CeGE-Discussion Paper

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GEORG-AUGUST-UNIVERSITÄT GÖTTINGEN

Mai 2001

ISSN 1439-2305

MULTINATIONAL FIRMS: EASY COME, EASY GO?

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October 2000

Abstract

Although many countries welcome inward investments by multinational firms (MNEs), it is often perceived that MNEs readily close down production in bad times. We study the choice of an MNE in deciding whether to establish a branch plant within a region, explicitly taking into account *exit*, as well as entry, costs. Protecting workers by having strict lay-off rules deters potential investment while subsidies attract it. We examine the policy trade-off for a host government and investigate how uncertainty affects the attractiveness of investment in a particular location. Just how much does the ease of exit influence the entry decision?

JEL Codes: D92, F12, F23

Keywords: multinational firms, subsidies, entry, exit, uncertainty

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This paper has been presented at NOITS, Helsinki; a Workshop on International Economics, City University of Hong Kong; The University of Warwick; and a CEPR/Ld'A Workshop on Foreign Direct Investment and the Multinational Corporation, Turin. We are grateful for the comments and suggestions that we received, in particular those of Lakis Raimondos-Møller and Pertti Haaparanta. We would like to thank the Research Council of Norway (grant no. 124559/510) for financial support.

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1. INTRODUCTION

When comparisons are made about different countries' relative abilities to attract inward investment from multinational enterprises (MNEs), it is often argued that firms prefer to establish operations in countries with less regulated markets (particularly the labour market). The premise is that the firm will have more freedom to adjust to prevailing economic conditions in such locations. There is the implicit acknowledgement that the firm may not choose to maintain a particular level of production indefinitely and takes into account the costs of downsizing or closing its branch plant entirely.

It is frequently claimed that the relative success of the United Kingdom in attracting overseas investment, relative to their continental partners in the EU, can partly be explained by its less regulated labour market that permits the firm to adjust its employment level more easily than in could were its operations based in another of the large European nations. Thus firms concern themselves not only with entry costs and relative productivity levels but also with the potential costs of downsizing and closure. Britain, by making it easier to layoff workers, becomes more attractive to MNE which will find it easier to both “come” and “go” from a location in the UK.

However, these conjectures have seldom received much attention in formal analysis. Instead, most of the literature on attracting investment from foreign MNEs has focused on lowering the firm's costs of establishment or its production costs[1], largely ignoring the ease with which the MNE might close down their production facilities. This paper re-examines the MNE's investment decision with an explicit consideration of the likelihood of future closure of the production facilities. We compare the relative merits of locations when the

[1] For a (partial) review of this literature, see Haaland and Wooton (1999). Braunerhjelm et al. (2000) include an overview of empirical findings on the location decisions of firms. The literature is closely related to studies of tax competition for foreign investments; see e.g., Haufler and Wooton (1999) and Kind, Midelfart Knarvik and Schjederup (2000). Devereux and Griffith (1998) present empirical findings on the importance of taxes for the location of American firms in Europe.

firm expects its branch plant to be around for a long time and when the MNE is in an industry characterized by a great deal of uncertainty. In this setting we consider the policy instruments that a government might use to make its country a more attractive location for MNE investment. We focus on two that seem of particular relevance.

The first is related to the labour market flexibility of a host country. A firm, in making its location decision in an uncertain economic climate, will look not only at the costs of training and employing its workers but also at the financial implications of firing them, should economic conditions worsen. Thus the rules on severance pay must be taken into account[2]. Thus a low-wage location might have low production costs, but this benefit may be offset by the requirement that former employees receive high redundancy settlements. Clearly the likelihood of failure is a crucial consideration.

The second element is a development subsidy offered to the firm to offset some of the fixed costs that it faces in initially establishing the branch plant. These frequently take the form of provision of land at subsidized prices, the offer of already built premises, assistance with the training costs of personnel, or cost-sharing in building new facilities. What seems to be important to us is not just the size of the subsidy but the conditions attached to it[3]. Clearly a firm receiving financial assistance and then choosing not to invest would be expected to return the funds. But what of a firm that closes down shortly after starting production? How might being required to repay some of the subsidy affect its perception of the attractiveness of the investment location?

We suggest a simple model structure to analyse these issues in the next section. In section 3 we examine the firm's entry and production decisions, while in section 4 we discuss the policies available to the potential host country to attract the MNE's investment. We then

[2] Bentolila and Bertola (1990) study the importance of firing costs for labour demand and the employment situation in Europe.

[3] Mudambi (1999) discusses various types of investment support and analyses the choice of support scheme in a

consider, in section 5, how industry-specific uncertainty will affect the investment decision and may make some production locations more attractive than others. The focus of this paper is on the attractiveness to the MNE of a particular location, in terms of the mixture of investment incentives and labour-market policies that the host country offers. We do not look at issues of policy competition between the governments of rival locations. These are at the heart of the companion paper [Haaland and Wooton (2000].

Before going further, it is perhaps worthwhile addressing what makes the firm in question a multinational enterprise. The policy experiments that we conduct are to attract inward investment from a foreign firm that is prepared to invest in the most attractive location. The host government brings benefit to its citizens through the increased employment opportunities, less any subsidies that are paid to the foreign firm. Thus, unlike its dealings with a domestic firm, the government is not concerned with the wellbeing (profits) of the MNE. The MNE, for its part, considers the relative merits of locating in different countries and chooses that which maximizes its objectives[4].

2. THE MODEL

We focus on an integrated economic region comprising several countries and that there are no barriers to trade (tariffs or transport costs) between these countries. A multinational firm makes its decision as to the location of production. We assume that there are several countries in the region that are potential hosts for the MNE's investment. Suppose that the successful location is country *i*.[5] Wherever it produces, the firm will face the same demand schedule for its good. The inverse demand curve is:

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strategic context.

[4] Pennings and Sleuwaegen (2000) show that firms with an option to relocating internationally (i.e. MNEs) behave differently from firms that do not have this option when it comes downsizing of the production.

[5] As this is the only country under discussion, we can suppress the country-specific subscripts. We cannot do this in our analysis of policy competition between potential host countries, in Haaland and Wooton (2000).

$$p = a - bx \tag{1}$$

where x is the output level of the branch plant of the MNE and p is the price.

Production is characterized by increasing returns to scale. Consequently, the firm will choose to locate its production facilities in a single plant, from which it will serve the entire region. While the technology is the same irrespective of where production takes place, costs will depend on the location chosen by the firm. In each period of production, the firm must pay a fixed cost F and constant marginal cost, such that total costs are:

$$c = F + w\beta x \tag{2}$$

where β is the unit labour requirement and w is the wage rate. Total employment by the firm amounts to:

$$L = \beta x \tag{3}$$

The firm faces initial costs of establishment and these may differ from country to country. In choosing one country over another, the firm foregoes the benefits that it would have enjoyed in the alternative location. Thus, it will choose to establish production facilities in country i only if the benefits of doing so exceed those it would achieve in the next-best location. National governments may provide financial assistance to attract the firm to invest in the form of a subsidy. The nature of this subsidy is discussed at length later in the paper.

The firm faces an uncertain business climate. The demand for its product can change as a result of the introduction of new products. In addition, as technological advances are made, the firm's existing plant may become obsolete. In which case, it will face, once again, the choice of where to locate its (new, more advanced) production facilities. We model the uncertainty in an elementary fashion, assuming that a catastrophic shock may arise in a

period with probability ρ. Such a shock is industry-specific, due to changes in demand or technology, and consequently is independent of the location of the production facilities[6]. The impact of such a shock is to force the firm to close down its production at its existing plant. The expected lifespan (planning horizon) of the plant is $H = (1-\rho)/\rho$.

Should the firm be obliged to close down its factory, it will encounter some additional costs. We examine two principal, country-specific costs of closure. Firstly, the firm will have to pay government-mandated severance pay to each of its employees.[7] Secondly, there may be conditions on the subsidy from the government such that, should it close the plant down, the firm will be required to make some repayment to the national government.

3. THE FIRM'S DECISION

Consider initially what would happen were the firm to focus only on its current productive activities, ignoring the possibility of future shutdown. Then it would maximize current profits. Profits in each period are:

$$\pi = px - c \tag{4}$$

Substituting (1) and (2) into (4), differentiating and solving yields the equilibrium quantity, employment, and profits for the *myopic* firm:

$$\begin{aligned} x^m &= \frac{a-\beta w}{2b} \\ L^m &= \frac{\beta(a-\beta w)}{2b} \\ \pi^m &= \frac{(a-\beta w)^2}{4b} - F \end{aligned} \tag{5}$$

[6] This is contrary to models of political risk or risk of expropriation, where the risk by assumption is country-specific [see e.g. Schnitzer (1999)].

Suppose that, instead of its concern with current profits, the firm is now assumed to take into account the possibility that its market might collapse at some point, requiring a closing down of the manufacturing facilities. The risk of closure affects the firm in two ways. Firstly, the riskier the project, the less likely the firm will be to set up production facilities in the first place. Secondly, given the decision to establish a branch plant, the degree of risk will influence the level of production. Consider this latter element initially.

Activity level

We assume that the firm discounts the future at rate $\delta \leq 1$, while the probability that the market remains strong in any period is $(1-\rho)$. Thus the expected present value of the future stream of profits is:

$$\Pi = \frac{(1-\rho)\pi}{1-\delta(1-\rho)} \tag{6}$$

But there is also the probability that the firm will fail at some point in the future. When that happens, the firm will face exit costs including layoff costs. Let *r* be the severance pay that the firm is required to give to each laid-off worker when the plant is closed. As the redundancy payments are proportional to the number of workers that the firm employs, firms will take them into account in choosing its activity level. Clearly, if the firm fails in the first period before having employed any workers, then it will not have to make redundancy payments. Taking this into account, the expected present value of these payments is:

$$\Lambda = \frac{\delta\rho(1-\rho)rL}{1-\delta(1-\rho)} \tag{7}$$

[7] We do not model how the severance pay is determined by the national government. We assume that it is established through some exogenous political process.

In deciding upon the optimal level of production (and employment) the firm will maximize the expected present value of its *net* operating profits, that is, the expected present value of profits less the expected present value of the costs of closure:

$$\Omega = \Pi - \Lambda \tag{8}$$

Substituting (1), (2), (3), (4), (6), and (7) into (8) yields the equilibrium quantity, employment, and profits for the prescient firm:

$$\begin{aligned} x &= \frac{a-\beta\left(w+\delta\rho r\right)}{2b} \\ L &= \beta\frac{a-\beta\left(w+\delta\rho r\right)}{2b} \\ \pi &= \frac{\left(a-\beta w\right)^2-\left(\beta\delta\rho r\right)^2}{4b}-F \end{aligned} \tag{9}$$

The net present value in equilibrium is:

$$\Omega = \frac{\left(1-\rho\right)}{4b\left[1-\delta\left(1-\rho\right)\right]}\left\{\left[a-\beta\left(w+\delta\rho r\right)\right]^2-4bF\right\} \tag{10}$$

When we compare the activity levels under foresight with those of myopia, we find from (5) and (9), that:

$$\begin{aligned} x &= x^m-\frac{\beta\delta\rho r}{2b} \\ L &= L^m-\frac{\beta^2\delta\rho r}{2b} \\ \pi &= \pi^m-\frac{\left(\beta\delta\rho r\right)^2}{4b} \end{aligned} \tag{11}$$

Thus output, profits, and employment will all be lower when the firm takes into account the redundancy payments that will eventually have to be paid.

The entry decision

In choosing whether or not to establish its production facilities in a country, the firm considers both the expected present value of its net operating profits and any extra costs of establishment and closure. In particular, the firm may be required to repay some of its subsidy, if it shuts down its operations early in the lifetime of the plant.[8]

The government of the host country can make it a condition of the subsidy, *S*, that it be repayable, in full or in part, should the firm cease operations in the country. We model this in a simple fashion. If the market collapses prior to any production activity then *S* must be returned to the host government in full. In each subsequent year, the repayment is discounted by σ. If $\sigma = 0$, there is no required repayment and *S* is simply a grant. If $\sigma < 1$, then the nominal value of *S* is declining and becomes increasingly a subsidy. For values of $\sigma \geq 1$, *S* has become a loan which, when $\sigma = 1$ is interest-free. Let Σ be the expected net benefit to the firm of the subsidy; the value of the initial transfer less the expected present value of the repayment on closure:

$$\Sigma = \frac{(1-\rho)(1-\delta\sigma)S}{1-\delta(1-\rho)\sigma} \tag{12}$$

The overall return *R* to the MNE of establishing its branch plant is the sum of the expected present value of its operating profits, Ω, and the net benefit of the subsidy, Σ. Writing out the expression in full, from (10) and (12), we find:

[8] The firm will likely face other costs of shutting down production but, for simplicity, these are ignored.

$$R=(1-\rho)\left\{\frac{\left[a-\beta\left(w+\delta\rho r\right)\right]^{2}-4bF}{4b\left[1-\delta\left(1-\rho\right)\right]}+\frac{\left(1-\delta\sigma\right)S}{1-\delta\sigma\left(1-\rho\right)}\right\} \tag{13}$$

This should be compared to the combined costs of setting up in the host country and the opportunity cost of not investing in the best alternative location.[9]

4. THE POLICIES OF THE HOST GOVERNMENT

In order to attract the MNE, the putative host can offer inducements to the firm. At the same time, domestic legislation will influence the investment decision. We shall look at two issues independently, starting initially with layoff policy and then considering the nature of subsidies offered to the incoming firm.

Severance agreements

In the model that we described in the previous section of this paper, firms will choose a particular level of employment of workers whenever they are in production. Should there be a downturn in the market, the firm will then cease all production activities at the branch plant, and will fire all of the workforce. The firm will be bound to giving their former workers compensation at a level established by the host government. We now consider how the government might use the level of redundancy payment as a policy instrument.

Differentiating (13), yields:

$$\frac{\partial R}{\partial r}=-\frac{\beta\delta\rho\left(1-\rho\right)\left[a-\beta\left(w+\delta\rho r\right)\right]}{2b\left[1-\delta\left(1-\rho\right)\right]}<0$$

Higher redundancy payments both make an investment less appealing and reduce the activity level of any branch plant that is established. This is because the firm, in its employment

[9] In our analysis of policy competition between locations, in Haaland and Wooton (2000), these cost differences will take on a high degree of importance.

decision, takes into account the future layoff costs for its workforce. We see this by differentiating the output and employment expressions in (9):

$$\frac{\partial x}{\partial r} = -\frac{\beta\delta\rho}{2b} < 0$$

$$\frac{\partial L}{\partial r} = -\frac{\beta^2\delta\rho}{2b} < 0$$

We illustrate the relationship between various levels of r and the viability of the investment in Figure 1.[10] Each line corresponds to a different ρ, the probability of failure of the firm in each period. The higher the probability, the shorter the expected lifespan of the branch plant, and consequently the lower the expect return to the investment. We therefore have a trade-off between the protection of workers in the future and both the likelihood of attracting the MNE investment and the scale of employment. A more confident future (low ρ) reduces the threat of having to make redundancy payments, making any investment more rewarding (in expected value) and on a larger scale.

Investment subsidies

An inspection of (13) makes it clear that the level of S and the repayment conditions on it have no effect on the activity level of a firm should it decide to establish a branch plant. Their impact is purely on the decision of the MNE whether or not to invest in the host country. We therefore focus on the role that the level of the subsidy and the repayment conditions attached to it play in that decision. Differentiating (13) with respect to S shows that, *ceteris paribus* and unsurprisingly, a larger subsidy makes the investment more attractive to the MNE:

[10] In these numerical simulations we have (unless otherwise noted) adopted the following parameter values: $a = 10$, $b = 1{\cdot}25$, $F = 15$, $S = 0$, $w = 1$, $\delta = 0{\cdot}9$, $\sigma = 0{\cdot}8$ and $\rho = 0{\cdot}22$.

$$\frac{\partial R}{\partial S}=\frac{(1-\rho)(1-\delta\sigma)}{1-\delta\sigma(1-\rho)}>0$$

The value of subsidy to the MNE, and its cost to the host government, is Σ, given by (12). Differentiating Σ with respect to its arguments yields a negative relationship for each:

$$\frac{\partial \Sigma}{\partial \delta}=\frac{\partial \Sigma}{\partial \sigma}=-\frac{\delta\rho(1-\rho)S}{\left[1-\delta\sigma(1-\rho)\right]^2}<0$$

$$\frac{\partial \Sigma}{\partial \rho}=-\frac{(1-\delta\sigma)S}{\left[1-\delta\sigma(1-\rho)\right]^2}<0$$

The discount rate δ and the repayment condition σ enter (12) as a product. When $\sigma=0$, the subsidy is a grant requiring no repayment. For values of $\sigma>0$, the firm must make some repayment on closure and the sum to be repaid increases with σ. When the firm totally discounts the future repayments (that is, $\delta=0$), the expected value of the subsidy is always $(1-\rho)S$, the monetary value of the subsidy discounted by the probability of collapse of the market prior to any production having taken place (necessitating the return of the subsidy). The larger is δ, the more important is the future to the firm, making the eventual repayment of the subsidy more burdensome. When $\sigma=1/\delta$, the government subsidy is of no advantage to the firm, as it will eventually have to repay principal and interest exactly equal to the benefit from the original monetary award.

We turn now to the benefits to the firm of the subsidy for different rates of industry risk. When $\rho=0$, the production facilities remain open indefinitely and, as there is no expected future repayment, the firm gets the full benefit of the subsidy under any terms where $\sigma<1/\delta$. If, however, immediate failure is guaranteed ($\rho=1$), even the most favourable repayment terms cannot make the subsidy worthwhile. Between these extremes, we see that more favourable subsidy terms and lower risk make the investment more attractive.

Benefits of investment to the host country

In this partial-equilibrium framework, the advantages to the host country of persuading the firm to build its branch plant would equal the present value of the wage bill of workers employed by the MNE, less the present value of the subsidy paid out by the host government. We assume that the government discounts the future at the same rate as the MNE (δ). The cost of the subsidy (in terms of its expected present value) is therefore identical to its benefit to the firm Σ.

The present value of the wage bill aggregates the benefits to a worker of employment over the period of operation of the firm, plus the redundancy payments made when the branch plant closes down. This is multiplied by the employment level of the firm in (9). Let Γ be the present value of employment by the MNE, where:

$$\Gamma = \frac{\beta(1-\rho)(w+\delta\rho r)\left[a-\beta(w+\delta\rho r)\right]}{2b\left[1-\delta(1-\rho)\right]} \tag{14}$$

The benefit to the host country of the MNE's investment is $B \equiv \Gamma - \Sigma$, the difference between equations (14) and (12):

$$B = (1-\rho)\left\{\frac{\beta(w+\delta\rho r)\left[a-\beta(w+\delta\rho r)\right]}{2b\left[1-\delta(1-\rho)\right]} - \frac{(1-\delta\sigma)S}{1-\delta\sigma(1-\rho)}\right\} \tag{15}$$

The gains from investment

Figure 2 illustrates representative iso-benefit loci for the MNE and the host country when faced with combinations of redundancy payments and subsidy levels. We arbitrarily select R = 10 as the minimal return to the MNE that leaves it indifferent to establishing the branch

plant in country *i*, rather than in the next-best location.[11] Similarly we choose $B = 0$ which, in our partial equilibrium setting, is the level of benefit to the host country that just makes the investment worthwhile.

Combinations of government policy with higher subsidy and lower severance payments will make the investment opportunity more attractive to the firm and less appealing to the host country. Thus both loci are positively sloped. However, the $B = 0$ locus is flatter than the $R = 0$ locus at all relevant values of r. Thus the country gains more from the entry of the MNE when the subsidy is lower and redundancy payments higher.

A standard optimization exercise (maximizing the benefit to the host country for a fixed level of benefit to the MNE) yields a first-order condition that

$$r = -w / \delta\rho \tag{16}$$

If the government were to implement such a redundancy policy, it would be offering the firm a payment at closure that fully offsets the costs of employing the workers over the lifetime of the branch plant. This means that the firm will treat the marginal costs of production as zero and will, consequently, choose the highest level of production and employment. This can be seen at point **A** in Figure 3, where $B \approx 3$ is tangent to $R = 10$ at this level of (negative) redundancy payment (r = -5). The MNE would be prepared to receive a negative subsidy $S \approx -6$, that is, pay a tax to set up production facilities.[12]

Paying the firm when redundancies occur, rather than the firm compensating the fired workers, is not likely to be a politically achievable option, despite the inherent efficiency of

[11] We could have chosen any value of R, to reflect the required return to persuade the MNE to invest in this country. In this paper we have not discussed the initial costs of establishing the branch plant nor the alternative investment locations available to the MNE. The firm will only choose to locate in a particular country in the region if the benefits of doing so exceed those it would receive in the next best location. These issues are discussed in Haaland and Wooton (2000).

[12] This optimal for the host country because we have assumed that workers not given jobs by the MNE would otherwise be unemployed and hence their opportunity cost is zero.

the outcome. Instead, the severance payments will be non-negative and the host government will have to accept lower overall benefits from the MNE investment in order to make the firm still willing to enter. We calculate that $B \approx 2 \cdot 4$ intersects $R = 10$ at point **B** where $r = 0$ and $S \approx 14$. In the absence of the employment subsidy (negative redundancy payments), the firm's willingness to enter is reduced and a positive, rather than negative, subsidy is required. In addition, as the severance payments are further away from the optimal level, the benefit to the host country of the investment has been reduced.

This yields an interesting, though unsurprising, policy conclusion. If countries that are in competition for inward MNE investment are constrained from offering inducements in the form of subsidies, then the conditions of employment will become more important in determining which country will capture the firm. The easier it is for a firm to shut down operations in terms of costs of layoffs, the more appealing that location will be to the MNE. The host country could impose higher redundancy payments and still make investing attractive by offering a higher subsidy. This can also be seen in Figure 3, at point **C**, where a combination of $r = 6{\cdot}9$ and $S \approx 38$ lies on $R = 10$. However, the benefits to the host country have diminished to the point where it is indifferent to the establishment of the branch plant (i.e., $B = 0$). We have already seen in Figure 1 that, for any given redundancy scheme, the benefits to the MNE of investment will diminish, the higher the probability of closure. Thus, in a more uncertain investment climate, the host that requires least of the firm in terms of redundancy payments will be best placed to attract the investment.

5. INDUSTRY-SPECIFIC UNCERTAINTY AND MNE INVESTMENT

We have already established that a more uncertain investment climate (that is, a higher probability of failure ρ) makes the subsidies offered by the host government less attractive, lowers the level of production of firms that do invest, and these effects together lower the

likelihood of a firm choosing to establish a branch plant. In this section, we suggest that some industries may be "higher risk" than others and consider whether the investment climate within a country might be more conducive to one type of industry than another.

We have shown that a country with low redundancy payments is better able to attract MNE investment than a country with high severance rates. Thus, in Figure 2, the $B = 0$ and $R = 10$ iso-benefit contours intersect at point **A**, where $S \approx 30$ and $r \approx 3 \cdot 7$. Were the redundancy payments less, the host would not be prepared to offer as large a subsidy. But the MNE would not need as great a subsidy if layoffs were made less expensive. Given the relative slopes of the iso-benefit schedules, a reduction in r would reduce the subsidy necessary to induce the investment by more than the fall in the government's willingness to pay. Consequently, a country with low exit costs (in terms of its redundancy payments) is able to offer better investment incentives, whatever the riskiness of the enterprise. The "easy come, easy go" host is therefore more attractive to all potential investors.

We now consider the impact of increasing uncertainty on both MNE and host government. Let the initial level of risk be ρ and let the mandated level of redundancy payments be r. We can rewrite (13) in terms of S_R, the subsidy level necessary for the firm to achieve return R on its investment in the branch plant:

$$S_R = \frac{1-\delta\sigma(1-\rho)}{(1-\delta\sigma)}\left\{\frac{R}{1-\rho} - \frac{\left[a-\beta(w+\delta\rho r)\right]^2 - 4bF}{4b\left[1-\delta(1-\rho)\right]}\right\} \tag{17}$$

We can also rewrite (15) in terms of S_B, the subsidy that the host country would be prepared to offer while receiving a benefit level B from the investment:

$$S_B = \frac{1-\delta\sigma(1-\rho)}{(1-\delta\sigma)}\left\{\frac{\beta(w+\delta\rho r)\left[a-\beta(w+\delta\rho r)\right]}{2b\left[1-\delta(1-\rho)\right]} - \frac{B}{(1-\rho)}\right\} \tag{18}$$

If the industry risk were to rise, while the redundancy rules remained the same, then the subsidy necessary to keep the firm happy to invest would increase and government's willingness to pay would decline. We define $X \equiv S_B - S_R$ to be the excess subsidy, that is, the difference between the subsidy that maintains the government's benefits from the investment in the branch plant and the subsidy that is now necessary to yield the same expected returns to the MNE. Subtracting (18) from (17) yields:

$$X = \frac{1-\delta\sigma(1-\rho)}{1-\delta\sigma}\left\{\frac{a^2-\beta^2(w+\delta\rho r)^2-4bF}{4b\left[1-\delta(1-\rho)\right]}-\frac{B+R}{1-\rho}\right\} \tag{19}$$

Differentiating (19) shows that a country with lower redundancy payments is better able to afford the subsidies to attract the MNE:

$$\frac{\partial X}{\partial r} = -\frac{1-\delta\sigma(1-\rho)}{1-\delta\sigma}\left\{\frac{\beta^2\delta\rho(w+\delta\rho r)}{2b\left[1-\delta(1-\rho)\right]}\right\} < 0$$

which is a direct consequence of the slope of the iso-benefit schedule for the firm being steeper than that of the host country.

It is evident from Figure 4 that, for any level of severance payments, increasing risk reduces *X*. That is, a riskier venture will require greater subsidies. Consequently, the country with less burdensome labour legislation will be able to attract firms from high-risk industries that a country with high redundancy payments could not. Compare, for example, two countries where one has strong labour legislation mandating high redundancy payments (i.e., r 0) and the other imposes no such obligations on the exiting firm (i.e., $r = 0$). From Figure 4, it is clear that for a range of industry-specific risk, the investment would be worthwhile if redundancy payments are low (as $X \geq 0$) while high rates of *r* would deter entry of the MNE (because $X < 0$).

6. CONCLUSIONS

In this paper we focus on location decisions for an MNE with several possible locations for a plant to serve an integrated regional market. Applying a very simple model, we illustrate how various country and industry characteristics may affect the firm's entry decision as well as the activity level and profits should the firm decide to locate in a specific host country. Previous studies [e.g., Fumagalli (1998), Haaland and Wooton (1999), Haufler and Wooton (1999), and Markusen and Venables (1999)] have focussed on potential gains for the host country should the MNE choose to establish production in the country, and on policy competition between various potential host countries. Although these models consider policies to attract foreign direct investments, they do so in static and deterministic frameworks using very simple policy measures. We study various policy instruments in a dynamic setting, where there is an industry-specific risk of failure. To make the model as simple as possible, we do not include externalities or spillovers that would create potential benefits for the host country. In principle there is no reason why such effects could not be included in our model. In this final section we will try to summarise and draw some policy conclusions from our analysis.

The policy instruments we study are of two types: required redundancy payments; and initial subsidies to the MNE. The former may have to do with labour market flexibility in general in the country; the latter is directly aimed at attracting foreign direct investments. However, our analysis shows that both are important for the MNE's entry decision, and that there is a clear trade-off between labour-market inflexibility and the need for investment subsidies. Our analysis shows that redundancy payments not only affect a foreign firm's entry decision; should the firm choose to locate in the country, the activity and employment levels and the operating profit will also be negatively affected by strict redundancy rules. The more uncertain the future of the industry, the more severe will be the effects of such

labour market rigidities. Hence, although the redundancy rules are there as safeguards for the workers, their consequence may well be less investment and lower employment levels during operation.

Investment support may be important to attract foreign firms, but it will not affect the operations once a plant is established. Depending on the support policies and possible repayment schemes, the subsidy elements of such policies have been analysed. One conclusion is that the more uncertain the industry is, the lower will the subsidy element be, as long as there is some repayment requirement should the plant close down.

In evaluating possible policy mixes, a number of interesting conclusions appear. Firstly, high redundancy payments work in the same way as high wage rates, discouraging investments and employment. Secondly, it would be optimal to have negative redundancy payments, to ensure high activity levels while in operation and reduce the need for direct subsidies. Given non-negative redundancy payments, the more uncertain the industry is, the higher is the cost, in terms of required investment subsidies, for the host country of a given redundancy scheme.

These conclusions indicate that there may be systematic effects from the chosen policy mix to the type of industries one may attract. The more important uncertainties about the future are, the more severe will be the effects of labour market inflexibility. A natural question is then the type of industry a country would like to attract. Everything else equal, one would expect that lower uncertainty would be preferred, such that the expected lifetime of an investment is longer. However, everything else is not necessarily equal. Much depends on the type of markets and the type of uncertainty we are looking at. In many cases risky projects are also more profitable should they succeed. A new industry could, for example, be such that there is a high risk of failure at the outset, but success would bring more profitability (due to higher demand) than traditional industries.

Hence, the choices we are discussing could also be between policies to attract new and modern industries versus traditional industries, with which have lower profitability but also lower risk of failure. In such a setting, what we show is that labour-market flexibility is important to attract the modern firms. Such flexibility may, to some extent, offset high wages and may also reduce the subsidy required to attract the firms.

We have so far only touched on policy competition in this setting. There is, however, good reason to believe that countries will compete for the most attractive investments. As we have shown, in this competition both the labour-market institutions and the direct subsidy schemes will be important, with the industry uncertainty playing an important role. The outcome of the policy competition is the same across all industries, in that the "Easy Come, Easy Go" host is more attractive to all potential investors. Of particular interest is that the country with lower severance rates can attract the riskier investments that other countries deter through their labour laws. We investigate this further in Haaland and Wooton (2000).

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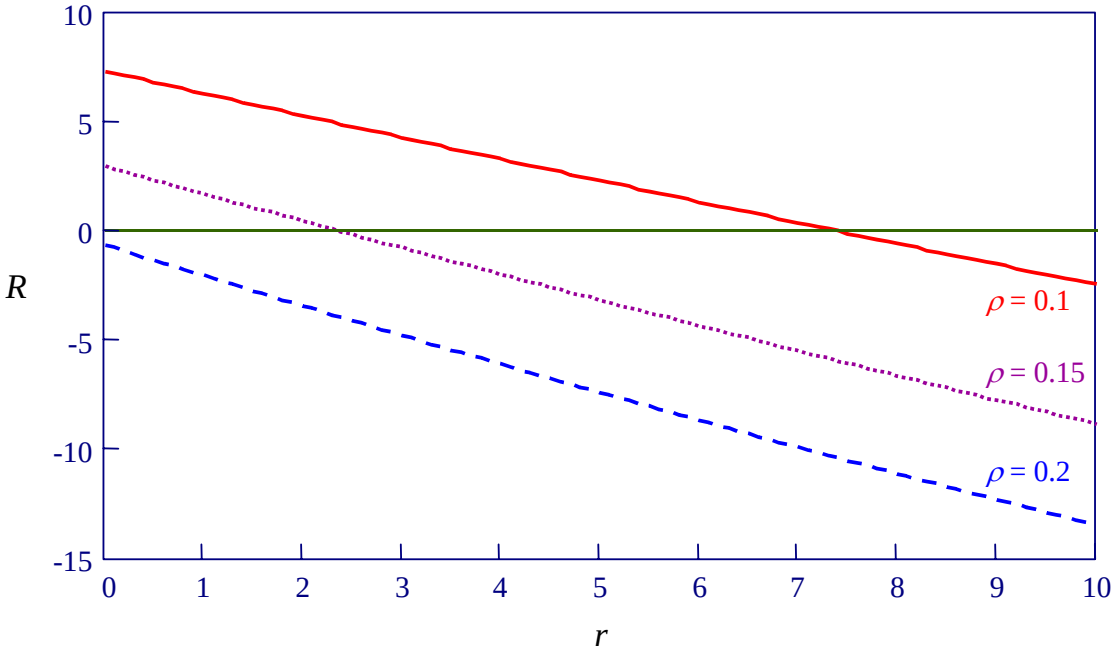

Figure 1. Level of redundancy payments and the benefits to the MNE of entry

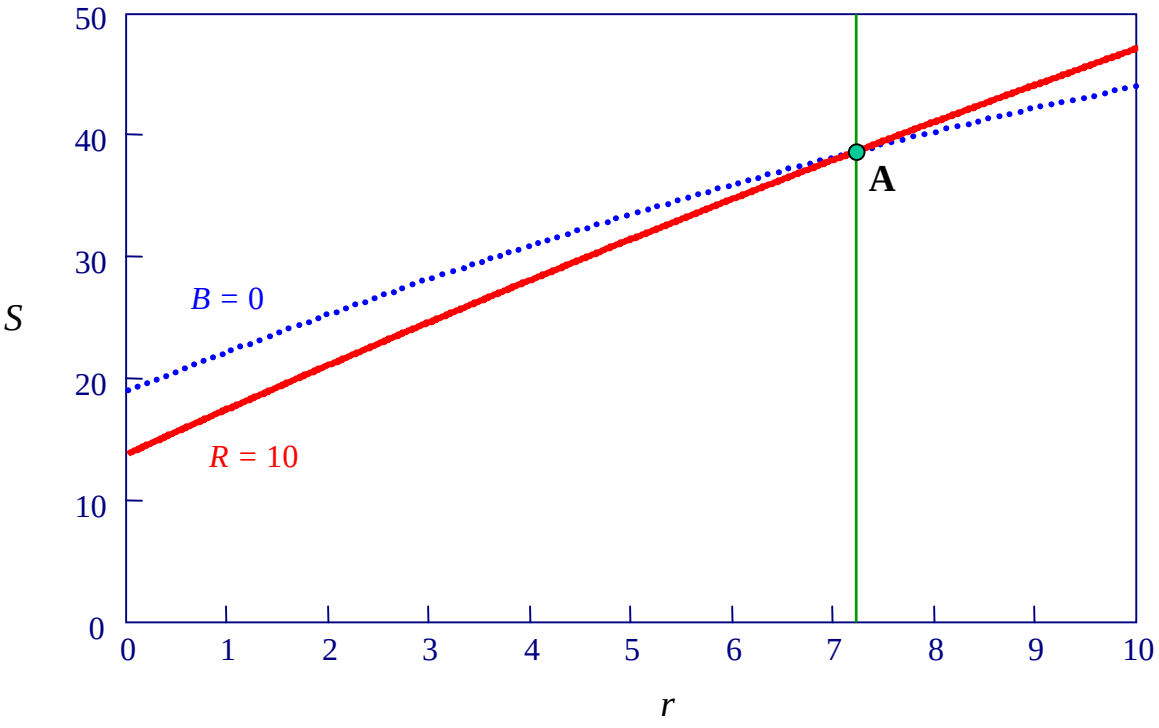

Figure 2. Iso-benefit loci for the host country and the MNE

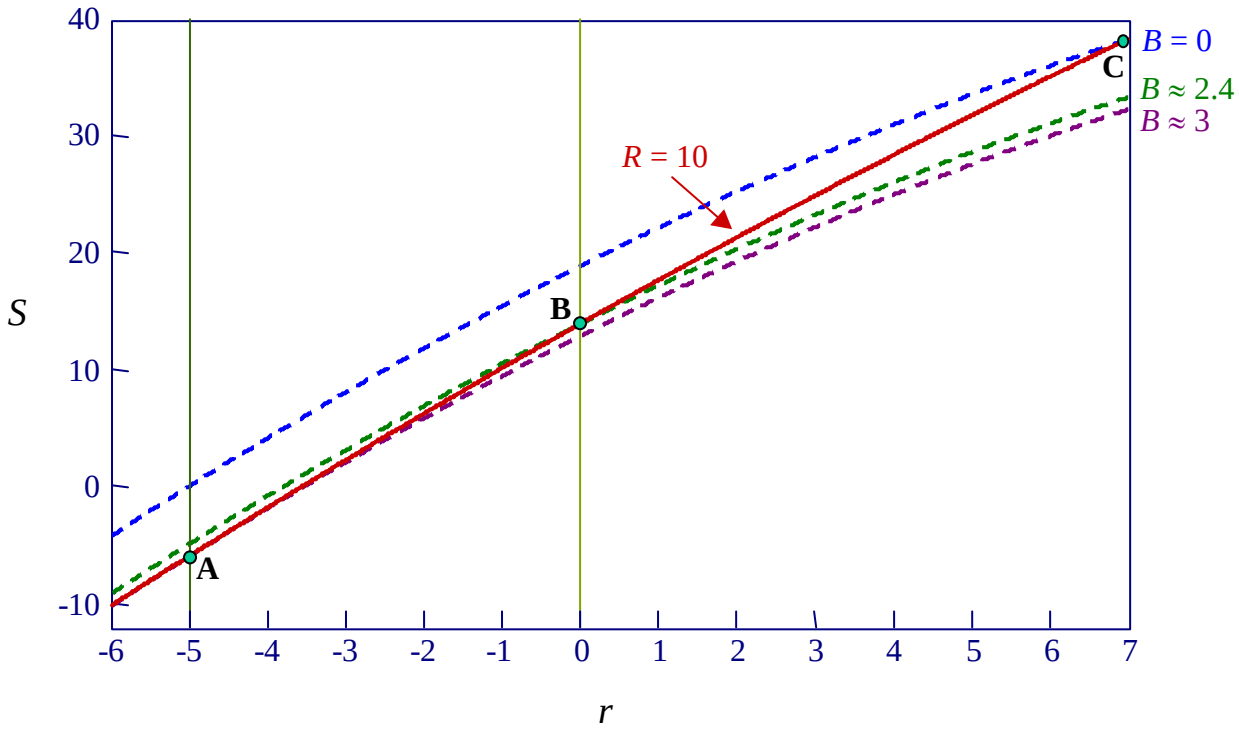

Figure 3. Benefits to host country of various investment-incentive schemes

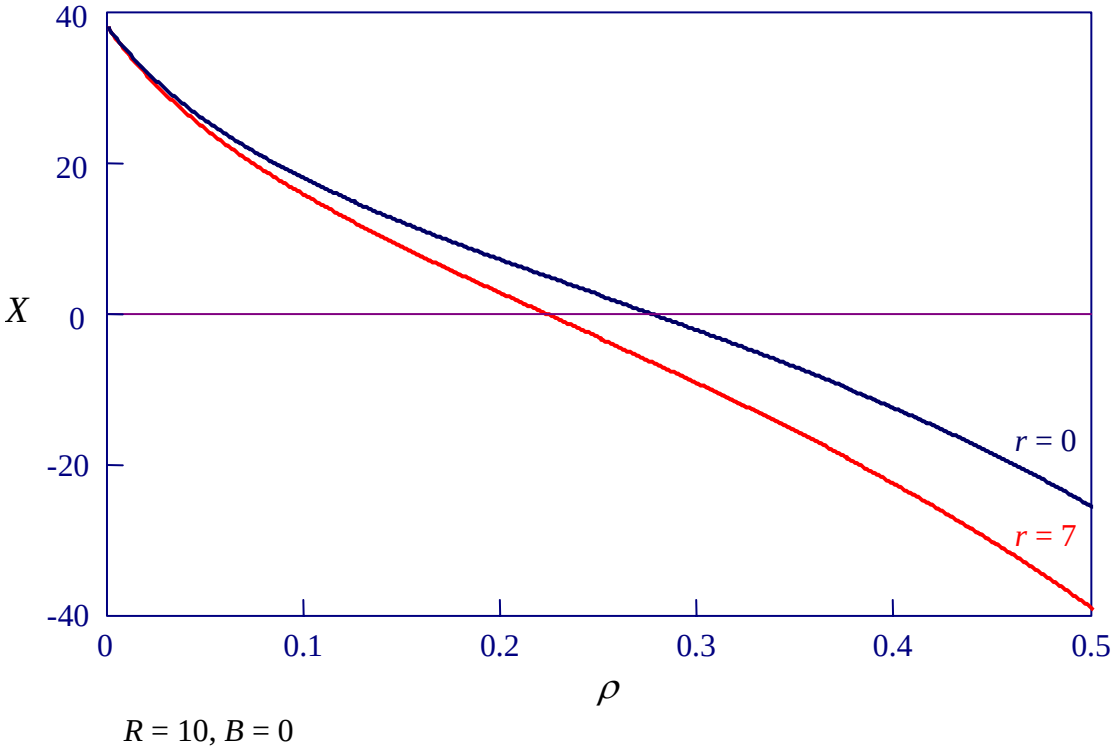

Figure 4. Relationship between risk of closure and the excess subsidy

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