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A New Approach to Taxing Financial Intermediation Services Under a Value-Added Tax

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A New Approach to Taxing Financial Intermediation Services Under a Value-Added Tax

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Abstract

This paper contains a proposal (referred to as the "modified reverse-charging" approach) to tax financial intermediation services under a VAT. At the heart of the proposal is the application of a reverse charge that shifts the collection of the VAT on deposit interest from depositors to banks, in conjunction with the establishment of a franking mechanism managed by banks that effectively transfers the VAT so collected to borrowers as credits against the VAT on their loan interest on a transaction-by-transaction basis. The proposal is fully compatible with an invoice-credit VAT and is capable of delivering the correct theoretical result at minimal administrative costs.

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I. INTRODUCTION

An overwhelming majority of the more than 120 countries with a value-added tax (VAT) today exempt the financial sector from the VAT to varying degrees. Generally, the scope of this exemption is narrower in developed than in developing countries: the former tend to apply the VAT to at least some financial services that are rendered for explicit fees, while the latter tend to exclude the entire financial sector. Even if all financial services with explicit fees are taxed, however, a significant share of the value-added of the financial sector—most notably the banking industry whose value-added is largely comprised of intermediation services represented by interest margins between lending and deposit-taking activities—would still be exempt. As pointed out by Zee (2004), since on average about a quarter of the GDP in developed countries originates from the financial sector (Table 1), exempting this sector from the VAT can give rise to significant economic distortions.[2] It is precisely concerns about these distortions that have motivated a number of countries in recent years to deviate from the exemption approach. Even the European Union (EU), which led the way with the exemption approach, has for some time been seriously exploring alternative VAT treatments of the financial sector.

This paper contains a proposal for a new approach (henceforth referred to as "modified reverse-charging") for taxing financial intermediation services under a VAT that is both conceptually compelling in design and administratively simple to implement. At the heart of this approach is the application of a reverse charge that shifts the collection of the VAT on deposit interest from depositors to banks, in conjunction with the establishment of a franking mechanism managed by banks that effectively transfers the VAT so collected to borrowers as credits against the VAT on their loan interest on a transaction-by-transaction basis. The outcome ensures that the net VAT revenue to be remitted to the government by a bank is equal to the VAT rate on the bank's provision of intermediation services, while, at the same time, the VAT burden on such services is borne by final consumers either directly as bank borrowers or indirectly when they consume goods and services in which the intermediation services have been embedded. Moreover, this modified reverse-charging approach is fully compatible with an invoice-credit VAT. Before delving further into the details of the new approach, the nature of the problem of taxing financial intermediation services under a VAT, as well as measures adopted by different countries to address it, are first briefly described and assessed in the next section. Section III then explains in detail the mechanics of the modified reverse-charging approach and compares it with other approaches. Some concluding remarks are given in Section IV.

[2] The relative size of the financial sector is smaller, of course, in developing countries, but it would still be on the order of about 10 percent of GDP on average.

Table 1. Value-Added of the Financial Sector in OECD Countries, 2001

(Percent of GDP)

Australia	26.2
Austria	27.0
Belgium	29.3
Canada 1/	25.7
Czech Republic	16.7
Denmark	23.4
Finland	22.9
France	30.5
Germany	30.8
Greece	23.6
Hungary	20.5
Iceland 2/	20.2
Ireland 3/	17.9
Italy	28.4
Japan	23.9
Korea	23.8
Luxembourg	57.9
Mexico	12.1
Netherlands	27.6
New Zealand 1/	29.2
Norway	19.4
Poland	14.2
Portugal	21.0
Slovak Republic	19.4
Spain	22.9
Sweden	24.0
Switzerland 3/	29.5
Turkey	14.7
United Kingdom	29.9
United States 3/	27.7
Average	**24.7**
Memorandum item:	
EU average	27.8

Source: Zee (2004).

1/ Based on 1996 data.
2/ Based on 1997 data.
3/ Based on 2000 data.

II. Nature of the Problem and Alleviating Measures in Practice[3]

The VAT is almost universally implemented on the basis of the invoice-credit method, by which the tax is imposed on the taxed goods or services (the output tax) supplied by VAT-registered businesses and a credit is given for the tax paid on the inputs (the input tax) used to produced the taxed output.[4] Both the output tax and the input tax is paid by the buyer and collected by the seller, which forms a credit chain tying one VAT-registered business to the next. Hence, for each such business, the net VAT to be remitted to the government would be its output tax (collected from its customers) less its input tax (paid to its suppliers). It is this crediting mechanism that allows the business to bear no VAT burden and merely serve as a VAT collection agent along the credit chain. Situated at the end of the chain is the final consumer, who has to pay the VAT on the taxed goods and services but—by definition—has no claimable credits to offset the tax liability. Hence, it is the final consumer that bears the entire VAT burden, although the actual collection of the VAT revenue is undertaken by all VAT-registered businesses along the many stages of the production and distribution process—each collecting a share of the revenue in proportion to its own value-added.

The above invoice-credit method works well for all goods and services (including financial services) that are supplied with explicit prices on which a VAT can be imposed. However, as noted earlier, a significant portion of the services provided by the financial sector is in fact of an intermediation nature for which the prices charged are typically implicit—in the form of interest margins or margins of a similar kind. Under such circumstances, the invoice-credit method is widely recognized to be inapplicable. It is worth pointing out that the perceived difficulty is related not to measuring the value-added of financial services rendered with implicit prices *per se*—such value-added can be measured easily enough by either the appropriate margins associated with the relevant transactions (the so-called "subtraction method" of determining value-added) or summing the wages and profits connected with the same transactions (the so-called "addition method")—but rather to measuring their value-added on a transaction-by-transaction basis upon which the invoice-credit method relies. Furthermore, since a key input into the provision of financial intermediation services are deposits from final consumers who are necessarily not registered as VAT payers, they would not be able to collect the input tax paid by the bank on deposits even if a price for supplying the input (the deposit interest) could be identified for VAT purposes. Hence, it is widely believed that the only way to tax financial intermediation services under a VAT would be to apply the tax on the basis of the subtraction or addition method,[5] but this would in effect turn

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[3] Parts of the discussion in this section are drawn from Zee (2004).

[4] One important reason for the world-wide prevalence of the invoice-credit method is surely the fact that it is the only method that can accommodate multiple VAT rates, which many countries undoubtedly found attractive at the time of the VAT's introduction. Most countries, except those in Western Europe, have now moved to a single-rate VAT on account of both efficiency and administrative considerations.

[5] Or on a cash-flow basis—discussed later in the paper—as some have recently proposed.

the VAT into an accounts-based tax as it relates to the financial sector, which is inconsistent with the transaction-based VAT applied using the invoice-credit method to other (nonfinancial) sectors.[6]

Faced with the above difficulty, the EU decided to simply VAT-exempt the financial sector.[7] This decision has proved fateful, as most other countries emulated the EU model when introducing their own VATs. However, given that the VAT is supposed to be a broad-based tax and taxing financial services usually raises few equity concerns, exempting such a large sector of an economy for practical reasons seems decidedly uncompelling as a policy choice and unsatisfactory as an administrative solution. From a policy standpoint, the exemption approach has resulted in cascading—stemming from its breaking of the VAT credit chain—and thus in overtaxation of financial intermediation services when they are purchased by VAT-registered businesses as inputs, but in undertaxation of such services when they are consumed by final consumers. From an administrative standpoint, the exemption approach has not absolved financial institutions of all compliance costs: to the extent that some of their fee-based services are taxed, they would still need to identify the creditable portion of their input tax.[8] Moreover, as financial intermediation services have become increasingly mobile globally in recent years, many countries have felt an urgent need to enhance the international competitiveness of their financial sectors. Under such circumstances, it is not surprising that the limitations of the exemption approach has come into sharp focus—with increasing attention now being paid to searching for alternative, better approaches. In this context, a number of countries have adopted measures that—though vary in details—share the common objective of rectifying the problem of overtaxation of financial intermediation services consumed as a business input, rather than the undertaxation of such services consumed by final consumers.[9]

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[6] Israel is currently the only country that taxes the financial sector on the basis of an addition-method VAT. It is essentially a separate tax from the invoice-credit VAT that is applied elsewhere in the economy. Since the addition-method VAT is not a creditable tax for the invoice-credit VAT, Israel's simultaneous application of the two methods actually results in substantial cascading.

[7] The principles of the VAT in the EU are laid down by its Sixth Council Directive (see Council of the EU (1977)), as amended and modified by later directives. Art. 13(B)(a) and (d) provide for the exemption of financial services (including insurance), although Art. 13(C) allows member states to grant their taxpayers the option to treat such services (not including insurance) as taxable. Financial services (including insurance) are zero-rated if exported to outside the EU (Art. 17(3)(c)).

[8] For a illuminating description of the conceptual and administrative problems encountered by Mexico in apportioning creditable and noncreditable input taxes in the banking industry, see Schatan (2003).

[9] For a recent extensive review of country practices, see Schenk and Zee (2004).

One measure, adopted by Australia and Singapore, allows financial institutions to claim a credit for a stipulated proportion of the VAT they have paid on (nondeposit) inputs, even if such inputs are used to produce exempt sales.[10] Such a measure is administratively simple to implement, as it requires no separation of taxable from exempt sales. However, it is *ad hoc* and may only reduce (rather than completely eliminate) the overtaxation of businesses on their purchases of financial intermediation services. Moreover, the problem of undertaxation of final consumers could actually be made worse by this measure. Another measure, currently targeted for adoption in 2005 in New Zealand[11] and is also available in Singapore as an alternative to the measure described above, involves zero-rating business purchases of all financial services.[12] This measure, which preserves the credit chain for business transactions that go through the financial sector, is conceptually superior to the first measure, as it (the zero-rating measure) would completely rectify the problem of overtaxation of business consumption of financial intermediation services, although under it financial institutions would be required to identify their sales to registered businesses and final consumers separately for apportioning their creditable input taxes. The potential administrative cost of this requirement is unknown but certainly worrisome.[13] This measure would also leave unaddressed the problem of undertaxation of consumption of such services

[10] The stipulated proportion of creditable input VAT can vary across different industries, as in Singapore (the creditable proportion ranges from 58 percent (finance companies) to 98 percent (offshore banks)—see Jenkins and Khadka (1998) for a discussion); or fixed, as in Australia (75 percent—see Australia (1999), Div. 70 and Regulation 70–2 and 70–3). It is interesting to note, however, that Australia and Singapore arrived at these proportions based on entirely different conceptual considerations. For Australia, the creditable proportion is designed to neutralize, on average, the self-supply bias that is engendered by a VAT exemption, i.e., the bias an exempt business has towards providing the needed services in-house rather than procuring them from third parties to avoid paying the non-creditable VAT. For Singapore, the various creditable proportions are designed to reduce the forward cascading of the VAT when the output of a VAT-exempt business is purchased by VAT-registered businesses.

[11] See New Zealand (2002). The measure was enacted in late 2003.

[12] This is known in New Zealand as the zero-rating of B-to-B transactions and in Singapore as the special method of obtaining input VAT credits, under which exempt sales are treated as taxable sales (for purposes of crediting the input tax) when made to taxable persons.

[13] In fact, since a VAT-registered business typically produces a mixture of taxable and exempt supplies, as a practical matter New Zealand's application of the zero-rating of B-to-B transactions is restricted only to cases where the VAT-registered business purchasing financial services has taxable supplies that are at least equal to 75 percent of its total supplies (this threshold effectively rules out the zero-rating of transactions between financial institutions). As of the writing of this paper, it is unclear what guidance New Zealand's tax authorities would provide to financial institutions to categorize their customers on the above basis.

by final consumers. Israel's approach to taxing its financial sector (i.e., the application of an addition-method VAT) cannot be regarded as an appropriate response to the limitations of the exemption approach, since, as already noted earlier, it would actually worsen the cascading suffered by business users of financial intermediation services.

Taxing the financial sector on a cash-flow basis has received a lot of attention since it was first proposed by Poddar and English (1997);[14] it is, in fact, an approach that is being considered by the EU itself to replace the exemption approach (see the report of the European Commission (2000)). The cash-flow approach is conceptually elegant but administratively complex. Its merits and limitations are best understood, however, when compared against the modified reverse-charging approach proposed in this paper, as explained in the following section.

III. A New Approach to Taxing Financial Intermediation Services

Throughout the discussion in this section, the focus will be placed on taxing financial intermediation services provided by banks through their deposit-taking and lending activities. Such services are at the core of the VAT treatment of the financial sector. Intermediation services may, of course, also be provided by banks through their other myriad activities or even by other nonbank financial institutions (e.g., brokerage firms). In such cases, the operational design of the proposed approach may need to incorporate rules and procedures that are tailored for the special characteristics of a specific activity (e.g., the trading of certain financial instruments), but the underlying principle of the approach would remain the same.[15] Below, implications of taxing deposit and loan interest are first described, followed by a discussion of the modified reverse-charging approach and a comparison between it and other approaches.

A. Implications of Taxing Deposit and Loan Interest Through Reverse-Charging

If the value of a bank's intermediation services can be measured by the difference between its loan and deposit interest, then it would be natural to regard loans as the bank's output and deposits as its input, on both of which a VAT could certainly be imposed: the VAT on the loan and deposit interest would then be the bank's output tax and input tax, respectively, and the excess of the former over the latter would be remitted to the government by the bank as the VAT on its intermediation services. Taxing the loan and deposit interest in this way is

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[14] The idea of taxing financial intermediation services on a cash-flow basis was developed earlier in Hoffman *et al.* (1987).

[15] For example, European Commission (2000) provides details on how the cash-flow approach would be applied to different security transactions, derivatives, and insurance services. Similar details would need to be worked out under the reverse-charging approach to cover a wide spectrum of intermediation activities carried out by the financial sector. Such details are beyond the scope of the present paper, whose aim is merely to lay down the principle of this approach.

clearly feasible on a transaction-by transaction basis (i.e., the VAT is assessed at each instance of an interest payment) and is thus fully compatible with an invoice-credit VAT.

While seemingly straightforward, the above VAT treatment of the bank generates two crucial problems. The first is administrative: as noted earlier, the bulk of bank deposits is derived from multitudes of individual final consumers who are administratively infeasible to be registered as VAT payers. Hence, they cannot serve as VAT collection agents for the government like VAT-registered businesses. Fortunately, a procedure already exists that is almost ideal for dealing with just such a problem, although in practice it is typically invoked to address a different problem in another context. The procedure in question is known as reverse charging. In the jargon of the trade, a reverse charge refers to the collection of the VAT by a VAT-registered taxpayer on *both* the input and output side of its business, and is most commonly used by countries to apply the VAT to imported services (since, unlike imported goods, imported services do not go through normal customs controls) to level the playing field between foreign- and domestically-supplied services. As foreign service providers cannot be relied upon to collect the VAT for the domestic government, the responsibility for collecting the tax is shifted, through the reverse charge, from the foreign suppliers to the resident service importers.[16] When applied to the present context, reverse-charging would basically shift the collection of the VAT on deposit interest from depositors to banks. In effect, a bank would issue a VAT invoice to itself for the tax paid on its purchased input (deposits) and claim the same as a credit against its output tax (collected on loan interest from its borrowers).

The machinations of reverse-charging are illustrated in Table 2 for the four different combinations of depositors and borrowers, each as either a VAT-registered business or a final consumer. For simplicity, the illustration assumes a principal amount of 1,000, a deposit rate of 4 percent, a loan rate of 9 percent, and a VAT rate of 10 percent. In all cases, the VAT is applied to the loan interest and collected by the bank as its output tax (regardless of the status of the borrower). A final consumer taking out a loan from the bank would have no further tax implications following the payment of the loan interest inclusive of the VAT. If the borrower is a registered business, the VAT on the loan interest is creditable just like the VAT paid on its other inputs. Similarly, the VAT is applied on the deposit interest in all cases as the bank's input tax, to be collected by the bank as a reverse charge (regardless of the status of the depositor) and credited against the bank's output tax under the standard crediting procedures of an invoice-credit VAT. The basic outcome of the reverse-charging procedure under all combinations of depositors and borrowers is that the bank's deposit-taking and lending activities are fully integrated into the invoice-credit mechanism. The credit chain remains intact for businesses that purchase the bank's intermediation services as inputs (by borrowing from it) and thus no cascading can occur.

[16] The EU's Sixth Council Directive contains a reverse-charging provision in Art. 9(2)(e).

Table 2. VAT Treatments of Deposits from and Loans to Residents

	Depositor (D)	Bank (B)	Borrower (R)
	Assumptions:	Principal amount = 1,000 Deposit rate = 4 percept Loan rate = 9 percent VAT rate = 10 percent	
1. D = R = Final consumer			
B's output tax	Not applicable	• Collects VAT = 9 from R • Issues a VAT invoice to R	• Pays VAT = 9 to B • No further tax implications
B's input tax	No tax implications	• Reverse charges VAT = 4 • Claims a credit for the VAT reverse charge	Not applicable
Tax payment/burden 1/	• Remits no payment to the government • Bears no VAT burden	• Remits VAT = 9 to the government • Bears no VAT burden	• Remits no payment to the government • Bears the VAT burden on D's deposit and B's margin
2. D = Final consumer; R = Registered business			
B's output tax	Not applicable	• Collects VAT = 9 from R • Issues a VAT invoice to R	• Pays VAT = 9 to B • Receives a VAT invoice from B • Claims a credit for the VAT
B's input tax	No tax implications	• Reverse charges VAT = 4 • Claims a credit for the VAT reverse charge	Not applicable
Tax payment/burden 2/	• Remits no payment to the government • Bears no VAT burden	• Remits VAT = 9 to the government • Bears no VAT burden	• Remits no payment to the government • Bears no VAT burden
3. D = Registered business; R = Final consumer			
B's output tax	Not applicable	• Collects VAT = 9 from R • Issues a VAT invoice to R	• Pays VAT = 9 to B • No further tax implications
B's input tax	No tax implications	• Reverse charges VAT = 4 • Claims a credit for the VAT reverse charge	Not applicable
Tax payment/burden 1/	• Remits no payment to the government • Bears no VAT burden	• Remits VAT = 9 to the government • Bears no VAT burden	• Remits no payment to the government • Bears the VAT burden on D's deposit and B's margin
4. D = R = Registered business			
B's output tax	Not applicable	• Collects VAT = 9 from R • Issues a VAT invoice to R	• Pays VAT = 9 to B • Receives a VAT invoice from B • Claims a credit for the VAT
B's input tax	No tax implications	• Reverse charges VAT = 4 • Claims a credit for the VAT reverse charge	Not applicable
Tax payment/burden 2/	• Remits no payment to the government • Bears no VAT burden	• Remits VAT = 9 to the government • Bears no VAT burden	• Remits no payment to the government • Bears no VAT burden

1/ The net revenue to the government is 9.
2/ The net revenue to the government is nil.

The reverse-charging approach is also fully consistent with a destination-based VAT requiring border tax adjustments on deposits received from or loans extended to nonresidents, as illustrated in Table 3. A reverse charge is applied on foreign deposits by the bank in the same way as it is applied to deposits from residents. If the borrower is a nonresident, the loan would be regarded as being exported, and the loan interest would accordingly be zero-rated. Hence, nonresidents, be they depositors or borrowers, are not affected in any way by the reverse-charging approach to taxing the bank's financial intermediation services.

Note that, in the numerical example illustrated in Table 2, the total tax payment by the borrower (and the total revenue remission by the bank) is always 9, of which 5 represents the VAT on the bank's intermediation services and the remainder represents the VAT on the deposit interest that the bank remits on behalf of the depositor. The net revenue to the government would also be 9 if the borrower is a final consumer, but would be nil if the borrower is a registered business, because the latter can claim a credit for the VAT on its loan interest. This suggests that, for the registered business, its VAT payment is largely immaterial, but the final consumer bears a VAT burden that exceeds the VAT on the financial intermediation services that are embedded in the loan. Herein lies the second problem of extending an invoice-credit VAT to deposit and loan interest: it results in the overtaxation of final consumers as bank borrowers.[17] This problem poses a fundamental conceptual difficulty with the straightforward application of reverse-charging; it would clearly need to be overcome before one can seriously consider integrating the financial sector into the VAT's invoice-credit mechanism.[18] The trick seems to hinge on designing a mechanism by which the reverse charge on depositors can be used as a credit, not directly by the bank against its output tax, but indirectly to reduce the VAT that is actually paid by borrowers. The modified reverse-charging approach incorporates just such a mechanism.

B. Modified Reverse-Charging Approach

The mechanism that is embodied in the modified reverse-charging approach to transfer the reverse charge on depositors to borrowers is a franking mechanism similar to the one used by corporations to frank dividends under an imputation system. In short, the mechanism ensures that, when borrowers are granted VAT credits, the credits are derived from deposits that have in fact been reverse-charged. Moreover, since such credits to borrowers are to be granted on a transaction-by-transaction basis, the available credits would have to be calculated after each deposit and loan in a franking account. The machinations of the franking mechanism is illustrated in Table 4 for an arbitrary sequence of deposits and loans of varying principal amounts and interest rates. The numerical example assumes a VAT rate of 10 percent.

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[17] This outcome in fact resembles that of a tax on gross interest—a measure adopted by Argentina largely to curb consumer borrowing. See Alba (1995) for details.

[18] Hoffman *et al.* (1987) also discussed reverse-charging (although this term was not used by the authors) but quickly dismissed it as a possible solution on account of the problem just described.

Table 3. VAT Treatments of Deposits and Loans Involving Nonresidents

	Depositor (D)	Bank (B)	Borrower (R)
	Assumptions:	Principal amount = 1,000 Deposit rate = 4 percept Loan rate = 9 percent VAT rate = 10 percent	
1. D = Nonresident; R = Resident			
B's output tax	Not applicable	• Collects VAT = 9 from R • Issues a VAT invoice to R	• Pays VAT = 9 to B • If a registered business: ▫ Receives a VAT invoice from B ▫ Claims a credit for the VAT • If a final consumer: ▫ No further tax implications
B's input tax	No tax implications	• Reverse charges VAT = 4 • Claims a credit for the VAT reverse charge	Not applicable
Tax payment/ Burden 1/	• Remits no payment to the government • Bears no VAT burden	• Remits VAT = 9 to the government • Bears no VAT burden	• Remits no payment to the government • If a registered business: ▫ Bears no VAT burden • If a final consumer: ▫ Bears the VAT burden on D's deposit and B's margin
2. D = Resident; R = Nonresident			
B's output tax	Not applicable	Applies zero rate	Pays no VAT to B
B's input tax	No tax implications	• Reverse charges VAT = 4 • Claims a credit for the VAT reverse charge	Not applicable
Tax payment/ Burden 2/	• Remits no payment to the government • Bears no VAT burden	• Remits no payment to the government • Bears no VAT burden	Bears no VAT burden

1/ The net revenue to the government would be 9 if the borrower is a final consumer, but would be nil if the borrower is a registered business.
2/ The net revenue to the government is nil.

The franking account works exactly like a pooled account of depreciable assets under the declining-balance method and maintains three running balances: (1) cumulated unlent deposits, (2) cumulated unclaimed reverse charges on the unlent deposits, and (3) unclaimed reverse charge per unit of unlent deposit. These balances are updated after each deposit or lending transaction, with the former giving rise to a credit entry and the latter to a debit entry. For example, in the numerical example illustrated in Table 4, after the two initial deposits of 1,000 (at an interest rate of 4 percent) and 3,000 (5 percent), the three running balances in the franking account are 4,000, 19, and 0.00475, respectively. When a loan of 2,000 is made at this point at an interest rate of 9 percent, a notional VAT of 18 (10 percent of 180 in interest) is charged, but the borrower is granted a credit of 9.5 (computed by multiplying 0.00475 by the loan principal of 2,000) for the reverse charge that was levied on the deposits used to finance the loan. Hence, the net VAT payment by the borrower—and to be remitted by the bank to the government—is 8.5, for which the bank is required to issue a standard VAT invoice. If the borrower is a registered business, this VAT would be creditable as usual. The entire process requires no ascertainment on the part of the bank of the status of either its depositors or borrowers.

Table 4 shows that, following the arbitrary sequence of three deposits and three loans, each with a different principal and interest rate, the total net VAT paid by the borrowers is 24, which is precisely 10 percent of the intermediation services rendered by the bank, as represented by the difference between its total loan interest received (490) and deposit interest paid (250). The franking mechanism as described is thus capable of producing the desired conceptually-correct result. For simplicity, the numerical example has implicitly assumed that all deposits and loans are withdrawn and repaid, respectively, at the end of the same period. In reality, of course, deposits and loans extend over multiple periods of different lengths. But this would present no difficulty for the franking mechanism: at the end of each period, outstanding deposits and loans are simply treated as if they are withdrawn and paid, respectively, to be re-deposited and re-lent at the beginning of the next period at the same interest rates.[19] All calculations involving the franking account can be computerized and carried out by the bank in a straightforward and routine manner. Neither depositors nor borrowers would incur any compliance costs in the whole process.

[19] However, because the interest margin may change during the interim (due to new deposit-taking and lending activities), the net VAT liability on an existing fixed-interest loan may still vary from one period to the next.

Table 4. Modified Reverse-Charging Approach to Taxing Deposit and Loan Interest

Deposit and loan sequence	Deposits			Franking account			Loans				
	Principal	Interest rate (Percent)	Reverse charge 1/	Cumulated unlent deposits	Cumulated unclaimed reverse charges	Unclaimed reverse charge per unit of unlent deposit	Principal	Interest rate (Percent)	Notional VAT 1/	VAT credit from franking account	Net VAT paid by borrowers
1	1,000	4	4								
				1,000	4	0.004					
2	3,000	5	15								
				4,000	19	0.00475					
3							2,000	9	18	9.5	8.5
				2,000	9.5	0.00475					
4	2,000	3	6								
				4,000	15.5	0.003875					
5							1,000	7	7	3.875	3.125
				3,000	11.625	0.003875					
6							3,000	8	24	11.625	12.375
				--	--	--					
Total	6,000		25				6,000		49	25	24

1/ The VAT rate is assumed to be 10 percent.

C. Extension

One implication of the modified reverse-charging approach described above is that financial intermediation services are consumed only by borrowers, with depositors consuming nothing. It can be reasonably argued that this outcome is not strictly conceptually correct, as the very nature of intermediation implies that at least two parties are involved in the process. It turns out that the modified reverse-charging approach can be extended easily to cover the case where depositors are assumed to also consume a share of the intermediation services provided by banks.

Continuing with the earlier numerical example of a VAT rate of 10 percent and a deposit rate of 4 percent, suppose now that depositors have been charged an implicit fee of x percent for their consumption of intermediation services. In other words, the deposit rate gross of the implicit fee would actually be $(4 + x)$ percent. To tax the depositors for the value of such services, the bank would collect, as part of its output tax, $(0.1x)$ percent in VAT revenue on its deposits. In practice, this can be effected most conveniently by simply reducing the net interest paid to depositors from 4 percent to $(4 – 0.1x)$ percent. At the same time, the base for the reverse charge would be increased from 4 percent to $(4 + x)$ percent. Since any reverse charge is transferred to borrowers as a credit against the notional VAT on the loan interest through the franking mechanism described earlier, the net VAT paid by borrowers would be reduced by exactly the amount of the VAT paid by depositors.

It is clear, therefore, that x only determines how the VAT burden on intermediation services would be shared between depositors and borrowers; it has no impact on overall revenue and does not complicate the operation of the modified reverse-charging system in any way. Since banks do not derived any inherent benefit from the above burden sharing and thus would not have any built-in bias in favor of either depositors or borrowers, the setting of x could be left to the banks themselves. This would provide them with the freedom to vary x across different account types to better reflect differences in the underlying services provided, as well as to vary x over time in accordance with changing market conditions in a timely manner.

D. Discussion

The modified reverse-charging approach proposed above is a simple and effective way to tax financial intermediation services under an invoice-credit VAT. It is capable of overcoming at once all of the problems (overtaxation of registered businesses, undertaxation of final consumers, and administrative difficulties in apportioning creditable input tax) associated with the exemption approach. It is also superior to the various alleviating measures currently adopted by different countries in response to those problems because, as described earlier, all such measures fall short of addressing the problems completely. However, the supremacy of the modified reverse-charging approach cannot be taken for granted until it is compared with the cash-flow approach—its main conceptual rival.

The basic tenet of the cash-flow approach is fairly easy to grasp. A simple numerical example will suffice. Assume as before that a bank charges 9 percent on its loans and pays 4 percent on its deposits, so that the interest margin is 5 percent. The cash-flow approach taxes (say, at a VAT rate of 10 percent) the bank on all its inflows but provides a credit on all its outflows. For a deposit transaction of 1,000, the bank incurs a tax of 100 when the deposit is received, but gets a tax credit of 104 when the deposit is withdrawn with interest. The combined tax effect of this deposit transaction is a net tax credit of 4. When the bank makes a loan of the same amount, it gets a tax credit of 100, but incurs a tax of 109 when the loan is repaid with interest. The combined tax effect of this loan transaction is a net tax of 9. Taking both the deposit and loan transactions into account, the overall tax effect is thus 5, which is the tax on the interest margin.[20] In general, these financial flows have mirror images in the depositor's and borrower's accounts, which have been omitted for simplicity from the above description. Note that nonfinancial businesses must also perform VAT calculations on a cash-flow basis for their transactions with financial institutions to obtain tax credits, which could potentially entail large compliance costs. Moreover, because the principal amounts of loans are included in the tax base (although they are given a subsequent offset when the loans are repaid), the cash-flow approach would pose cash flow problems for the borrowers. Taxing principal amounts would also present difficulties if the VAT rate is changed over the life time of the deposits and loans, as offsetting taxes on the inflows and outflows of the principal amounts would no longer be aligned.

To be sure, proponents of the cash-flow approach are well aware of the above problems, and have proposed ways to work around them, the main device used being the setting up of a so-called tax calculation account (TCA) to be maintained by banks that tracks deposit and loan transactions for each customer (see Poddar and English (1997) and European Commission (2000)). In essence, a TCA is a tax suspension account through which the VAT on inflows and outflows of the principal amounts of deposits and loans are reduced to a series of mere bookkeeping entries. For the proper results to emerge, the tax on open balances of the principal amounts would need to accrue interest periodically and be grossed up or down to reflect any interim tax rate changes. At the end of each period, banks would report these entries to their customers, thus obviating the need for the latter to maintain a parallel set of accounts.

While the TCA device does address the main problems of the cash-flow approach, it is unnecessarily complex, because the tracking of inflows and outflows of the principal amounts of deposits and loans is superfluous for taxing financial intermediation services under an invoice-credit VAT, as demonstrated by the use of the modified reverse-charging approach. By ignoring principal amounts, the latter requires no computation of accrued interest nor any attention be paid to tax rate changes. On the whole, the modified reverse-charging approach removes an entire layer of administrative complexity associated with the

[20] To split this tax between depositors and borrowers under the cash-flow approach, Poddar and English (1997) and European Commission (2000) propose the use of an appropriately chosen indexing interest rate that normally would lie between the deposit and the loan rates. The share of intermediation services to be imputed to depositors and borrowers would be determined, respectively, by the excess of the indexing rate over the deposit rate and the excess of the loan rate over the indexing rate.

cash-flow approach that represents no value-added to resolving the problems entailed by the exemption approach.[21]

IV. Concluding Remarks

Integrating the financial sector into the invoice-credit mechanism of the VAT is the remaining major outstanding issue in VAT design. The EU's basic exemption approach, as enshrined in its Sixth Council Directive and emulated by most other countries with a VAT, now seems increasingly anachronistic and unsustainable in a world of global mobility of financial services (and of almost everything else for that matter). In recent years, an increasing number of countries have deviated from the exemption approach to address its problematic consequences (cascading when financial intermediation services are used as a business input, undertaxation of final consumers when purchasing such services, and administrative complications in apportioning the creditable input tax of financial institutions), but none seems capable of overcoming all of these consequences completely.

The cash-flow approach to taxing financial services, which is under consideration by the EU itself as an option to replace its exemption approach, is conceptually elegant but seems unnecessarily complex administratively for the task at hand. In contrast, the modified reverse-charging approach proposed in this paper seems capable of rectifying all the limitations of the exemption approach at once in an extraordinarily simple and straightforward manner. This approach delivers the correct theoretical result but entails minimal administrative costs in terms of either enforcement or compliance. Hence, it deserves serious considerations by policymakers.

[21] Huizinga (2002) has recently proposed combining the zero-rating of financial services as business inputs (the New Zealand measure) with taxing only transactions between financial institutions and consumers on a cash-flow basis. This proposal would reduce the scope and thus the complexity of cash flow calculations and yet manage to address the problems of both overtaxation and undertaxation described earlier. However, under this approach, banks would still be required to separate its transactions with registered businesses from those with final consumers, which remains an unnecessary administrative complication.

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