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THE FISCAL APPROACH TO FINANCIAL INTERMEDIATION POLICY

by

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Abstract

Against the background of increasing financial depth and international financial integration, not least in the EU, the trend towards analyzing financial system policy in fiscal terms is reviewed. Implicit and explicit taxation of the financial system has generated substantial - though now declining - fiscal resources. In many countries arbitrary fluctuations in such taxation have resulted accidentally from poorly designed regulatory mechanisms whose primary purpose was not revenue, and which had been set up without regard to the quasi-fiscal consequences. Insights from standard tax analysis help assess the question of efficiency of financial system taxation, though they should not be applied without taking into account the informational and risk-sharing characteristics of financial contracts. The institutional structure of the financial sector can be strongly influenced by conventional taxation.

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1 Introduction

With the increasing importance of financial intermediation in the economy, evident from the growing size of financial assets and the growing contribution of financial intermediation to GDP, public policy in respect of financial intermediation has also been evolving rapidly. Increasing international integration of financial markets, deriving from policy and technological changes, not least in the EU, has also been an important generator of policy issues in this area. At the same time, there has been an accelerating trend towards analyzing financial sector policy (long the subject of independent branches of economics) in fiscal terms. This is partly because of a recognition of the importance of the financial system for generating revenue or otherwise easing budgetary constraints, but also because of a greater awareness of the role of the financial system and of financial intermediation in contributing to economic welfare.

Though it could be carried too far, the fiscal approach to analyzing government policy in relation to the financial system is a fruitful one. It brings powerful and unifying principles from public finance into what can otherwise seem a specialized and arcane topic.

Not only does the financial system provide the basic payment systems for the economy and channel investible funds between surplus and deficit agents and sectors, but it also plays a crucial role in evaluating and distributing risk in the economy. Key elements of the system are the assets in which it deals and the institutions which process and evaluate these assets. Hand-to-hand currency now represents only a small fraction of financial assets in the economies of the EU and other developed areas, but it is still important both as the numeraire of a much larger fraction of financial assets and as a main part of governments' involvement in the financial system. Most financial assets represent claims on or of financial intermediaries, and though non-financial entities do hold financial claims on others, many such claims can be traded in markets with the use of brokers and other financial firms.

The financial system has long been a source of government revenue. Government monopoly on the issue of currency was an early and important aspect. As economies became more sophisticated, the variety of ways - usually implicit - in which the financial system has been taxed also increased, but this process has surely peaked. Indeed, advances in communications technology have opened the financial sector of all countries to international competition and, *a fortiori,* have resulted in tax competition which has tended to erode the tax base in this area. For example, the Single Market process in the EU as well as the wider European Economic Space has accelerated the degree to which international competition in financial markets is free to operate even without assuming evasion of exchange controls.

The financial sector has traditionally been regulated in nearly all countries, and though the degree of regulation has greatly diminished in recent years this remains true today. As with the tariffs and quotas, a degree of equivalence between administrative regulation and taxation can be discussed for financial systems, and this forms the basis of the fiscal approach to analysis of the financial system. Such implicit taxes stand alongside explicit taxation, though it is customary to consider different types of regulation or taxation separately.

This paper reviews some current issues in the fiscal analysis of financial system issues. We begin in Section 2 with the contribution of the system to government revenue. Section 3 discusses aspects the efficiency of financial system taxation, implicit and explicit, including the question of tax smoothing, and corrective and distorting taxation. In Section 4 we point out the apparently accidental nature of much of financial system taxation and especially its use as a last resort. Finally, in Section 5 we discuss some implications of explicit taxation for the structure and performance of financial intermediation. Throughout we provide only illustrative references to the literature; there is no attempt to be comprehensive.

2 As a source of revenue

Seigniorage and the dynamics of inflation

Seigniorage and the inflation[1] tax are probably the most important aspects of financial system taxation. Terminology in this area is ambiguous, because a number of distinctions can be made between closely related concepts.[2] Seigniorage relates to the government's monopoly rent on the issue of currency. Even though the maintenance of a paper currency system is not costless,[3] especially because of the need to print replacement banknotes when they become worn, the issue of currency provides immediate resources to the government at a running cost well below the opportunity cost of obtaining such funds through borrowing. As the economy grows, an increase in real currency demand provides an incremental flow of resources to the government, as does the private sector's efforts to maintain the real value of its currency holdings in inflationary times.

The dynamic path of an economy under inflationary anticipations requires careful analysis. To the extent that they are anticipated, the capital losses imposed by inflation on currency holders result in their economizing on currency balances, and this implies that the potential of resources to the government through the inflation

[1]Patinkin (1993) points out that Keynes attributed governments' tolerance for inflation to quasi-fiscal objectives as long ago as 1923.

[2]Some authors prefer to distinguish between revenue resulting from the growth in real money balances as seigniorage and that attributable to a growth in nominal balances without any change in real balances. Definitional issues are explored in Honohan (1992).

[3]A point which is stressed by Goff and Toma (1993).

tax is not unlimited. Indeed, it has been estimated that inflation in some Latin American countries has sometimes exceeded the revenue maximizing rate. The key importance of anticipations in the context of the inflation tax has more complex implications also. For instance, tricky issues of multiple equilibria need to be taken into account, as was shown by Bruno and Fischer (1990) in whose model a given revenue target could be achieved at either of two equilibrium inflation rates, one of them an unstable equilibrium. The possibility of an economy sliding into a hyperinflation because of such anticipation-related dynamics is also something which needs to be taken into account in evaluating the revenue potential of inflationary finance.[4]

Bank deposits are a close substitute for currency, and have naturally also been subjected to implicit taxation. This has been generally been done by imposing unremunerated reserve requirements on banks in respect of deposits mobilized by them, thereby effectively expanding the base for seigniorage and the inflation tax. We discuss below the degree to which such requirements can be seen as a corrective tax, but it is clear that the ability of a government which is relying heavily on inflation tax to generate its target revenue will depend on its ability to tax existing or emergent substitutes.

Where the inflation tax is heavy, the adoption of cash-saving technological innovations (such as indexation, use of debit cards etc.) has been observed. Although individually rational, such innovation can actually be welfare-reducing in a country where the government has no alternative to the inflation tax for revenue purposes as it will lead to even higher rates of inflation on the diminished base.[5]

Conversely, by suddenly foregoing the inflation tax, for example by abandoning one's own currency and adopting a stable alternative, governments who have relied on high inflation may have difficulty in achieving fiscal objectives. The practical importance of this point for the European Monetary Union project has been discussed by Grilli (1989) and Végh and Guidotti (1990), for example, who have stressed the wide difference between EU countries in the degree to which they have relied on the inflation tax. Conversely, the strategic interaction of national policies (cf. for example Bacchetta and Caminal, 1992) in this context is of importance to the extent that EMU is delayed.

Inflation tax revenues do not always benefit the budget

Although inflation does transfer resources to the public sector in this way, the popular image of the printing press running to finance a government budget deficit is often misleading. Indeed, one of the most characteristic aspects of inflationary

[4]See also Kiguel (1989), Lee and Ratti (1993).

[5]This point has been shown by Végh (1993). Fischer and Summers (1989), presented a similar argument, but from the point of view of exploiting a Phillips curve rather than meeting a fiscal revenue objective.

finance is that it is rarely consolidated in an explicit way into the budgetary process. Very often the flow of resources is not reflected in government revenue as such, but in loans made by the central bank to non-government public or private sector entities. If such loans were serviced on commercial terms they would contribute to central bank profits and ultimately accrue to central government. But more often the loans are either explicitly interest-free or at below-market interest rates, or implicitly so in that they are never fully serviced or repaid.[6] The operation of concessional loan facilities by the central bank can mushroom to become a very substantial parallel budgetary process financed by seigniorage and the inflation tax (and in some extreme cases requiring transfers from the government's own budget). Expenditures of this type contribute to what is often termed the "quasi-fiscal deficit" (cf. Blejer and Cheasty, 1991).

Centrally planned economies used the banking system as an integral part of the process of allocating resources, and as these economies adapt to the market system, continued reliance on subsidized central bank credit has been the proximate mechanism for much of the monetary expansion which has kept inflation high in many of these countries.[7] The corporate sector rather than the budget has been the main beneficiary of the resources generated by the inflation tax (World Bank, 1992).

Thus, the extent to which the inflationary process can be seen as a self-contained parallel budgetary mechanism on both spending and revenue side varies. At one extreme would be Russia and other formerly planned economies, with central bank subsidies to the non-government sector being financed by the inflation tax. The German hyperinflation of 1922 would represent the other extreme where the fiscal deficit proper was being financed by money creation. As intermediate examples we could cite the case of Israel in the 1980s, where central bank subsidies were important, but where elimination of the inflation also required a sharp reduction in the fiscal deficit proper (Patinkin, 1993).

Quantification

To account fully for the resources transferred by fiscal and quasi-fiscal impositions on the financial system one needs to include other elements apart from the inflation tax. For instance, the imposition of ceilings on interest rates, with preferential

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[6]Underpriced foreign exchange rate guarantee programmes are another hidden form of spending which have become quantitatively important in various countries, including Yugoslavia in the late-1980s. By guaranteeing the exchange rate to banks who are importing foreign exchange to onlend to their customers, the central bank typically ensures a substantial subsidy for the onlending to the extent that the domestic currency is sure to have depreciated when the banks' foreign exchange loan falls due.

[7]Erosion of corporate tax revenues has also been important in preventing the reestablishment of macroeconomic equilibrium.

access of government to credit, can in general be seen as a tax - often falling on depositors in the first instance. Indeed, this type of quasi-tax, though even more hidden than the inflation tax, is often much more important quantitatively than the others, at least in financially repressed developing countries.[8] There are also a number of explicit taxes on the financial sector which have been applied in many countries. These can include a special tax on the gross receipts (interest and fees) of the banking system and on premium income of insurance companies, and *ad valorem* duties on transactions such as the purchase or sale of securities.

Quantification of some or all of these taxes and quasi-taxes is not altogether straightforward but has been attempted by several authors.[9] Wide variations between the revenue generated is reported for different countries, and for different time periods for a single country. In some developing countries the share of seigniorage revenues in total taxation can be very high indeed.

3 Efficiency of taxation

The inflation tax as efficient taxation in a second-best world

The financial system is taxed, but should it be? The classical result about seigniorage is that, because of the almost negligible cost of producing currency, in an otherwise undistorted steady-state economy (e.g. in the presence of lump-sum taxation), the social optimum would be achieved where the rate of inflation was negative to the point where the opportunity cost of holding currency - the nominal interest rate - was close to zero.[10] Most recent analysis of efficient taxation has proceeded on the assumption that alternative taxes are either unavailable, impose an excess burden or are costly to collect (cf. Chamley, 1985, Phelps, 1973, Végh, 1989). In that case, the inflation tax may play a part in the constrained efficient tax structure.[11] although to the extent that money is an intermediate good, the strictures of Diamond and Mirrlees (1971) may dictate that it should not be taxed.[12] If

[8]Cf Sussman (1990). The concept of financial repression is discussed with references in Fry (1993).

[9]For example, Chamley (1991), Chamley and Honohan (1990), Cornelius (1990), Fischer (1982), Giovannini and de Melo (1993), Grilli (1989), de Macedo and Sebastiao (1989), Repullo (1991). The last-named reports financial system quasi-taxes in Spain averaging 1.7 per cent of GDP during 1980-90, with annual figures varying between 1.2 and 2.3 per cent of GDP.

[10]Cf. Friedman (1953, 1969) and Bailey (1956).

[11]And the optimal inflation rate is, as pointed out by Dixit (1991), independent of the presence of inflationary erosion of other taxes discussed by Tanzi (1977).

[12]The applicability of the Diamond-Mirrlees result is somewhat controversial, as one needs to specify clearly the role of money in the production, transactions and consumption technology. Spaventa (1989) provides a review of the issue.

countries differ in the degree to which the efficient tax structure would rely on inflation, then this may be a reason to retain separate currencies, rather than joining a currency union - a matter which has been of some concern in the context of the EMU (Canzoneri and Rogers, 1990). Still, even if one accepts the desirability of some reliance on the inflation tax, calculations using computable general equilibrium models of the US suggest that even at the low rates prevailing there, inflation is above the optimum evaluated from the fiscal perspective.[13]

The close connection between the inflation tax and reserve requirements implies in most models that if one should be present, then so should the other. In this context, most authors take for granted an equivalence between taxation of deposit interest and imposition of (unremunerated) reserve requirements, though this has been recently controversial.[14] But it seems clear that such equivalence cannot be extended to other forms of quasi-tax (cf. Chamley and Honohan, 1992).

A government's revenue needs are rarely static, and much attention has recently been focused on the degree to which the inflation tax should be correlated with other taxes in an intertemporally optimized tax structure. A simple model exploring this was presented Mankiw (1987) and elaborated with variations by many subsequent authors.[15] This tax-smoothing hypothesis has been tested on time series for many countries with only moderate success. Among the possible reasons for failure of this theory are the consideration that some taxes are more easily and quickly adjusted than others, and ambiguity regarding the time at which the inflation tax has its incidence.

This latter point concerns measurement which is a pervasive, though rather neglected, problem in the empirical analysis of the inflation tax.[16] The main issue arises from the fact that the correlation between the stock of currency and the price

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Kimbrough (1986) presents an explicit model which generates this result, but the assumptions made are somewhat restrictive, and Guidotti and Végh (1993) point out that the transactions technology is likely not to display constant returns to scale, thereby falling outside the Diamond-Mirrlees theorem.

[13]Cf. _mrohoro_lu and Prescott (1991), Cooley and Hansen (1991).

[14]Cf. Freeman (1987), Mourmouras and Russell (1992.). The latter show that Freeman's non-equivalence is a rather special result. Interestingly, non-equivalence has been shown only for a model which results in a hyperinflationary optimum.

[15]For example, Poterba and Rotemberg (1990), who assume that the deadweight cost of inflation is a function of the inflation rate; Calvo and Leiderman (1992), who derive the welfare costs of inflation from a model with in the utility function of private agents. These models also address the problem of time-consistency which is important in this context.

[16]Cf. Drazen (1985), Honohan (1992).

level is not exactly contemporaneous. Accordingly, one will compute a different timepath of the tax depending on whether one uses the inflation rate itself or the expansion of the currency stock as measures. Which of these measures is the most appropriate for the tax-smoothing analysis depends on how one models the welfare losses involved.[17]

Corrective taxation for financial system failures

So far, we have focused mainly on aspects related to the inflation tax, where expectations and intertemporal links are central. We now turn to the other aspects of financial markets which can lead to a requirement for regulation and implicit taxation.

There is a growing awareness of the decisive influence of information asymmetries on the structure and performance of credit markets (cf. Gertler, 1988). If credit markets are subject to failure for informational reasons, how does this impact one's perception of the efficiency of financial system taxation? Even with optimal design of financial contracts, asymmetric information, together with difficulties in enforcing contracts, may result in credit rationing and generally induce sub-optimal allocation of investible resources. In such an environment the excess burden of distorting taxation (or regulation) can be very high.[18] On the other hand, and although government intervention is not always indicated, de Meza and Webb (1989), for example, provide instances where taxation of bank interest can be welfare improving by mitigating the consequences of information asymmetries and of constraints on the design of loan contracts. There has recently been a move at EU level to expand the provision of loan subsidies (intermediated by the European Investment Bank) in an apparent attempt to deal with financial market failures. Whether interest subsidies are likely to be effective in this regard is questionable.

A different type of argument for intervention in the financial system with a quasi-fiscal aspect relates to reserve requirements and monetary policy. The argument has been that effective macroeconomic stabilization policy requires that the banks hold non-interest bearing reserves which can act as a fulcrum on which monetary policy actions can be levered. Only if constrained to hold more reserves than they would otherwise choose (it has been argued) will each bank's incentive to minimize its excess holdings of costly reserves provide a sufficiently reliable way of ensuring transmission of monetary policy actions to interest rates, credit availability and monetary aggregates. If so, the distorting effects of the implicit tax involved in unremunerated reserve requirements are incidental to a valuable stabilizing

[17]A further issue relates to the problem of "surprise" inflation which, though often ruled out in optimizing models, may be present in samples (Cf. Auernheimer, 1974).

[18]Schiantarelli et al. (1994) summarize some empirical evidence here. The insights of the endogenous growth literature reinforce this point, cf. Alogoskoufis and van der Ploeg (1991), de Gregorio (1993).

function. Furthermore, the lower the reserve requirements, the more volatility is transmitted from high-frequency demand shocks to money market interest rates (Meulendyke, 1990, Brunner and Lown, 1993). The importance and validity of these arguments can be questioned when it is observed that most countries have been progressively lowering reserve requirements, in some cases to zero.

A pressure on reserve requirements and similar quasi-fiscal impositions on the banking system has been the increased vulnerability of banks to competition from countries with lighter regulatory requirements and from non-bank providers of funds. With banks no longer the only possible source of funds for large borrowers even small taxes can result in significant diversions of resources. It is presumably an acceptance of this proposition on the part of the authorities that has allowed US banks in practice to avoid most of the reserve requirements tax by effectively switching most deposit-type funds into non-reservable forms.[19] In preparations for the EMU project, the question of whether reserve requirements will be imposed on banks by the European Central Bank, and if so how they will be remunerated, promises to be a source of controversy, in which the fiscal aspects will be debated against the issues of monetary control.

There are some similarities between the claimed stabilizing properties of reserve requirements and the advocacy by Tobin and others of a foreign exchange transactions tax (Eichengreen and Wyplosz, 1993). The idea of such a tax is to reduce the incentive for short-term currency speculation, and renewed interest in the scheme results from the waves of currency speculation which broke over the European Monetary System during 1992-93 forcing the adoption of wider margins of fluctuation . A one-per-cent duty payable on all purchases and sales of foreign exchange[20] would, it has been argued, represent a negligible distortion to trade or long-term investment, but would be a huge discouragement to short-run speculation where transactions are designed to be reversed in a matter of days and are undertaken in the hope of a movement of 5-10 per cent in exchange rate parities.

Deposit insurance: a distorting subsidy

Designed as a corrective measure (to avoid externalities related to asymmetric information where bank failure or the fear of bank failure can generate panic withdrawals or runs), deposit insurance in the United States proved to be

[19]By this means, US banks are able to bring actual reserve holdings down to about one-half of one per cent of total liabilities despite much larger nominal requirement ratios - up to ten per cent on demand deposits - on the traditionally important classes of liabilities.

[20]An alternative scheme, with similar effect, is to impose a high unremunerated reserve requirement for a fixed period on foot of net foreign exchange purchases by the banking system. Such a scheme was introduced in Spain as a temporary measure during 1992.

underpriced and was effectively a seriously distorting subsidy. The ability of bank shareholders effectively to pass most of the downside risk to the deposit insurance scheme has induced very risky portfolios and resulted in heavy costs to the budget. The official response has been to increase the insurance premium (earmarked tax), but a fully efficient scheme would need to graduate the premium by risk category.[21] Here then is a clear case where inadequate prior analysis of the specifically financial consequences (for financial leverage and moral hazard) of a tax-subsidy programme have been very damaging. In the EU, explicit deposit insurance schemes have been less generous, though implicit insurance on the "too big to fail" principle may be quite high. The existence of implicit insurance may reduce the degree to which differences in national deposit insurance schemes lead to tax competition on the part of depositors within the EU.

4 Accidental taxation

Even if there are theoretical arguments for taxation of the financial system, it is arguable that much of this taxation is accidental in nature rather than being the outcome of a systematic decision by policymakers. A good example of accidental taxation can be seen in the way in which the effective tax rate from a gross receipts tax or from an unremunerated reserve requirement fluctuates with the rate of inflation or nominal interest. A tax on the gross interest receipts of a bank at the rate of 5 per cent will add just 50 basis points to a break-even lending interest rate of 10 per cent - corresponding[22] to a rate of taxation on value added of perhaps 20 per cent. But if the interest cost of funds jumps to 40 per cent, then the gross receipts tax will account for more than 200 basis points - or close to 80 per cent on value added.

Similar jumps in the effective rate of taxation apply to implicit taxes such as reserve requirements. Some countries do remunerate required reserves, but at a fixed or administered rate which does not respond to changes in market interest rates. When expected inflation is low so that nominal market interest rates are close to the rate of remuneration on required reserves, the implicit tax on the reserves is negligible. An increase in the rate of inflation (with a corresponding increase in nominal market rates of interest) will increase the implicit tax rate by an amount which could even be proportionately greater than the increase in the rate of inflation. Although the benefit of this implicit tax should ease the Government's budgetary position, in practice budgetary accounting procedures may not make this evident. For instance the increased profits of the Central Bank may not be quickly

[21]Rochet (1992) elaborates in the context of current policy in the EU on this and related issues.

[22]If we assume that banks compete (e.g. with foreign investment opportunities) for deposits in a competitive market but have some market power on the lending side.

transferred to the benefit of the budget.[23] This tends to confirm that some fluctuations in implicit financial system taxation is the accidental and little understood by-product of poor design in financial regulation rather than being a deliberate component of budgetary policy.

As against this, it is also true that recourse to inflationary financing is often the last resort for a government caught in an unanticipated fiscal bind. Declining tax revenues or a sudden need for expanded spending (typically arising from natural or climatic disasters or cycles) can leave the government with little option but to print currency or impose special lending or reserve coefficients on banks. This is especially the case for governments which are constrained from borrowing on the domestic or international capital markets. In such circumstances, large fluctuations in the resources obtained from financial system taxation may represent a constrained optimum in that it represents the use of an elastic and quickly adjustable source which may be preferable if the next best is drastic cutbacks in spending, or the emergence of government payments arrears.[24]

If it is the absence of a well-developed and flexible formal tax system that makes haphazard recourse to inflationary tax necessary, an interesting political economy question is why and when will such a tax system emerge. Cukierman, Edwards and Tabellini (1992) provide one answer presenting cross-country evidence that links seigniorage revenues to the presence of a polarized and unstable political system. It is in the interest of neither side in such conditions to put in place an effective system of formal tax collection.

Because it is a response to unpredicted net revenue requirements, the transfer of resources from such emergency recourse to the printing press typically imposes unanticipated capital losses on holders of financial assets denominated in domestic currency. In a rational expectations equilibrium, the possibility of such losses will be built in to the required yield on such assets *ex ante*. If such a country goes for some time without experiencing revenue shocks, we may accordingly observe high *ex post* real interest rates for an extended period attributable to rational pricing. This is the *Peso problem*, which can also be experiences in a learning period after a government has renounced use of the inflation tax as a tax of last resort, but has not yet secured full credibility for this policy.

5 The impact of the explicit tax code on financial intermediaries

An entirely different dimension to the fiscal analysis of the financial sector relates to conventional (explicit) taxation. Because of the sensitivity of financial

[23]Even in the United States within living memory, cf. Goff and Toma (1993).

[24]This point is explored theoretically by Bohn (1988). Fluctuating revenue requirements can result in disproportionate swings in the inflation rate (Honohan, 1991).

intermediaries to after-tax rates of return, and their ability to adapt, the design of conventional taxation can have a dramatic influence on the type and structure of financial institutions.

Sensitivity of financial structure to taxation

In many countries, the direct tax treatment of different types of financial institution are set out explicitly, so that (for example) the tax treatment of licensed banks differs from that of leasing firms or insurance companies. Increasingly, however, a more relaxed regulatory environment has broken down the traditional barriers of demarcation between different classes of financial intermediary, making differential tax treatment by type of institution increasingly difficult to sustain. The completion of the EU Internal Market in financial services has hastened the demise of discriminatory tax regimes because of the threat of tax competition, though this remains a contentious issue in certain fields, notably life assurance.

Even where no explicit discrimination by type of intermediary exists, features of the tax code can implicitly favour one form of intermediation over others. Thus in particular while the taxation of different forms of capital income has been widely studied in the context of its influence on saving, investment and the financial structure of enterprises, the relative importance of such taxes on the evolution and competitive position of different types of financial intermediary is probably more important. After all, it is the essence of financial intermediaries to convert one stream of capital into another with different risk characteristics. To the extent that the tax code distinguishes between different forms of return on capital (capital gains, dividends to equity, interest on bonds or bank loans, interest on indexed bonds), then it will influence the capacity of intermediaries to offer this kind of service.

The controversy over dividend taxation (cf. Zodrow, 1991) illustrates the point. For the non-financial firm, the question has been whether taxation of dividends influences investment decisions, with the answer depending on the ability of the firm to finance investment opportunities out of retained earnings or alternative sources of funding rather than new share issues, and on whether share repurchases will be an available option. In some presentations, the availability of alternative financing opportunities has the effect of eliminating or reducing the impact of the dividend tax on investment. But of course this means that the tax has an all-important impact on the financing structure, and thus on financial institutions, since intermediaries are defined by little more than their financial structure and their capacity to deal with the information and risk problems presented by financial structure.

In particular, the notion that "trapped equity" suffers the burden of a tax such as the dividend tax does not at all mean that it has no allocative consequences. Wealth effects can matter a lot in the area of financial contracts. Indeed, applying considerations of risk aversion and imperfect information, financial system theorists have begun to attach considerable importance to the role of net wealth of both borrowers and financial intermediaries in determining the allocation of credit

(cf. Stiglitz, 1992).

Other aspects of inflation non-neutrality

We have treated the question of the inflation tax at some length above; but even where tax revenue is more easily adapted to revenue needs, and the fiscal situation is not subject to substantial shocks, the tax code is usually not neutral with regard to inflation. Indeed, the tax code of most countries seems to embody a considerable degree of money illusion. This is most notable in regard to the taxation of interest and profits, where calculations of tax liability usually make insufficient allowance for changes in money prices, if they make such allowance at all.[25] This has consequences for the financial sector, and for its ability to intermediate funds effectively. Securities such as indexed bonds may be subject have unfavourable or uncertain tax treatment. More important, the sharp distinction often drawn in tax codes between income and capital gains can, in inflationary times, sharply distort the margins between returns on different financial assets. For example, Sinn (1991) demonstrates the potential importance of interactions between a non-neutral tax code and differing rates of inflation by showing how international capital flows may be triggered by changes in the rate of inflation. More generally, increasing mobility of capital constrains the degree to which international differentials can be maintained in the taxation of capital income, a consideration which has kept alive the debate on an EU-wide minimum withholding tax on interest income.

As well as inhibiting certain types of financial intermediation, tax considerations can greatly encourage other types. An example is leasing, which has mushroomed as a result of the desire of tax-exhausted firms to benefit from investment and depreciation allowances (cf. Edwards and Mayer, 1991). Specialized financial intermediaries (leasing companies) have grown up to service this need.[26]

Indirect taxation

Interest charges made by a financial intermediary typically embody an element to cover the value added provided by the institution over and above the pure interest

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[25]The distorting effects of non-indexation on the choice of investment asset has been widely studied, see for example, Agell (1989), Ebrill and Possen (1982), Feldstein (1980). Sadka (1991) discusses the problem in the case of very high inflation.

[26] Another example is provided by the anti-avoidance provision in the Irish tax code which insisted that an interest payment would be treated as a distribution if it was in any way subject to variation with the profitability of the firm (Flynn and Honohan, 1984). This provision, combined with the fact that certain categories of firm were subject to a low rate of corporation tax, allowed banks to shelter substantial tax liabilities. Among those sharing in the tax savings was GPA, helped thereby to became one of the largest aircraft leasing companies in the world.

component; the latter is, in a sense, simply held in trust for the depositor or other provider of funds to the intermediary. To the extent that financial services are an input into production, the Diamond-Mirrlees (1971) results could (as in the case of currency) also apply to taxation of the value added. This thought naturally leads to the question of whether financial services should be subject to a comprehensive value added tax (VAT).

In the EU, financial services are exempt from VAT: a financial service company cannot recover VAT paid by those who provide services to it. Thus the purchaser of financial services "effectively pays" the VAT on services purchased by the company, but not on services generated by the financial services company itself. Still, unless it is a consumer or otherwise not registered for VAT, the customer of the financial service company will in turn build the cost of the financial service into its pricing and pay VAT on it. In this way most of the value added of the financial system - an amount which now exceeds 5 per cent of GDP in most industrial countries - is caught in the VAT net. A systematic discussion of how banking and insurance could be treated in a VAT is contained in Barham, Poddar and Whalley (1987) and Hoffman, Poddar and Whalley (1987).

6 Concluding remarks

It is widely accepted that much of the implicit taxation involved in government's relationship with the financial system has created severe distortions which have held back economic growth and development especially in low and middle income countries. That awareness has led in recent years to extensive liberalization of the financial system and a reduction in both implicit and explicit taxation on the system. Many countries have now reached the point of fine-tuning, of deciding whether further reductions in taxation are still needed, and whether the structure and design of taxation and regulation needs to be refined. The potential for applying the fiscal approach to financial system policy is thus likely to increase.

But, while insights from standard tax analysis can be revealing, it would be unwise to apply standard results on efficient taxation to financial system issues without taking into account the inherently intertemporal nature of financial assets, together with the essential informational and risk-sharing characteristics of financial contracts. These raise special questions with regard to the impact of taxation, implicit and explicit, on the financial system.

In many countries arbitrary fluctuations in implicit taxation appear to have resulted from poorly designed regulatory mechanisms whose primary purpose was not revenue, and which had been set up without regard to the quasi-fiscal consequences. Fiscal analysis can reveal such deficiencies and allow such accidental taxation to be eliminated.

The institutional structure of the financial sector can be strongly influenced by conventional explicit taxation, especially in the emerging deregulated financial

environment of most countries.

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