THE TREATMENT OF FINANCIAL SERVICES
UNDER A BROAD-BASED CONSUMPTION TAX
William Jack
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SUMMARY

This paper examines the appropriate taxation of financial services under a broad-based consumption tax. It is assumed that the underlying objective of the consumption tax is to maintain undistorted prices between current and future consumption (i.e. to impose no distortion on savings decisions) and, in a model with uncertainty, between consumption in different states of the world. It is argued that, in order to achieve such neutrality, proportional financial services charges like interest spreads and insurance premium loadings should be untaxed. On the other hand, identifiable fixed fees should be taxed. This is because, under the partial equilibrium assumption that the size of the spread used to finance financial services is fixed, the price of such services automatically increases with the introduction of the consumption tax. Levying the tax on them explicitly would then increase their relative price, and impose an unwanted distortion.

Although the results suggest that the incorporation of financial services in a VAT system is straightforward, the appropriate treatment of business users is somewhat complicated. In particular, under a credit-invoice VAT, when the purchaser of the service is a business, it should receive a credit for any increase in the proportional fee associated with the tax, even though this amount does not accrue to the government as tax revenue. Unfortunately, this may create headaches for the tax office, and goldmines for tax accountants.
1. Introduction

Many tax economists, lawyers, and accountants have examined the design of mechanisms with which financial services can be appropriately taxed under a broad-based consumption tax such as a value added tax (VAT). The main problem identified in the application of a VAT to financial services is that of calculating the value added when such services are not explicitly priced, and allocating it between the two sides of the transaction (e.g., between savers and the dissavers). Recent papers that address these issues include Morley English and Satya Poddar (1997), David Bradford (1996), Peter Merrill and Chris Edwards (1996), and, in the context of developing countries, Malcolm Gillis (1990). Most authors take as given the desirability of taxing financial services, and confine themselves to implementation issues. The aim of this paper is to show that the focus of the literature so far has been somewhat misguided.

Ngoc Chooi Chia and John Whalley (1989) and Whalley (1992) have taken a step back from the implementation issue and asked whether banks should be taxed. They argue that, under the assumption that financial services do not enter individuals' utility functions directly, they should not be included in the base of a consumption tax. Quiggin (1993) also mentions a similar point briefly in passing. The analysis of this note is consistent with those papers. However, the observation that financial services do not provide direct consumption benefits, while useful, is not sufficient to yield the prescription of exemption (or, more precisely, zero rating). The same could be said for other inputs into the production of final goods, such as unfinished plastic, steel, or cement - these intermediary goods yield no direct consumption benefit (for most people) but are properly included in the base of a broad-based VAT.

I assume that the underlying feature of a consumption tax that we wish to maintain is that it has no direct effect on the relative prices of different consumption goods. By consumption goods, I will mean goods that effectively provide direct benefits to individuals - in a formal sense, those that the economist would model as entering an individual's utility function directly. As I concentrate on financial services, of particular interest are goods consumed at different dates in different states of the world. This will allow examination of the treatment of

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1 See also Grubert and Mackie (1998) for an alternative treatment.
2 Even if a tax has no direct effect on relative prices, in the presence of wealth effects, the general equilibrium impact may induce relative price changes. In the absence of other distortionary taxes, such adjustments do not represent distortions.
financial services in the banking/investment area, and the insurance sector.

The simple observation of the current paper is that if the value added from financial services provided to final consumers is proportional to the nominal value of the underlying financial transfer - e.g., if a bank charges for financial services by means of an interest rate spread - then it should not be taxed. On the other hand, to the extent that the fixed fee charged for financial intermediation services is proportional to the real value of the underlying transfer, it should be included in the VAT base. I refer to such charges as quasi-fixed fees. These rules ensure that the relative prices of consumption goods are not directly affected by the tax. In the case of spread-based charges, the finance charge automatically increases proportionately in response to a tax on final consumption, so taxing it would distort relative consumption good prices. On the other hand, quasi-fixed fees do not automatically increase in proportion to the tax, so should be included in the base. Thus the services that the literature has identified as being difficult to tax are exactly those which in fact should not be taxed.

The prospect of such a free lunch is seductive, but there are unfortunately some costs involved. The main issue is how transactions between financial institutions and other VAT-registered businesses should be treated. Some authors have noted that the treatment of business users of financial services is simpler than that of final consumers. For example, Merrill and Edwards (1996) note that "by contrast, the failure to tax implicit FI [financial intermediation] fees supplied to business customers typically will be offset by the lack of a deduction at the customer level." However, if non-taxed spread-based fees increase proportionately with the introduction of the tax, then the problem is reversed. In order to maintain undistorted prices, business users of such financial services must be granted a credit on the increase in the fee, even though this increase does not accrue to the government as tax revenue. It may be that we need tax accountants after all, to examine ways of implementing this aspect of financial service taxation, instead of targeting services provided to final consumers.

Much of the discussion here turns on the form of financial intermediation costs, and a complete analysis would require an explicit account of the production technology employed by financial institutions and a general equilibrium treatment of the effects of taxes. For example, one may expect that the real intermediation costs associated with providing a loan or deposit service would be independent of the nominal value of the transaction. In this case spreads would not be observed in a competitive market, and only fixed fees would be sustainable. On the other hand, the existence of spread-based charges suggests that the financial services
industry is less than perfectly competitive, and/or that some component of the costs of providing services is positively related to the size of the transaction. One reason costs may be positively related to the size of the transaction is that financial institutions may have greater incentives to monitor larger loans, and thus to expend more real resources on their provision. While these are important issues, in this paper I take a partial equilibrium approach, and assume that the proportional component of fees - i.e., the spread-based charge - is unaffected by the introduction of a tax.

The next section presents a simple numerical example of financial services provided to final consumers. This is followed by a formal, although equally simple, algebraic treatment in section 3 of banking and insurance, again at the final consumer level. Section 4 examines the issue of business users, and section 5 concludes.

2. Some numerical examples

Consider a simple banking example in which an individual allocates consumption across time. There are two periods and one good, the nominal price of which does not change over time and is normalised to $1. Suppose an individual is contemplating giving up a unit of consumption in period 1. This requires that she save $1. If the market rate of interest is 10%, she earns $1.10, and can purchase 1.1 units of the good in the second period. The relative price of the good in the second period with respect to that in the first is $1/1.1 = 10/11 \approx .91$.

Now suppose that the consumer saves with a bank, and that the bank earns interest of 20% on its loans to other clients. Let us also assume that the demand for bank loans is infinitely elastic at this rate, so that the saver bears the full cost of the interest rate spread of 10 percentage points. In the absence of intermediation costs, the saver would receive the full interest rate of 20%. Under the assumption that the individual chooses to transfer consumption from period 1 to period 2 using the bank, the intermediation services are properly seen as being an input into the production of future consumption. A typical credit-invoice VAT would thus call for these services, although not inherently valued, to be taxed like any other input.

However, suppose a 50% VAT is now introduced. Consider first the case in which VAT is applied to the financial service component of the bank's operations.\footnote{The assumption about who bears the cost of intermediation is convenient, but otherwise without consequence.}
In this case, foregoing a unit of real consumption in period 1 permits the individual to save $1.50. Assuming that interest rates don't change, she earns 10% on this deposit, so arrives at period 2 with $1.65. The amount she effectively pays as a financial service charge is $.15, and, if she is required to pay VAT on this amount, her net return in period 2 is $1.65 - $.075 = $1.575. These funds can be used to purchase 1.575/1.50 = 1.05 units of the good. The relative price of the good in the second period with respect to that in the first is thus $1/1.05 \approx .95$. That is, second period consumption is relatively more expensive than in the absence of the VAT.

If the financial service is not taxable, then the individual's net return is $1.65, which buys $1.65/1.50 = 1.1$ units of second period consumption. The relative price of consumption in the second period vis-à-vis that in the first is thus $1.1/1 = .91$ - equal to that in the absence of the VAT.

Now suppose that instead of charging for the financial service by means of an interest rate spread, the bank charges a pure fixed fee of $.15. That is, depositors earn interest of 20%, but pay the fixed fee to cover administrative costs. It is important to recognise that this fee structure is a form of non-linear pricing, and to recall that the efficiency properties of resource allocations are determined by prices paid at the margin. In the absence of a VAT, the average price of the first unit of period 2 consumption remains unaffected (since, in this example, the size of the intermediation fee has not changed). However, the marginal price of second period consumption is $1/1.2 \approx .83$.

A VAT is now introduced at a rate of 50%. Conditional on saving a positive amount, the individual again saves $1.50 when she foregoes an additional unit of consumption in the first period. She earns a return at the margin of $.80, yielding a relative price of period 2 consumption equal to $1.5/1.8 \approx .83$, the same as without the VAT. Here, it is irrelevant whether the financial service is subject to VAT, as, conditional on saving a positive amount, the tax is effectively lump-sum. The only potential behavioural effect of a tax on the pure fixed fee is via the income effect - an individual who was previously saving a small amount may now be deterred from doing so.

An alternative type of fixed fee, which I shall refer to as a quasi-fixed fee, is one associated with banking services that do not facilitate inter-temporal substitution of consumption, but which reduce the cost of current consumption. Examples include the use of automatic teller machines (ATMs) which allow consumers to economise on cash holdings, automatic debit cards (which serve a similar purpose) and credit cards whose balance is paid off before interest charges start to accrue.
In this case, it is reasonable to assume that an individual’s use of such services is proportional to the number of transactions undertaken, and hence to the quantity of real consumption goods purchased in a period. Now it is necessary to tax the financial service whose value added is represented by the quasi-fixed fee.

To see this suppose there are two consumption goods. The first can be purchased directly, and the second requires the use of a unit of banking services for each unit of the good purchased. Suppose the price of the first good is $1, that of the second is $2, and that the fixed fee per transaction is 8.50. The relative price of the second good vis-a-vis the first is 2.5. Now a VAT is introduced at a rate of 50%. If the fixed financial service fee is untaxed, the relative price of the second good becomes $3.5/1.5 \approx 2.3$. On the other hand, subjecting the financial service to VAT yields a relative price of $3.75/1.5 = 2.5$.

These numerical examples suggest that the tax rules for the three kinds of financial service charges - spreads, pure fixed fees, and quasi-fixed fees - should differ. To maintain undistorted relative consumption goods prices, quasi-fixed fees must be taxed. On the other hand, to achieve the same objective, spreads should not be taxed. Finally, the tax treatment of pure fixed fees has little if any efficiency effect. The next section provides a formal exposition of these results.

3. A simple model

In this section I present two formal models of financial service provision. The first examines the case of banking services, which generally facilitate trades across time. The second model is of the costly provision of insurance, which facilitates the allocation of consumption across alternative states of the world under conditions of uncertainty.

3.1. Banking

3.1.1. Costless banking

Consider a two-period model with consumption in period $i$ denoted $c_i$, $i = 1, 2$. An individual has preferences over bundles of these goods, as described by a utility function $u(c_1, c_2)$. In the absence of any financial services, the purchase price of good $i$ is $p_i$ (which includes any search costs the individual might incur). The consumer has exogenous income $w$ in period 1, and income in period 2 is zero (this ensures that the individual is a net saver, for simplicity). If the individual
can deposit funds with a bank and earn interest at a rate \( r \), her budget constraint is

\[
p_1 c_1 + \frac{p_2}{1 + r} c_2 = w,
\]

assuming that the bank levies no charges against her.

### 3.1.2. Costly banking

Now suppose that the transformation of first period consumption into second period consumption requires the use of costly banking inputs, i.e., financial services. These inputs do not enter the individual's utility function directly - all she cares about are the quantities \( c_1 \) and \( c_2 \) that she consumes. The bank levies three possible types of charges to cover the cost of these services.

The first charge is a pure fixed fee \( F \) that is levied if the individual uses any of the financial institution’s services. \( F \) is thus like an account keeping fee a bank might charge, independent of the number of transactions or the size of the account balance. The second charge is a quasi-fixed fee, \( \phi \), which is levied in proportion to the quantity of each good consumed. This is like a transactions fee (assuming that the number of transactions is related to consumption of the two goods) such as annual credit card fees, ATM withdrawal fees, etc. It effectively reduces the gross purchase price of the goods from \( p_i \) to \( p'_i = p_i - \alpha_i \), for some \( \alpha_i > 0 \). The net purchase price of good \( i \) is thus \( p'_i + \phi \).

Finally, the bank charges a spread fee, \( \sigma \) (measured in gross terms) which is a reduction in the interest rate the individual earns. Her budget constraint is thus

\[
(w - (p'_1 + \phi)c_1)(1 + r - \sigma) = (p'_2 + \phi)c_2 + F\delta
\]

or

\[
(p'_1 + \phi)c_1 + \frac{(p'_2 + \phi)}{(1 + r - \sigma)} c_2 = w - \frac{F\delta}{1 + r - \sigma}
\]

where \( \delta = 0 \) if \( c_2 = 0 \) and \( \delta = 1 \) if \( c_2 > 0 \). The relative price of good 2 with respect to good 1 is then

\[
\tilde{R}_2 = \frac{p'_2 + \phi}{(p'_1 + \phi)(1 + r - \sigma)}
\]
3.1.3. Applying a VAT

If VAT is introduced at a rate \( \tau \), and is applied only to the purchase price of goods 1 and 2, then (3.1) becomes

\[
((1 + \tau) p'_1 + \phi)c_1 + ((1 + \tau) p'_2 + \phi)c_2 = w - \frac{F \delta}{1 + r - \sigma}
\]

(3.2)

and the relative price is

\[
\tilde{p}_1 = \frac{((1 + \tau) p'_2 + \phi)}{((1 + \tau) p'_1 + \phi)(1 + r - \sigma)} < \tilde{p}_0.
\]

Applying the tax to both the purchase price and the quasi-fixed fee however yields a relative price of

\[
\tilde{p}_2 = \frac{((1 + \tau) p'_2 + (1 + \tau)\phi)}{((1 + \tau) p'_1 + (1 + \tau)\phi)(1 + r - \sigma)} = \tilde{p}_0.
\]

Applying the tax to the spread component of the charge as well yields a relative price of

\[
\tilde{p}_3 = \frac{((1 + \tau) p'_2 + (1 + \tau)\phi)}{((1 + \tau) p'_1 + (1 + \tau)\phi)(1 + r - (1 + \tau)\sigma)}
\]

\[
= \frac{(p'_2 + \phi)(1 + r - (1 + \tau)\sigma)}{(p'_2 + \phi)(1 + r - (1 + \tau)\sigma)} > \tilde{p}_0
\]

while applying it to the pure fixed fee has no effect on the relative price of good 2 (at the margin), since the budget constrain reduces to

\[
((1 + \tau) p'_1 + (1 + \tau)\phi)c_1 + \frac{((1 + \tau) p'_2 + (1 + \tau)\phi)}{(1 + r - \sigma)}c_2 = w - \frac{(1 + \tau) F \delta}{1 + r - \sigma}.
\]

(3.3)

Under the assumption that the individual always chooses a positive quantity of each good (i.e., assuming that \( u_1(0, c_1) = u_2(c_1, 0) = \infty \), \( \delta = 1 \), and levying the tax on the pure fixed fee has a pure income effect.
3.2. Insurance

Suppose an individual faces uncertainty about the state of the world (say about the occurrence of an accident or the onset of ill health). Corresponding to the simple framework of the banking model above, we assume there are two possible states of the world $i = 1, 2$, and consumption in state $i$ is $c_i$. Let the endowment of consumption in each state be $\bar{c}_i$, with $\bar{c}_1 > \bar{c}_2$, so that state 2 is the accident state. The probability of an accident is $\pi$, and the probability of state 1 occurring is $(1 - \pi)$. Insurance companies offer contracts that consist of a premium, $P$, paid by consumers in both states of the world, and a benefit $B$ paid by the insurer in state 2. Clearly we have

$$P = \bar{c}_1 - c_1 \equiv \Delta c_1$$

and

$$B = c_2 - \bar{c}_2 + P = -\Delta c_2 + P.$$ 

3.2.1. Costless insurance

If insurance companies are competitive and use no resources in spreading risk among individuals, and if all individuals face the same probability, then expected profits are zero, and the premium just covers the expected benefit:

$$P = πB$$

Thus, in terms of consumption in different states, an individual’s budget constraint is

$$(1 - π)Δc_1 + πΔc_2 = 0$$

or

$$(1 - π)c_1 + πc_2 = w$$

where $w = (1 - π)\bar{c}_1 + π\bar{c}_2$ is the individual’s effective income. The relative price of consumption in state 2 with respect to consumption in state 1 is thus $π/(1 - π)$.

3.2.2. Costly insurance

Now suppose that the insurance company does incur administrative, monitoring, and other costs associated with providing insurance. This might be charged for
by adding a loading factor to the premium, say in a proportion $\lambda$. The premium charged then must cover the expected value of benefits paid, plus costs, and becomes

$$P' = (1 + \lambda)\pi B$$

For a given benefit level $B$, consumption in the second state of the world is

$$c_2 = \bar{c}_2 + B - P' = \bar{c}_2 + (1 - (1 + \lambda)\pi)B$$

and consumption in state 1 is

$$c_1 = \bar{c}_1 - P' = \bar{c}_1 - (1 + \lambda)\pi B.$$ 

Thus, the individual's budget constraint is

$$(1 - (1 + \lambda)\pi)c_1 + (1 + \lambda)\pi c_2 = w(\lambda)$$

where $w(\lambda) = (1+\lambda)\pi \bar{c}_2 + (1-(1+\lambda)\pi)\bar{c}_1$. The relative price of state 2 consumption in terms of state 1 consumption is thus

$$\frac{\bar{p}_{1}^{w\ast}}{\bar{p}_0^w} = \frac{(1 + \lambda)\pi}{1 - (1 + \lambda)\pi}.$$ 

### 3.2.3. Applying a VAT

Introducing a VAT at rate $\tau$ to consumption in each state, $c_i$, and to the load factor, yields a relative price of state 2 consumption of

$$\frac{\bar{p}_{1}^{w\ast}}{\bar{p}_0^w} = \frac{(1 + \lambda(1 + \tau))\pi}{1 - (1 + \lambda(1 + \tau))\pi} > \frac{\bar{p}_{1}^{w\ast}}{\bar{p}_0^w}.$$ 

On the other hand, applying the VAT only to consumption in each state maintains the relative price at its level in the absence of the tax, $\frac{\bar{p}_{1}^{w\ast}}{\bar{p}_0^w}$. 

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4We do not include the possibility of pure or quasi fixed fees in this insurance example. Pure fixed fees have no efficiency implications for the tax base. Services that facilitate consumption in both states of the world (like credit cards in the banking example) and would be financed with quasi fixed fees, would appear to be unusual in the insurance sector.
4. Tax treatment of business users

We have only considered transactions between financial institutions and final consumers. What about the treatment of business use of such services? As before, our guiding principle is that of maintaining the relative prices of final consumption goods. Now, if a business borrows from a bank that charges a spread fee, and the VAT increases the size of the required loan, then the value of the financial services it uses rises. This rise is in proportion to the underlying price increase and should be creditable against VAT charged on sales of output in order to maintain constant relative input prices.

To see this, consider a simple example in which a firm uses labour, $l$, and one other input, $y$, to produce a good $c_1$. The production function is Leontief, and a unit of output requires $l_1$ units of labour and $y_1$ units of the other input. To abstract from issues of intertemporal choice, let us simply assume that the firm must use a second institution - the financial intermediary - to purchase the input $y$. For example, if the market for $y$ has search costs, the intermediary might undertake such search activities. Assume also that the fee charged by the intermediary for this search service is proportional to the price $p_y$ paid for the input. If the proportion is $\lambda$, then the cost of producing a unit of $c_1$ is

$$\gamma(w, p_y, \lambda) = w l_1 + (1 + \lambda)p_y y_1.$$

We can think of the firm incurring costs made up of labour costs $wl_1$, direct input costs $p_y y_1$, and search costs $\lambda p_y y_1$. In a competitive market, the total unit cost $\gamma(w, p_y, \lambda)$ is equal to the price charged to final consumers, $p_1$. A second consumption good is produced by a firm using only labour, with unit cost $p_2 = w l_2$, where $l_2$ is the unit labour input requirement.

Suppose a tax on final consumption of $c_1$ and $c_2$ is introduced at the rate $\tau$, payable at the retail level. The relative price of good 2 with respect to good 1 is clearly unaffected. If this tax is implemented as a credit-invoice style VAT, with tax paid on purchases of the input $y$ creditable, then the net cost of producing a unit of $c_1$ is

$$\gamma(w, p_y, \lambda; \tau) = (1 + \tau) \left[ (wl_1 + p_y y_1 (1 + \tau) + \lambda p_y y_1 (1 + \tau)) - \tau p_y y_1 \right]$$

$$= (1 + \tau)(wl_1 + p_y y_1 ) + \tau \lambda p_y y_1$$

The relative price of good 2 with respect to good 1 is thus

$$\frac{P_2}{P_1 + \tau \lambda p_y y_1} < \frac{P_2}{P_1}$$
Thus, even zero-rating the intermediation services, good 2 becomes relatively cheap. This distortion can only be removed by allowing the firm a credit against the increase in intermediation fee caused by the introduction of the tax, $\tau \phi \beta t$. Such a credit reduces tax revenue, which is transferred to the provider of the intermediation service, but is required to maintain relative consumption goods prices.

As in the final consumption case of section 3, the treatment of quasi-fixed fees is standard. Firms should be taxed on their use of them, and receive credits at the next stage. Similarly, the treatment of pure fixed fees is of little importance as far as efficiency effects are concerned.

5. Concluding comments

There has been much discussion in the literature regarding feasible mechanisms for taxing financial services under a broad-based consumption tax. Commentators regularly claim that the treatment of business users presents little conceptual difficulty, but that final consumers of financial services provide the tax-man with headaches. This paper has claimed that, on the contrary, the treatment of financial services used by final consumers is relatively straightforward - fixed fees, which tend to be easily identifiable, should be taxable, and implicit fees covered by spreads, which are difficult to observe and apportion, should be zero-rated. On the other hand, business users of implicitly-priced financial services need to be brought into the tax net in a rather unusual way. They should not be charged VAT on their use of such services, but should be granted a credit based on the impact of the tax on the implicit fee.

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