the Treasury to issue comprehensive regulations setting out the tax distinction between the two in 1969: but, not for want of trying, it has been unable to do so.

16. **This tension is reflected in the emergence of devices that enable debt-like instruments, attracting interest deduction, to be included in Tier 1 capital.** Basel guidelines allow up to 15 percent of tier 1 capital to be in the form of hybrid instruments that may attract interest deductions—in itself suggestive of the tax bias to debt finance that banks face. Beyond this, moreover, devices have emerged by which banks can include as Tier 1 capital what is arguably closer to debt. Prominent among these is the trust preferred security (TruPS), which has accounted for a large share of hybrid issues in the U.S.[12] Measures can be conceived to close specific possibilities of this kind,[13] but so long as the underlying tax bias remains so too will an incentive to find other ways of achieving the same end.

B. Possible Policy Responses

The concerns raised by potential debt bias are clear. Issues also arise at the interface of tax, regulation and accounting.

Alleviating debt bias

17. **Given the large potential macroeconomic damage from excess leverage, including balance of payment effects, it is hard to see why—as now is often the case—debt finance should be systematically tax-favored.** Micro-theory results on the likely inefficiencies of financial markets—whether there will be too much borrowing or too little—are model-specific.[14] The impact of externalities operating at a more macro level, however, seems clear-cut: when firms borrow, they are likely to internalize the expected bankruptcy costs they themselves incur but not the impact of their own failure and default on others (effects that are not present in the use of equity finance). These externalities are likely to be especially large for financial institutions, given their systemic importance. Some aspects of government policy exacerbate these concerns, as with guarantees (explicit or implicit) on bank deposits or corporate debt. There may also be strong effects on the balance of payments: preferential tax treatment of debt can provide an implicit subsidy to corporate and household borrowing, including from abroad, so increasing vulnerabilities through the capital account. This may have happened in Latvia, to give just one example, where—though other factors were likely the major sources of external imbalances—the implicit corporate-level tax subsidy made investment financed by borrowing (including from abroad) something like 130

[12] Preferred securities are treated as Tier 2 capital if issued directly by the bank. If issued, however, by a trust in which the bank has an interest, which then makes a loan to the bank, the interest is deductible to the bank while Basel guidelines allow inclusion of the bank's equity interest in tier 1 capital.

[13] In the case of TruPS, for example, by appropriate consolidation rules to look through the trust.

[14] Stiglitz and Weiss (1981) and de Meza and Webb (1987), for instance, derive contrasting results from different assumptions on the joint distribution of projects' probability of success and return if successful.

basis points cheaper than it would have been in the absence of tax.[15] Externalities from increased leverage are hard to quantify, but there is evidence that high leverage is associated with greater output losses in bad times.[16] These macro externalities raise the question of whether taxation should actively discriminate against debt finance. Current knowledge, however, does not allow a definitive view on this. Most important for present purposes is that there is no compelling reason why debt should be actively tax-favored—movement towards neutrality would thus be seen as desirable even by those who would wish to go further and tilt the playing field against debt.

18. **Fundamental but conceptually straightforward reforms to the CIT—for which there are some encouraging precedents—can eliminate the debt bias at corporate level.** Leveling the treatment of debt and equity costs can be done in either of two broad ways.

19. **One approach is to limit the extent of interest deductibility**:

- ***Thin capitalization rules*** deny deductibility for interest payments in excess of some level. Such rules have become more common in recent years. But they are essentially ad hoc, failing to capture all avoidance-related transactions and to acknowledge the differing debt capacities of different enterprises.

- ***A comprehensive business income tax (CBIT)*** would deny interest deductibility altogether (while retaining depreciation allowances broadly unchanged).

- ***'Cash flow' forms of CIT*** would allow investment to be deducted in full (rather than depreciated over time), while giving no deduction for interest. One type of cash flow tax, for example, would tax net distributions to shareholders (so that while banks would have no deduction for interest paid, interest received would not in itself be taxable). Since the PV value of net distributions is the PV of the firm's fundamental value, such a tax—and all other cash flow taxes, to which it is equivalent in PV—is non-distorting not only for financing but also for real investment decisions.

20. **The CBIT and cash flow routes, however, involve transitional difficulties in dealing with pre-existing debt.** And if adopted unilaterally they run the risk of multinationals being unable to claim foreign tax credits in their home country, since interest deductibility is often taken as a necessary condition for any tax to be regarded as a creditable

[15] There are no data on corporate leverage in Latvia during this period, though the financial and real estate sectors did become highly leveraged.

[16] Davis and Stone (2004), for instance, find that higher debt-equity ratios are associated with greater post-crisis output declines, and IMF (2008) that the cumulative output loss following periods of financial stress tends to be larger the greater the run-up in nonfinancial corporate debt before the onset.

income tax. (This will be less of a concern for multinationals whose home countries operate a territorial system). A CBIT would also require somewhat complex treatment of banks.

21. **The alternative is to keep interest deductibility but also allow a deduction for a notional cost of equity finance: the *Allowance for Corporate Equity (ACE)*** form of CIT.[17] Under an ACE, corporations deduct not only interest on debt but also a notional return to shareholders' equity (calculated, in principle, at a risk-free rate of return).[18] Tax is thus ultimately levied only on profits in excess of investors' required return, so that the ACE is fully neutral. Several countries have already experimented with the ACE (or variants), with some success. Croatia implemented an ACE from 1994 to 2001, and it has recently been adopted in Belgium and Latvia. A variant is applied in Brazil, and partial ACEs were applied in Austria and Italy. Although some ACE experiments were terminated—with changes of government, and in some cases a cut in the headline CIT rate—technical assessments of these experiences have been broadly positive, with evidence that movement towards an ACE is indeed associated with reduced debt-equity ratios.[19]

22. **For banks, an ACE would essentially mean giving a tax deduction for a notional return on Tier 1 capital**. Its adoption would thus send a strong and clear signal that accumulating capital reserves is no longer to be tax-penalized.

23. **Applying the same notional interest rate to debt as well as equity, an extended form of ACE would also eliminate the problems associated with hybrids**. This might appear to ride roughshod over the distinct risk and other characteristics of straightforward debt and equity claims: but the same argument as above suggest that the use of a risk-free rate is appropriate for both forms of finance. Uniform treatment would not be a necessary feature of ACE adoption, but would eliminate the need to make the inherently problematic distinction between debt and equity for tax purposes and limit the narrowing of the tax base.[20]

24. **The principal difficulty with the ACE is the reduction in revenue it can imply, but this may be modest and delayed**. Moving to an ACE narrows the tax base: it may have reduced CIT revenue in Croatia by one-third, and elsewhere FAD has estimated a loss of

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[17] FAD has supported or advocated CITs with ACE features several times in recent years.

[18] So long as the availability of a future tax reduction is perfectly certain—which requires appropriate arrangements in the event, for example, of the firm ceasing operations—the associated cash flow is appropriately discounted as risk-free. This and other issues in implementing an ACE are discussed in Griffith, Hines and Sørensen (2008).

[19] See Klemm (2007); for Croatia, Keen and King (2002); for Italy, Bordignon, Giannini and Panteghini (2001) and Staderini (2001), the latter finding reduced debt-equity ratios consequent on movement to the partial ACE.

[20] Debt-related deductions, for instance, could be less than interest actually paid.

around one point of GDP. Raising the statutory CIT rate to recover this lost revenue is problematic, as—unless undertaken in coordination with others—it would risk increased profit shifting to lower tax jurisdictions. The risk can be over-stated, however. To the extent, that the pre-existing CIT led to a marginal subsidy to debt-financed investment, movement to neutrality would actually lead to an increase in revenue—an effect ignored in standard revenue calculations. The immediate revenue impact can be mitigated, moreover, by providing relief only in respect of equity built up after some initial date (with anti-avoidance provisions to prevent recharacterization of 'old' equity as new).

25. **Importantly for both its distributional and revenue impact, much of the efficiency gain from moving towards an ACE would likely benefit labor, not equity-holders.** In an economy open to capital movements, much of the real burden of a source-based tax on the normal return to capital will be passed on by internationally mobile capital to immobile factors, notably labor: if the required *after*-CIT return to capital is fixed on world markets, then taxing that normal return must lead to a higher *before*-tax return; and the only way this can happen is if the return to immobile factors falls. Emerging evidence suggests that this effect may be substantial.[21] This implies—though no doubt not an easy political sell—that eliminating a tax on the normal return to capital would lead labor income to increase by enough for revenue to be recovered through taxing labor explicitly and still leave labor better off.[22]

26. **Adopting an ACE or cash flow CIT would not eliminate all distortions to financial decisions, for which changes to personal taxation would also be needed**. Both would remove normal profits from the CIT base. This would be consistent with a range of approaches to achieving a more neutral tax treatment of alternative forms of capital income. It could readily be integrated into a broader expenditure tax. Or it could be part of a more traditional income tax, with neutrality between the alternative forms of finance achieved by taxing interest and dividend income at the same rate while exempting capital gains on corporate stock.[23] That, in turn, could be done either as part of a comprehensive income tax (treating capital and labor income identically) or as part of a 'dual' income tax (applying a progressive tax to labor income and a flat tax to all forms of capital income). The choice of accompanying measures would evidently be key in shaping the overall distributional impact of the reform.

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[21] Arulampalam, Devereux and Maffini (2008) and Hassett and Mathur (2008).

[22] If, on the other hand, the normal return is subsidized (which, as noted above, may well be the case for debt-financed investments) eliminating the distortion would increase tax revenue by more than labor income falls: taxes could be cut so as to leave labor better off and tax revenue ultimately no lower.

[23] Since, given the dividend tax, not doing so would amount to double taxation.

27. **Fundamental change in the CIT treatment of debt and equity would likely be too unsettling for some while, but movement to an ACE or cash flow system is the less problematic route.** Removing interest deductibility—even if only for 'new' debt—would risk amplifying financial distress. The alternative route of extending deductibility to equity finance, however, would have the opposite effect, and might make recapitalization of banks, for instance, more attractive than under current rules.

Tax, regulatory and accounting linkages

28. **The crisis has drawn attention to difficulties in the regulatory treatment of financial institutions' tax losses.** The reduction in future tax liabilities implied by accumulated tax losses can, under certain circumstances, be included in Tier 1 capital. The requirement for inclusion is that such deferred tax assets (DTAs) have a reasonable prospect of being realized in the near future—within the next year, under U.S. rules. On occasion, however, tax losses have apparently been valued for these purposes far above their likely PV.

29. **Increased use of marking-to-market (fair value accounting) in taxing financial institutions may increase the volatility of revenue, but is the right direction for tax policy.** The lock in effect of levying CGT on realization rather than accrual, noted earlier, creates an incentive to defer realizing gains and accelerate realizing losses.[24] Even if taxed at the same nominal rate, capital gains thus become inherently more favorably treated than other forms of capital income, such as interest. This creates opportunities for tax arbitrage—a significant concern at personal level (where taxation on realization remains the norm) as well as corporate. As banks have expanded their trading books, increased use of marking-to-market in assessing tax liability—in this area tax rules generally follow accounting treatment—will have made revenue more volatile, though in the direction of strengthening the automatic stabilizers that other tax developments in recent years may have weakened. A potential difficulty is that taxation on fair market value may induce the sale of assets simply to finance the accruing liability. There is though little sign that this has been a significant problem in the financial sector. It is possible, moreover, to design schemes that tax on realization but mimic taxation on accrual, and there is some practical experience with them.[25] Greater neutrality in taxing capital income is likely to mean more rather than less marking to market.

[24] As Slemrod (2009) notes, this latter 'lock-out' effect may be of some importance at present.

[25] One such scheme charges CGT on the excess of the actual sale value over not the acquisition price but what that price would have been had the asset earned the risk-free rate, in effect taxing only expected gains or losses while leaving the realization decision undistorted (Auerbach, 1991). This has the disadvantage that tax might be payable even on assets that had made a loss, but more complex schemes address this. Alworth et al (2003) describe experience in Italy with schemes of this broad type.

30. **Though there are important overlaps, the objectives of tax policy need to be recognized as distinct from those of regulatory and accounting practices if each is to serve its proper purpose.** Clearly, there are monitoring and compliance advantages in applying common definitions and concepts for tax and accounting purposes, and some see corporate governance advantages in closely aligning tax and book profits: this can create a helpful tension between the temptations to overstate profits for financial accounting purposes and to understate them for tax purposes. But the ideal tax base is not necessarily the most accurate measure of current income. For instance, valuing depreciation at true economic rates is generally appropriate for financial accounting, but there can be a case for encouraging investment by allowing faster depreciation—or even full expensing—for tax purposes. It may also be appropriate to treat provisioning for bad debt differently for accounting and tax.

31. **Issues concerning the tax treatment of provisions for bad loans would be raised by moving towards dynamic provisioning.** [26] Currently, the most common approach is to allow tax deductions only for specific provisions (related to the impairment of particular assets), not general. Dynamic provisioning would include a systematic and mandatory countercyclical element of general provisioning, raising questions as to their tax treatment. To the extent that dynamic provisioning would be analogous to depreciation allowances for physical assets that reflect their expected reduction in value (or sometimes more, if accelerated deprecation is allowed), deductibility could be argued to be appropriate. Other approaches would be appropriate if the CIT were to be fundamentally reformed.[27]

III. HOUSING

32. **Housing is commonly subject to special tax treatment that may have increased household leverage and house prices.** Taxation does not explain the widespread house price boom—that occurred in countries with very different tax systems—and there are no obvious tax changes that might have triggered its collapse. But taxation does create substantial distortions in a market of central macroeconomic importance.

A. The Tax Treatment of Housing

33. **Within a comprehensive income tax, fully neutral taxation of owner-occupation would require full taxation of imputed rents and capital gains on housing, and deductibility of mortgage interest payments**. Compared, for instance, to instead renting and investing in fully taxed assets: taxation of imputed rents—the consumption value of housing services—is needed to match the payment of market rents from taxed income;

[26] As proposed for example by the IMF (2009b) and the Turner Review (2009).

[27] An incidental advantage of an ACE (described below) is that tax incentives to overstate specific provisions would in principle be eliminated, since any increased deduction from doing so would be offset in PV by a reduction in Tier 1 capital and hence in the future imputed tax allowance on equity.

taxation of capital gains is needed to match the CGT liability on other financial assets; and deductibility of mortgage interest is needed to match the taxation of the interest available from investing in other assets.[28]

34. **In practice, imputed rents and capital gains on primary residences are rarely taxed, creating a general bias towards housing that mortgage interest relief—where it remains—is likely to reinforce.** Very few countries bring imputed rents into the income tax (the Netherlands and Switzerland being exceptions).[29] Some tax capital gains on owner-occupied housing, but typically more lightly than other income or only beyond a high threshold (or both). Even in the absence of distortions on the financing side, these features would tax-favor owner-occupation relative to renting. And mortgage interest costs attract tax relief, subject to limits, in a number of countries (including Denmark, France, Italy, Spain, Italy, France, and the U.S.). Since borrowing to acquire other assets is generally not deductible, this makes investment in housing even more favored.

35. **Mortgage interest relief would not tax-favor mortgage finance if the alternative to borrowing were investing less in fully-taxed assets and other interest were also deductible—but that is commonly not the case**. If alternative investments were fully taxed, mortgage interest deductibility would mean that the opportunity costs of acquiring housing by borrowing and by running down other assets would in each case be the after-tax interest rate—so mortgage finance would not be tax-favored. Many countries, however, tax other forms of saving (such as pensions) at reduced rates. In that case, if the return on those assets matches the pre-tax interest rate on mortgage debt, there is an arbitrage gain from leveraging against housing and investing own-funds in the non-housing asset. And while interest on loans used to finance consumption is generally not deductible, home equity loans have provided (within limits) just such a tax-favored way to borrow and spend.

36. **The distributional impact of mortgage interest relief can be complex, but deductibility likely favors the better off.** Higher income individuals may be more likely to face constraints on their access to tax-favored assets (since this is often subject to caps), so that their opportunity cost of investing in housing is the after-tax return. This creates an argument for some tax relief to ensure that the less well-off also pay an after-tax rate. Against this, however, deductions are worth more to the better-off as they take them against a higher

[28] The treatment of housing under a personal expenditure tax can be problematic. The simplest approach would be to subject new housing fully to the VAT, but this would not incorporate the progressivity of the income tax, and nor would it tax returns to housing in excess of normal. The usual way of achieving the latter would mean allowing housing purchase as an immediate deduction (with carry forward of any loss at interest) and fully taxing sale proceeds, eliminating liability for many taxpayers.

[29] Several countries charge VAT on first sales of residences, which—to the extent that house prices are the present value of housing services—amounts to an implicit tax on imputed rents, though one that is not tailored to household circumstances in the same way that the income tax is.

marginal rate of tax. The latter effect would be avoided if relief were provided—as many countries do—not as a deduction but as a credit (reducing tax paid, rather than the income taxed).

37. **Ownership/occupation and transaction taxes also play an important role.** Many countries charge substantial recurrent taxes based on ownership or occupation. These have potential appeal both in serving as user charges reflecting the value of local public services—hence they are often allocated to lower-level governments—and, to the extent that these and other features are location-specific, as being less vulnerable to interjurisdictional tax competition than the CIT and other taxes on more mobile bases. There is indeed evidence that such taxes (along with consumption taxes) have significantly less adverse effects on growth than income taxation (Johansson and others, 2008). Housing transactions themselves are often subject to tax, sometimes in significant amounts (up to 9 percent in Ireland).

B. Impact on Prices and Leverage

38. **Tax policy can affect two key aspects of housing markets: house prices and households' leverage.** These are interrelated, as high house prices encourage removing equity through increased borrowing, the availability of cheap loans drives up house prices, and the expectation of price increases raises the expected return on borrowing to acquire housing.[30]

House prices

39. **Favorable tax treatment is likely to be capitalized in house prices, may be reflected in the rate of house price inflation, and can also increase housing price volatility.** In the short run, when the physical stock of housing is virtually fixed, most taxes (or tax subsidies) will be fully capitalized in housing prices, with the incidence mainly on the seller (though the effect may be mitigated by changes in the supply of housing offered for sale). A reduction in the rate of CGT on housing, for instance, would be expected to increase house prices (with some offset as sellers enter the market to realize deferred gains). It might also lead to a slower—not, as one might expect, a faster—rate of house price appreciation (because a lower pre-tax gain is needed to yield the required post-CGT return). In the longer term, supply responses will ease price effects, but since the long run elasticity of supply of housing is unlikely to be infinite, marked effects can remain. Importantly too, distortions affecting most directly prices in one segment of the market (the greater value of mortgage interest deductions for high income taxpayers, for example) will generate substitution effects

[30] Taxation also affects other features of the housing market, not considered here—including the share of housing in the aggregate capital stock.

that then feed price effects through to others. There is also evidence that more favorable tax treatment of housing is associated with greater volatility of its price.[31]

40. **Tax effects can substantially reduce the user cost of—and hence increase the demand for—housing.** One recent study for the U.S. finds that mortgage interest deductibility and other tax features on average provided a tax subsidy equivalent to around 19 percent of the user cost. [32] This means that, for households facing a user cost of capital of, say, 8 percent, the favorable tax treatment of housing was equivalent to a reduction of 200 basis points, a magnitude that can be regarded as having significant macroeconomic effects. The reduction is greatest for high-income households (since they take the mortgage interest deduction at a higher marginal rate) but it is nevertheless around 8 percent for those with low incomes.

41. **Effective tax rates on housing (reflecting also transactions taxes) vary enormously across countries, and with the circumstances of the investor and investment.** An effective (average) tax rate (EATR) on housing can be calculated as the ratio of the PV of total taxes over an expected holding period to the sum of the PV of imputed rent and capital gains. EATRs can be very high—sometimes more than 100 percent—when investors keep a house for a short period and are subject to high transaction taxes. They can also be negative, for example for investors with large mortgages in countries that allow mortgage interest deductions but do not tax imputed rents and alternative assets.

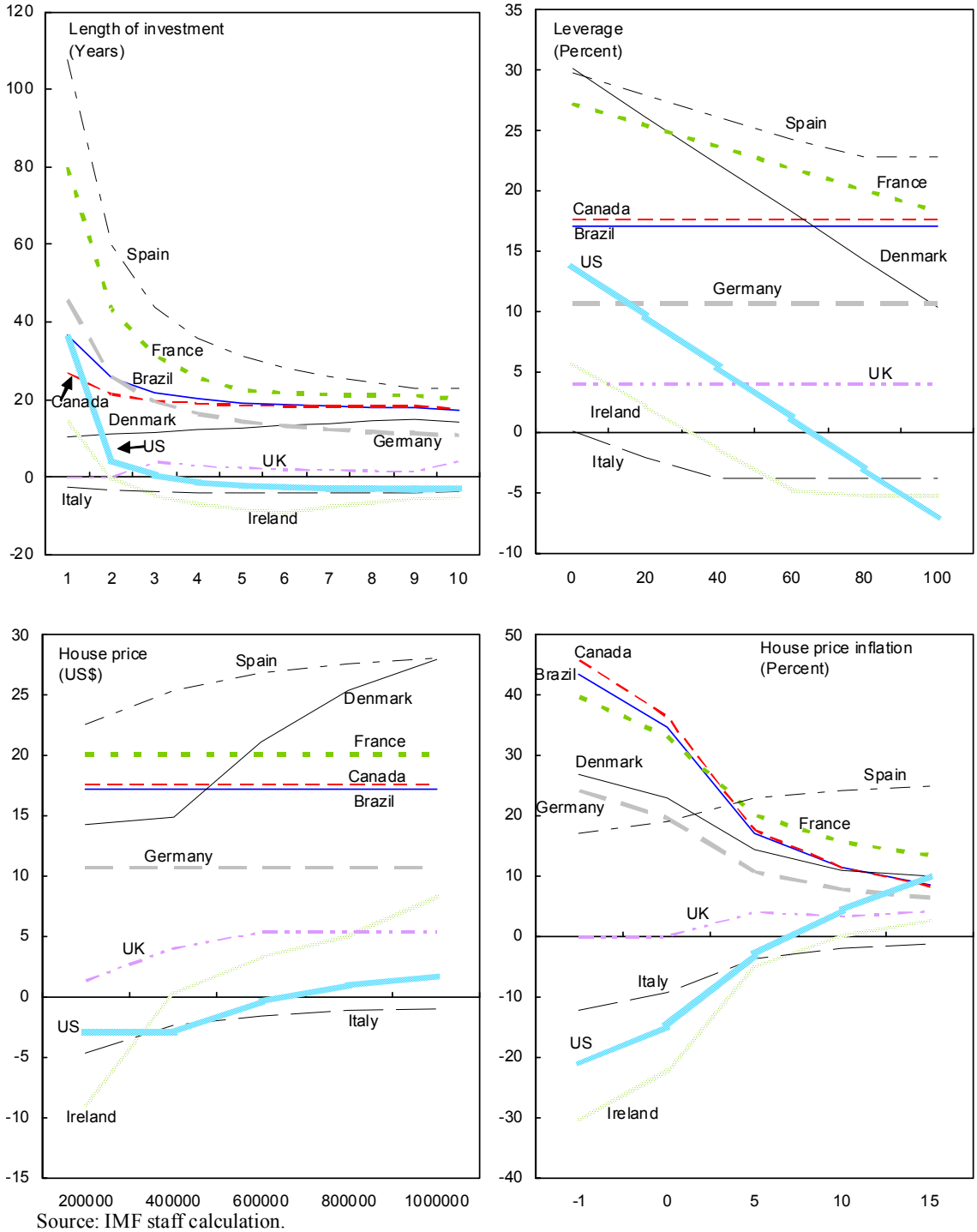
42. **Countries can be broadly grouped into those with high-, low- or medium-EATRs.** Figure 1 shows calculations for ten countries, a mix of small and large, industrialized and emerging economies, and booming and flat housing markets. These assume a property purchased for US$250,000, held for 10 years, 80 percent mortgage-financed, and appreciating in value by 5 percent per year—and then track how EATRs vary across countries as each of these assumptions is changed. Such changes affect the ranking of countries, but: Spain, France, and to a lesser extent Denmark, have relatively high tax rates across a range of assumptions; Italy (which stands out as having almost consistently negative EATRs),[33] Ireland, and the U.S. have low EATRs.

[31] van den Noord (2005). Section V explains how favorable tax treatment can do this.

[32] Poterba and Siani (2008). The comparison is with an idealized personal income tax of the type described in paragraph 33.

[33] Partly reflecting the abolition of the property tax on owner–occupation in 2008.

Figure 1. Effective Average Tax Rates on Owner Occupation
(in percent)



Source: IMF staff calculation.

Note: Assumptions maintained throughout are: mortgage interest rate 6 percent; discount rate 5 percent; imputed rent 4 percent of house price; investor unmarried and in the top-income tax bracket, purchasing an owner-occupied house; no repayment of principal; proceeds of home sales used entirely to purchase another property.

43. **Special vehicles—not captured in these calculations—may have created further tax biases towards housing.** Real Estate Investment Trusts (REITs) provide CIT exemption for corporations whose main business is property investment (subject to fulfilling certain criteria, notably distributing a large share of profits to shareholders); dividends are taxed at shareholder level, potentially at low rates. This makes investing in property through REITs tax-favored relative to doing so directly (which would attract tax, and deductions, at ordinary income tax rates). Further, in the U.S. a substantial proportion of the required cash distributions from REITs is typically in the form of non-taxable return of capital, as the earnings and profits of the REIT are frequently reduced by high leverage and depreciation.

44. **Taxation does not appear, however, to have been the main driver of house price developments over the last decade.** Strong price increases occurred in all countries examined, including in the high tax group (Table 3). The same conclusion flows from the diverse experience of local markets: in the U.S., for example, booming property markets in coastal cities went with more stagnant developments inland, despite relatively small inter-state variation in tax rates. Nor are there changes in tax rules that clearly account for housing price movements over the period. Some commentators attach importance, for instance, to a substantial increase in the CGT exemption for housing in the U.S. in 1997, something of an inflection point for house prices. The impact of this change is not clear cut, however, since it eliminated rollover relief,[34] which for some taxpayers was a marked reduction in generosity.

Table 3. Real Cumulative House Price Inflation Between 1998 and End-2007
(in percent)

High tax countries			Medium tax countries				Low tax countries		
Spain	France	Denmark	Brazil	Canada	Germany	UK	US	Ireland	Italy
110.9	105.9	75.7	…	65.2	-18.0	124.1	45.3	108.5	56.4

Source: Staff calculation based on data from OECD *Economic Outlook*, Vol. 83.

Mortgage debt

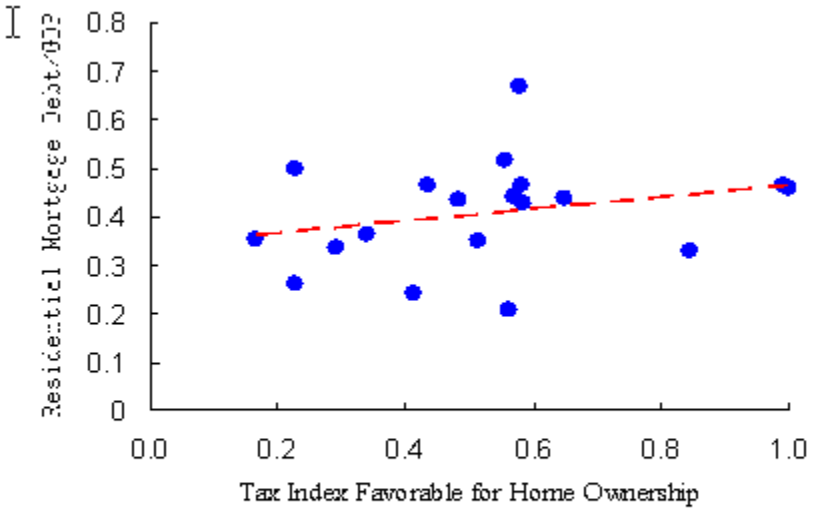
45. **Mortgage interest tax relief encourages the build up of (gross) housing debt if alternative investments are less than fully taxed,** which as noted above, is often the case because, all else equal, the after-tax return on other investments then exceeds the cost of mortgage-backed borrowing.

[34] This provided that any gain on disposal of a house would not be taxed if the proceeds were reinvested in another property: so no tax liability arose as long as taxpayers traded up with each move.

46. **As Figure 1 shows, in countries offering mortgage interest relief, EATRs fall markedly—in many cases changing from positive to negative—as leverage increases.** This effect is strongest for the U.S., reflecting the high upper limit for mortgage interest deduction (interest on debts up to US$1,000,000). Where the limits are lower (Ireland, Italy and Spain) or deduction is only against relatively lightly taxed capital income (Denmark), the tax advantage to leverage vanishes sooner.

47. **There is evidence that countries offering more favorable tax treatment for home ownership do indeed have higher ratios of mortgage debt** (Figure 2). Econometric analyses for the U.K. and the U.S. confirm that mortgages fell significantly relative to home value after reforms reducing the value of mortgage interest relief. Of course, other factors are also at work, notably regulatory limits on maximum LTVs and enforcement of realistic appraisals. As a result, even some countries without mortgage relief—such as the U.K., since 2001—have experienced substantial growth in housing debt and housing price bubbles.

Figure 2. Debt Ratios and the Tax Treatment of Owner-Occupation



Source: Cardarelli, Igan, and Rebucci "The Changing Housing Cycle and the Implications for Monetary Policy," Chapter 3, World Economic Outlook, IMF, April 2008.

C. Possible Policy Responses

48. **Alleviating tax distortions to housing markets would improve efficiency and help avoid macroeconomic imbalances—but timing is important.** The social objectives underlying these distortions—realizing the beneficial externalities from owner-occupation for which there is some evidence—can be achieved through better-targeted measures (such as

outright grants).[35] And to the extent that they are capitalized in house prices, existing tax subsidies do not even help first-time buyers. Some reforms towards greater tax neutrality, however, would likely reduce house prices and/or construction activity, and so be inappropriate at present. Current policy, nevertheless should be guided by longer-term objectives.

49. **For the short-term, creating more tax breaks for housing should be avoided, but there may be scope for reducing transactions taxes.** Special tax preferences ultimately reinforce the policy-induced bias that ought to be redressed. Transactions taxes can be easy to collect, but scaling them back would remove an impediment to efficient trading, increase prices, and speed up clearance of any excess stock of unsold houses. It would also be helpful for labor mobility.

50. **When housing markets regain robustness, other distortions should be addressed**. Since housing tax regimes vary widely, so too should reform priorities. Possibilities—to be coordinated with both each other and any wider changes in the tax system—include:

- Taxing imputed rents (perhaps proxied from market values) and capital gains on housing. The former in particular goes to the heart of the bias towards housing, and would be appropriate under both income- and expenditure-based approaches to personal taxation.

- If imputed rents remain untaxed, phasing out mortgage interest relief, where it remains. Experience in the U.K. indicates that this can be done without undue controversy or adverse impact.

- Fully taxing first sales of residences under the VAT (or other sales tax). This is structurally attractive irrespective of the income tax treatment of housing—since anything else distorts consumption decisions to no obvious purpose—but may also serve as a proxy for income taxation of imputed rents. It would raise (tax-inclusive) house prices, including of existing houses, but (by reducing the tax-exclusive price on new sales) adversely affect construction activity.

- Raising ownership taxes. As well as providing a relatively efficient revenue source this would go some way towards implicitly taxing imputed rents—but would likely require improved valuation practices in many countries.

[35] Glaeser and Shapiro (2002), for example, note that while mortgage interest deduction does appear to increase the amount spent on housing in the U.S., home ownership rates have been broadly stable despite large changes in the tax subsidy.

51. **The desirability of many of these reforms has long been recognized**—the question is whether experience with the costliness of housing market distortions will increase willingness to address them.

IV. Complexity, Low Tax Jurisdictions, and Risk-Taking

52. **This section considers the tax treatment of innovative financial instruments, the presence of low-tax jurisdictions, and other tax provisions, including in relation to executive compensation.** It concludes that tax has through these channels contributed to the opacity of financial arrangements, but the direct impact on risk-taking has been less clear-cut.

A. Financial Innovation

53. **Tax considerations have encouraged the development of complex financial instruments**. Financial innovation has been driven primarily by the search for new ways to allocate risk, but also by tax avoidance. This can be a matter essentially of manipulating legal form (as with hybrid instruments), but may also be achieved by creating substantively new instruments: swaps, for instance, may be used solely to avoid withholding taxes. Generically, the ability to replicate a portfolio in a variety of ways expands opportunities to tailor the nature of the payments to the tax preferences of the investor (transforming it into lightly taxed capital gains, for instance). Such innovation is a response to, not in itself a source of, tax distortions.

54. **Tax policy has in some cases facilitated, and even encouraged, securitization—potentially increasing the attraction of subprime lending, for instance—but has not driven it.** It is not always clear how innovative transactions will be taxed. To address this in relation to securitization,[36] the U.S., for instance, created the Real Estate Mortgage Investment Conduit in 1986 and Financial Asset Securitization Investment Trust in 1997. These provide clear and neutral tax treatment for the issuance of mortgage and debt-instrument backed securities, respectively. Subtler considerations suggest, however, that this element of neutrality can set the scene for exploiting distortions in the taxation of capital gains and other income in ways that are more attractive for risky original loans[37]—which

[36] Tax issues raised by securitization include: whether any gains on assets placed in the SPV by the originator are taxable; whether the SPV itself is taxable; and whether payments to holders of the securitized assets will be taxed as interest or dividends.

[37] Investors paying tax on interest income at a rate higher than that at which they can offset capital losses benefit by pooling assets to pay interest at a rate which reflects the expected losses. Investors facing the same rate on both, on the other hand, do not care about the mix of interest and gains. Bringing the two types together creates scope for tax arbitrage from which both can benefit, with a role too for the use of CDSs. Eddin (2009) develops this argument.

consequently become easier to finance. Better understanding is needed of when financial innovation reduces the social cost of underlying tax and other distortions and when amplifies them—and of the practical importance of such effects.

55. **Lack of clarity in the tax treatment of new instruments can lead to further complexities through the use of strategies aimed at assuring tax minimization**: one way to trying to ensure that SPVs themselves—which are just intermediating receipts[38]—are not subject to additional layer of tax, for example, is by locating them in low-tax jurisdictions.

Possible policy responses

56. **Complex financial instruments exploit tax distortions—differential treatment across types of income, investors and jurisdictions—that are deeply embedded in current practice.** Tax arbitrage opportunities, and hence scope for creative ways to exploit them**,** will remain unless all forms of capital income are taxed at a single marginal rate—internationally as well as domestically. One aspect of at least moderating such distortions is likely to be further movement towards levying CGT on accrual rather than realization, whether by marking-to-market or equivalent realizations-based schemes.

B. Low-Tax Jurisdictions[39]

57. **The availability of low rates on capital income in some jurisdictions creates opportunities for tax arbitrage, including through high leverage—leading to further opaqueness of financial arrangements**. For instance:

- The exemption of foreign profits—either permanently or until repatriation—creates an incentive to lend from low tax jurisdictions to high (taking interest deductions at a high rate and paying tax at a low rate)—making debt finance in high-tax countries even more attractive.[40]
- Complex corporate structures can reinforce this effect still further by enabling interest to be deducted twice (or more).
- Other profit shifting devices can be used, for example, manipulating transfer prices and locating intangible property rights and corporate headquarters judiciously.

[38] Neutrality argues against taxing intermediation of this kind. A coherent approach is to treat the SPV itself on a flow-through basis, taxing instead at the level of the originator and security-holder.

[39] Appendix 2 provides a primer on issues and concepts in international taxation.

[40] Controlled foreign corporation (CFC) rules aim to preclude this by bringing passive income into tax even if not repatriated.

- In countries using a residence-based tax system, further complications arise as funds are routed so as maximize the benefits from double-tax agreements.

58. **Tax-induced complexity in how and where financial assets are held may hamper financial supervision**, even when the motivation for complex arrangements is tax avoidance rather than circumventing supervision.

59. **Low tax rates in some jurisdictions may have increased their own vulnerability, and contributed to high levels of leverage elsewhere**. There were no systematic changes in the tax treatment or practice of low-tax jurisdictions that would explain the onset of the crisis. Some low tax jurisdictions may, however, have increased their own exposure by attracting capital inflows vulnerable to reversal: there is evidence that reducing the rate of CIT, for instance, leads to a temporary but significant capital inflow.[41]

Possible policy responses

60. **Recent developments in relation to 'tax havens' focus on evasion concerns, not opportunities for legal arbitrage**. The OECD reports that all 84 countries which it monitors have now committed to the principles of its harmful tax practice project, the essence of which is willingness to exchange taxpayer information on request (as set out in Article 26 of the OECD's model tax treaty). Such information exchange is intended to prevent residents of countries operating the residence principle from evading tax by depositing funds in lower-tax jurisdictions and failing to declare the proceeds. This is likely to be efficiency-improving, and to increase revenue in residence countries both directly and by reducing the incentive for other countries to set low tax rates. It does not, however, address the legal use of low-tax jurisdictions for any of the tax-reducing purposes described above. There may be a dampening effect through reduced availability of finance from investors willing to accept a lower return because they are not tax-compliant. Even with full information exchange, however, distortions from cross-country divergence in tax rates will remain.

61. **Addressing the distortions associated with low-tax jurisdictions would require a substantial, controversial, and challenging increase in tax cooperation, and perhaps action from high-tax countries.** Two distinct but related issues arise. One is the downward pressure on tax rates associated with international tax competition: all could lose from this, even though ultimately all ended with the *same* tax rate. The second is the opportunity for tax arbitrage created by *differences* in tax rates. Acting on either would require unprecedented tax cooperation, the challenge being to develop a firmer consensus on what constitutes harmful tax practices. There are clear sovereignty concerns. And there are intellectual ones too. Some see tax competition as providing a beneficial constraint on government size, for

[41] Keen and Syed (2006).

instance, and it may ease credibility problems in taxing capital income.[42] Prohibiting differentially low tax rates that are 'ring-fenced' from the domestic economy—a possibility raised at the outset of the OECD project[43]—might worsen tax competition by requiring low tax rates to apply domestically too.[44] Importantly, opportunities for international tax arbitrage are to a large degree contingent on practices in 'high-tax' countries.[45] Movements towards exemption, as sometimes mooted, could increase the attractions of low-tax jurisdictions by eliminating any tax on repatriation (Mullins, 2006). It would be conceivable, indeed, for residence countries to eliminate the deferral that is a key reason for the use of low-tax jurisdictions. These and other international tax issues are likely to require closer attention.

C. Risk-Taking and Tax Losses

62. **There are important nontax distortions to risk-taking.** Limited liability itself creates an inherent bias towards more risk-taking, since shareholders enjoy the upside of risky investments but are protected against the downside. Accounting rules can also play a role. In the U.S., for example, the cost of stock options shown in the financial accounts may be lower than the tax deduction generated. To the extent that non-tax distortions lead to excessive risk-taking, a case can be made that taxation should be structured to counter this.

63. **Proportional taxation of investment returns (with full relief for losses) can lead to higher investment in risky assets—but progressivity reduces this effect.** A fully symmetric tax system reduces the variance of after-tax returns by dampening both positive returns in good outcomes and negative ones in bad outcomes (by reducing other tax liabilities or providing a rebate). If the tax is applied uniformly to all assets (so leaving their relative expected returns unaffected), this encourages risk-averse investors to hold more of the risky asset.[46] Progressive taxation (a higher average tax rate when the outturn is good than when it is bad) mitigates this effect, and it could be that this check to risk-taking has become weaker as income tax systems have become less progressive over recent years.

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[42] Pros and cons of international tax competition are reviewed in Keen (2008) and Wilson (1999).

[43] OECD (1998).

[44] See Keen (2001) and Janeba and Smart (2003).

[45] This is the case, for instance, with the potential inconsistencies that make possible the hybrid entity (explained in Appendix 2).

[46] The investor may well end up bearing less after-tax risk, with increased holding of the asset more than offset by its reduced riskiness.

64. **Imperfect loss offset—a form of progressivity—tends to discourage risk taking.**[47] Under most CITs, the government shares in positive profits but not in losses. Instead, losses are carried forward and deducted against future profits, typically without any adjustment for either inflation or the reduction in the value of the tax allowance from its deferral. In addition to discouraging risk taking, this creates opportunities for tax arbitrage[48] and may disadvantage new entrants.

65. **Standard tax treatment of losses can impede corporate restructuring.** The usual principle is that tax losses may not be transferred to the successor entity if ownership or the nature of the enterprise's activity substantially changes. But acquiring a distressed bank, for instance, may be much more attractive if its accumulated tax losses can be used, as experience during the crisis has highlighted: a change in an IRS ruling[49] significantly eased the takeover of troubled banks, enabling Wells Fargo, for example, to use US$19.4 billion of tax losses that it acquired (for US$15 billion) with Wachovia.

Possible policy responses

66. **Dealing with debt bias would strengthen the case for less restrictive treatment of tax losses.** Refunding tax losses, permitting their sale, or carrying them forward at interest would facilitate efficient restructuring and ease a potential entry barrier. But it would be costly in revenue terms, increase the potential bias towards risk-taking noted above, and worsen debt bias (by preserving the value of interest deductions even when the firm has no current taxable income against which to use it). Addressing this last, as discussed in Section II, would limit the risks in easing some of the more arbitrary restrictions on the use of tax losses, including in the context of mergers and acquisitions. Easing these restrictions may be especially appealing in relation to banks, both for restructuring and in warranting substantial inclusion of tax losses in regulatory capital. And the alternative to allowing the transfer of losses may be bank failure, and an expensive and damaging call on deposit insurance.

D. Executive Compensation

67. **The level and form of executive compensation have attracted considerable attention, but the question here is whether tax policy has distorted them**. One central issue is the balance between salary and performance–related pay, the latter (which has come to account for more than half of all executive compensation) in the form of bonuses, stock

[47] If denial of loss offset is used to reduce the tax rate, the increased after-tax return in good states makes the effect ambiguous.

[48] Leasing, for instance, can be a way for companies to effectively trade in tax losses, with tax paying firms taking investment-related deductions that are then shared by leasing to tax-exhausted companies.

[49] Subsequently reversed, though not retroactively.

options and similar devices. A key difference between them is that stock options, in particular, generally increase in their value to the executive with the riskiness of the actions they take (and hence of the underlying share price), whereas salary does not. The general considerations above suggest that taxation may affect the balance between the two even if neither is intrinsically tax-favored: they suggest that tax consideration may encourage larger performance-related components. Tax distortions may also affect other components of executive compensation, including golden parachutes and carried interest of fund managers.

68. **Tax rules for employee stock options are complex and vary substantially across countries and schemes—but in many cases offer only limited benefit relative to salary.** Employers choose between (1) paying salary now (with deduction at corporate level, and taxation at personal level) and (2) granting the right to exercise an option later, with the employer then taking the difference between market and exercise price as a deduction and the executive paying personal tax on the same.[50] The main difference is that in the latter case funds accumulate free of personal tax within the corporation, whereas in the former the executive is liable for taxation on their own holdings. The advantage of (2) is thus one of deferral, which may be small: one estimate for the U.S. put it at only around 4 percent of compensation cost. In some cases (as in Germany, for example) restrictions on deductibility of option costs at corporate level have meant that options are actually tax-disfavored.

69. **Tax rules in the U.S., however, have encouraged performance-related pay.** Since 1993, the deductibility of non-performance related executive salaries has been limited to US$ 1 million—a strong incentive to use more incentivized pay schemes.

70. **Golden parachutes generally do not receive special tax treatment.** They are usually generally taxed as other earned income—and in the U.S. are tax-penalized, with certain payments subject to a 20 percent excise and not deductible against CIT.

71. **Private equity and hedge fund managers receive most of their compensation as 'carried interest,' subject, in several countries, only to relatively light taxation as dividends or long-term capital gains.**[51] Critics see this as taxing managers at inappropriately low rates on what is effectively labor income. If this income were taxed as earnings, however, coherence would require that a corresponding deduction for payment of compensation be available to other partners—enabling an offsetting increase in the pre-tax remuneration of the fund managers. Many fund investors, however, are tax exempt and so could not use the deduction: taxing as earned income then would result in increased partnership tax payments. The remuneration arrangements for fund managers are likely to

[50] The tax treatment described here is not universal, but is quite common.

[51] This is the case, for instance, in Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Spain, Sweden, the U.S. and the U.K.

encourage risk-taking, since only a fixed fee is received until some target rate of return is realized: light taxation of carried interest once that return is realized may amplify this effect.

Possible policy responses

72. **Tax policy could have a role if it were decided to discourage some forms of remuneration (such as stock options relative to salary)**. Practice varies widely, but major tax biases to the form of executive remuneration do not appear to have been endemic. Some country-specific action may be needed simply to achieve greater neutrality, for instance removing caps on deductibility limits on ordinary salary (dealing with any equity concerns through progressivity of the general income tax). If it were felt necessary to go further and actively discourage the use of stock options—and a tax argument might be made that they reinforce the tendency to excess risk-taking implied by limited liability (and implicit government guarantees)—such measures as denial of CIT deductibility (perhaps above some threshold) could be considered.

73. **The carried interest issue turns on the fundamental distortion introduced by the taxing capital gains and dividend distributions differently from labor income—which almost all tax systems are likely to retain**. The fairness concern is a real one, but no fully satisfactory solution has yet been found.

V. Taxation and Financial Asset Prices

74. **Tax policy can be used, and has been, to affect asset prices.** Asset prices reflect expected future returns, and hence expected future tax payments. The expectation that future capital gains will be taxed, for example, can in principle make bubbles less likely. Several countries indeed used tax measures to this end during the housing boom: The Republic of Korea, for instance, introduced in 2005 a national-level property tax charged at progressive rates on the combined value of all housing and land over a threshold value (with an exemption for one-person households), and from 2007 reinforced a progressive CGT structure for housing by raising the rates applied to those owning two homes and on land held for non-business use. Ireland introduced an anti-speculative yearly ownership tax of 2 percent of the market value of homes other than primary residences. In other cases, tax measures have been used, at least in part, to support asset prices. One benefit some anticipated from the 2003 dividend tax cut in the U.S., for example, was a substantial increase in equity prices and consequent wealth effects. And in the present crisis, a number of countries have used tax measures to bolster house prices: Ireland, for example, removed stamp duty on first-time buyers (of relatively inexpensive properties) and extended mortgage interest relief.

75. **Such effects can be substantial**. One estimate, for example, is that the 2003 cuts in dividend taxation and CGT in the U.S. increased share prices by around 6 percent. And there

is evidence that announcements of reductions in stamp duty on share transactions in the U.K. have led to greater price increases for more frequently traded stocks. [52]

76. **Tax effects on asset prices, however, can be complex and hard to predict.** Three aspects of price behavior are potentially important: level, rate of increase, and volatility. Tax measures can affect all three, and in ways that may be difficult to anticipate:

- A higher rate of CGT may cause the price of an asset to fall but its rate of appreciation to increase (in order to continue yielding the after-tax return available on other assets). It is even possible for a higher CGT rate to be associated with higher asset prices (because any capital loss attracts a larger tax break).

- Reducing dividend taxes may have no effect on equity prices if the marginal shareholder is non-resident (and so not subject to the tax).

- Preferential tax treatment of the return on some asset can increase the volatility of its price (implying a relatively high variance of returns, as discussed in Section III.C above).

- Transaction taxes, sometimes recommended as a way to decrease price volatility, have been found in some cases to actually increase it (by thinning the market).[53]

77. **Ad hoc tax policy measures are unlikely to be the best way to deal with unwelcome asset price developments.** Compounding the uncertainties of effect just noted is the risk of creating unintended distortions and avoidance opportunities: for instance, lowering CGT in the attempt to support asset prices can create an incentive to transform interest income into capital gains. Gaps between announcement and implementation (or even the expectation of tax changes) can distort financial decisions (the anticipation of a reduction in stamp duty in the U.K. during 2008, for example, was reported to have led to some delaying of transactions). And lags in the adoption of tax changes can cause unwelcome procyclical effects: tax increases on land holdings intended to quell the bubble in Japan, for instance, did not come into effect until after it had burst.[54] Tax measures can be attractive for their asset-specificity and, in some circumstances, relative speediness. But they should not substitute for countercyclical policies, both monetary and potentially fiscal (applied across a range of instruments and maintaining tax neutrality properties). These would properly

[52] See Bond, Hawkins and Klemm (2005), who examine the effects on share prices of reductions in stamp duty announced in 1984, 1986, and (though ultimately not implemented) 1990. (There have been no subsequent changes).

[53] See for instance Westerholm (2003).

[54] Morinobu (2006).

operate in part through effects on asset prices. Targeted regulatory actions are surer and better-focused instruments for dealing with particular assets. Structural tax policy is best guided by the core objective of neutrality across assets and over time.

VI. Issues for Discussion

78. **The conclusions from the analysis above will guide FAD's policy development and advice, including through technical assistance, and its outreach.** Directors may wish to consider:

- The paper described and assessed a range of channels by which tax distortions may have increased financial vulnerabilities. Do Directors believe that tax biases favoring debt finance, leading to complex financial arrangements, and creating tax arbitrage opportunities raise significant macroeconomic concerns?

- Section II considered potential tax incentives towards high corporate leverage, and set out possible reforms to level the playing field between debt and equity. Should restructuring the corporate income tax to mitigate debt bias be a central element of long-term tax reform?

- Section III reviewed the range of tax instruments that often impact housing markets together with their potential effects. Do tax distortions in housing markets need, in due course (perhaps earliest with transactions taxes), to be addressed more decisively?

- Section IV considered a range of channels by which taxation might affect the complexity of financial arrangements, create opportunities for cross-border tax arbitrage, and affect risk-taking:

    - Do Directors believe that tax considerations have played a major role in the development and use of complex financial instruments?

    - Is there a need for deeper international tax cooperation? If so, what role, if any, should the Fund play?

    - Do Directors see any tax distortions likely to have significantly encouraged excessive risk-taking?

- Section V reviewed principles and experience in relation to tax effects of asset price dynamics. Do Directors agree that tax policy is not the best tool for moderating asset price movements?

Appendix 1. Taxes and the Cost of Corporate Finance

This appendix explains the tax effects on the costs of retention and new equity finance given in Box 2 and discussed in the text.

For *retention finance*, note first that if the company retains an additional \$1 of after-tax income this costs the shareholder $\$(1-T_D)$ as forgone after-tax dividend, where T_D denotes the rate of tax on dividends at personal level. This could have been lent out to generate interest income *R* that would have been taxed at rate T_P. The net income forgone is thus $\$(1-T_D)(1-T_R)R$. Against this, the additional internal funds generate a capital gain (taxed at rate T_G) that reflects the additional future net income ρ that will generate dividends (taxed at T_D). The net benefit to retaining an additional \$1 is thus

$$-(1-T_D)(1-T_R)R+(1-T_G)(1-T_D)\rho\ .$$

Setting this to zero gives (2).

For *new equity,* (3) in Box 2 follows from a similar argument[55] except that the initial cost is in terms of funds already in the shareholders' hands, and so is not mitigated by the dividend tax, and there are no capital gains consequences (since the share is purchased at the a price reflecting the future earnings). Optimality thus requires

$$-(1-T_R)R+(1-T_D)\rho=0\ ,$$

which gives (3). Imputation schemes of the kind mentioned in the text provide a shareholder-level credit for corporate level taxes charged at some rate *C*, so that $1-T_D=(1-T_R)/(1-C)$; if *C* is set at the CIT rate, the cost of new equity is the same as that of debt-finance.

[55] The marginal cost of any form of finance today typically depends on the marginal source in the future: the latter is assumed throughout this analysis to be retentions.

Appendix 2. International Tax Considerations

International tax rules

Countries generally assert the right to tax all income arising in their jurisdiction, including that accruing to nonresidents. Superimposed on this are broadly two approaches to taxing multinationals on their earnings abroad:

- Under the ***residence*** (or ***worldwide***) principle, income of domestically-owned entities abroad is taxed in the home country of the parent, but with a credit for taxes (including withholding) paid in the host country (up to the amount of home tax that would be payable). Residence-country tax on the active business income of subsidiaries (separately incorporated abroad) typically becomes due only when income is repatriated to the parent, creating opportunities for deferring home country tax by channeling income to low-tax jurisdictions and retaining it there (though CFC rules seek to limit these by bringing passive income into tax immediately). Income of branches and partnerships is generally taxed without deferral.

- Under the ***exemption*** (or ***territorial***) principle, income from domestically-owned entities is generally exempt in the home country.

It is not always easy to classify countries between these regimes. [56] Canada, for example, applies exemption to countries with which it has a double tax treaty, but the residence principle to others. Broadly speaking, Japan, the U.K. and the U.S. currently tax on a worldwide basis (though the U.K. has announced its intention to move towards exemption, and the possibility of such a move has long been discussed in the U.S.). Australia, France and Germany are among those operating exemption.

Debt and avoidance

Under either of these systems, there are potential tax advantages to borrowing in countries with relatively high statutory CIT rates. Lending from subsidiaries in low tax jurisdictions to others located in high tax ones is advantageous, for instance, since then interest is taxed at a lower rate than it is deducted. There may even be circumstances in which by borrowing, preferably in relatively high-tax jurisdictions, companies can *double-dip*, taking multiple interest deductions.[57]

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[56]Portfolio income of individuals, however, is commonly taxed on a residence basis.

[57] By, for instance, borrowing in a (high-tax) country to acquire equity in a subsidiary located in a low-tax jurisdiction that then lends to another subsidiary in a third country: see Mintz (2004).

Special rules are in some cases deployed to prevent such tax arbitrage. The U.S., for example, allows deduction only of a fraction of domestic interest payments, corresponding to the share of domestic in worldwide assets. Such measures may reduce but do not eliminate the potential distortion: interest allocation rules will have no effect on some U.S. multinationals, for instance, while for others it will create incentives to invest more abroad.[58] And many countries simply do not attempt to limit interest deductions for borrowing intended to finance operations abroad. Borrowing is thus likely to be especially tax-favored where the CIT rate is high, not necessarily in absolute terms, but relative to that in other countries; notably, perhaps, in the U.S.—the only OECD country not to have reduced its CIT rate since 1987.

Particular opportunities for tax-advantageous use of debt are also provided by ***hybrid entities***, treated as a corporation in one country but as a branch or partnership (rather than subsidiary) in another. For instance, a parent company can then locate in a low-tax jurisdiction a hybrid that the home country treats not as a corporation (and hence is not subject to its CFC rules) but as a branch of a corporation located in some third, high-tax jurisdiction. The parent then injects equity into the hybrid, which lends to the high tax affiliate. This generates interest deductions in the high tax country, but the interest received by the affiliate is not taxed by the home country until repatriated.[59]

More generally, in economies open to international capital movements' domestic personal tax considerations become less determinative since the marginal investor may simply be nonresident. The treatment of financing costs at corporate level then becomes critical.

There is considerable evidence that a range of corporate decisions respond sensitively to tax considerations, with use of various devices—not only on borrowing, but also on transfer-pricing, and the location of headquarters and intangible assets—to shift profits from high to low tax jurisdictions. Dischinger and Riedel (2008), for instance, find that a 1 point increase in the corporate tax rate increases the level of intangible assets held in a subsidiary by 1.6 percent.

[58] For a firm with deficit credits—that is, which has not paid enough foreign tax to eliminate its the U.S. liability on repatriation—interest allocation has no effect: the increase in taxes on domestic income it implies is exactly offset by a reduction in the U.S. tax due on income from abroad (since that underlying income is reduced, for the U.S. tax purposes, by the interest allocated there). For a firm with excess credits, interest allocation does increase the U.S. tax payments.

[59] Nor is that interest generally taxed in the high tax country unless it applies CFC rules.

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