

Corporate Income Taxation : (d) Rules for Multinationals

Suppose that a Canadian corporation has a wholly-owned subsidiary incorporated in another country. That is, company A is incorporated in Canada. It owns 100 % of company B , which does business (only) in France, and is incorporated in France.

For generality, let the parent company's location (Canada, in the example above) be referred to as the "home country", and let the subsidiary's location (France, in the example) be referred to as the "foreign country". The home country levies a corporate income tax at the rate τ_h , and the foreign country levies a corporate income tax at the rate τ_f .

Income which the parent company earns in the home country, from domestic sales in the home country, is taxed in the home country, and only in the home country. This income presents no new problems. The subject of this section is the income earned by the subsidiary company, in the foreign country.

Suppose the subsidiary earns profits of π_f from its business operations in the foreign country. That income is taxed, at the rate τ_f , in the foreign country, since that is where it is incorporated. So, after foreign taxes, the subsidiary is left with profits of $(1 - \tau_f)\pi_f$. What if it remits these after-tax earnings to its owner, the parent company in the home country? How does the home country's tax authority deal with the income remitted from the subsidiary company to the parent company? [That is, in the example, what does the Canadian parent do, in its Canadian corporate income tax return, with the earnings remitted by its French subsidiary?]

There are several ways that the home country could deal with the fact that the subsidiary has already paid some corporate income tax, albeit to another country's government.

1. The home country could simply ignore the tax that was paid by the subsidiary in the foreign country, and require the parent country to pay taxes, in the home country, on the full, before-tax profits earned by the subsidiary. That means the parent company would pay corporate income taxes of $\tau_h\pi_f$ to the home country government, on the earnings of its foreign subsidiary — after the subsidiary already paid taxes of $\tau_f\pi_f$ to the foreign government.

Under this scheme, the total taxes paid — to both countries' governments — on the foreign subsidiary's earnings would be $(\tau_f + \tau_h)\pi_f$. The firm's owners face an effective tax rate $\tau_e = \tau_f + \tau_h$ on the return to any investment in the foreign country.

2. The home country could give a tax **deduction** to the parent company for taxes already paid by the subsidiary to the foreign government. That means that the parent company would report earnings of $(1 - \tau_f)\pi_f$ from the foreign subsidiary : the total earnings minus a deduction of $\tau_f\pi_f$ for the taxes already paid. The parent company would then pay taxes of $\tau_h(1 - \tau_f)\pi_f$ to the home country government. The total taxes paid on earnings of the foreign subsidiary would then be $\tau_f\pi_f + (\tau_h(1 - \tau_f)\pi_f)$, and the effective tax rate τ_e on the return to investment in the foreign country would be $\tau_h + \tau_f - \tau_h\tau_f$. This effective tax rate is strictly greater than either the home

country tax rate τ_h , or the foreign country tax rate τ_f .

3. The home country could give a tax **credit** to the parent company for taxes already paid by the subsidiary to the foreign government. That means the parent company would report earnings of π_f from the foreign subsidiary on its home country corporate tax return, pay taxes of $\tau_h\pi_f$ on those earnings, but get a tax credit equal to the taxes already paid to the foreign government by the subsidiary, of $\tau_f\pi_f$, which would be subtracted from its taxes owing.

So the total taxes paid on the foreign subsidiary's earnings would be $\tau_f\pi_f$ to the foreign government, and (after the tax credit) $(\tau_h - \tau_f)\pi_f$ to the home country government. This implies total taxes paid to both governments of $\tau_h\pi_f$, and an effective tax rate τ_e equal to the home country tax rate τ_h .

But wait! The tax credit is a **non-refundable** tax credit. It can be applied only against taxes owing on the earnings of the specific foreign subsidiary. So if the foreign tax rate were higher than the home country tax rate, the credit would actually be larger than the taxes owing in the home country. The company cannot claim for a credit bigger than the taxes owing. So if $\tau_f > \tau_h$, then the company would simply claim a tax credit in the home country equal to the taxes owing in the home country. It would pay no taxes in the home country, after paying taxes of $\tau_f\pi_f$ in the foreign country. Its total taxes would just be $\tau_f\pi_f$, and its effective tax rate would be τ_f .

Since this latter case arises if and only if the foreign tax rate is higher than the home country tax rate, combining the two cases ($\tau_h \geq \tau_f$ and $\tau_h < \tau_f$), implies that

$$\tau_e = \max(\tau_h, \tau_f)$$

4. A final option is simply to ignore the earnings of any subsidiaries incorporated in foreign countries. This principle is called the **exemption** principle. It treats the earnings of corporations as taxable only in the country in which the corporation does business, regardless of the ownership of the corporation, and allows remittances from subsidiary companies to parent companies to be made without being taxed.

Under the exemption rule, the foreign earnings are taxed only in the foreign country, and thus face an effective tax rate of τ_f .

Summarizing, if the foreign corporate tax rate is t_f , and if the home country corporate tax rate is τ_h , then the effective tax rates τ_e on a dollar of profit earned by the foreign subsidiary are :

	ignore	deduction	credit	exemption
τ_e	$\tau_f + \tau_h$	$\tau_f + \tau_h - \tau_f\tau_h$	$\max(\tau_f, \tau_h)$	τ_f

The effective tax rate declines as we move right across the above table [unless $\tau_f \geq \tau_h$, in which case the credit and exemption methods yield the same effective tax rates.]

What methods are actually used by countries to deal with the foreign corporate income taxes paid by subsidiaries of multinationals? Typically, the methods are determined by **bilateral treaties** between countries : a treaty between Canada and France would specify a method, to be used both by Canadian authorities in assessing taxes on income of French subsidiaries of Canadian companies, but also by French authorities in assessing taxes on income of Canadian subsidiaries of French companies.

Of course, there are a lot of bilateral treaties possible. With about 200 countries in the world, there are about 40,000 possible bilateral treaties. In many cases, pairs of countries have not been able to negotiate treaties (or have not bothered to try). In that case, the home country has a “default” method, to be applied on income of subsidiaries in countries with which the home country has not negotiated a treaty.

The first two methods listed above — simply ignoring foreign taxes paid, or deducting the foreign taxes from home country income — are used by some countries, but are relatively rare. The last two methods, credit and exemption, are much more common in the world today. Canada uses the credit method for subsidiaries of Canadian corporations in countries with which we have not negotiated an explicit treaty. But we have very many bilateral treaties, and most of those treaties specify the exemption method.

(Recently some European countries, such as France and Germany, have moved from the exemption system to a sort of hybrid system, which still is mostly an exemption system. Now, in France and Germany, 90% of the earnings of a foreign subsidiary are exempt from all domestic taxes, but the other 10% are included in domestic income, with credit given for foreign taxes. So they’re now 90% exemption system and 10% credit system.)

How does the tax treatment of the foreign taxes paid by the subsidiary affect a firm’s decisions? Consider a firm’s investment decision : how much to invest at home, and how much to invest in its foreign subsidiary. The firm’s earnings, at home or in the foreign country, depend on how much it invests in the two places. Presumably, the more that is invested, the higher the firm’s earnings will be. So suppose that the annual earnings of the firm in the home country are some function $H(K_H)$ of the amount K_H which is invested in the home country. Similarly, the annual earnings of the subsidiary in the foreign country are some function $F(K_F)$ of the amount K_H invested in the foreign subsidiary. In both cases, the earnings increase with the amount invested — $H'(K_H) > 0$ and $F'(K_F) > 0$ — but the marginal return to investment falls with the amount invested (that is, the return to capital exhibits a declining marginal product), so that $H''(K_H) < 0$ and $F''(K_F) < 0$.

The firm must pay taxes on its earnings, at the rate τ_h for income earned in the home country, and at the effective rate τ_e for income earned by the foreign subsidiary. It would like to maximize its net earnings, from all its operations, after tax. These net earnings are

$$(1 - \tau_h)H(K_H) + (1 - \tau_e)F(K_F)$$

If it has a fixed amount of capital \bar{K} , which it can invest either at home or in the foreign subsidiary, then it wants to invest so as to maximize its net earnings, $(1 - \tau_h)H(\bar{K} - K_F) + (1 - \tau_e)F(K_F)$.

Choosing the level of foreign investment K_F so as to maximize these overall net earnings (and setting $K_H = \bar{K} - K_F$) implies that

$$-(1 - \tau_h)H'(\bar{K} - K_F) + (1 - \tau_e)F'(K_F) = 0 \quad (firm)$$

Equation (*firm*) defines the firm's (net) profit-maximizing choice of investment plan, as a function of the amount of capital it has to invest, and of the tax rates and tax rules which it faces. The equation says simply that the marginal return to investment — net of all taxes — should be the same wherever it can invest. Equation (*firm*) also says that an increase in τ_e — holding constant the home country's statutory corporate income tax rate τ_h — will decrease the amount invested in the foreign country (and increase the amount invested in the home country).

Equation (*firm*) can also be written

$$-H'(\bar{K} - K_F) + (1 - \tau_s)F'(K_F) = 0 \quad (firm')$$

where τ_s is defined as the effective **surtax** on earnings of the foreign subsidiary, defined implicitly by

$$(1 - \tau_s) = \frac{(1 - \tau_e)}{(1 - \tau_h)} \quad (surtax)$$

Equation (*surtax*) can also be written

$$\tau_s = \frac{\tau_e - \tau_h}{1 - \tau_h} \quad (surtax')$$

so that the various tax rules imply

	ignore	deduction	credit	exemption
τ_e	$\tau_f + \tau_h$	$\tau_f + \tau_h - \tau_f\tau_h$	$\max(\tau_f, \tau_h)$	τ_f
τ_s	$\frac{\tau_f}{1 - \tau_h}$	τ_f	$\max(0, \frac{\tau_f - \tau_h}{1 - \tau_h})$	$\frac{\tau_f - \tau_h}{1 - \tau_h}$

Changing the rule for foreign subsidiary income will change the surtax, and thus will change the amount invested in the foreign subsidiary, according to equation (*firm'*).

What might the home country government want to do? In this story, the income from investment is going to one of three places : the owners of the multinational, the home country's tax authority, or the foreign country's tax authority. The multinational is owned here by people in the home country. So the home country government presumably cares about the owners. (At the very least, it can tax some of their income using the personal income tax.) So one possibility is that the home country government cares about total domestic income : money earned by home country citizens, plus money earned by the home country tax authority. That total domestic income is

$$[(1 - \tau_h)H(K_H) + (1 - \tau_e)(F(K_F))] + [\tau_h H(K_H) + (\tau_e - \tau_f)F(K_F)]$$

where the first term in square brackets is the net earnings of the firm's owners, and the second term in square brackets is the home country government's tax collections. But this maximand can be written more simply as

$$H(K_H) + F(K_F) - \tau_f F(K_F) \quad (domestic)$$

That is, it is the total earnings of the firm, minus any taxes paid to the foreign country tax authority. The selfish home country government is assumed here, therefore, to care about everyone except foreigners.

Such a selfish home country government would therefore want to choose a tax policy which somehow maximizes the value of expression (*domestic*). Since

$$K_H = \bar{K} - K_F$$

expression (*domestic*) will be maximized by an investment level K_F in the foreign country such that

$$-H'(\bar{K} - K_F) + (1 - \tau_f)F'(K_F) \quad (\text{dommax})$$

Notice that the selfish home country government would **not** want to cut off all investment in the foreign country. If the return $F'(K_F)$ to foreign investment is very high, compared to the return to domestic investment, it is worth investing abroad, even though the foreign government is getting some of the earnings. But notice that equation (*dommax*) does imply that, in order to maximize domestic income, it would want an investment pattern in which the gross return to investment F' in the foreign country is higher than the gross return H' to investment in the home country. (That's because all of the return to investment in the home country accrues to home country nationals, whereas some of the return to foreign investment goes to the foreign government.)

How can the home country tax authority achieve the investment pattern that it wants, the one which satisfies equation (*dommax*)? It does not get to choose investment levels, at least not directly. The firm's owners choose investment levels. And we already have the result that profit-maximizing firm owners will choose investment levels which satisfy condition (*firm'*).

So is there a way to make the firm's choice, the solution to equation (*firm'*), match the government's choice, the solution to equation (*dommax*)? The two solutions will be the same if (and only if)

$$\tau_s = \tau_f$$

But the table above showed that the **tax deduction** rule implies an effective surtax rate of $\tau_s = \tau_f$. So

If the home country government wants to maximize total **domestic** income, and if investment decisions are made by the private sector, then the home country tax authorities should use the **deduction** rule.

This result was derived by the Japanese economist Koichi Hamada. It offers a very clear explanation of how tax rules can be manipulated for strategic advantage. But its prediction is not born out by behaviour of most governments. The exemption rule and, to a slightly lesser extent, the credit rule are the rules most used by the developed countries in the world. Why do they choose these rules? Perhaps they care about something more than just maximization of national

income. Another possibility is the behaviour of other governments. Hamada's analysis ignores the fact that foreign governments may be making their own choices, of tax rules and tax rates. If the home country considers the reaction of the foreign governments to its own policies, then the deduction rule turns out not to be such a good idea.

Now domestic income is not world income. The total income earned by the corporation, from both of its operations, is just

$$H(\bar{K} - K_F) + F(K_F) \quad (\text{world})$$

This income is divided among the firm's owners, the home country tax authorities, and the foreign country tax authorities. The investment pattern which maximizes world income is the one for which

$$-H'(\bar{K} - K_F) + F'(K_F) = 0 \quad (\text{worldmax})$$

From equation (*firm'*), the firm's owners can be induced to choose the investment pattern which maximizes world income only if the effective surtax τ_s on foreign income is 0 : from a world perspective, there should be no special encouragement or discouragement from investing in one country or another. So the only rule which would lead to the firm choosing an investment pattern in which world income is maximized is a rule under which $\tau_s = 0$. From the table above, this is only possible under the credit rule : and then only if $\tau_h \geq \tau_f$.

But the exemption rule is the most widely used in Canada. And it can create some problems of its own. One of the problems is the difficulty in administering **transfer pricing** by multinational firms. A transfer price is a price charged by a multinational firm to one of its subsidiaries, or vice versa. That is, it is a price charged on a transaction which is **internal** to the firm. For example, there are Canadian subsidiaries of Japanese electronics firms. These subsidiaries assemble finished products (stereos, television sets, etcetera) using imported components. The components are manufactured by the parent firm, or (more commonly) by other subsidiaries of the parent firm. So, typically, there is a transaction between the Canadian subsidiary, and the subsidiary which manufactures the components. The Canadian subsidiary "buys" the components from the foreign subsidiary, and then uses them to manufacture the finished product which it sells in Canada. This transaction is purely a paper transaction. The money is going from one subsidiary of the multinational to another subsidiary.

In a world with no taxes, the multinational would not care about what transfer price it charges. The money is staying within the firm. But taxes change this. If a Canadian subsidiary "buys" a component for p dollars from a Korean subsidiary, then the accounting profits of the Canadian subsidiary go down by p dollars, and the accounting profits of the Korean subsidiary go up by p dollars. Now the profits of both subsidiaries, Canadian and Korean, wind up with the Japanese parent — which is why the transfer price p would not matter in the absence of tax considerations.

But with corporate income taxation, and with the exemption rule in place, the **after tax** profits of the Canadian subsidiary have decreased by $(1 - \tau_C)p$, and the after tax profits of the Korean subsidiary have gone up by $(1 - \tau_K)p$, where τ_C and τ_K are the corporate income tax rates

in the two countries. Overall after-tax income of the parent has increased by

$$(\tau_C - \tau_K)p \qquad \qquad \qquad (\textit{transfer})$$

Expression (*transfer*) says that the parent company wants p as high as possible, if the Canadian corporate tax rate is higher than the Korean, and as low as possible if the Canadian rate is lower.

In other words, since the transfer price is only an accounting device, the parent company can use transfer pricing to shift income from high-tax countries to low-tax countries.

Countries do have rules to try and prevent this sort of profit shifting. The transfer prices used by different subsidiaries of the same multinational cannot be set arbitrarily. They must be what they would be in an “arm’s length” transaction. That is, the price p charged by the Korean component manufacturer to the Canadian assembly company must be the same as the price the Korean subsidiary would charge a customer which was **not** also a subsidiary of the same parent (or the same as the price the Canadian assembly company would pay to a supplier which was not owned by the same parent).

But often, it is hard to assess what the arm’s-length price is. Sony doesn’t sell components to outside firms. They sell only to their subsidiaries (who then assemble the final products). So governments who suspect that transfer prices are used to shift income among countries have a difficult time establishing that the prices are “incorrect”. Often, what is being sold between subsidiaries is not even tangible, so that the true market price is even harder to assess. For example, the Canadian tax authorities have been fighting a long battle with a leading cola company. (This is a brand of cola which used to be unavailable on the York campus.) The Canadian cola bottler uses, as one of its inputs, a “secret” recipe, which they claim is essential to the product’s quality. They pay a royalty to the owner of that recipe, as compensation for being able to use the recipe in Canada. Who owns the recipe? The parent company (based in Atlanta, USA) had transferred ownership of the recipe to another subsidiary — based in Panama. Panama has a very low corporate income tax rate. So every dollar in royalty payments shifts income from the Canadian subsidiary to the Panamanian subsidiary, and lowers the worldwide corporate tax liabilities of the parent company. The Canadian tax authorities have argued that the royalty payment has been set artificially high, so as to avoid Canada’s corporate income tax. But to win their case, they will have to somehow establish that the “true” value of a recipe for a fizzy sweetened drink is a lot lower than the royalty now being paid.