

Cross-Border Liability of Multinational Enterprises, Border Taxes, and Capital Structure

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■ The research in this paper was motivated by the chemical disaster that occurred in Bhopal in December 1984, which raised, and subsequently left unresolved, a crucial issue in international law: the issue of whether the liability of a multinational enterprise (MNE) is limited to the extent of its local assets in the host country (as Union Carbide, USA wished; see Mokhiber [25]) or whether it is the global entity as a whole that is liable, given that the damages exceeded local net worth (as the Government of India wanted when they introduced the legal concept of “multinational enterprise liability”; see *Multinational*

Monitor [26]).¹ In this paper we explore the implications of the continuing void in the resolution of MNE liability for international corporate finance and international corporate taxation.

Under incomplete contracting, limited liability creates a difference between private and public valuations of investments resulting from the socialization of costs and privatization of benefits. This, in turn, provides an incentive for managers in the private sector to overinvest in risky technologies (see John and Senbet [16]).² The

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¹This issue continues to be a grey area in international law, since the legal question did not ultimately get resolved: the Indian Supreme Court passed a summary judgement in 1989 without examining the full ramifications of the arguments.

²Throughout the paper, we shall use the term “private” to denote the perspective of a corporate manager who is working solely on behalf of

Bhopal chemical accident is just one example of cases where limited liability may engender socialization of costs. There are numerous other examples involving product liability suits, oil spills, nuclear accidents, etc.

With incomplete cross-border liability, the problem — which we refer to as a “social agency problem” — associated with cross-border investments of the multinational enterprise (MNE) is exacerbated, depending upon the quality of the technology transferred by the MNE. The problem manifests itself in the form of localization of costs while the benefits are globalized. This, in turn, creates the potential for conflict between the private firm (the MNE) and the host state, when the MNE from the “home” country invests across sovereign boundaries in a “host” country.

This agency conflict will result in attempts by the government to regulate the MNE differentially in order to counteract an implicit subsidy resulting from cross-border liability, relative to other host country firms. However, we show that the extent and nature of this regulation — which may seem discriminatory or inexplicable under conventional analysis, but which are seen as rational in our framework — will depend on the nature of the technology that the MNE brings in relative to a domestic firm, and particular types of capital structure choice made by MNEs. In particular, we shall argue that a seemingly contradictory set of policies that are commonly observed in many host societies — where the host government imposes a differential or apparently discriminatory border tax on the MNE while simultaneously offering it subsidized credit — are rationalizable as a means of counteracting cross-border subsidies. Our analysis sheds light on many issues of crucial interest to international corporate finance: differential capital structures, concessionary credit, and dividend-withholding (border) taxes, all of which are commonly prevalent in the multinational context.

The notion of limited liability lies at the core of corporate finance, since the corporate form and the basic claim on its value, equity, are defined by it. Its history and impact in domestic corporate behavior have been studied previously (see the review in John, Senbet and Sundaram [17]). Though there have been some recent efforts at

grappling with the issue in the MNE context, the implications of cross-border liability limitation have received scant attention (see John, Senbet and Sundaram [18]).

The problem is as follows: even if the international legal norms were clear on the extent and nature of cross-border liability (which they are not), there is no commonly applicable or agreed upon legal enforcement mechanism that participants engaged in the process of direct foreign investment (DFI) can have recourse to, in the event of conflict. Currently, the only clearly defined mechanism is through appeal to legal systems within sovereign boundaries.³ In fact, even if such a legal mechanism were to be clearly defined, the social consequences would depend on the nature of cross-border limited liability, which, in polar cases, depends upon recourse to assets domiciled on a country-by-country basis or to the global assets of the MNE.⁴ Specifically, from the point of view of the host country, there is the likelihood that benefits from DFI are *globalized*, while the costs (if any) imposed by possible failures of the DFI are *localized*.

The paper is structured as follows. In Section I, we touch upon the history of limited liability, and provide an

³For example, in the case of Union Carbide and Bhopal, the Government of India originally brought suit against the MNE in New York. However, the U.S. judge sent the case to India on grounds that it was perhaps best tried in the setting in which the disaster occurred, since the process of discovery was likely to be easier (see Gladwin [10]). Such a directive could have been quite onerous in a situation in which the host country did not have a well-developed legal system or institutions, unlike the case of India. In another recent case involving Costa Rica and the Dow Chemical Company, it was only in March 1990 that a jurisdiction in the U.S., the Supreme Court of Texas, allowed (narrowly, in a 5-4 decision) foreigners to sue U.S. companies. The decision is expected to be appealed by the company and may go up before the U.S. Supreme Court (see the *Wall Street Journal*, March 26, 1990).

⁴As economic and financial activities become increasingly globalized in a world in which regulation is still largely determined by the sovereign authority of the state, the potential for conflict between the MNE and the state will be exacerbated. International laws on conflicts that arise at the intersection of sovereign jurisdictions rest fundamentally on the notion of consent between the affected parties and the notion of “comity” (or reciprocal goodwill) between nations (see Sundaram and Black [33]). There are two broad approaches to defining the nature of sovereign jurisdiction in the event of cross-border conflicts. They are the “territoriality” principle (under which no external authority can prescribe laws or take action to enforce laws in the territory of another sovereign entity) and the “nationality” principle (under which the authority of a sovereign state may extend to those owing it allegiance even when the subject leaves the state territory). Most national authorities appear to regard the territoriality principle as the one that has implicit consent between nations (see Neale and Stephens [28, pp. 12-16]). Under this principle, the basic mechanism for conflict resolution reverts to that of comity.

the interest of equityholders. We shall use the terms “public”, “social”, or “host government”, interchangeably, to denote the perspective of managers who are working on behalf of the interests of the whole society. The latter perspective might be interpreted as that of a manager who acts to maximize the value to *all* stakeholders of the corporation (including equityholders) who are directly or indirectly affected by corporate decisions.

overview of where the current thinking and debate stands on the issue of MNE-host government relations. The structure of our model is then presented in Section II. Specifically, we derive host government policies directed at affecting the MNE's capital structure and its equity-related payouts. We argue that, in a world in which there are personal and corporate taxes, the host government will have an incentive to impose a border tax on MNEs. In Section III, we examine the role of MNE technology (specifically, whether the MNE brings in technology equivalent or superior to that of the domestic firm) in altering the host government policies. In Section IV, we examine the role played by policies that are directed toward altering capital structure choices made by MNEs. We derive a number of policy implications for both MNEs and host governments, as well as testable predictions. The concluding discussion and implications are provided in Section V.

I. A Brief Historical Perspective

Limited liability is closely associated with the development of the MNE. The earliest and most prominent limited liability corporations of the modern era were those that were chartered to expand Britain's program of colonization — in particular, the East India Company, the Africa Company, and the Royal Fishery Company, all of which were granted limited liability by the Crown, *circa* 1660, to enable them to raise capital easier, given the risky nature of their ventures (Scott [32]). Many of the companies chartered by the British government for the settlement of U.S. colonies were also given limited liability by charter — examples are the Hudson Bay Company in 1690, the Massachusetts Bay Company in the mid-1700s, and the Ohio Company in 1749 (Myers [27]).

While the concept of limited liability is at least as old as the Roman Empire (Palgrave [30]), and limited partnerships were common in Italy during the 15th century and onwards (many banks were constituted as limited liability "commendas"), it was formally introduced through the English Companies Act of 1862, which made it possible for the firm to obtain corporate rights by mere registration (see Hunt [13] for details).

It is uniformly agreed (see John, Senbet and Sundaram [17] for a review) that the provision of limited liability was a watershed in the development of the business sector in the West. Notable among its positive features are: (i) in the context of incomplete capital markets, it allowed risk-averse entrepreneurs to undertake investments that might otherwise be forsaken; (ii) it solved information asymmetry problems by disengaging the wealth position of any

one corporate equity owner from that of the others, since the equityholder could not be made liable for more than the capital he initially put in; (iii) it could counteract the underproduction incentives associated with market power which were bound to accompany the development of the corporate form (Woodward, Sundaram, Senbet and John [37]); (iv) it facilitated the development of a market for equity claims by enabling easier ownership transfers.

However, the development of the corporate form also led to concerns about its power over society and over parties that may be outside the direct contracting process with the corporation (see, for example, Davis [3], Galbraith [8], Hannah [11], and King [22]). In particular, the relationship between the corporate form and society has been examined by a vast literature on MNEs versus home governments. It would be impossible to summarize all of the debate, but we provide a quick review so as to motivate the concerns of this paper (also, we will focus primarily on the economics literature; for good reviews of the political science literature on this topic, see Gilpin [9], Svedberg [34], and Frey [6]; in addition, there is also a large and related literature in the area of "international management" from the standpoint of country risk analysis; the interested reader is referred to Kobrin [23]).

Host countries across the world — both developed and developing — adopt a wide range of policies that affect all aspects of MNE operations (Hawkins and Walter [12]), i.e., entry regulations (e.g., ownership restrictions, registration and screening procedures, investment incentives through subsidized credit), regulations governing forms of participation (e.g., requirement of joint ventures, prohibition of majority-owned affiliates in certain sectors), operating controls (e.g., domestic content rules, price and wage controls, environmental regulations), financial controls (e.g., restrictions of profit remittance, border taxes, transfer pricing restrictions, foreign exchange controls, differential taxation and depreciation rules), and terminal controls (nationalization, expropriation).⁵

⁵Though there have been changes over the past decade — e.g., terminal controls are rarely as common they were during the 1970s — many of these controls persist in one form or the other. For example, Mexico, until recently, used to require minority ownership by MNEs and has severe restrictions on technology flows; similar policies are found in Brazil and India. Many Andean Pact countries used to require a 15-year phase-out of MNEs; Taiwan and South Korea used to impose numerous financial and operating restrictions on MNEs operating there; Japan, during the 1960s and the 1970s used to *de facto* require the foreign investor to enter the country primarily through joint ventures. Even in relatively laissez-faire economies, such as the U.S. and Canada, the government restricts or prohibits foreign ownership in a wide range of

As to why such policies exist, there is a wide range of views spanning the entire spectrum from the left to the right. On the left, there is the view that MNE-host government relationships are characterized by dependency (Dos Santos [4], Johnson [19], and Furtado [7]) or by the powerlessness of the host state (Hymer [14], [15]). On the right, it is generally argued that attempts to MNE control are unnecessary at best (McCulloch and Owens [24], and Root [31]), and discriminatory at worst (Drucker [5]). There is also the literature that argues the middle ground (e.g., Kindleberger [21], Vernon [35], [36], Caves [2], Bierstecker [1], and Keirans [20]). Indeed, there have been some recent suggestions that the era of MNE-host government conflicts may have passed (see, for example, Newfarmer [29]).

This brief survey suggests two things that are important from the point of view of this paper. First, host countries — whether developed or developing — seem to adopt a wide array of policies to effect changes in MNE behavior, and, other than certain ideas suggested by Marxian lines of analyses, there is no explicit rationale for why such controls exist (if they should, in the first place). Second, if they should, many of these policies seem to be internally contradictory (e.g., differential or border taxation when subsidized credit is offered simultaneously). In this paper, we argue primarily that (i) many host government policies could perhaps be understood as responses to ill-defined laws on the extent and nature of cross-border liability, and (ii) some of the policy contradictions disappear within this framework. In addition, we are able to articulate a case for when and how particular types of policy may be anticipated by managers of MNEs operating in host countries.

II. The Model

The model we develop is one in which corporate managers, acting on behalf of equityholders (the “private” sector), make an investment decision at initial date $t = 0$, resulting in an uncertain payoff at the final date $t = 1$. Contracting between parties in the private sector is as-

sectors. In the U.S., foreign ownership (in some cases, majority foreign ownership) is disallowed in sectors such as air transport, nuclear power generation, development of federally owned lands, fishing, communications, and inland and coastal water shipping. Foreigners are also typically excluded from participating in work covered by classified defense contracts. Canada established a Foreign Investment Review Agency in 1974, and it exercises control over the entry of MNEs. In Europe, despite the moves toward 1992, domestic content requirements are a common barrier to the entry of MNEs, particularly in sectors such as automobiles. Dividend withholding (border) taxes are common in most countries, as is the provision of debt-related subsidies to MNEs.

sumed to be complete. However, there is incomplete contracting with parties outside the direct contract (who are affected by the private sector contract); the parties outside the direct contracting process are assumed to be the society at large, represented by a manager who maximizes the value of the investment decision from the perspective of *all stakeholders*, including that of equityholders (e.g., suppliers, employees, legal claimants against the firm, customers, and potentially, the society at large). Consequently, we shall refer to such a decision-maker as the “government” (see also footnote 2). It is prohibitively costly (e.g., for informational reasons) for the government to write and enforce contracts that cover all contingencies with respect to the relationship between the corporate form and the society at large.

For simplicity, we assume risk-neutral valuation with zero risk-free rate of interest, and abstract from exchange risk considerations by assuming a deterministic exchange rate of unity. There are initially three all-equity corporations (firms), m , d , and p : m is an MNE located in its home (foreign) country, d is a similar firm located in the host (domestic or local) country, and p , an existing project in the host country, is the object of investment by either m or d , where the investment is an acquisition. Where appropriate, mp or dp will denote that project p has been acquired by the foreign or domestic firm, respectively. The portion of p that is acquired by m or d is $0 \leq \theta \leq 1$; the remaining portion if any, $1 - \theta$, is assumed to be held by a local joint venture partner. Given our assumption of complete contracting in the private sector, there are no incentive problems between the owners of θ and $1 - \theta$; this assumption considerably simplifies the analysis that follows since it enables us to focus on the policy issues that result from the conflict between public and private sectors. Also, we shall maintain the assumption that $\theta = \theta_m = \theta_d$, since our intention is to make a relative statement with respect to domestic versus foreign acquisitions.

The firm-specific investment is I_p and the technology resulting from the acquisition is $f(I_p)$, assumed to be decreasing returns to scale in I_p , with $f(0) = 0$. ω_p is a random variable representing the state of nature at $t = 1$, distributed uniformly in the interval $[-\iota_p, h_p]$, with $0 < \iota_p < h_p < \infty$. Then $f(I_p)\omega_p$ denotes the total terminal cash flow available in the firm, net of the amount required to settle all claims (including the society at large).

When either m or d acquires p , the corporate structure of the combined entity is assumed to be one in which p is spun-off as a separate unit if acquired by d , and chartered as a subsidiary in the host country if acquired by the

m .⁶ Consequently, under limited liability, the acquirer — whether domestic or foreign — is not liable for more than the net worth of the equity investment in p .⁷ The technology associated with p if acquired by m will be denoted by $f(I_{mp})$, and the corresponding technology of p if acquired by d will be denoted by $f(I_{dp})$. In order to derive the benchmark results, we shall initially assume that the technologies brought in by the two acquirers are identical.

Our final set of assumptions concerns taxes. If there is taxation in the economy, both the home and host societies are assumed to have a tax structure whereby both personal and corporate incomes from equity are taxed, resulting in some (as yet unspecified) effective equity tax rate, τ . Given the particular social trade-offs determined by the government, an exogenously specified portion δ (≤ 1) of the effective tax rate on equity is derived from the corporate tax rate (which is, as in normal practice, assumed to be taxed at source), while the remaining portion $1 - \delta$ of the effective tax rate on equity is derived from the personal tax rate (which is, as in normal practice, assumed to be taxed at destination, or the point of receipt).

A. Social and Private Optimum in a Taxless World

Assuming no taxes, the host government desires a benchmark investment level I_{sp} that solves:

$$\begin{aligned} I_{sp} &= \arg\max_{I_p} -I_p + E[f(I_p)\omega_p] \\ &= \arg\max_{I_p} -I_p + f(I_p)[h_p^2 - \tau_p^2]/2(h_p + \tau_p). \end{aligned} \quad (1)$$

The expression in Equation (1) represents the net present value that takes into account both the negative cash

flows that would arise in the poor states of nature and the positive cash flows that would arise in the good states.

The first order condition for Equation (1) gives us

$$f'(I_{sp}) = 2(h_p + \tau_p)/(h_p^2 - \tau_p^2). \quad (2)$$

Note that this optimality condition and the resulting investment level is independent of the structure of the financial claims in the corporation (e.g., debt versus equity), the tax structure in the economy, and the existence of limited liability.

With limited liability, the domestic (all-equity) private investor (along with its joint venture partner) has a call option with exercise price equal to zero, and the investor chooses a level of investment to maximize the value of equity:

$$\begin{aligned} I_e(dp) &= \arg\max_{I_p} -I_p + [\theta + 1 - \theta] E[\max(f(I_p)\omega_p, 0)] \\ &= \arg\max_{I_p} -I_p + f(I_p)[h_p^2/2(h_p + \tau_p)]. \end{aligned} \quad (3)$$

In this case, unlike the government in Equation (1), the private sector manager is concerned only about the positive cash flows that would arise from the good states of nature, since limited liability protects the firm's equity-holders from any claims in the poor states. In the Union Carbide case, for example, this is consistent with their legal contention that they could not be held liable for more than the value of the assets of their Indian subsidiary.

The first order condition for Equation (3) gives us

$$f'(I_e(dp)) = 2(h_p + \tau_p)/h_p^2. \quad (4)$$

By comparing Equation (2) and Equation (4), combining with the initial assumption that $f(I_p)$ is strictly concave in I_p , it is easy to see that

$$I_e(dp) > I_{sp}, \quad (5)$$

or, that the provision of limited liability results in a privately optimal level of investment that is larger than the socially optimal level of investment. Under our incomplete contracting assumption, limited liability introduces a distortion by creating the incentive for overinvestment in risky technologies by equity (since it now concerns itself with only the positive states of nature) relative to levels that the government (whose concerns include both positive and negative states of nature) would consider optimal.

⁶The assumption of this corporate structure, while made for convenience, would be optimal for the acquirer given the incentives arising from limited liability; pursuing the option analogy of equity with limited liability that is developed below, the intuition is simply that an option on a portfolio is worth less than a portfolio of options. Alternatively, one might wish to treat the analysis that follows as being restricted to the case of investment in subsidiaries; subsidiaries, in any event, account for a large portion of all cross-border investment.

⁷Again, it might appear that this assumption rules out the ability of the host government to dip into the "deep pockets" of the parent company. As a practical matter, this is not so: recall that international law on the cross-border liability of the parent company is an unresolved issue, regardless of the corporate structure. Even if the parent company were held liable, the cross-border enforceability of the contract would be in doubt. We have an additional commentary on this issue in the concluding section of the paper.

This result is a restatement of Proposition 1 of John and Senbet [16].

In this paper, we focus only on the overinvestment incentive of limited liability and the associated risk resulting from the scale of investment. We abstract from the pure asset substitution problem which would have altered the range $[-1, h]$ by fixing the investment level. We have additional commentary on this issue later.

Let us now consider the foreign investor's problem. By assumption, both the domestic and foreign investor own proportion θ of the cash flows from the project. Given our assumption of perfect contracting between parties in the private sector, the overall level of investment by m in p will be no different from that which would result from Equation (4). In other words, the privately optimal level of investment from the point of view of both domestic and multinational private sector managers will be exactly the same, and given by Equation (3):

$$I_e(dp) = I_e(mp). \quad (6)$$

However, there is now a difference between domestic and foreign investors from the host government's perspective. If the investor is domestic, the host government's investment problem is given by

$$I_s(dp) = \arg\max_{I_p} -I_p + [\theta + 1 - \theta] E[f(I_p)\omega_p], \quad (7)$$

which is exactly the same as Equation (1), so that $I_{sp} = I_s(dp)$.

When the acquirer is foreign, while the social subsidy — i.e., the social agency cost that results from limited liability which protects equityholders from states with negative payoffs — remains the same as that from a domestic acquirer, all of the surplus on θ portion of the cash flows is now transferred abroad. The government faces an investment level that solves:

$$I_s(mp) = \arg\max_{I_p} -I_p + \left[\frac{f(I_p)}{2(h_p + l_p)} \right] h_p^2 - \left[\frac{l_p^2}{(1 - \theta)} \right]. \quad (8)$$

The interpretation is as follows. While the foreign firm takes away θ portion of the cash flows from the project when the state of nature is good, it is not liable for any claims against it when the state of nature is poor. On the other hand, the host society, facing an outlay of $(1 - \theta)I$, can get $(1 - \theta)$ portion of the cash flows when the state of nature is good, but it bears *all* of the negative cash flows when the poor states of nature result.

Comparing the solutions to Equation (7) and Equation (8), we have,

$$f'(I_s(mp)) = \frac{2(h_p + l_p)}{h_p^2 - [l_p^2 / (1 - \theta)]} > f'(I_s(dp)), \quad (9)$$

if $1 \geq \theta > 0$. The assumption of strict concavity of $f(\cdot)$ and Equation (7) will, in turn, imply that

$$I_s(mp) < I_s(dp) = I_{sp}. \quad (10)$$

That is, foreign ownership of a domestic project with risky technology results in a *higher* social cost than domestic ownership with equivalent technology; consequently, the host government will desire an investment level that is *lower* under multinational ownership compared to domestic ownership. Clearly, under equivalent technologies, if the government had a choice over who should invest, then it would prefer domestic investment. But this may not be possible, either since the MNE has access to a monopolistic technology, or since it cannot directly forbid foreign investment. However, we see from the optimum investment suggested by Equation (8) that, conditional on the choice of θ , the MNE will have no incentive to invest at a lower level than a domestic firm. This is our core result: if cross-border liability results in the localization of costs and globalization of benefits to multinational ownership, then there will be a conflict of interest between the MNE and the host government (relative to the case of an equivalent domestic firm).

B. The Role of Taxes on Equity

In this section, we show that a tax on equity overcomes the social agency problem induced by limited liability, and we derive the optimal tax rate. The equity tax here is defined broadly to be inclusive of taxation at both personal and corporate incomes. The tax rate that equates private and social investment valuations, in the aggregate, turns out to be the same for both domestic and foreign equity. However, to the extent that the structure of domestic taxation on equity differentiates between corporate (taxed at source) and personal (taxed at destination) incomes in the ratio δ to $1 - \delta$, we show that the government will have an incentive to impose dividend-withholding, or border taxes on the MNE. The incentive for border taxation results from the host government attempting to shift cash flows to the host country rather than to the home country of the MNE; consequently, the host government may also enter into a tax treaty with the foreign government so as to avoid double taxation of the MNE. This will resolve the problem

between the MNE and the host government, but could potentially introduce conflicts between the two governments themselves.

We assume that the effective (constant marginal) tax rate on equity, τ , is imposed only in the positive states of nature, so as to preserve the option-like feature of limited liability. With tax at rate τ , the private investor invests an amount that would solve:

$$I_{ep,\tau} = \underset{I_p}{\operatorname{argmax}} -I_p + (1 - \tau) E[\max(f(I_p)\omega_p, 0)], \quad (11)$$

with the first order condition:

$$f'(I_{ep,\tau}) = \frac{2(h_p + \iota_p)}{h_p^2(1 - \tau)}, \quad (12)$$

which, when equated with the solution to the government's problem in Equation (2), gives us the effective optimal tax rate on equity:

$$\tau^* = \frac{\iota_p^2}{h_p^2}. \quad (13)$$

We note that $0 < \tau^* < 1$, since $0 < \iota_p < h_p$ by assumption.

With corporate taxes accounting for δ proportion of τ^* , the net present value of the host country cash flows from *domestic* investment, from the government's standpoint, is:

$$V_s(dp, \tau) = -I_p + (1 - \delta\tau^* - (1 - \delta)\tau^*) E[\max(f(I_p)\omega_p, 0)] \\ + \tau^* E[\max(f(I_p)\omega_p, 0)] + E[\min(f(I_p)\omega_p, 0)], \quad (14)$$

which, after simplification, is exactly the same as Equation (11), which, in turn, is equivalent to the government's objective function in Equation (1). The reason is that, in Equation (14), the expected value of the tax revenue given by the third term is exactly equal to the fourth term, which represents the expected social loss that results from the provision of limited liability in a taxless world. In other words, as long as the government has picked τ^* (given by Equation (13)), it is indifferent to the personal versus corporate tax rate choice, δ , when the investor is a domestic corporation.

The net social value in Equation (14) is also indicative of the sense in which taxes play a role in mitigating (or even eliminating) the incentive for managers in the private sector to overinvest in risky technologies. The last term

can be viewed as an expected social subsidy provided to the domestic firm, which is exactly offset by the third term, which represents the countervailing expected tax revenue collected by the government.

When the investor is foreign, the distinction between corporate and personal taxes (i.e., δ) matters. The corresponding net present value to the host government, of cash flows from *foreign* investment, is given by

$$V_s(mp, \tau) = -I_p(1 - \theta) + (1 - \theta)(1 - \tau) E[\max(f(I_p)\omega_p, 0)] \\ + (\theta\tau\delta)E[\max(f(I_p)\omega_p, 0)] + E[\min(f(I_p)\omega_p, 0)]. \quad (15)$$

In this case, the cash flows accruing to the host society are less than those in Equation (14) by an amount $(1 - \delta)\theta\tau$, since this is the amount that the MNE investor does not pay as personal taxes in the host country. However, note that the host society bears all of the negative externalities associated with the investment, as given by the fourth term in Equation (15) (which is the same as that from a domestic investment). Given $0 < \tau < 1$, if $\delta \leq 1$ is equivalent between domestic and foreign investors, we have

$$[\tau(1 - \theta) + \theta\tau\delta] E[\max(f(I_p)\omega_p, 0)] \leq E[\min(f(I_p)\omega_p, 0)]. \quad (16)$$

The investment level which will be desired by the host government can be characterized by the optimality conditions resulting from Equation (15):

$$f'(I_s(mp, \tau, \delta)) = \frac{2(h_p + \iota_p)}{[1 + (\tau\theta\delta)/(1 - \theta)]h_p^2 - [1 - \theta]\iota_p^2}. \quad (17)$$

Consequently, under a tax structure that includes both corporate and personal taxes, the social welfare is lower under MNE investment compared to an equivalent domestic investment.

How might the host government try to solve this problem? One approach will be to make $\delta = 1$, that is, to tax all of the equity income at the corporate level, and none at the personal level; this would be equivalent to adopting a *tax policy on equity through which corporate and personal taxes are fully integrated*.⁸ It is easy to see from Equation (14) and Equation (15) that, when $\delta = 1$, the cash flows to the host society are the same, and the host government would therefore be indifferent to whether the investor is domestic or foreign.

⁸Some industrialized countries are moving toward such a corporate tax structure for equity (for example, Germany).

However, we shall focus in this paper on two other (complementary) approaches that the host government might adopt. The first concerns the role of dividend withholding (or border) taxes on the MNE, while the second approach is through creating differential incentives for the MNE to take on debt in its capital structure (we shall pursue the latter in Section IV).

Consider the first approach, and the case where $\tau = \tau^* = \tau_p^2 / h_p^2$ (as in Equation (13)). Here, even though the overall tax rate τ^* is sufficient to induce the socially optimal level of investment for a domestic firm, the fact that δ of τ^* is untaxed for the MNE by the host country gives rise to a socially optimal investment level which is lower than in Equation (2). Suppose the host government collects an additional amount $(1 - \delta)\theta\tau$ on every dollar of profit from the MNE investor in the host country ("at the border") rather than have that cash flow accrue to the host country. It is now easy to see by comparing Equation (14) and Equation (15), that the additional tax rate of $(1 - \delta)\theta\tau$ equates the social value of private investments made by the domestic and the foreign firms. In other words, the host government will have an incentive to impose a dividend-withholding tax on repatriated profits of the MNE.⁹

A question that might arise is whether and why the foreign government would go along with such a border tax. Though it raises issues of intergovernmental tax relationships that are far beyond the scope of this paper, we can make one observation: given that $\tau_p = 0$ for the foreign government from any outward investment undertaken by its MNEs, the foreign country would have little or no incentive to tax equity income from abroad. Indeed, it suggests that there is likely to be a treaty between the two governments such that full tax credit is given for the border taxes paid in the host country, if the idea is that the total worldwide tax paid by the foreign investor for every dollar of investment is no different from that paid by the domestic investor (since total taxes that exceed τ will cause the MNE to underinvest).

⁹Such dividend-withholding policies may also be interpreted as attempts by the host government to encourage cash flow retention by the MNE investor, so that the "money-is-kept-at-home." Indeed, if we were to consider a multiperiod framework, then policies that encourage higher retention by MNE investors would mitigate the adverse consequences of cross-border limited liability. We are grateful to the reviewer for this insight.

III. The Role of Superior Technology

All of our results have thus far been developed on the assumption that the MNE transfers the same technology as the domestic firm in making the acquisition. Under identical technologies, the host government would desire the MNE to underinvest relative to the domestic firm, since the social costs associated with cross-border investment are localized, although the benefits are shared globally. In order to motivate the socially desired level of investment by the MNE, in a world with personal and corporate taxes, the host country government will have an incentive to either integrate the tax code, or to impose a border tax on the MNE.

Let us now examine what would happen if the MNE acquirer were to transfer a technology that is superior to that of the domestic acquirer. A natural question that would arise is: would the host government have the same incentive to impose border taxes if the MNE transfers superior technology to the host country? The answer depends on how we define "superior". One way to characterize the different technologies of the MNE and domestic acquirer is: the output of the MNE acquisition is greater or lower than that of the domestic acquisition for all I_p ; that is, if we define a $\Phi(I_{mp}) = \beta f(I_p)$ for all I , then $\beta > 1$ would connote superior technology. In this case, the host society's cash flows from the domestic acquisition remain the same as in Equation (14), while that from the foreign acquisition would now become

$$-I_p(1 - \theta) + (1 - \theta)(1 - \tau + \tau)E[\max(\beta f(I_p)\omega_p, 0)] \\ + (\theta\tau\delta)E[\max(\beta f(I_p)\omega_p, 0)] + E[\min(\beta f(I_p)\omega_p, 0)]. \quad (18)$$

Note that, under this definition of technological superiority, nothing would change in the policy toward the MNE, since the additional cash flows from $\beta > 1$ in the positive states of nature, in Equation (18), are exactly counterbalanced by the additional negative cash flows in the adverse states of nature. In other words, if the MNE transfers a technology that merely increases output across all states of nature for given levels of inputs (compared to a domestic firm), then public policy toward the MNE is unlikely to change.

The discussion above underscores that the technology that is superior from a private standpoint is not necessarily superior from a social standpoint. Under limited liability, a technology is superior only if it favorably alters the ratio of τ_p to h_p . In other words, superior MNE technology requires that:

$$\left(\frac{\iota_{mp}}{h_{mp}}\right) = \beta \left(\frac{\iota_{dp}}{h_{dp}}\right), \text{ where } \beta < 1. \quad (19)$$

This has an important policy implication. In attracting foreign direct investment, the value to the private sector alone is a misleading benchmark, because it ignores the possibility of additional negative cash flows that a seemingly superior technology may transfer.

Under Equation (19), it is relatively straightforward to show that, *ceteris paribus*, the host government will impose a lower (perhaps even zero or negative) border tax on the MNE.¹⁰ We can illustrate this with a simple example. Suppose, under equivalent technologies, that $\iota_p/h_p = 1/\sqrt{2}$, and $\delta = 0.6$; it is easy to see, from Equation (13) that $\tau^* = 50\%$, and the corresponding corporate tax rate and personal tax rate are 30% and 20%, respectively. The host government has the incentive to impose a border tax of up to 20% on the net income of the MNE. Now, suppose β (as defined in Equation (19)) = 0.8 for the MNE technology; the optimal effective tax rate on equity for the MNE is $\tau_m^* = (0.64)(0.5) = 32\%$. If the corporate tax rate on foreign and domestic incomes are equal, then the border tax rate imposed on personal equity incomes of the MNE investor is now only 2%. Thus, we have the following general result: if the MNE transfers superior technology to the host country, where superior technology is as defined in Equation (19), then the host government would impose a lower border tax on such an MNE compared to one that transfers technology equivalent to that of a domestic investor.

The host government has access to other policy instruments that we will pursue in the following section. In particular, we look at the incentives for provision of differential financing choices and concessionary credit as mechanisms to counteract social agency costs resulting from cross-border limited liability.

IV. Capital Structure Policies Toward MNEs

An important and commonly observed anomaly in host country policies toward MNEs is that, while border taxes are imposed on MNE profits, there are often inducements to MNE investments in the form of subsidized credit and loan guarantees. We argue that this seemingly anomalous policy can be explained as a rational response by the host country government to counteract the higher social agency costs associated with MNE investment (relative to domestic investment).

The logic of our argument is as follows. As is well-known in the corporate finance agency literature, debt induces underinvestment relative to an all-equity financed optimal level of investment. This investment effect of debt is independent of tax-induced disincentives, thus serving the government's interests. Given this underinvestment effect, managers acting in the interest of equityholders will optimally issue no debt unless there are countervailing benefits or incentives. But, (i) in a world without taxes, the provision of a subsidy to debt in the capital structure, and (ii) in a world with taxes, the allowance of tax deductibility of debt-related (but not equity-related) payments will provide an incentive for taking on debt in the firm's capital structure, since an added advantage for debt is created by providing it at below-market cost. However, in order to assure equivalent social optimality from domestic and foreign investment, this subsidy would need to be larger for the MNE, compared to the domestic firm.

We motivate the role of debt by first considering the case of domestic investment as analyzed by John and Senbet [16]. Our analysis may be viewed as an extension of the latter into an international context. Further, in order to derive the benchmark results, we revert to the case of equivalent technology between domestic and foreign firms. We assume that the host country faces no capital constraints in international markets for positive net present value projects: in other words, it has access to fairly priced debt, where such debt might originate domestically or abroad.

Assume that, at $t = 0$, the domestic stockholders issue a pure discount bond of face value B to mature at $t = 1$. Denote the cum-debt level of investment that will be chosen by domestic equity as $I^B(dp)$. Then

$$I^B(dp) = \arg\max_{I_p} -I_p + E[\max(f(I_p)\omega_p - B, 0)]. \quad (20)$$

The first order condition for the optimum is given by

$$f'(I^B(dp)) = \frac{2(h_p + \iota_p)}{h_p^2 - B^2/[f(I^B)]^2}. \quad (21)$$

Again, by concavity of $f(\cdot)$, it is clear that $I^B(dp) < I_e(dp)$, by comparing Equation (21) and Equation (4).

The underinvestment incentive of debt is familiar from the agency literature in corporate finance. The intuition is that, in the presence of bondholder-stockholder conflicts, equity value maximization (not firm value maximization) is an appropriate decision criterion. As shown in Equation (20), equity value is maximized based on the cash flows

¹⁰The detailed results may be obtained from the authors upon request.

obtained only in the nonbankrupt states. Because of the concavity of $f(\cdot)$, the maximum such value occurs at a lower level of investment than the case of all-equity financing.

Recall that we have abstracted from the pure asset-substitution problem by fixing the range $[-1, h]$. Our focus here is on the role of debt in mitigating distortions in the level of private investment relative to socially optimal levels. Under more general conditions, the issuance of debt may, indeed, result in a trade-off between risk-shifting and overinvestment incentives (the latter being socially desirable). In this case, a richer menu of debt securities (such as convertibles or callables) may be more desirable, but these issues are beyond the scope of this paper.

It is easy to see from Equation (21) (see also John and Senbet [16]), that if we set

$$B^*(dp) = \iota_p f(I_p), \quad (22)$$

then Equation (21) will equal Equation (2), the optimal level of investment from the social standpoint. In other words, there is an optimal level of debt given by Equation (22), which, if taken on by equity in its capital structure, will induce the socially optimal level of investment.¹¹ Note that the optimal level of debt which aligns the private and social investment levels is a function of the extent of limited liability subsidy as determined by the negative cash flows in the poor states (the right hand side of Equation (22)). As shown earlier, the private *overinvestment* incentive is a function of this subsidy, which can be curtailed by the “correct” degree of *underinvestment* induced by debt financing. Consequently, the “correct” amount of debt will also be a function of the social subsidy resulting from limited liability.

However, it also clear from Equation (21) that, given the underinvestment incentive of debt, equity will have no incentive to take on debt in its capital structure, since the loss in value if it took on a debt of B is

$$\begin{aligned} \Delta(B(dp)) &= (I^B - I_e(dp)) + E[\max(0, f(I_e(dp)\omega_p)] \\ &\quad - E[\max(0, f(I^B)\omega_p)]. \end{aligned} \quad (23)$$

¹¹The implications of this line of analysis are more fully developed in John and Senbet [16], which argues that the introduction of debt into the firm's capital structure introduces a new agency problem, between debt and equity (and in the *private* sector); interestingly, this private agency problem helps to counteract a *social* agency problem between the corporate form and society.

The agency cost specified in Equation (23) suggests that, in the absence of any other incentives to equityholders, the optimal amount of debt in the firm's capital structure would be zero. However, we shall show below that the host government may provide incentives for debt financing using (i) subsidies, or (ii) tax deductions.

A. Direct Subsidization of Debt

Let us consider the role of subsidies first in a world without taxation. If the host government provides a lump-sum subsidy of $\Delta(B(dp))$ when the domestic firm issues debt, then it would accomplish the social objective, since it would induce a level of investment $I_p(dp) = I_{sp}$. The extent of this subsidy for the domestic firm is given by

$$\Delta(B(dp)) = (I_{sp} - I_e(dp)) + [\frac{1}{2}(h_p + \iota_p)][h_p^2 - (h_p^2 - \iota_p^2)f(I_{sp})], \quad (24)$$

where Equation (24) follows from Equation (23) by substituting $B(dp) = \iota_p f(I_{sp})$ and evaluating the objective functions. Note that this subsidy can be recovered by the government through alternative revenue generation mechanisms, such as taxes on sales or consumption — consequently, the direct subsidization of debt can be accomplished in a revenue-neutral fashion. However, we know from Equation (8) and Equation (9) that Equation (24) would not be socially optimal when the investor is an MNE, since $I_s(mp) < I_s(dp)$. Consequently the host government would want the MNE to take on a *higher* level of debt in its capital structure in order to induce the socially optimal investment level, $I_s(mp)$. This debt level can be computed from Equation (9) and Equation (21) as

$$B^*(mp) = \frac{\iota_p f(I_s(mp))}{(1 - \theta)}. \quad (25)$$

Comparing Equation (22) and Equation (25), we see that $B^*(mp) > B^*(dp)$. Since the private costs of taking on larger levels of debt are higher, it would require a corresponding higher social subsidy, $\Delta(B(mp))$, which can be computed from Equation (23) by substituting $B = B^*(mp)$, and the debt-induced investment level, $I_s(mp)$:

$$\begin{aligned} \Delta(B^*(mp)) &= I_s(mp) - I_e(dp) + \frac{1}{2}(h_p + \iota_p) \\ &\quad [h_p^2 - (h_p^2 - \iota_p^2/(1 - \theta)^2)f(I_s(mp))]. \end{aligned} \quad (26)$$

Clearly, $\Delta(B^*(mp)) > \Delta(B^*(dp))$, and the host government will thus provide higher debt incentives for the MNE so that it takes on the larger debt level $B^*(mp)$ and invests the smaller amount $I_s(mp)$, relative to the domestic firm. That

is, if the host government wishes to induce the optimal level of investment by the MNE which transfers a technology equivalent to that of the domestic firm, then it would provide an additional debt subsidy to the MNE investor. But it is also easy to see, from the analysis in Section III, that if the MNE were to transfer a "socially" superior technology to the host country (where superiority is defined as in Equation (19)), then the socially desired level of debt in the MNE's capital structure (and the amount of subsidy to debt) will be lower.

B. Tax Subsidization of Debt

In a world with taxes, we now show that the role played by tax deductibility of debt (or preferential treatment of debt relative to equity) will be complementary to that which is accomplished by the independent investment incentive effects of taxation alone. If total equity taxes are equal to τ^* and if $\delta = 1$, we will see that no preferential treatment of debt is necessary. However, if $\tau < \tau^*$ or if $\delta < 1$ (because of, say, the host country's social or political agenda), then debt plays an important incremental or complementary role.

Specifically, if $\tau = \tau^*$ and if $\delta < 1$, then debt plays an important role, but no distinction is made between domestic and foreign investors in terms of debt incentives; but if $\tau < \tau^*$ and if $\delta < 1$, then the MNE's debt will be given an additional favorable treatment by the host government. We provide a simple framework to sketch the analysis below (for the details of the effect of tax deductibility of debt in the domestic case, see John and Senbet [16], and John, Senbet and Sundaram [17]; though their analysis is for the domestic case, the logic is readily applicable to the case of MNE investments also).

First, consider the case of a domestic firm and a tax regime where $\tau < \tau^*$. For simplicity, (i) assume that all of the debt, B , is deductible for tax purposes; and (ii) that the entire tax on equity, τ , is the effective tax base on which the credit for debt is given.¹² The firm will now choose a level of investment, $I^B(dp, \tau)$, where $I^B(dp, \tau)$ solves

$$I^B(dp, \tau) = \arg\max_{I_p} -I_p + E[\max(f(I_p)\omega_p - B, 0)] - \tau \max(f(I_p)\omega_p - B, 0), \quad (27)$$

¹²All of the implications of the analysis remain intact even if only a portion of the debt-related payments — e.g., the interest component — is deductible for tax purposes, and if we restrict deductibility to only $\delta\tau$ portion of the equity tax rate. Again, the details may be obtained from the authors upon request.

The first order condition is

$$f'(I^B(dp, \tau)) = \frac{2(h_p + \iota_p)}{[h_p^2 - (B/f(I^B(dp, \tau)))^2][1 - \tau]}. \quad (28)$$

We can now show that a debt level

$$B(dp, \tau) = h_p f(I^B(dp, \tau)) \sqrt{(\tau^* - \tau)/(1 - \tau)}, \quad (29)$$

where $\tau^* = \iota_p^2/h_p^2$ will induce a privately optimal level of investment that is equal to the socially optimal level of investment in Equation (2). As expected, the larger the difference $\tau^* - \tau$, the higher the debt that will be needed to induce the socially optimal investment level on part of the domestic firm. This domestic case has been previously analyzed by John and Senbet [16], but now we wish to pursue the complementary role of debt in the context of cross-border investments by the MNE.

If $\delta = 1$, as with the case of debt subsidies, note that $B(dp, \tau)$ would be sufficient to induce the same level of investment by both the domestic and the MNE investor. But let us now examine the optimal debt level that would be appropriate for the MNE investor under an arbitrary tax scheme (τ, δ) , where τ may be less than τ^* and δ may be less than one. The debt level which will induce investment $I_s(mp)$ given in Equation (17) can be derived from Equation (17) and Equation (28):

$$B(mp, \tau, \delta) = h_p f(I_s(mp)) \sqrt{[\tau^* - \tau(1 - \theta + \delta\theta)]/[1 - \tau][1 - \theta]}, \quad (30)$$

where, in general, the MNE's debt level is function of τ , δ , and θ . When $\theta = 0$ (i.e., full ownership is domestic), Equation (30) reverts to the domestic case in Equation (28). For the tax regime $\tau = \tau^*$, $B(dp, \tau^*) = 0$ because taxation alone is sufficient to accomplish social objectives.

However, for the MNE, even if $\tau = \tau^*$, whether or not investment incentives are completely aligned with social values will depend on whether δ is equal to, or less than, one. For $\delta = 1$, the optimal debt level is zero. For $\delta < 1$, the host government would like to see a positive level of MNE debt:

$$B(mp, \tau^*, \delta) = h_p f(I_s(mp)) \sqrt{[\tau^* \delta (1 - \delta)/(1 - \tau^*)(1 - \theta)]}, \quad (31)$$

which is obtained by substituting $\tau = \tau^*$ in Equation (30). We note that $B(mp, \tau^*, \delta)$ is increasing in δ : that is, the host government will provide larger incentives to debt, the smaller is the δ . To the extent that the "effective" δ is made closer to one by cross-border taxes discussed in Section II,

the required debt incentives are smaller. In this sense, the two schemes — border taxes and subsidies for debt — turn out to be complementary policies. The relationship between the required debt incentives and δ is valid for arbitrary overall tax rates $\tau < \tau^*$, as seen from Equation (30). We shall not analyze the case of superior technology, but it should be intuitively clear by substituting Equation (19) into Equation (30) that the more “socially” superior the foreign technology, the lower the requirement of additional tax relief.

In summary, we have argued in this section that, in the context of limited liability, debt in the firm’s capital structure plays a positive role from the social standpoint since it moves the level of private investment in the direction that the host government would want. However, equity-holders require an incentive to take on this debt, since, in the absence of such an incentive, the optimal level of debt is zero. The host government will then either provide a direct subsidy to debt, or allow deductibility of debt-related payments for tax purposes. The level of this subsidy (or the extent of the tax relief) will not be equal between domestic and foreign investment, since the host government desires a lower level of investment by an MNE compared to a domestic investor (assuming equivalent technologies): the host government will, therefore, provide additional inducements to the MNE to increase the level of debt in its capital structure. However, the more socially superior the technology that the MNE transfers, the lower the need for this additional inducement.

V. Concluding Discussion and Implications

In the context of incomplete contracting, limited liability results in private sector overinvestment in risky technologies relative to levels of investment that the society, as a whole, would consider optimal. This social agency problem is exacerbated from the standpoint of a host society in the context of cross-border investments by the MNE when there is ill-defined or incomplete cross-border liability. While this crucial issue of international law on the extent and nature of cross-border liability became dramatic in the recent dispute between Union Carbide and the Government of India in relation to the Bhopal Disaster, the Indian Supreme Court left the issue unresolved.

The social agency problem associated with cross-border investments arises in the form of localization of costs in the host country while the benefits from MNE investments are globalized. Consequently, the host society would desire a lower level of foreign investment than its domestic counterpart, when the foreign firm transfers

technology equivalent to that of the domestic firm. A tax on equity can correct the distortion, but if the host economy has a tax structure with both personal and corporate taxes, then the host government will have the incentive to impose dividend withholding taxes on MNE profits.

An alternative approach that host governments might adopt is to provide the firm with an incentive to take on debt in its capital structure: mechanisms to provide that incentive include direct subsidy to firms taking on debt, or allowance of deductibility of debt-related payments for equity tax purposes. This incentive would have to be relatively greater for the MNE, given the problem of localization of costs and globalization of benefits resulting from cross-border limited liability. It is possible that the extent of debt subsidies may vary from project to project, since combinations of tax rates, breakdowns between corporate and personal tax rates, and technology-specific subsidies could achieve socially desired optimal levels of investments for individual projects.

We also saw that if the MNE transfers technology superior to that of the domestic firm (where, recall, technological superiority from a social standpoint is different from a private standpoint), then the level of border taxes imposed and the level of incentives provided to debt would be lower. Further, independent of the quality of technology, our results provide a rationale for the prevalence of commonly observed border taxes; it also simultaneously resolves the apparent contradiction between a seemingly discriminatory tax and generous credit incentives to MNEs. Both types of policy are commonly observed in many economies with respect to MNE investment. We have argued that there may be no contradiction in reality, since they are rational responses by the host government to counteract the effects of cross-border limited liability.

We close by identifying some empirically testable implications of our analysis. First, in economies where personal and corporate taxes on equity are present, we are likely to observe border (or dividend-withholding) taxes on the repatriated profits of MNEs. Such border taxes will be less than or equal to the personal income tax rate within the domestic economy, and are likely to be accompanied by tax treaties between the host country and the MNE’s home country. Second, such border taxes should be lower for MNEs that transfer superior technology to host countries. Third, we may observe MNEs receiving credit subsidies and debt-related tax breaks over and above those that a typical domestic firm would receive. This implication, in turn, suggests that we are likely to observe that subsidiaries of MNEs will have a greater proportion of

debt in their capital structures compared to equivalent domestic firms. Finally, we are likely to observe that MNEs with superior technologies have a smaller proportion of debt in their capital structures compared to domestic firms in similar industries.

We motivated the paper with the Bhopal incident. To what extent is our stylized analysis consistent with the relationship between Union Carbide (the MNE) and India (the host country)? Our assumptions concerning the void in the extent and nature of cross-border liability result from the fact that it continues to remain unresolved, despite having arisen as a major issue in international law following the chemical disaster. While we do not wish to overstate, there are many facts with respect to Union Carbide's investment in India that are consistent with our analysis.¹³ For example, there was, arguably, overinvestment in a risky technology in Bhopal: in all of the years since the plant was commissioned (until the end), at no time did it ever run at greater than one-fifth of its installed capacity. Second, the pesticide technology that was transferred to India by Union Carbide (based on methyl isocyanate, the gas that ultimately leaked) was considered to be superior to that which was then locally available in a country that was attempting to become agriculturally self-sufficient. However, as the disaster subsequently revealed, the technology also carried with it a significant downside risk from the standpoint of the local society. Third, during the years that Union Carbide operated in India, its local subsidiary consistently drew upon many Indian banks (all of whom were nationalized) for debt at below market interest rates. Also, India, like many other countries in the world, imposes border taxes on the repatriated profits of MNEs.

More generally, the void at the intersection of sovereign boundaries over the cross-border liability limitation of MNEs can result in overinvestment in risky technologies. This problem has some important implications for financial management and taxation of MNEs. In this paper, we explored two specific cases that have received attention in international corporate finance: the role of border taxes and credit subsidies in aligning private and social values across borders.

There are additional issues raised by cross-border investments in an international environment characterized by ill-defined liability rules, which are beyond the scope of this paper. For instance, we have left open important

and related questions on cross-border claim settlement and multinational bankruptcy. We have also abstracted from the impact of financial synergy arising from merging firms on the possible negative consequences that limited liability introduces for the society at large. As argued in John and Senbet [16], the investment project, which is the subject of our analysis here, can be coinsured by the assets of the acquirer, and hence diminish the negative consequences to the host society. For example, if the acquirer is an MNE with abundant resources (relative to the domestic firm) and if the parent company faces complete cross-border liability, then the beneficial impact of the coinsurance would be larger.¹⁴ Thus, the degree to which coinsurance affects the policies of the host country toward the MNE depends on the clarity of cross-border liability and the global enforceability of limited liability laws. The possible relationship between host country policies toward international mergers and cross-border liability is an issue that should be explored in further research.

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¹³The facts that follow are drawn from Gladwin [10] and A. Sharplin, "Union Carbide of India Limited: The Bhopal Tragedy," Case Research Association, Northeast Louisiana University, 1985.

¹⁴Such coinsurance may result when the MNE has a "branch", rather than a subsidiary, in the host country.

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