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THE INCIDENCE OF THE CORPORATION INCOME TAX REVISITED

A report submitted under
Contract No. EEM-C-00-06-00008-00

by

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November 2007

TO: U.S. Agency for International Development
PPC/CDIE/DI -- Attn. ACQUISITIONS

Strategic Objective or Activity: 905-101/Economic Growth

Cognizant Technical Office: EGAT/EG
RRB, Room 2.11.123
1300 Pennsylvania Avenue NW, Washington, DC 20523

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Paper Presented at the Meetings of the National Tax Association

Columbus, November 2007

This review of thinking about corporation income tax incidence takes us through several steps -- the traditional trichotomy, the general equilibrium revolt against it, the open economy revolution, and some smoke-and-mirrors issues. Finally, it will take special aim at the operation of corporation tax incidence in today's developing nations.

1. The Traditional Trichotomy: The typical public finance textbook of, say, the 1940s and 1950s, took what it thought was a quite general (and hence quite safe) position. Some of the tax was surely passed on to consumers, some of it was likely passed back to workers, and the rest of it had to be borne by the residual claimants, the shareholders. Little in the way of genuine analysis was offered in support of this view, but it nonetheless succeeded in establishing itself as the standard treatment.

The biggest flaw in this approach was its mix-up with respect to the time dimension. Shareholders are indeed the residual claimants, but the negative shock created by a new tax does not stay with them forever. Capital will flee from areas with lowered rates of return, and as it does so will move the whole capital market to a new equilibrium rate of return. Thus all segments of the capital market will tend to share in whatever fate ends up being inflicted on the equilibrium net-of-tax rate of return of corporate shareholders. If this real rate of return goes

down, so too will real interest rates on bonds, real rental rates on buildings and land, real yields on bank deposits.

While the traditional trichotomy could claim to be right about shareholders being the residual claimants in the very short run, it is not in the short run that product prices would be driven upward and real wages downward to absorb part of the tax. Indeed, it would be the very process of the capital market seeking its new equilibrium that would set in motion those product and labor market adjustments.

2. The General Equilibrium Revolt: It was this revolt, in which I was one of the players, that tried to formalize the above critique of the traditional trichotomy. Perhaps its defining feature was a model with two sectors (corporate and non-corporate) and two factors (labor and capital). Factor supplies were taken as given and a closed economy was assumed. Equilibrium meant equalizing real wages and real after-tax rates of return across the two sectors.

Perhaps the greatest insight that emerged from this analysis was that capital's bearing 100% of the burden of the corporation income tax was not an unlikely limiting case (the upper limit of the shareholders' fraction of the trichotomy), but was rather a result situated somewhere in the middle of the plausible range of outcomes. My classroom illustration of this result starts with a capital stock earning a 9% return in both the corporate and non-corporate sectors, in the no-tax situation. When a tax is imposed taking 50% of the income from corporate capital, but nothing from capital in the non-corporate sector, we have two extreme cases. One is that the net-of-tax-return stays at 9%. The corporate gross-of-tax return goes to 18%, and the burden is pushed forward to consumers of the corporate product. The wage rate is the numeraire for this example. Thus, with both the wage rate and capital's net-of-tax rate of return remaining the same as before, and with the prices of corporate-sector products rising to reflect the tax, we have

both capital and labor sharing the burden of the tax -- but only in their role as the consumers of the output of the corporate sector.

At the other extreme we had the case where, when the tax is imposed, the gross-of-tax rate of return stays at 9% for the corporate sector. That means that the net-of-tax rate of return goes down to 4 1/2% in both sectors. The fall to 4 1/2% in the corporate sector reflects, in the post-tax equilibrium, what the government collects in corporate tax revenue. But capital's burden is a lot greater than this, as its take from the economy has been cut in half (over both sectors). The fall from 9% to 4 1/2% in the non-corporate sector is reflected (under assumptions of competition) in a gain to consumers of non-corporate products. Capital thus ends up bearing a burden equal to $[K_x + K_y(1 - \beta_{ky})]/K_x$ times the burden of the tax, β_{ky} being the fraction of the non-corporate product that ends up being bought by capitalists.

Thus if capital ends up being equally split between the two sectors, and if capital's gross-of-tax share in the product ended up at 40%, then in the first extreme case, the burden of the tax would be 10% of GDP, and it would be shared between labor and capital in the proportions β_{Lx} and β_{Kx} . At the other extreme we would have capital bearing between one and two times the burden of the tax (depending on the fraction of the non-corporate product that is bought by capitalists).

In the interesting case where Cobb-Douglas production functions prevail in both sectors, and where product demands are determined by a Cobb-Douglas utility function, capital ends up bearing precisely the full burden of the tax. In the numerical example, this would correspond to the rate of return going down to 6%, and the ending capital stock being split between the two sectors. The government collects $(.12 - .06)K_x$; capital loses $(.09 - .06)(K_x + K_y)$. These end up

equal to each other, of course, when $K_x = K_y$ (i.e., capital's burden equals the government's take).

3. The Open Economy Revolution: We will soon show how an open economy model yields very different conclusions from its twin for a closed economy. Though some authors have leaped to the conclusion that this invalidates the closed economy model for practical purposes, such a leap is not warranted. It is far better to think of the closed economy case as applying to a rise or reduction of corporate tax rates across many countries at roughly the same time, while the open economy model traces the consequences of rate changes in just one country. Thus the closed economy is quite relevant for the major reform movement that took place over the last few decades, in which the corporation tax rates of major countries were reduced from a range around 50% to a range of some 30-35 percent.

We must thus consider that a general worldwide, roughly parallel change in rates, is a different scenario from a similar change taking place in just one country (or perhaps a small subgroup of countries). The biggest difference is the likelihood that the allocation of the national capital stock will end up responding quite differently under the two scenarios.

The most basic open-economy analyses have operated under the assumption that the world capital market “works”. While there may be differences across countries in the net-of-tax rate of return to capital (owing mainly to differences in perceived risks), there is little reason to believe that a unilateral change in a country's corporation tax rate will have an important effect on its “country risk premium”. Thus it may be that it takes a 10% net-of-tax return in Paraguay to match a 6% return in New York. But if that is true before a change in Paraguay's tax law, it is likely also to be true in the new equilibrium, after such a change. (Modelwise, we usually assume balanced trade in both the no-tax and the with-tax equilibrium. Trade gets unbalanced,

of course, in the transition from one of these equilibria to the other, as the capital stock responds to the unilateral tax change in question.)

The basic model also follows tradition in assuming that the world prices of tradable goods are determined in the world market, and do not themselves change in response to any one country's shifts in tax policy.

The bottom line of a simple open-economy model is that country A's tax change cannot affect the net rate of return to capital, nor can it affect the world prices of tradable goods and services. Thus it can only be reflected in the wages of labor and in the prices of non-tradable goods.

My own favorite open-economy model contains four sectors -- corporate and non-corporate, tradable and nontradable. Manufacturing is the corporate tradable sector, "Public utilities and transport" the corporate non-tradable case. In the non-corporate area, agriculture represents tradables, the services sector represents nontradables.

Where we insert into such a model a special tax on the income from capital in the corporate sector, manufacturing occupies center stage. For in it the price of its product cannot change due to the tax (because it is tradable), and the net rate of return to capital cannot change, because capital is mobile. Thus whatever tax ends up being paid in that sector, it has to come from a reduction in the real wage rate paid there. But we cannot have real wages falling in one sector but not in another (except in a transition period). So the fall in real wages that permits manufacturing to stay in business in country A -- that fall in wages has to apply throughout the labor market of that country. In agriculture, this fall in wages generates an equal and opposite rise in the rents to land. In services, it generates a benefit that is passed on to consumers via lower competitive prices for services. Finally in "public utilities and transport" (PUT), the

product price will likely rise because PUT is typically a lot more capital intensive than manufacturing. (If the two corporate sectors have equal capital intensity, the result in PUT would look exactly like that in manufacturing, where (owing to tradability) product price remains unaffected by the tax.)

So we end up with labor bearing a large burden, with landowners and consumers of services also benefiting, and with consumers of PUT bearing an additional cost.

(This is a good place to point out a useful trick in incidence analysis. It distinguishes between the “burden” of a tax, which equals the amount collected by the government, and the “excess burden” or “deadweight loss” associated with that tax. If we think of these as two separate categories, we greatly simplify the analysis of incidence. In this vein, incidence analysis deals with first-order effects -- $X_i \Delta P_i$, $L_j \Delta W_j$, etc., while deadweight losses are typically measured as second-order effects -- $1/2 \Delta X_i \Delta P_i$, $1/2 \Delta L_j \Delta W_j$, etc. If we combine these two in our measurement of incidence we have, in effect, two sets of problems to solve. If, on the other hand, we follow the convention of separating the “burden” analysis (first-order) from the excess burden (second-order), we reduce our task from two sets of problems to one, and the easier one at that. Once we are in the world of first-order effects, it is clear that overall, gains and losses have to add up to zero. So if we show the government getting the tax revenue, and other private groups (landowners, demanders) also winning significant net benefits, then the remaining group (labor in our case) must end up bearing more than the full burden of the tax.)

4. Smoke-and-Mirrors Issues: I use this term to refer to situations where things are not what they seem. Perhaps the prime case of this kind occurs when there is full integration between personal and corporate taxes, so that the corporate tax simply represents a withholding device for the domestic owners of capital. If everything works well, with no evasion at any

point, the domestic capital owners will then end up earning the same gross-of-tax rate of return, regardless of whether they hold their capital at home or abroad, or in the corporate or non-corporate sector. If their supply of funds is inelastic with respect to the rate of return in the relevant range, (a typical assumption) then their after-tax rate will fall to absorb the full burden of the personal income tax, regardless of whether the withholding tax on corporate earnings exists or not, and regardless of its rate.

We never see full integration of this type in the real world, partly because the allocation of corporate savings to particular shareholders presents a host of problems. What we typically do see is integration based on dividends actually paid. In this case, with a 50% corporate tax rate, shareholders receiving a dividend of 10 would declare an income of 20 and a tax withheld of 10. Corporate savings would be fully taxed at the 50% rate, however, with no remission at any point. This distortion in turn would be partly offset, if capital gains (typically assumed to be mainly generated by corporate savings) were free of tax.

This example makes clear that it can really turn out that the corporation income tax is not even much of a tax at all, and functions mainly as an alternative route for collecting the personal income tax itself (in the case of integration based on dividends) or a rough surrogate for the income tax (where the corporate tax is levied on corporate savings but the resulting capital gains are then freed from personal tax).

This example should help readers see that it is hard, in a real-world setting, even to define what we mean by the incidence of the corporation income tax. Much of the literature has focused on this tax as being a tax on the income from capital in the corporate sector of an economy, with no corresponding tax prevailing in the non-corporate sector. This is clearly a high stylized scenario, but it is one that gives us a clear answer, and that we can quite easily

“model”, assuming “our” tax to be the only serious distortion. When we get into real-world cases, we not only have links with the personal income tax (mentioned above) but also with the property tax (which may hit housing much more heavily than it strikes the return to corporate capital), and the housing subsidies (both direct and through the non-taxation of the imputed rent to owner-occupied housing) that prevail in many, or even most countries. (Readers should be aware that in most countries the housing sector accounts for more than half of non-corporate reproducible capital.)

Once one realizes how complex are the general-equilibrium connections across sectors, among factors, and across product markets, one has to recognize that if one is going to talk about it at all in general terms, one had better stick with tradition and model it as the only tax in a world divided into corporate and non-corporate (and perhaps tradable and nontradable) sectors.

The alternative sensible way to go is to try to simulate, in a computable general equilibrium model, the precise conditions, economic structure and tax laws prevailing in a particular country at a given moment in time. One can then simulate the results of an increase or decrease in the corporate tax rate, given all the bells and whistles that characterize that country’s tax system at that moment in time. In this case the incidence of the corporation income tax T_C would not add up to what the government collects from $dT_C (= K_C dT_C + T_C dK_C)$ but would also include $\sum_i T_i (\partial L_i / \partial T_C) dT_C + \sum_h T_h (\partial K_h / \partial T_C) dT_C$. That is to say, the burden to be borne would be the full net impact on government revenues of the change dT_C in the corporation income tax rate. This would include the changes in revenue from other taxes on capital income (property taxes $[T_j > c]$ and housing subsidies $[T_j < 0]$) in other sectors, the taxes T_i on labor income in all sectors, and the taxes T_h on the output of the different sectors. (In the latter case we have

the important observation that most value-added taxes have a much higher effective rate in the tradable than in the nontradable sectors of the economy.

To my knowledge, nobody has yet tried to do this, but it is an inviting topic for new research, and perhaps an interesting breeding ground for a new family of doctoral dissertations.

5. Monopoly Profits in Developing Countries: I have been impressed by the high estimates we get when we try to measure the real rate of return to capital in developing countries. This is especially true when we focus on business capital -- excluding public infrastructure and housing capital in particular. Such returns are almost always above 15% and quite commonly above 20% in real terms. They seem to persist year after year, even decade after decade, so one can not pass them off as transitory phenomena. Yet any of us who thinks he/she can collect a real rate of return of 20% on a regular basis by putting money into, say, Mexico or El Salvador (where we have persistent estimated rates of return of over 20%) should please send me an e-mail telling me how to do it.

Something seems to be missing here. I think the best hypothesis is that the measured real rate of return to capital will typically include whatever monopoly profits are being actually garnered by an industry's owners. Now we return to basic price theory to realize that monopoly profits: a) are not, in principle, part of the income from capital, and b) basically function as a privately-imposed, privately collected excise tax on the monopolized product or products. Thus we learn in elementary economics that under competition a productive factor will tend to earn the value of its marginal product ($\phi_{fX}P_X$) while under monopoly it will tend to earn its marginal revenue product $\phi_{fX}MR_X = \phi_{fX}P_X[1+(1/\eta_X)]$, where ϕ_{fX} is the marginal physical product of factor F, P_X is the price of the product, MR_X is its marginal revenue, and $(-1/\eta_X)$ the monopoly tax rate τ_m . Note that $\eta_X(<0)$ is the elasticity of demand that the monopolistic firm

perceives applies to the demand for its product. In no sense is it the elasticity of demand for an industry's product.

So what we will do here is to model the corporation income tax as striking both the true income from capital and the monopoly tax revenues that are collected by the corporate sector. For the closed economy case we will assume a Cobb-Douglas world, with equal exponents of $1/2$ applying to capital and labor in every sector. But above and beyond that we will assume a monopoly "tax" of 10% of U.S. gross product applying in the corporate sector but not the non-corporate sector.

Suppose the national product is 1,400, with 800 going to the corporate and 600 to the non-corporate sector, and with labor and capital accounting for half of the product of each sector in the no-tax situation. Monopoly profits are $1/4$ of the receipts of the monopolized sector, and thus amount to 200. The "true" earnings of capital are 300 in each sector, and there is an equal amount of capital in each sector. But the measured earnings of capital in the corporate sector are 500.

This looks like a 25% rate of return on a corporate capital stock of 2000, but it really reflects a 15% return to capital plus a 25% monopoly "tax" on the entire product of the corporate sector.

When now the government imposes a 50% corporation income tax, we assume that overall spending continues to be divided 800 and 600 across the two sectors. The monopoly tax continues to be 200, but now half of it is taken away by the government. The net earnings of corporate capital continue to be 300, but half of this is also taken by the government. So the net earnings of capital are now only 150 in the corporate sector, but stay at 300 in the non-corporate sector. This means that the capital stock, which was initially divided 2000 and 2000 between the

two sectors, now gets divided 1333 to 2667. The true earnings of capital go down by 1/4, from 600 to 450, while the “measured earnings” stay at 800 gross of tax and become 550 net of tax. It appears as if the full burden of the tax is borne by capital (as in the standard Cobb-Douglas case without monopoly complications), but the true burden is shared, 150 being “truly” borne by capital as such and 100 by the holders of monopoly power.

This is the same result that one would come to by simply considering an excise tax on the monopoly profits themselves. The monopolist tries to maximize monopoly profits, regardless of whether they are taxed or not. His choice of monopoly markup should therefore be the same, whether those profits are taxed or not. The incidence of a tax on monopoly profits therefore falls on the monopolist.

I have not explored the whole gamut of possibilities that under certain conditions the above conclusion would have to be modified. For the moment I am satisfied that it is a result of wide, if not totally general, applicability.

The open-economy case presents a problem, in that monopoly profits are not compatible with tradable goods prices being determined in the world market. This complication could be handled by introducing a semitradable sector producing differentiated products, where individual producers could be assumed to have at least a moderate degree of monopoly power. We will not do that here, however, and will instead only consider the case where monopoly profits are being earned in the nontradable corporate sector of the economy (e.g., Mexico’s major telephone company, Telmex). For this sector, I see no reason why the same sort of analysis that we have applied in the closed-economy case would not also be relevant. That is to say, the monopoly power in question would be present in both the no-tax and the with-tax situation, and monopolistic firms would have the incentive to maximize profits in both cases. This line of

thinking leads to the conclusion that insofar as monopoly profits end up constituting part of the base of the corporation income tax, there is a presumption that that part of the corporation tax burden will end up being borne by the monopolists themselves.

6. Multinational Corporations in Developing Countries: Even before the great wave of globalization over recent decades, multinational corporations had a significant presence in many developing countries. That presence has, of course, by now been greatly magnified. This obviously adds to the importance of the question of how their presence impacts the policy decisions of host countries with respect to the corporation income tax rate.

Here let us first consider the fact that the corporation income taxes paid by multinationals to host countries often end up being credited against the income tax that would otherwise be due (on the same income) in the multinationals' own base countries. If these firms were immediately liable for base-country taxes on their host-country earnings, then one could say that it makes great sense to set the corporation tax rates of developing countries at the same rate as applies in the base countries. In this case it is strictly true that the tax that is collected from multinationals by, say, Brazil would otherwise end up in the treasuries of, say, the U.S. or the U.K. or Germany.

Actually the above line of thinking probably misleads more than it guides sensible policy discussion. Typically, the profits of multinationals are taxed by their base countries only to the degree and at the time they are repatriated. This creates a strong incentive to postpone repatriation, an incentive that is only strengthened by the likelihood that the profits that are reinvested (in the best venues of the developing country world) typically promise very attractive real rates of return. The consequent postponement of base-country taxes blunts the force of the argument that the money collected by corporation income taxes levied on multinationals represents simply a free good for the taxing country (because of tax substitution in the base

country). Once postponement enters the picture, the multinationals will no longer be indifferent with respect to taxes levied in the host country, even at rates lower than those prevailing in the base country.

In the presence of postponement, the multinationals would not be truly indifferent even to a much lower tax rate by the host country. The indifference comes only when the tax payments in the two countries occur at the same time (on the same income), for then they are both either undiscounted or discounted at the same rate. But if the host country tax τ_h is paid “now” and the base country tax τ_b is paid later (with a corresponding credit for the τ_h previously paid), then the present value of total tax is $[\tau_h + d(\tau_b - \tau_h)]$, where d is a discount factor representing the present value of \$1 dollar paid at the time of expected repatriation. Clearly, even the first dollar of host country tax adds $\tau_h(1-d)$ to the multinational’s present value of expected taxes. (This result arises because even with $\tau_h = 0$, the multinational would want to postpone repatriation, thus reducing the present value of the tax paid to the base country. One could, of course, restore indifference, even in the presence of postponement, by making τ_h also postponable until the date of repatriation).

But the above exercise is not the most relevant one because so much of investment by multinationals in developing countries is essentially “footloose” -- it can locate in a wide variety of places, and gain much the same basic cost advantages. Major companies end up weighing very seriously all the aspects of current and prospective costs and risks in each location. They thus may end up going to China not because China’s taxes or even its wage rates, are lower, but rather because the prospect of China’s huge domestic market promises advantages that outweigh what is perhaps a higher Chinese tax rate. That said, there is no doubt that for any developing

country, a lower tax rate makes that location more attractive to multinationals. However, reducing the tax rate also means that \$1 of multinationals' investment will generate a lower total flow of benefits to the host country.

7. Weighing the Alternatives: Some Reflections: It is not a good idea to dream up “general solutions” to complex policy problems. Underlying conditions differ from country to country; so to does the capacity of the authorities to administer. So I will refrain from trying to give general advice, and instead try to highlight the types of consideration that should be borne in mind as different possible solutions are explored and weighed.

First, concerning the corporation income tax rate itself, as it applies to the “normal” rate of return to capital in a developing country, there can be little doubt that it ends up causing wage rates to be lower than they would have been without the tax. The reason, of course, is that the capital stock would be higher without the tax than with it. Thinking about this aspect, it is tempting to focus on foreign direct investment, perhaps concluding that such investment is drawn to this particular country only or predominantly in the extractive industries, and then opt for a high tax rate to capture a bigger share of the economic rents generated by the country's natural resources. This temptation should be resisted, for policymakers should realize that it is quite natural for owners of wealth who reside in developing countries themselves to hold part of that wealth abroad, both for reasons of economic diversification and also as a hedge against political risks. The most compelling reason to keep capital in the country is the prospect of a higher net-of-tax real return. Thus even where direct investment by multinationals does not play an important role, or is mainly concentrated in the extractive industries, the consideration is still relevant that a higher corporation income tax will lead to a lower capital stock and to a lower level of real wages.

Second, when it comes to extractive industries, royalties or separate taxes focused on those particular industries tend to make more sense than allowing “extractive considerations” to govern one’s choice of a corporation income tax rate. Royalties are a quite natural way to handle this problem in countries in which legal ownership of subsoil resources is vested in “the people” or “the government”. Here there is no doubt that arrangements in which these owners get a share of the value of the extracted resources is far preferable to one in which the rights of exploitation are auctioned off to the highest bidder or are otherwise sold for a fixed price in advance of exploration and/or exploitation.

The reason for the above assertion is that there is always huge uncertainty with respect to what a mineral right is worth, when its exploitation will stretch over many future years. Normally one at best only has a rough idea of how much mineral is there and what its extraction costs will be. But more important even than these uncertainties are those concerning the future price (in real terms) that will prevail in the world market for a mineral product. In the presence of these uncertainties, what can be better than a contingent contract? If the deposit turns out to be rich, the people are paid more; if poor, they get less. Likewise, if the future price of the mineral is high, the people get more; if low, less. Contingent contracts genuinely reduce the risk to be borne by mineral operations and lead to higher expected payments. If competitive bidding among alternative exploiting firms is opened, then the bids should concern the fraction of the market value of future output that will be paid to the host government, rather than dealing with a one-time price to be paid now to the government now in power. (Note, however, that myopic or corrupt governments would always, or almost always, prefer a lump-sum payment right now.)

Third, the greater is the extent to which corporation income taxes fall on monopoly profits, the stronger is the case for a higher rate of corporation income tax. I make this statement

on analytical, not moral grounds. It is based on the fact that the part of the tax falling on monopoly profits has few if any efficiency effects, while the part falling on the economic equilibrium return to capital has important efficiency effects. Increasing the corporation tax rate τ_c at the margin will have an efficiency cost equal to $-\tau_c \rho_c^e (\partial K_c / \partial \tau_c) d\tau_c$ in all cases (ρ_c^e is the equilibrium competitive gross-of-tax rate of return to corporate capital K_c at the “point” where this tax increment is “counted”). But the revenue increment is $(\rho_c^e K_c d\tau_c + \tau_m X_m P_m d\tau_c)$. That is to say, raising the tax by one percentage point takes an extra one percent from equilibrium competitive profits and also an extra one percent from monopoly profits. Recall that τ_m accrues to the monopolist, not to the government. If we have two countries, otherwise similar, but one of which has an important monopoly sector and the other one not, both will suffer the same efficiency cost (from a reduced equilibrium capital stock) as a consequence of a higher corporation tax rate, but the one with a big monopoly sector will raise a lot more revenue from the same extra one percentage point in the rate. So the benefit-cost equation comes out more positive in the monopoly case, for a given increment in the corporation income tax rate.

Needless to add, I would not make the above statements if I thought one could possibly design a special tax that would measure and strike monopoly profits per se. But in fact I do not feel that is a reasonable position to take. Direct monopoly policy can appropriately include the prudent regulation of public utility rates (natural monopolies) and the promotion of competitive behavior through anti-monopoly commissions (viz., the United States Federal Trade Commission), but to me at least, legislation that would take observed high rates of return themselves as direct evidence of monopoly power (held by the firm or firms in question) would be extremely unwise.

Thus unlike the case of extractive industries, where royalties or special taxes can easily deal separately with the problem of natural resource rents, I see no easy way of taxing monopoly profits except via a corporation (or enterprise) income tax.

Fourth, corporation income taxation is much easier to justify if there is some degree of integration with the personal income tax. I indicated above that full integration seems to have turned out to be impractical, but partial integration based on dividends makes a great deal of sense. To minimize administrative problems, one can conceive of taxing corporate profits at the personal marginal rate of the highest tax bracket, and then exempting dividends (generated by firms within the country) from the personal income tax. If the corporation tax rate τ_C is lower than the top personal tax rate τ_P^* , one could proceed by taxing profits at τ_C , at the corporate level, and dividends $(\tau_P^* - \tau_C)$ at the personal level, or by giving individuals a tax credit of τ_C times dividends they received from home-country corporations while taxing those dividends themselves at each taxpayer's own marginal rate τ_P . Either of these treatments would still end up levying the corporation income tax on foreign corporations and on earnings retained by domestic firms.

Fifth, to go beyond integration and have a genuine, separate and additional corporation income tax rate, the best justifications are: a) that such taxation will take on a bigger bite out of the monopoly profits (striking them, presumably, at both the corporate and personal levels, and b) that such taxation may be a way to get at some of the mineral rents that accrue to extractive-industry companies operating under old arrangements that are considered to be inviolable. Often, such arrangements include provisions that the corporate income of the affected companies will be taxed at the standard rate generally applying to other corporations. Where such

provisions exist, or where existing arrangements simply do not rule out taxation at the standard corporate rate, the tax collected on the income of extractive industries might well turn out to be a benefit (in addition to the monopoly benefits discussed above) of maintaining an unintegrated corporate income tax.

Sixth, no developing country should contemplate its tax policy with respect to corporation (or enterprise) income without giving extensive attention to the problem of tax competition from other developing countries. This problem mainly affects foreign direct investment, but may also be relevant vis-a-vis the use of tax havens by the taxing country's own nationals. Put another way, the optimal corporation income tax rate for a single developing country (or for a small group of them) to impose is almost certain to be well below the rate that would be optimal if all (or nearly all) developing countries were to impose one jointly. But in the absence of joint action by developing countries with respect to corporation income tax rates, and given the unlikelihood of such joint action, individual countries must take seriously the observed fact of tax competition by other developing nations.

Seventh, and finally, the maintenance of the "shell" of a corporation income tax has administrative advantages even if all other considerations are absent. Administration of the personal income tax (apart from that withheld from the wage income paid by the government itself and by medium and large corporations) is notoriously difficult in developing countries. So we can be confident that catching corporate profits at the source will lead to a better and fairer collection of the taxes due on those profits than could plausibly be obtained by trying to tax them only after they reach the personal level.