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Cash-Flow Tax

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Abstract

The cash-flow tax has been proposed as an alternative to corporate income tax on grounds of clarity and simplicity in defining the tax base in the face of widespread departures from the comprehensive income tax in actual practice. Variants of the tax, with their advantages and disadvantages, demonstrate that it would require careful design. Simplicity is not an obvious property because of expectable administration problems related to tax avoidance and evasion through transfer pricing; to inflation adjustments; and to incompatibility with existing international tax regimes. Thus, the tax remains theoretically attractive but difficult to implement by a single--especially developing--country.

JEL Classification Numbers

H24; H25; H87

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Summary

Conceptually, cash-flow taxation is based on consumption, and is therefore neutral with respect to capital formation. The paper identifies three variants of the corporate cash-flow tax (CCFT) as follows: (1) The R--or real--base CCFT taxes net real transactions (the difference between sales and purchases of real goods and services). As opposed to a corporate income tax (CIT), it allows immediate expensing of capital outlays but not the deduction of interest payments. Interest received is not taxable. (2) The RF--or real plus financial--base CCFT, in addition, includes in its tax base nonequity financial transactions (the difference between borrowing and lending). Interest and retirement of debt are deductible, while borrowing and interest received are taxable. (3) The S--or shareholder--base CCFT taxes the net flow from the corporation to shareholders (dividends paid plus purchases of shares minus issues of new shares) and conforms closely to the interpretation that the CCFT is a "silent partnership" of the government in any investment.

The success of a CCFT, the paper argues, depends on the existing CIT structure, the structure of the corporate sector, and the relative importance of foreign investors. The CCFT's advantages, its claims, lie primarily in the theoretical clarity of the tax base insofar as it does away with the problems of defining true economic depreciation, measuring capital gains, costing inventories, and accounting for inflation (although not in all variants of the tax).

However, the paper observes, the CCFT can give rise to problems--for example, tax-base erosion through avoidance and evasion. This, the authors argue, could be contained by carefully designing the tax code and by selecting an RF-base over the R-base CCFT, thereby including the financial sector. On the other hand, an important advantage of the R-base CCFT--nondeductibility of interest, which eliminates incentives for debt over equity financing and obviates any need for inflation adjustments for the calculation of real interest--is not shared by the RF-base variant. The S-base CCFT, while sometimes favored because it has been perceived to be administratively simpler, could, the paper contends, lead to a tax rate of over 100 percent because of the definition of the S base. Thus, the choice among variants of the CCFT is not at all clear.

Observing that international considerations turn out to be important in any future implementation of the CCFT because of the unresolved treatment of foreign tax credits under a CCFT, the paper nevertheless argues that the prevalence of excess foreign tax credits and the existence of tax-sparing arrangements would tend to dampen the negative impact of CCFT on foreign investment. The paper concludes that the CCFT remains a theoretically attractive option with accompanying practical difficulties. However, it notes, the CCFT may prove particularly difficult to implement for a single--especially developing--country in an environment that may not necessarily accommodate its smooth and effective operation.

Introduction

This paper surveys some practical issues relating to an alternative form of corporate taxation: the cash-flow tax. 1/ Cash-flow taxation has long been discussed as an alternative to taxation of income, both at the personal and the corporate levels. There has been a renewed policy interest in such proposals recently, motivated by long-standing conceptual arguments, but increasingly also on administrative grounds. It is argued that despite a renaissance of the comprehensive income tax ideal in many tax reforms of the 1980s, it is only poorly approximated in existing tax codes. Cash-flow taxation might be a viable alternative to the "uneasy compromise" (Aaron, Galper, and Pechman, 1988) of a "hybrid income-consumption tax."

Conceptually, cash-flow taxation is based on consumption; thus, it is neutral with respect to capital formation. Practical advantages of cash-flow taxation, its definitional clarity and simplicity of measurement, were first forcefully argued by Andrews (1974) and discussed in a U.S. Treasury report (1977). Perhaps they have received new interest as, more recently, tax theorists have also come to emphasize implementation and administration aspects of tax policy (Kay, 1990; Slemrod, 1990; and, for developing countries, Khalilzadeh-Shirazi and Shah, 1991). The classic Haig-Simons ideal of a comprehensive income tax, based on consumption plus net accrual of wealth, seems to be rather problematic when judged by this criterion. It is argued that the hypothetical nature of the accrual concept tends to create complexities in the tax code, to increase the burden of administration and compliance, and to foster avoidance and distortion (Kay, 1990, p. 67). Under these circumstances, a cash-flow tax base seems to be a promising alternative especially at the corporate level, where equity concerns about exemption of capital income are irrelevant and some technical problems are less salient. 2/

Opponents of the cash-flow tax question the superiority of the cash-flow tax base on equity grounds. Also, they are usually not optimistic about the administrative advantages of the tax. In the context of the corporate sector, they decry it primarily on the basis of implementation problems as well as the lack of international experience and, consequently, coordination. The doubts emanate from perceived difficulties in containing tax evasion because of transfer pricing practices or tax avoidance through intra-company leasing arrangements as well as because the tax may not be

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1/ In the literature the tax is sometimes also referred to as the Brown tax, named after its first classic proponent Brown (1948).

2/ Among the problems confined to personal taxation are the treatment of consumer durables, education, or gifts and bequests. For a discussion of these and other problems of a cash-flow based personal consumption tax see Pechman (1980).

creditable in those countries that export capital until they themselves introduce the tax. Therefore, the tax may not be compatible with the existing international tax regime. In addition, political forces that lead to base erosion of the corporate income tax (CIT) are, of course, also likely to affect the corporate cash-flow tax (CCFT). While the cash-flow base may address some inherent shortcomings of the income tax, in and of itself it is unrelated to the political willingness and ability to keep a tax system clean of special provisions and targeted incentives. 1/

The objective of this paper is to survey some of the practical problems associated with the introduction of a CCFT--namely, its effects on revenue, possibilities for tax avoidance and evasion, and the international compatibility of the tax, as well as transition issues. In what follows, Section I illustrates the conceptual background of the tax and points to some of the advantages and disadvantages that arise from its definition. Section II assesses the CCFT on practical grounds rather than on its conceptual merit. It addresses issues that would arise in the transition to a CCFT, as well as considerations of a more general nature. Among the latter are the ramifications for revenue based on the CCFT's impact on investment and, consequently, on the revenue base; often expressed preoccupations regarding increased tax avoidance and evasion; and the implications of relatively uncoordinated cross-country tax arrangements that are currently prevalent. However, many difficulties with tax administration that are associated with the cash-flow tax are not reviewed in any detail in this paper. Section III lists the main conclusions that emerge from the paper. Many middle-income developing countries, especially in Latin America, are considering the introduction of a cash-flow tax. Therefore, the paper, at several points, gives specific consideration to issues particularly relevant for them.

I. Conceptual Elements

1. What is a CCFT?

While the focus seems to have shifted over time, conceptually the CCFT rests primarily within a tradition of consumption-tax proposals (Sunley, 1989). Thus, first, it is usually advocated as a supplement to a personal expenditure tax (ET) as a device for: (1) withholding tax on economic rents and nonwage labor income; 2/ (2) discouraging evasion of ET by individuals through business activities; and (3) capturing foreign capital income. It

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1/ For instance, claims have been made that the CCFT is "an alternative way to attain the objective of fiscal neutrality without a significant erosion of the tax base" (King, 1986, p. 2), or that it "avoids the problem of targeted incentives; the need to pick winners and losers" (McLure, 1991, p. 15).

2/ Note here its similarity to the value-added tax (VAT), a point taken up below.

would also curtail the windfall capital gains accruing to shareholders if an ET were adopted.

Second, the CCFT has been discussed as a separate corporate tax alongside a personal income tax system. Such a system would fall short of the ideal consumption-tax "package." But given the difficulties of an ET, a CCFT may be a second-best alternative, which corrects administrative and economic shortcomings of the CIT (Mintz and Seade, 1991; King, 1986).

Third, the CCFT was suggested in different variants as a tax on economic rent. For example, it has been recommended as an ideal resource tax (Garnaut and Clunies Ross, 1983). 1/

Fourth, there seems to be an argument for compacting the cash-flow tax with the VAT. Thus, if a VAT is calculated according to the subtraction method, the same tax return could be used to deduct wages and investment in order to compute the cash-flow tax base.

The following discussion is not confined to any of these variants of CCFT in particular. For practical purposes the most relevant option seems to be a CCFT as a complement to a personal income tax. However, most of the points raised will be equally valid for other variants.

2. The tax base

Following Meade (1978), there are three types of CCFTs:

a. The R--or real--base CCFT is one in which the tax base is net real transactions, that is, the difference between sales and purchases of real goods and services. As opposed to an income tax, the distinctive features of such a tax base are immediate expensing of capital outlays and the nondeductibility of interest payments. At the same time interest received is no longer taxable.

b. The RF--or real plus financial--base CCFT is one which, in addition, includes in its tax base nonequity financial transactions, that is, the difference between borrowing and lending. Interest and retirement of debt would be deductible, while borrowing and interest received would be taxable: RF base = (sales + borrowing + interest received) - (purchases + interest payment + debt repayment).

c. The S--or shareholder--base CCFT taxes the net flow from the corporation to shareholders, that is, S = (dividends paid + purchases of

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1/ Cash-flow based rent resource taxes have actually been used for mining projects in Papua New Guinea, Tanzania, and several other developing countries (Garnaut and Clunies Ross, 1983).

shares - issues of new shares). 1/ The S base is conceptually equivalent to the RF base minus the tax, as can be seen from a basic accounting identity: any difference between total business inflows and outflows has to be paid out either to shareholders or as tax: RF = S + CCFT. Since taxes enter into the sources and uses-of-funds statement, the rate of the RF-based tax would be tax inclusive. The S-based rate would be tax exclusive, that is, it could well be higher than 100 percent.

The S base was favored by Meade (1978) because it was perceived to be administratively simpler. However, the conceptually equivalent RF base is closer to current tax base configurations and is, therefore, more commonly discussed as an alternative to the CIT. Nevertheless, an R-base CCFT system has been advocated recently by McLure, 1991; and McLure et al., 1990, who suggests it as part of his simplified alternative tax (SAT), which is essentially a consumption-flow tax for business and personal taxation. He argues that the exclusion of financial transactions makes an R-base tax easy to administer. On the other hand, the exclusion of the financial sector from the R-base CCFT is also an obvious drawback. Further, it increases the problems of transition and seems particularly prone to tax avoidance schemes, points which are elaborated upon later.

3. Selected characteristics

A classic interpretation of the CCFT is that of government as a "silent partner" in an investment (Brown, 1948). This is most clearly seen for the S base where the government, in fact, sustains tax losses from equity raised and receives revenue from distributed earnings. Alternatively, with immediate expensing and a tax rate t_c, capital outlays K produce a tax loss $t_c{*}K$. This can be interpreted as a reduction in the corporation's own investment outlay, so that its effective financing becomes $(1-t_c){*}K$. If we assume a constant tax rate, government will then share a proportion t_c of all subsequent inflows. As outflows and inflows for the corporation are reduced proportionately by the "silent partnership," the rate of return on an investment remains unaffected by taxation.

The "silent partnership" enables the government to appropriate a share of the above-normal returns that are generated in the economy. Those returns may be economic rents from entrepreneurial activity, nonrenewable resources, or monopoly, but also investors' compensation for risks which on average will be positive. Hence, the CCFT can also be interpreted as a tax on pure profits and on returns to risk taking (Stiglitz, 1976). For marginal projects that just cover the opportunity cost of capital the

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1/ Since share transactions between corporations cancel out, the aggregate S base represents the net flow from the corporate sector to shareholders.

present values of initial tax losses and of subsequent CCFT payments just offset each other. 1/

The marginal effective tax rate of zero is a crucial implication of the CCFT. The tax is neutral with respect to the employment of capital. No project that would be worthwhile in the absence of taxation is discouraged. From a theoretical perspective there are a number of other attractive features of a CCFT (King, 1986):

- The exemption of marginal returns implicit in immediate expensing does not discriminate between debt and equity. 2/ The income tax favors debt over equity by allowing deduction of interest only. Partial integration of corporate and personal income taxation does not solve this problem as long as there is a substantial spread of marginal investor-tax rates.

- Immediate expensing also ensures neutrality with respect to the rank-ordering of projects. Under the income tax, any divergences between the profiles of "economic" and "tax" depreciation--which are virtually inevitable--result in positive or negative tax wedges that distort this ordering (Samuelson, 1964).

- Except for situations of hyperinflation (where even annual expensing falls short of a full deduction of real investment) the cost of capital is not affected by inflation under CCFT.

- If the CCFT is introduced alongside a personal income tax there is no need for integration of the two taxes. Because capital income is effectively exempt at the corporate level under the CCFT, the appropriate treatment would be the classical system under which the corporation is treated as a separate entity and no effort is made to attribute its earnings to equity holders.

1/ For illustration consider a simple, two-period investment project of $K=1$ which yields a pretax return of r. The present value (PV) of CCFT payments from this project is given as:

$$T_c = -t_c + (1+r) * t_c/(1+i) = (r-i) * t_c/(1+i) \quad (1)$$

where $-t_c$ is the tax benefit from initial expensing and $(1+r)$ is the cash inflow in the second period; i is the risk-free market rate of interest, equal to the government discount rate, so that $(1+i)$ is the discount factor. As can be seen, revenue is raised on the difference $r-i$, that is, on above-normal returns. A marginal project, with $r=i$, is effectively untaxed.

2/ Financial decisions under a CCFT may still be distorted by the personal income tax, that is, if there is differential treatment of capital gains and dividend income.

- In addition, the CCFT is based on current transactions and hence avoids the timing-related problems of a typical income tax: Expensing replaces calculation of "true economic depreciation" as well as the need for inflation adjustment of inventory and asset replacement values. The problem of capital gains is irrelevant.

For practical purposes two critical assumptions of the theoretical neutrality results need to be stressed, however: it is assumed that tax rates are constant and that taxable inflows are always sufficient to offset expenses, so that an investment will actually produce an initial tax reduction. These points are considered next.

Rates of a neutral CCFT must not be progressive and must be stable over time. Especially, the latter may be a problem, since governments have a short-run incentive to raise rates once investors have committed themselves (King, 1986). 1/ An unexpected rate hike in itself will not affect the allocation of capital but will only generate windfall-tax revenue. However, the effects of a CCFT on investment activity will depend crucially on the credibility of a government's pledge not to change rates in the future.

If inflows are insufficient to offset expenses, a cash refund for unused deductions would be required to make an ideal CCFT work. Alternatively, a loss carry-forward at an appropriate interest rate could be used to preserve the present value of the initial deduction. Following the silent partner interpretation, one might also say that with a loss carry-forward the government's "equity share" t_c is effectively financed by a forced loan from the firm. For the CCFT to be still neutral, the loss then has to be carried forward at the firm's discount rate. Timing issues obviously would sneak in through the back door if loss carry-forwards are used. Grossing them up by firm-specific discount rates is hardly possible. Thus, there seems to be a clear trade-off between practical and conceptual considerations in some important aspects of the application of a CCFT.

II. Practical Considerations

While the CCFT cannot be criticized too strongly for lacking theoretical foundations, it comes up against some practical hurdles. The important practical considerations for the CCFT fall under two categories: first, those that must be kept in mind especially during the transition phase; and second, those that are relevant for its general implementation.

1/ This incentive is particularly strong under CCFT because taxation consists of two separate moves: first the government contributes to an investment by granting expensing; then it collects revenue from inflows. Defecting from initial tax rules after the first move is more attractive than in the case of the income tax, where depreciation allowances and tax payments are calculated simultaneously over the lifetime of the project.

1. Transition issues

There are numerous concerns that arise during the transition from a CIT into a CCFT. First, a "cold turkey" transition would produce windfall-tax revenue by denying companies their existing depreciation allowances. On the other hand, allowing immediate expensing of remaining depreciation could adversely affect revenue. A hybrid of allowing continued depreciation might, therefore, be the only practical solution. As Sunley (1989) points out, however, such "transitional" arrangements may have to last for a number of years.

Most authors (Gordon, 1989; Sunley, 1989) suggest that there is likely to be a short-term revenue loss during the transition. Various arrangements are likely to accommodate the amortization of old investment while new investment would generate substantial tax losses. In order to mitigate this effect one may resort to "present value expensing" (McLure et al., 1990), that is, during the transitional period, deductions for new investments would be spread out over several years, grossed up so that their present value would still be equal to the initial outlay. This obviously would give rise to the issue of using the right discount rate.

The particular choice of the CCFT base and transitional provisions will obviously affect the financial position of firms (King, 1986). Under an R-base CCFT, leveraged firms could face financial distress because interest would no longer be deductible. Yet, continued interest deductibility for old debt might be prone to manipulation. The solution would, therefore, seem to be to select an RF-base CCFT.

In the very short term the tax may have undesirable announcement effects. Investment might collapse in anticipation of future expensing unless the tax can be introduced retroactively. If the prospective CCFT is RF based, firms may increase borrowing and later repay debt by raising equity. Whether retroactive enactment is possible could depend on political factors (King, 1986).

2. General issues

a. Revenue implications

The CIT is an important source of revenue in many developing countries. Following a bell-shaped curve, its share of GDP and total revenue generally increase in the initial stages of development, 1/ so that for different income groups of developing countries, CIT makes up between 11 and 23 percent of total revenue. In a few cases, CIT accounts for more than one fourth or even more than one half of total revenue (Tanzi, 1987).

1/ In OECD countries the CIT has become relatively unimportant over time.

Revenue implications of any change in corporate taxation obviously have to be weighed very carefully in this context--even if one may argue that, in the long run, CCFT is likely to foster growth through increased investment and improved capital allocation, and that government would participate in such growth. If we leave aside both the purely transitional issues and the longer-term structural and dynamic effects, what can be said about the revenue implications of CCFT?

(1) Smaller tax base?

There are conflicting views about the likely differences in the size of the corporate tax base under CIT and CCFT. The straightforward argument against CCFT is that full and immediate expensing clearly seems to reduce the tax base. The government forgoes tax on the marginal returns to capital and one would therefore expect that the CCFT rate has to be higher than the initial income tax rate if present-value revenue is to be sustained. 1/

On the other hand, proponents of CCFT have based their case partly on the massive erosion of the tax base under CIT (Kay, 1990; King, 1986). They argue that most marginal returns escape taxation anyway. Firms find it advantageous to debt-finance their investments, as nominal interest payments are deductible. Foreign investors may choose "thin capitalization" to shield their income from host country taxation and to facilitate repatriation. Legislative rules against such excessive interest deductions often are not fully effective. Firms may also avoid taxation of capital income by making use of special incentives such as accelerated depreciation, tax arbitraging, resorting to tax-preferred activities, or investing abroad.

1/ If total returns r comprise the tax base of the CIT, and above-normal returns $(r-i)$ are the base of CCFT, t_i and t_c are the respective tax rates and T_i and T_c the present value of revenue under both taxes, then revenue neutrality requiring $T_c = T_i$, implies

$$t_c*(r-i) = t_i*r.$$

Thus, the revenue neutral CCFT rate is

$$t_c = t_i * [r/(r-i)].$$

The right-hand expression in parenthesis, which is the ratio of total over above-normal returns, will obviously decrease for increasing r, that is, as above-normal returns make up an increasing proportion of total returns. If CIT allows initial expensing of a proportion a $(0=<a<1)$, its base reduces to $(r-a*i)$, that is, the necessary rate increase will also be smaller.

The traditional view of the CIT as a tax on the use of capital in the corporate sector then becomes questionable. According to the "new view," CIT is rather a tax on immobile production opportunities in the corporate sector. The CCFT is the "logical counterpart" (Kay, 1990, p. 29) of this "new view," since it would tax the same base while eliminating the excess burden of the present system, for example, by restoring debt-equity neutrality. 1/

Empirical work for developed countries indeed seems to suggest that the CCFT and the current income tax base would not be very different in many cases. Assuming unchanged behavior on the part of firms, and ignoring transitional issues, several rough estimates of potential CCFT yield for the United Kingdom, the United States, and Canada indicate that even for stable tax rates revenue loss should not be a serious problem (King, 1986; Daly et al., 1986). Gordon and Slemrod (1988) found that by 1983 the U.S. tax code offered so many tax arbitraging opportunities that exemption of capital income through adoption of a "pure" cash-flow tax would have increased revenue, even after transitional losses were taken into account. 2/

In developing countries where the corporate sector is dominated by large mineral exporters, local cartels, monopolies, and debt-financed foreign corporations, the existing CIT may also be fairly close to a pure profits tax, as the tax base mainly consists of above-normal returns. 3/

Mintz and Seade (1991) suggest that, in many cases, the CCFT might actually increase revenue, because existing tax codes already provide generous investment incentives. With fast write-offs and tax holidays, income taxation is similar to the CCFT.

(2) Investment and current revenue

Tax yield under the CCFT would also tend to be very sensitive to investment. Under an income tax with "true economic depreciation," gross returns and offsetting capital allowances on an investment follow the same time pattern. But, under the CCFT, taxable inflows from past investments

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1/ A classic of the re-interpretation of CIT is Stiglitz (1976): "*In my interpretation of the U.S. tax system the dominant feature (of the* corporation tax) is the interest deductibility provision. . . (The corporation tax) is partly a tax on pure profits, partly a tax on entrepreneurship and partly a return on an implicit government partnership in risk-taking. Quantitatively, I suspect that the third role is the most important."

2/ The strength of this argument should, of course, have declined after the 1986 tax reform.

3/ Economic rents (monopoly, mineral deposits) comprise a common tax base for the CIT and CCFT. Debt-financed corporations can shield marginal returns by deducting them as interest under the CIT. Thus, the CCFT and CIT become similar.

are partly offset by expensing of new outlays. Hence, current revenue will depend on the difference between the average rate of return and the rate of growth of the capital stock. During periods of rapid expansion--that may, for instance, follow structural adjustments in reforming socialist economies--revenue could dry up or even become negative, at least theoretically. 1/ In other words, they could drop in periods of upswing in economic activity, making the tax pro-cyclical.

This does not imply that revenue will be permanently postponed. In the long term, the capital stock would not, on average, grow faster than the average rate of return earned on it. Nevertheless, as indicated above, the sensitivity of revenue to investment is undesirable both in terms of fiscal liquidity and business-cycle effects. As far as the latter is concerned, the CCFT would tend to generate more revenue during the downside of a business cycle since investment would tend to be low, even as returns from earlier investments could tend to flow in, entering the tax base.

However, to the extent that existing tax codes have special investment incentives, such as accelerated depreciation or investment tax credits, similar problems do, of course, arise under an income tax. Because of administrative problems and collection lags, the stabilization effects of corporate income taxation are also less clear than they may seem in theory. On the whole, however, it seems that the ramifications of characteristics such as incentives, and collection lags under the income tax should tend to be less pronounced.

(3) Revenue risk

As the government assumes the "silent partner" role with full loss offset, revenue from individual projects becomes more risky--though its expected value is still positive if investors are risk-averse. Still, the "silent partnership" should not cause substantial variations in total revenue as long as independent risks of many projects can be pooled. But in

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1/ Assume a sequence of two-period projects. If total investment in the previous period was 1 but grows at rate g --so current investment is $(1+g)$-- then under CCFT current government revenue R_c is

$$R_c = t_c*(1+r) - t_c*(1+g) = t_c*(r-g)$$

Contrast this with an income tax which allows expensing of proportion a. Current revenue R_i is

$$R_i = t_i*[(1+r) - (1-a)] - t_i*a*(1+g) = t_i*(r - a*g)$$

For $a=0$, that is, no expensing, current revenue R_i is completely independent of g.

the case of a small country with only a few major projects, or in the case where risks are correlated, variability of revenue as such may be an additional concern. 1/

(4) Other effects

Two other revenue-related points deserve brief mention. First, introduction of the CCFT may require substantial improvements of loss-offset provisions over the existing CIT. Such improvements may be costly in terms of revenue if previous loss-trading between corporations was imperfect. Second, there may also be a revenue increasing effect if a CCFT actually improves the tax administrative handle on small business and other hard-to-tax groups.

To conclude, the revenue effect of replacing a CIT with a CCFT remains an empirical question. Whether or not a revenue-neutral CCFT would require higher rates depends on the particular income tax laws that are to be replaced, the value of economic rents earned in the corporate sector, as well as the current corporate portfolios between debt and equity. Nevertheless, transition rules might be needed to soften any adverse revenue impact of the conversion, and such rules may have to be applied for a considerable period of time.

b. Tax avoidance and evasion

The above discussion of revenue effects excluded possible behavioral responses on the part of corporations. However, as firms will try to exploit possible new "loopholes" of the CCFT, revenue could be lost and tax administration might face new challenges.

A number of new possibilities of "gaming the system" under the CCFT have been discussed in the literature (Sunley, 1989; McLure et al., 1990; Gordon, 1989; Mintz and Seade, 1991; Tait, 1992). Like any avoidance scheme, the problems are enunciated by, and are based on, differences in tax rates between activities, jurisdictions, institutions or individuals, legal forms or points in time, all of which make arbitraging profitable (Stiglitz, 1988). This section surveys some possible avoidance and evasion schemes. It also discusses the related tax-exhaustion problem and possible solutions, the merits of the R base versus the RF base and some general issues.

1/ This argument may be an important element in the reluctance of governments to use the cash-flow base for mineral taxation.

(1) Gaming the system

Some of the tax avoidance possibilities are specific to the R-based CCFT. There would be an entire class of schemes exploiting the crucial difference between taxable real flows and tax-free financial transactions (Sunley, 1989):

- Installment sales to a tax-exempt party may understate the taxable purchase price, but overstate the tax-free interest component of seller financing.

- Labor, goods, and services may be sold at low prices and assets leased at low rates to a tax-exempt party, which in return provides a low-interest loan to the employee, seller or lessor; pre-arranged defaults and loan forgiveness would be extreme cases of such low interest loans, unless they are included as imputed flows in the tax base.

- Companies with different accounting years, in turn, may reduce their tax bases by increasing purchases from each other. At the end of its accounting year company A could make large purchases from company B and vice versa. These intercompany transactions could be debt-financed without tax consequences.

- To circumvent nondeductibility of interest paid, financing may be provided by a tax-exempt seller or lessor. Interest payments would be transformed into deductible leasing payments/purchases.

In order to contain these arrangements McLure et al. (1990) suggest that for tax deduction purposes, ceilings and floors may need to be imposed on interest rates.

Under both the R- and RF-bases taxpayers may try to shift the tax base to an affiliated low-tax party, for instance a tax-exempt pension fund or a foreign corporation with a lower rate. 1/ Expensable capital outlays would be allocated at the high-tax party while subsequent cash-inflows would be directed toward the low-tax party. Such base shifting may take the form of:

- Transfer pricing through the purchase of inputs from the low-tax party at inflated prices, and sale of goods at understated prices;

- Low-rate leasing of capital acquired and expensed by high-tax party to a low tax party; and

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1/ Provided that international tax differentials are not washed out by tax credit mechanisms; see below.

- Sale of expensed assets at understated prices to the low-tax party. 1/

Such schemes could be operated under the income tax as well, but the incentive for them will be much more powerful under the CCFT. This is because expensing makes the present value of deductions from any asset equal to the purchase price. Under any other depreciation scheme the present value of deductions decreases with the longevity of an asset and with the discount rate used by the corporation. 2/ Also, because the entire deduction is available up-front under the CCFT, immediate sale of the asset at an understated price becomes much more attractive. Under an income tax the high-tax party would have to hold on to the asset to benefit from available depreciation.

A CCFT will hence increase the incentive for tax-saving leases and mergers between corporations with different tax rates. Foreign corporations may set up subsidiaries in the CCFT country only to take advantage of expensing, then channel inflows to a lower-rate jurisdiction.

1/ The problem arising from the possibility that firms may move once they have expensed an investment (Tait, 1992) could be alleviated by taxing them upon migration. Since they previously benefited from expensing, such a tax should not be in conflict with free international capital movement.

2/ There is very little to be gained from shifting long-lived assets under the income tax. Think of land as the most extreme case. It is not depreciable under the income tax--but should be expensable under CCFT.

The difference between expensing and straight-line depreciation for different parameters is illustrated by Table 1. For example an asset depreciated over ten years by a firm using a 4 percent discount rate produces a present value of deductions of roughly 80 percent of its initial value. CCFT always provides a 100 percent deduction.

Present Worth of Straight-Line Depreciation Deductions*

(As a percent of cost of asset)

Economic Life (Years)	Annual Deduction (in percent)	Present Worth of Depreciation Discounted at Rate of Interest (Annually Compounded) of			
		2%	4%	6%	8%
(1)	(2)	(3)	(4)	(5)	(6)
5	20	94.3	89.0	84.2	79.9
10	10	89.8	81.1	73.6	67.1
20	5	81.8	68.0	57.3	49.1
50	2	62.8	43.0	31.5	24.5

*Cost divided by length of life, assuming no scrap value.

Manipulation of reported transactions may also be an important channel of tax evasion. Companies could try to overstate asset prices upon purchase to the tax authorities. They could also buy equipment, take the deduction, and immediately resell, concealing or understating the price. These possibilities also arise under the income tax. Again, however, expensing, which grants tax savings up front, increases their attractiveness.

To counter base-shifting schemes, arm's-length prices and rates for transactions between affiliates have to be enforced. But such monitoring is notoriously difficult and the administrative simplicity of just recording cash flows would be lost. Perhaps certain types of transactions such as leasing to foreigners or tax-exempt institutions would need to be prohibited. If there is a system of wealth taxation it may put some checks on the valuation of transferred assets. However, all such requirements--performing as checks and balances to the CCFT--would result in considerable complications, essentially eroding the main characteristic, simplicity, on which its proponents find it to be attractive.

Some general lessons from the income tax can of course be applied a fortiori to the CCFT in this context. Tax treatment of activities and institutions should be uniform to reduce arbitraging opportunities. For instance, some business activities of tax-exempt institutions may be taxed. The rate structure should be flat and low to the extent possible (given revenue needs), since it determines the taxpayer's per-dollar savings from reducing or shifting the tax base.

(2) Tax exhaustion and tax avoidance

A special case of uneven rates arises from tax exhaustion, where available deductions exceed taxable inflow. A tax-exhausted corporation has a marginal tax rate of zero though its statutory rate may be quite high. It is unable to benefit from capital allowances.

Excess allowances (through tax losses) are likely to be much larger and more frequent under the CCFT. However, especially with an R base, whether or not the resulting lumpy tax profile will foster additional arbitraging and mergers largely depends on loss-offset provisions. To the extent that such provisions ensure symmetrical treatment of profitable and loss-making corporations, profitable arbitraging would be curtailed.

Loss-offsets are crucial to the CCFT in conceptual terms as well and a refund would be the straightforward solution. Refunds may be problematic though, in that they aggravate the problem of "hobby farms," that is, businesses solely set up to generate tax losses on consumptive, nonprofit-oriented activities. Rules against such abuses under the income tax would have to be carried over to the CCFT (Gordon, 1989).

If statutory provisions are insufficient, additional tax arbitraging through leases or mergers could take place. The objection against such arrangements should not be that they cost revenue; in fact they could be interpreted as a "market solution" to the tax exhaustion problem (King, 1986; Stiglitz, 1988), ensuring equitable treatment of loss-making and profitable firms and preserving the investment incentive of the CCFT. But the objection is that such solutions would be inefficient, because they tend to distort economic activity through reduced competition and "parasitic tax-based industries" (Weeden, 1988). If full statutory loss-offset cannot be obtained, a second-best strategy for government may, therefore, be to at least facilitate loss trading. 1/

To conclude this section on tax avoidance and evasion, a summary assessment of the R and RF bases may be called for. The administrative advantage of the R base is that financial transactions can be entirely ignored. This actually reflects the basic concept of CCFT--equal treatment of debt and equity. On the other hand, the R base is vulnerable to the above-mentioned tax avoidance schemes. With the RF base, the tax profile is less lumpy and incentives for base shifting and evasion are reduced. However, the RF base has an incentive to raise capital as equity and disguise payouts as interest payments, a problem that is shared under the income tax. Therefore, the existing provisions under the CIT ameliorating these problems would have to be carried over to the RF-base CCFT.

c. International issues

(1) Basic concerns

The introduction of a CCFT raises serious questions about international compatibility. These questions concern legal as well as economic aspects. As the CCFT might not legally qualify as an income tax, its adoption could require the renegotiation of tax treaties. Such negotiations tend to take many years and hence imply considerable transactions costs and transitory arrangements. Moreover, tax treaties for many host countries serve as a signal of a stability which they may be unwilling to put at stake. Reforming socialist countries who ultimately want to join the EC may find the CCFT unacceptable simply because it would not conform to the EC requirement for a CIT. 2/

1/ So-called "safe harbor leases" (i.e., legalization of purely tax-motivated leasing arrangements) in the United States or "flow-through shares" (i.e., option to pass losses on to shareholders) in Canada were controversial attempts in this direction (Daly et al., 1986; Stiglitz, 1988).

2/ As a consequence of growing economic integration the coordination of capital income taxation will become even more important in the EC. Though there are advocates of "spontaneous coordination" through increased competition of tax systems, this approach has serious problems. EC countries will rather want to increase managed harmonization of existing CIT systems (Tanzi and Bovenberg, 1990). A CCFT would hardly fit into this process.

Host countries are worried about losing existing options of "soaking up" foreign tax credits. Also, there has been an overriding concern that home countries, in particular the United States, might not grant foreign tax credit for the CCFT and that this might discourage foreign investment. The creditability problem was the major obstacle for the adoption of CCFT proposals in Canada, Mexico, Sweden, and Colombia (Boskin and McLure, 1990).

(2) Principles for taxation of foreign earned income

Briefly recalling the basic principles that are applied to the taxation of foreign income (OECD, 1991; Slemrod, 1992; Leechor and Mintz, 1991), three regimes can be distinguished:

- Exemption: Home countries impose no tax at all on income earned abroad. This is sometimes also referred to as the territorial system. Income is only taxed by the host country (source principle).

- Taxation upon accrual: Home countries reserve the right to tax worldwide income of their resident corporations (residence principle), and foreign income is taxed as it is earned. Taxation upon accrual is typically applied to foreign branches of resident corporations.

- Taxation upon repatriation: Under this regime the home country applies the residence principle. However, corporations can defer their domestic tax liability by retaining earnings abroad. Because of the time value of money, deferral reduces the effective domestic tax rate. This regime is typically applied to subsidiaries.

If home countries apply the residence principle, foreign income is potentially subject to double taxation in both host and home countries. Double taxation can be mitigated in different ways. First, the home country may allow deduction of taxes paid abroad. This is actually the efficient policy, since foreign taxes represent a social cost to the home economy. If deduction is granted, resident corporations will equalize the after-tax foreign return to the pre-tax domestic return. However, it is not optimal from a global point of view, since capital export is discriminated against. To ensure capital-export neutrality, many home countries grant a tax credit against foreign taxes paid. Corporations will then equalize pretax rate of returns. In terms of revenue, the tax credit implies that, in fact, home countries bear the foreign tax burden of their resident corporations. Unless additional tax treaties impose restrictions, the host country can "soak up" those tax credits, that is, tax foreign investors without deterring them. However, the tax credit is usually limited to domestic tax liability (on the sum of domestic and foreign incomes), so that corporations ultimately face the higher of the (average) foreign or domestic tax rate. If the domestic rate is higher, the corporation will face the same effective tax rate at home and abroad. If the foreign rate is higher, the corporation may accumulate excess tax credits. Under a system of tax credit by source, such offsets are limited to income from a particular host country. Under the more generous worldwide tax credit system, excess tax credits may be used against tax on income from any host country. In this case the corporation actually faces the higher of the domestic and the average foreign tax rate. 1/

(3) CCFT and foreign direct investment

(a) Exemption at home: Obviously the concerns about revenue and creditability are irrelevant for foreign investment from home countries which grant exemption of foreign dividend income; in this case a CCFT host country will attract additional foreign investment until the pre(=after) tax rate of return is equal to the after tax rate of return in the home country.

(b) A creditable CCFT: What if the home country taxes foreign earnings? Let us first assume that CCFT would be creditable and discuss the implications of noncreditability later. Also, a crucial distinction has to be made between corporations whose available tax credits are less than their domestic liability on foreign earnings (so called excess limit position) and those who have excess credits.

If corporations are in excess limit position the tax credit mechanism will wash out the effects of host country tax policy. The revenue argument against CCFT is based on this case. While the investment incentive of CCFT would be neutralized, revenue is forgone which will simply be picked up by the home country.

Note, however, that this argument does not hold in the presence of "tax sparing." Under tax sparing a home country assumes that full tax has been paid in a foreign (host) country, in effect calculating foreign tax credit on the basis of regular foreign tax rates regardless of actual taxes paid (on the basis of preferential treatment). This protects host country tax incentives. With the notable exception of the United States, many capital-exporting countries (e.g., Japan and the United Kingdom) have signed tax-sparing treaties with developing countries.

Note also that under a "deferral system," retained earnings are tax exempt in the home country. The investment incentive of CCFT therefore may

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1/ Countries often do not apply one principle consistently but have special provisions for different circumstances. In general, tax exemption for foreign-source dividend income from all countries, or at least from tax-treaty countries, is provided by the following OECD countries: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Luxembourg, Netherlands, Sweden, and Switzerland.

The tax credit system for foreign dividends is used by Greece, Iceland, Ireland, Italy, Japan, New Zealand, Norway, Portugal, Spain, Turkey, the United Kingdom, and the United States. Iceland, Japan, and the United States provide worldwide tax credit; all other countries use the more restrictive credit by source. (OECD, 1991, p. 63).

still be effective. Hartman (1985) has argued that under deferral the home country tax is in fact a tax on repatriation rather than on foreign income. This "repatriation tax" is ultimately unavoidable in any case and therefore affects neither marginal investment decisions nor decisions to retain or repatriate profits. 1/ A corporation considering reinvestment of funds earned abroad hence will compare after-tax rates of return just as it would under the source principle. A tax credit will still alleviate the overall tax burden but does not wash out the effects of host country tax policy.

This "new view" of host country tax policy under the deferral system has been criticized in the literature, however. 2/ Of course, it does not apply to "immature" investment, that is, investment funded at the margin by transfers from abroad. The latter may be predominant in many cases, especially in the ex-socialist economies. It has also been pointed out that the formulas used for the calculation of domestic tax are such that investment and finance decisions of the subsidiary do affect the total liability on repatriated earnings. 3/

To preserve the incentive for "mature" investment but in order to continue to "soak up" foreign tax credit, the CCFT country may want to adopt a supplementary withholding tax on repatriated earnings (Sunley, 1989; Mintz and Seade, 1991). Such a tax would introduce some administrative complications, because foreign corporations' income would have to be calculated in order to distinguish dividends from the return of capital (Sunley, 1989). Also, the tax should not be applied to foreign investors whose earnings are tax exempt at home. But discrimination between corporations seems hardly feasible (Slemrod, 1991). Finally, the creditability of such a tax is uncertain as well. It will probably depend on the creditability of the CCFT itself (McLure et al., 1990, Sunley, 1989).

If corporations have excess tax credits, their foreign earnings at the margin are effectively shielded from domestic taxation. They do not trigger any additional liability in the home country. Host country tax policies therefore "matter" as they do under the source principle. After the 1986 Tax Reform Act (TRA), whose main feature was a reduction of statutory rates, many U.S. corporations have accumulated excess tax credits. This suggests that investment incentives of developing countries are likely to be more effective in the future, but some qualifications are in place.

1/ However, it does affect the initial investment decision. Also note that the argument regarding marginal decisions not being affected should be qualified by the possibility that foreign income may never be repatriated.

2/ Hines (1992) has a brief survey of the state of this debate.

3/ See Leechor and Mintz (1991) who develop a model to quantify empirically the effects of host country policy on effective tax rates and multinational investment. Using a related framework Mintz and Tsiopoulos (1992) have estimated the incentive value of a cash-flow tax in Central Eastern European Countries for U.S. corporations. They found that it would be reduced by about two thirds on average.

Not all foreign investors are in an excess credit position. For non-U.S. multinationals the lowering of U.S. rates in fact meant a reduction of excess credit positions at home. Those who have excess credits are likely to adjust their behavior in order to make profitable use of them. 1/

In the long run an excess credit situation may not be stable because (1) the home country, in this case the United States, may raise its tax rates, since it does not collect revenue from corporations with excess tax credits; and (2) other host countries may lower their rates to attract additional investment. Host-country tax competition may ultimately lead back to the usual situation, in which tax credits neutralize host country policies.

Arguments based on excess credits of foreign investors thus can be easily overstated. "The TRA 1986 may have created a temporary disequilibrium" (Slemrod, 1991, p. 13), rather than a fundamental change in the international environment for developing-country tax policy.

(c) A noncreditable CCFT: So far, it was assumed that the home country would grant foreign tax credit for CCFT. Possible noncreditability of CCFT in home countries, especially in the United States, has been a major concern in countries considering the tax, however.

There is no clear answer in advance to the legal question of creditability. Conceptually, a CCFT is based on cash-flow rather than on income, and thus seems likely to fail the "substitution test" required for instance by U.S. legislation. However, while the United States grants tax credit for income taxes, it also grants tax credit for taxes imposed "in lieu" of income taxes (Sunley 1989). In fiscal terms a CCFT makes home countries better off to the extent that they recover tax on marginal foreign returns. Therefore there should be no reason for them to deny creditability (McLure, 1991). 2/ Also, home countries agreeing to protect host-country incentives through tax sparing should be willing to grant foreign tax credit for a CCFT (Sunley, 1989).

What if CCFT were not creditable? Would double taxation discourage foreign investment? McLure (1991) points at three qualifications to this common argument, two of which were already discussed above. First, "mature investment" may still be attracted by the CCFT because a repatriation tax does not affect rates of return at the margin. Second, corporations may have excess tax credits and therefore, de facto, may be back to source-based taxation at the margin. However, lasting excess credit "protection" of a noncreditable CCFT is only possible if the home country has a worldwide credit system, such that new credits may be earned in high-tax countries. If a home country grants credit only by source, excess tax credits are

1/ Possibilities for such adjustments are outlined by Slemrod (1992).
2/ The Internal Revenue Service may, nevertheless, have different views.

available only from the previous income tax regime and will be used up after some time. Third, it may be argued that a tax with a marginal effective rate of zero "even when combined with a (home country) tax on repatriated earnings is unlikely to have much disincentive effect on investment in the host country" (McLure 1991, p. 21). A noncreditable CCFT will not distort investment at the margin, because for projects just earning the opportunity cost of capital net CCFT payments will simply be zero. 1/

For a project earning above-normal returns, a CCFT burden which is deductible but not creditable at home will become an additional cost. To the extent that such investment is mobile, it will be discouraged by the CCFT. One may argue, though, that above-normal returns on investments in developing countries are often earned on immobile production opportunities (for example, extraction of mineral resources or exploitation of a local monopoly for a trademark like Coca-Cola). In these cases, noncreditability of a tax on pure profits will have no effect. Note, however, that noncreditability of CCFT is likely to entail noncreditability of any supplementary withholding taxes. A noncreditable withholding tax would clearly introduce a distortion even for marginal investment. 2/

1/ This is most clearly seen for a marginal project which uses perfect loss carry-forward. As cash inflows are just sufficient to offset the loss carry forward, the corporation never makes any actual payment to the host country.

2/ The effects of a noncreditable CCFT and withholding tax can be illustrated algebraically as follows:

1. The after tax rate of return of a domestic investment is:

$$ar_d = (1-t_d)*r \tag{1}$$

Compare this with investment in a foreign country which has a CCFT. Domestic tax liability if foreign taxes are deductible is: $T_d = t_d*(r-T_f)$ where foreign taxes are: $T_f = t_f*(r-i)$, assuming that loss carry-forward bears interest at rate i. The after-tax rate of return on foreign investment then is

$$ar_f = (1-t_d)*(r-T_f) \tag{2}$$

and the wedge between domestic and foreign after tax rate of return is: $[ar_d-ar_f]/ar_d = [(1-t_d)*r - (1-t_d)*(r-T_f)] / (1-t_d)*r]$

$$= T_f/r = t_f*(r-i)/r \tag{3}$$

If $r>i$, foreign CCFT payments T_f are an additional cost and hence discourage investment abroad.

2. A supplementary withholding tax with a rate of t_w would increase foreign-tax liability by: $t_w*[r- t_f*(r-i)]$, where the term in brackets

(continued...)

III. Conclusions

CCFT of course has the drawback of any untried tax innovation, which is simply that "no one does it" (McLure, 1991; Mintz and Seade, 1991). There is no experience and administrative know how about the possibly complex details of a transition to CCFT, of its operation and the new avoidance schemes which will emerge. No official ruling on the critical question of the creditability of a CCFT has been required so far. Uncertainty costs of an experiment may, therefore, be reason enough for a developing country or an economy in transition not to implement a CCFT. The purpose of this paper was, however, to identify potential sources of problems and thus to understand better the conditions for a successful experiment with a CCFT. It seems clear that, depending on the existing CIT structure, the structure of the corporate sector, and the relative importance of foreign investors and the mix of countries they come from, some countries may find the CCFT less attractive than others.

The key conclusions of the paper may be briefly summarized as follows:

1. The theoretical pros of the CCFT seem clear. It can be interpreted as a "silent partnership" of the government in any investment and as such it is generally neutral with respect to financial and real decisions of corporations. The neutrality result has to be taken with a grain of salt as loss-offset provisions are likely to be imperfect and some base erosion through lobbying and similar means is probably unavoidable. Expectations of future rate changes may also modify the results. Still, in a closed economy a CCFT would tend to increase investment and improve the allocation of capital. On the administrative level, a tax based on observable cash flows rather than on a hypothetical concept of accrual of income promises to be simpler and more robust (again, theoretically speaking). It would do away with the problems of defining "true economic depreciation," measuring capital gains, costing inventories, and accounting for inflation.

2/ (...continued)
represents repatriated, after-CCFT earnings. After rearrangement of terms, total foreign tax liability becomes: $T_f = t_f*[(r-i)*(1-t_w)] + t_w*r$

and, from (3), the new wedge is:

$$T_f/r = t_w + t_f*[(r-i)*(1-t_w)]/r \qquad (4)$$

which is positive even for marginal investments where $r=i$.

For numerical illustrations of the effects of a noncreditable CCFT see McLure et al. (1990).

2. Possible revenue impacts are an important aspect of the CCFT especially in developing countries, since the CIT to be replaced is often a major source of revenue. Revenue losses are likely during the transition period, but those need not be prohibitive if transition provisions are carefully designed, and tax rates are appropriately adjusted. However, a more fundamental issue is that CCFT as a tax on above-normal returns may have a significantly smaller base than the comprehensive CIT. With expensing, the tax base may also be more volatile. Nevertheless, the actual difference between the CCFT and CIT bases remains an empirical question, depending on the particular income tax laws that are to be replaced, as well as the current corporate portfolios between debt and equity. In some cases the two bases may, in fact, be fairly similar.

3. Tax-base erosion through tax avoidance and evasion may be a serious problem for the CCFT. By choosing an RF- over the R-base CCFT and by carefully designing the tax code, some of the schemes could probably be contained at reasonable administrative cost. 1/ But the large up-front deduction that results from expensing of capital assets would create a powerful incentive for base-shifting schemes. The administrative efforts required to contain these schemes could be considerable and would involve the enforcement of arms'-length prices which is notoriously difficult. The "simplicity" argument for CCFT has to be qualified accordingly.

4. Any answer to whether international considerations favor or work against the CCFT would be complex. To the extent that "host country tax policies matter," a country with a CCFT may attract additional investment. Most clearly this is the case if home countries exempt foreign earnings of their multinationals--as do many Western European countries. Other important capital-exporting countries such as Japan, the United States, and the United Kingdom apply the residence principle with a foreign tax credit. This system tends to neutralize host country tax policy, but not entirely so. The incentive offered by the CCFT is likely to remain effective for investors that benefit from tax sparing which is granted by many countries other than the United States. CCFT is also likely to attract additional "mature" investment and investors that have excess tax credits. Recently, many U.S. corporations have accumulated such credits, although this position may not be stable in the long run.

To the extent that the effect of a CCFT is washed out by the tax credit mechanism the host country will lose. Tax forgone on marginal returns is merely picked up by the home country. In the case that the home country denies tax credit for the CCFT, some foreign investment would be

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1/ To recall, this is not to say that the R-base CCFT has no advantages over the RF-base variant. After all, one attractive feature of the cash-flow tax is the nondeductibility of interest which eliminates incentives for debt over equity financing, and obviates any need for adjustments for inflation to calculate real interest. These are properties of the R-base, rather than of the RF-base, CCFT.

discouraged. The creditability of a CCFT will be an issue mainly in relation to the United States, since most other developed countries either exempt foreign earnings or grant some form of tax sparing.

To conclude, at this point CCFT remains a theoretically attractive option with, however, some practical disadvantages. Also, many unanswered questions remain for its implementation by a single--especially developing--country in an environment that will not necessarily accommodate its smooth and effective operation.

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