



THE EFFECTIVENESS OF INCENTIVES DESIGNED TO INDUCE  
INDUSTRIAL DEVELOPMENT OF URBAN AREAS

by

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Submitted to the Alfred P. Sloan School of Management on May 8, 1981 in partial fulfillment of the requirements for the Degree of Master of Science in Management.

ABSTRACT

Manufacturing employment within older, American industrial centers has been on the decline for years. City and state governments representing these jurisdictions have responded to this phenomenon by developing locational incentive programs designed to attract industry. This paper explores this process from the perspectives of both the "redevelopment" agency and the firm.

The analytical framework provided by finance theory is applied to value locational incentives from the firm's perspective. A modelling exercise based upon this framework demonstrates that it is theoretically possible to build an incentive program sufficient to overcome the greater costs which a firm is likely to encounter in constructing and operating a central city facility vis-à-vis one located in a suburban community, although said incentive program would have to be of substantial value. This modelling exercise also indicates that certain combinations of incentive programs -- combinations which could be replicated in today's "real world" given the incentive offerings of contemporary development organizations -- appear to be powerful enough to attract industry to urban areas.

The issue of redevelopment agency recognition of the costs of providing locational incentives to industry is also discussed. Typically, a local development organization administers the incentive programs, however, the cost burden is not always borne at the local level since a substantial portion of incentive funding emanates from the Federal government. The relevance of game-theory to the redevelopment process is also discussed, primarily as involves: 1) the activities of rival redevelopment agencies; and 2) the interaction of firm and redevelopment agency.

A series of interviews with representatives of firms and redevelopment organizations which have recently been involved in this process was conducted by the author. Each firm in the interview sample had undertaken a central city manufacturing project with the assistance of locational incen-

tives. The interviews provide evidence as to those factors which played a significant role in these firms' location decisions; locational incentives were not among this set of significant factors. Interviews with representatives of redevelopment organizations provide an indication that their redevelopment strategy is best characterized as a defensive one, depending (to a great extent) upon the retention of local-firm expansions or relocations, expending little energy to market their incentive programs to extra-local firms. The implication is that a sizable fraction of the incentive dollar is expended on firms whose location decisions are not influenced by the receipt of subsidies. The author's recommendations for redevelopment agency policy revolve around the theme of marketing the incentive programs to extra-local firms in a more aggressive fashion than is presently the case.

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## Acknowledgement

My thanks to Professors Holland and Stoker for their suggestions and advice, as well as their generous contributions of time to this project.

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## CHAPTER 1

### Introduction

In the years since World War II, manufacturing employment has been on the decline within the older central cities. There is evidence of two general shifts in the locational preferences of manufacturing firms: intra-regionally to suburban rings outside the older central cities; and, inter-regionally from the Northeast and Midwest to the West and South. This decline in manufacturing employment within the older central cities has been attributed to a long list of contributing factors. Hubbell (14) lists the following factors: technological changes in transportation and communication which lessen the need for firms to remain in close proximity to markets and/or suppliers; new production technologies which tend to be land-intensive; plant/equipment located in the older core cities tends to be outmoded and hard to maintain; and, political/socioeconomic conditions are perceived to be more unfavorable in the central cities than in alternative locations. Hamer (11) adds the high cost and/or general unavailability of suitable central city sites vis-à-vis suburban alternatives to the list.

Two important direct effects of this exodus have been observed: high urban unemployment levels; and, weakened fiscal structures within the central city. On the fiscal side, some claim "that central cities are caught in a vicious spiral."<sup>1</sup> The point is, the original outmigration of industry

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<sup>1</sup>William H. Oakland, "Local Taxes and Intraurban Industrial Location: A Survey" in Metropolitan Financing and Growth Management Policies, (Madison, Wisc., The University of Wisconsin Press, 1978), p. 14.



from a central city translates into a reduction in central city tax revenues. If the central city responds by increasing the tax burden on remaining firms, then the result may be an additional outmigration.

In response to this state of affairs, a variety of "reindustrialization" programs have been developed and implemented by both cities and states in an attempt to attract fresh industrial projects to their jurisdictions. Hubbell claims that the re-establishment of a central city industrial base would have a "multiplier effect upon jobs, reducing welfare and unemployment costs, and strengthening the tax base of the local community at the same time."<sup>2</sup> There are numerous references within the literature to the "agglomeration" economies (those benefits resulting from the geographic concentration of industry) which would result from the re-establishment of a central city industrial base, which in turn would serve to induce further redevelopment of the central city. It is also claimed that as previously unemployed urbanites find new work, income related social costs will fall (see Hubbell (14)).

It is with such expectations for their effectiveness that city and state governments have developed locational incentive programs for industry. Financial incentives have been at the focus of most of these programs to date, although certain non-financial inducements -- such as development of central city industrial parks and establishment of training programs for

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<sup>2</sup>L. Kenneth Hubbell, Fiscal Crisis in American Cities: The Federal Response, (Cambridge, Mass., Ballinger Publishing Company, 1979), p. 293.

local labor -- have recently been adopted with greater frequency by industrial development organizations.

### The Issues

Incentive programs of one type or another have been adopted by government bodies at all levels -- i.e., Federal, state and local -- and are employed by such bodies throughout the U.S. (i.e. they are not the exclusive domain of those agencies interested in "reindustrialization"). Given the exodus from both the central city and the older industrial Northeast and Midwest, the key issue is whether the availability of industrial development incentives will serve to stimulate reindustrialization activity within these areas. Of interest, therefore, are the weights attached to these incentive instruments vis-à-vis those attached to other locational factors in the location decision processes of industrial firms.

To facilitate discussion of the relative importance of factors in the location decision process, this paper will apply a simple classification scheme which defines three general levels of factor importance, as follows:

- Primary factors are defined to be those which a firm would consider in its initial screening of candidate regions or localities. A candidate which did not meet this minimum standard would not be evaluated further;

- Secondary factors are defined to be those employed to choose between specific sites equal in all primary respects;

- Trivial factors are defined to have no impact on site selection.

Of late, a handful of firms whose primary operations and/or headquarters are located within the suburban industrial rings encircling Boston undertook to build plants within the older industrial central city zones of the city. Each was the recipient of locational incentives. This apparent beginning of a turnaround in the "flight to the suburbs" motivated this investigation into the effectiveness of these incentives; an investigation with a focus on the following:

- the potential dollar value of these incentives to a typical firm contemplating an investment in manufacturing facilities;
- those specific factors -- quantitative and non-quantitative -- which actually entered into the location decision processes of these particular suburban-based firms as well as the level of factor importance at which incentive opportunities entered into these processes;
- the actual development goals and activities of the local development organizations involved in this process;
- the financial issues which are relevant from the development organization's viewpoint;
- those specific factors which enter into the location decision processes of firms with existing central city manufacturing facilities in their decisions to locate additional (new or expanded) facilities there;
- the recent experience of other cities and states which have implemented industrial redevelopment programs.

## Thesis Purpose

The literature on this topic is quite substantial, yet, the phenomenon appears to be so complex that modelling exercises have experienced limited success in explaining the location decision process. Virtually no studies -- either through modelling or survey techniques -- have found the traditional incentive offerings to have a significant impact on the location decision, yet the jurisdictions attempting to induce "reindustrialization" lean heavily on these tools.

The complexity of this topic would indicate that the most valuable contribution can be made by investigating the above issues from a variety of perspectives -- theoretical and empirical, quantitative and non-quantitative, firm's and development organization's. This paper will apply the analytical framework provided by finance theory to value the most popular incentives from the firm's viewpoint (chapter 2) and to assist in a general analysis of the financial issues facing the various government bodies which offer these incentives (chapter 3). From an empirical perspective, discussion will focus on a number of observations drawn from direct interviews conducted by this author with both firm and development entity personnel who participate in this process (chapter 4). This empirical work serves to address the issues raised above regarding the actual operation of this process from the diverse perspectives of urban firm, suburban firm and development agency. This evidence has been drawn from a number of distinct communities. Evidence drawn from the literature will also enter the discussion at this point. It is hoped that some of the results -- pri-

marily those drawn from this author's direct contact with persons making these decisions -- will shed some light on the operation of the location decision process and the factors entering into it. This approach serves as an alternative (or perhaps more properly as a forerunner) to that of the modelling through hypothesized explanatory factors -- on which much effort has been expended with little progress to date. A discussion of policy implications will round out this undertaking (chapter 5). As background for the discussion to follow, the remainder of this chapter will be devoted to a description of: the most frequently encountered incentives; and, the specific offerings available through the jurisdictions studied by this author -- Boston, Cleveland, State of Michigan.

### The Incentives

#### (a) Financial

The standard financial incentives which have been developed to attract industry are: concessionary (below market interest rate) loans; loan guarantees; property-tax holidays; and, industrial revenue bonds (IRB's). The incentives are provided by a wide variety of government bodies, and in some cases incentive funds may flow through a series of development organizations prior to reaching the subsidized firm (e.g., from Federal to local). Furthermore, some of these instruments are not offered solely by redevelopment organizations. For example, tax concessions may be offered by a suburb in its efforts to attract industry. The unique feature offered by redevelopment organizations is that they provide access to a broad selec-

tion of incentive instruments, including those which are unique to redevelopment efforts as well as those available generally. Finally, it is not unusual for the issuing bodies to place limitations on the uses to which each instrument may be put.

A brief description of each follows:

- Loan Guarantees: Loan guarantees are provided by a development entity -- usually a Federal government body such as the Small Business Administration (SBA) or the Economic Development Administration (EDA) of the Department of Commerce -- to a private lender who funds some portion (typically not to exceed 90%) of project costs. Typically, the local development company (LDC) and the subsidized firm then advance the remainder of the capital required to fund the project. (Interestingly enough, the LDC's are usually capitalized with grants from a federal body -- EDA for example). The Federal entity and the private lender have the senior position with respect to the debt and the LDC a subordinate position. The SBA (502) program limits the size of both firm and loan which will be serviced by it. Funds involved in an SBA (502) agreement can be applied to buy land, machinery or equipment and to construct, modernize or convert plants. They may have terms of up to 25 years. The funds cannot be used for working capital or debt repayment. The private lender can charge no more than 1/2% over prime. The SBA (7a) program can be applied to finance working capital for a term of up to seven years; fixed assets up to twenty years. The EDA (Business Development Loan Program Title II) provides guarantees on loans which exceed the SBA maximum and cover either capital improvements (up

to 25 years) or working capital (up to 7 years). In sum, therefore, the private lending institution is essentially offered corporate debt which is as safe as a Treasury Bill since most of the guarantees emanate from a Federal agency, even if formally passing through a local "intermediary", (i.e., it is effectively riskless). In effect, the government has taken on the default risk of the debt. Finally, note that the SBA programs are not restricted to redevelopment efforts. The SBA restrictions involve firm size for the most part. In contrast, the EDA programs are targeted to assist areas of "economic distress".

- Concessionary Loans: The local development agency may orchestrate the placement of direct loans from Federal bodies to private firms or may use funds provided to it through a Federal grant to make a direct loan on its own. An Economic Development Grant (EDA Title IX) provides funds to a state or city entity to be dispersed to other public or private entities in the form of concessionary loans (or in some cases loan guarantees). Other Federally-based programs (the same EDA and SBA programs discussed in the loan guarantee section) typically require that a private lender, the LDC and the subsidized firm advance approximately 70% of the project funding, with the remainder to come from the Federal entity at a below market rate which varies over time as market conditions change. The direct investment by the Federal agencies -- especially the EDA -- is restricted to firms whose location in a "distressed" area will provide employment and other economic benefits. This type of loan effectively provides the recipient firm with an interest liability on its debt less than that which a "market"

loan would place on the firm. Another Federal body -- the U.S. Department of Housing and Urban Development -- offers Urban Development Action Grants (UDAG's) to local development organizations with the restriction that the grants be employed for projects which will create jobs and improve the tax base of "distressed" cities. There must be a definite commitment on the part of the private sector to fund the project since the UDAG money cannot account for more than 25% of total project cost. These funds may be used for: low interest business loans for industrial facilities; acquisition of land; and infrastructure improvements (e.g., water or sewer lines and access roads). Here again, availability of SBA funds is not limited to redevelopment activities, whereas the EDA and UDAG funds are designed to provide assistance to "economically distressed" communities.

- Industrial Revenue Bonds (IRB's): Although a local entity issues these tax-exempt instruments, in general only the recipient firm is obligated to make principal and interest repayments. The uses to which the IRB funds may be put are typically limited in some way. For example, a Boston redevelopment authority reserves the use of IRB's "for construction, acquisition, equipping or improvement"<sup>3</sup> of facilities. They cannot be issued for refinancing or for working capital. Effectively, these instruments provide a firm with an interest liability on its debt less than that which it faces in the conventional debt markets. In general, the various financial

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<sup>3</sup>Economic Development and Industrial Corporation of Boston, Financial Assistance Programs, (Boston, Mass., April, 1980), p. 16.



agreements may be structured so as to place any interest and/or depreciation deductions with either the IRB-issuing body or the recipient firm. Very heavily used in the 1960's, the IRS (in 1968) placed severe restrictions on the dollar amount of tax-exempt issues which could be floated by a single community for one firm within a specific time-frame. At present, the restrictions are as follows: if the IRB issue is over \$1 million (up to a limit of \$10 million), the total capital expenditures by the recipient firm within the community of issue cannot exceed \$10 million over the time span covering the three years before and three years after the issue date; for issues of less than \$1 million, no restrictions of this sort apply; issues for pollution control facilities are unlimited; for projects involving a UDAG, the capital expenditure ceiling is raised to \$20 million. Note that the issue of IRB's is not restricted to development activities, although a common requirement is that there be evidence showing that the subsidized project will serve the "public purpose". Public purpose "may include job creation and/or retention, tax revenue generation, or area revitalization among other possibilities."<sup>4</sup>

- Property tax holidays: Many development entities, through a variety of mechanisms, have the ability to significantly reduce the property tax burden on a firm for some period of time. The programs range from ad hoc deals on a firm by firm basis to very well-defined programs enacted into law. For example, one of the more well-defined methods involves the

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<sup>4</sup>Economic Development and Industrial Corporation of Boston, The Boston Industrial Revenue Bond Program, (Boston, Mass.), p. 9.

freezing of the assessed value of a piece of obsolete property upon which improvements are to be made. One variation on this theme for new or replacement property is to simply cut the millage rate by some substantial percentage. In cases in which local development agencies purchase, improve and then lease property to firms, an in lieu of property tax payment may be negotiated. Similarly, in cases in which IRB's are used, an in lieu of property tax payment may be negotiated between the issuing body and the firm which effectively is leasing the IRB-funded facilities from the issuer. Clearly, property tax concessions are not an exclusive instrument of communities involved in a redevelopment effort.

(b) Non-Financial Incentives

The development organizations studied by this author complemented their financial incentive offerings with a variety of non-financial incentive programs, including: the acquisition, clearance and improvement of central city land by the development agency which then either leased or sold the land to a firm on favorable terms (the key advantage in this instance is that the development organization is able to exercise its right of eminent domain to assemble a parcel of land sufficient to accommodate a modern, industrial undertaking); the purchase and renovation, by a development organization, of obsolete central city structures so as to provide a supply of modern, competitively-priced, central city manufacturing space; training programs operated by a development organization providing instruction to local labor in skills commensurate with the needs of central city firms; and, various real estate and research services. In the

case of training programs, a Federal grant may be utilized for funding. Typically, firms are able to gain access to this trained labor pool by promising to provide the program administrators with advance notice with respect to new openings. In the case of land assembly/improvement and building renovation programs, the local development organization may obtain funding by issuing general obligation bonds or by applying for Federal grants. The firms which ultimately occupy these properties typically are extended a lease with favorable terms, however, in the case of improved land the development organization may sell the land to a firm outright.

#### The Development Organizations

Interviews with development agency personnel representing three separate jurisdictions -- Boston, Cleveland and the State of Michigan -- were conducted by this author. Additionally, various publications containing information pertaining to the activities of these development organizations were collected. Interestingly, each development organization seems to be at a different stage in the development of its "reindustrialization" approach, with that of the State of Michigan being the oldest and most polished, Boston's next and Cleveland's last.

The office of Economic Development of Michigan's Department of Commerce has been in existence for thirty years. Its purpose is to encourage industrial growth. The key incentive program offered by the state is a tax program adopted in 1974 specifically designed to induce the renovation/expansion of older plant and the construction of new plant in Michigan.

Specifically, the program permits a 12 year freeze on the property tax assessed against an obsolete, (but-to-be-improved) facility. For new or replacement facilities, a 12 year tax break equivalent to 50% of the millage rate is available. The tax benefits are formally granted by the local government desiring to use such measures to attract industry. Note that this tax benefit is not just available to new firms entering the state for the first time, but is available to all firms which are expanding, rehabilitating or relocating plant within the state. Also available to firms locating within the state is a broad assortment of Federally-based programs (SBA (502), SBA (7a), EDA Title II and IX; and HUD UDAG funds). IRB's are also available and may be issued by the LDC's. There also exists a Michigan entity which will make direct loans and loan guarantees to industrial firms. In the area of non-financial offerings, the Office of Economic Development provides very detailed information on industrial sites available throughout the state as well as general information regarding the economic characteristics of the state (e.g. labor, natural resources, energy, etc.). Very detailed publications are distributed to firms outlining the locational incentives available within the state. Furthermore, a salesforce of "industrial representatives" actively markets specific facilities (through the use of individualized presentations) to firms which the representatives feel might find the facilities to be of particular interest. The site information presented to these firms is extensive and describes: geographic location of facility, land area, building, utilities, transportation, local educational facilities, municipal services, local financial institutions and so on.

Boston is not short on development entities. The key public agencies are the Economic Development and Industrial Corporation (EDIC) and the Boston Redevelopment Authority. Private development organizations also exist, representing specific communities. Financial incentive programs include: SBA (502), SBA (7a); EDA programs; IRB's; UDAG's and some funds through a Boston LDC established by the EDIC. The key in the non-financial area is the recent development of three industrial parks: a 102-acre ex-Navy facility (the closing of which in 1974 caused the loss of 6,000 permanent blue-collar jobs); 7.5 acres of open land which has been improved and zoned to accommodate light industry; a 38 acre development in five parcels which became available when plans for a highway extension were cancelled. Many small firms (less than 100 employees) and a few larger firms have located within these parks to date. The EDIC also operates a job training center and offers a real estate search service. The industrial parks were financed with EDA and UDAG grants. The job training center was similarly financed.

The following is an example of the flexibility and complexity with which these incentives can be combined. This example involves a major undertaking within Boston, the financial package for which was finalized in 1980. The plans are for a 166,000 square foot facility on 7.5 acres of land to be located within one of the city's industrial parks. A variety of financial instruments were applied as follows:

- \$175,000 in general obligation bonds issued by EDIC/City of Boston for site acquisition;

- \$1,585,000 of UDAG funds for site acquisition and preparation, issued to the EDIC;

- \$1,500,000 of EDA Title IX funds for building construction issued to a private, community-based economic development organization through the EDIC;

- \$4,750,000 of IRB funds purchased by a commercial bank for building construction, repayment of which will be the responsibility of the subsidized firm and the community-based organization.

A 25 year lease-purchase agreement was also negotiated which includes: rental payments to each of the development entities; an in lieu of property tax payment (since the city owns the property) which reflects an implicit rate of less than the regular property tax rate; a payback schedule for the general obligation funding with interest payments deferred to years 11-25; a purchase option; and, a goal for the employment of Boston residents.

Cleveland also has its share of development entities: one at the city level; another at the county level; an entity similar to a Chamber of Commerce which is involved in development work; and, community-based development groups. UDAG, EDA, tax-concessions and IRB funds are available. The primary financial tools used by Cleveland development groups are UDAG's and IRB's (which are used in practically every instance). In the area of non-financial activity, the city has recently undertaken to develop an industrial park. (Plans for its first tenant fell through, however, when

this firm found an existing facility elsewhere within the city which met its needs precisely.)

Having summarized the issues involved in the study of this topic, the various "tools of the trade", the participants, and having provided an indication -- through use of a "real world" example -- of how all of this may come together for one project, we turn in the next chapter to the evaluation of incentives by the firm.

## CHAPTER 2

### Firm Evaluation of Incentives

The purpose of this chapter is to apply some of the tools of modern finance theory to evaluate -- from the perspective of the firm -- the potential financial impact of the various incentive instruments outlined in the preceding chapter. To do so, a model for valuation of projects which utilize conventional financial instruments (base-case) will be established, followed by a discussion of the net impact on this base-case of each incentive instrument.

### The Base-Case

In ascertaining the relative value of alternative locations -- whether in an urban/suburban or an inter-regional comparison -- a base-case (conventional financing) analysis of each site would be the likely first step in the evaluation process. As its analytical framework, this chapter will apply the adjusted-present-value (APV) technique of project valuation. The APV technique estimates a project's value assuming all equity financing, then adjusts this figure for side-effects attributable to changes in the financing assumptions (e.g., introduction of debt). The technique is based upon the calculation of the present value of the various cash flows which transpire in the course of normal operations. The technique explicitly accounts for inflation (i.e. discounting real and nominal flows appropriately) and the different levels of risk which distinct cash flows may represent. For purposes of this chapter, it is assumed that the base-case project will



include some debt financing. The literature does contain some similar analysis (Hellman, Wassall and Falk (12) and Hubbell (14)), based upon different analytical frameworks (note: to my knowledge, none have applied APV to this area). These studies typically: do not distinguish between real and nominal flows; discount all flows by a single rate usually equal to the firm's cost of debt; and, assume that projects are 100% debt financed. The APV technique provides for a more realistic modelling of each of these areas.

The model for a conventionally financed project is as follows:

$$V = -C_0 + \sum_{j=1}^N \frac{(R_j - OP_j)(1-T)}{(1+r_a)^j} + \sum_{j=1}^N \frac{T \cdot DEP_j}{(1+r_a)^j} + \sum_{j=1}^N \frac{T \cdot IM_j}{(1+R_i)^j} + L_0 - \sum_{j=1}^N \frac{IM_j + P_j}{(1+R_i)^j}$$

where:

- V = project present value;
- R<sub>j</sub> = revenue in period j (real terms);
- OP<sub>j</sub> = operating flows in period j (real terms) exclusive of depreciation;
- DEP<sub>j</sub> = depreciation flows in period j (real terms);
- IM<sub>j</sub> = loan interest payment on debt sold through conventional market channels in period j (nominal terms);
- P<sub>j</sub> = loan principal repayment in period j (nominal terms);
- C<sub>0</sub> = total project cost in period 0;
- L<sub>0</sub> = loan receipt in period 0;
- T = tax rate (combined state and Federal);

- $r_a$  = the project's real opportunity cost of capital which is a function of the project's business risks;
- $R_i$  = the nominal rate of interest on debt sold through conventional market channels;
- $N$  = project life.

In effect, the first three terms (from the left) are the value of the project if all equity financed. The real net annual operating flows (the second term) are discounted by the real opportunity cost of capital for this project. The third term is the value of real depreciation tax shields and are also discounted at the project's real opportunity cost of capital (note: since the depreciation flows are nominal by definition, they would first have to be discounted by the inflation rate to set them in real terms). There is some question as to which discount rate is appropriate to apply to these depreciable flows, however, the use of  $r_a$  reflects the assumption that the market accounts for these flows in its valuation of the project. The fourth term is the value of the interest tax shields discounted at the market interest rate on this debt since the "common assumption is that the risk of the tax shields is the same as that of the interest payments generating them."<sup>1</sup> The last two terms are added for completeness. If the debt is priced fairly -- as is assumed here -- these two terms will be equivalent and thus cancel. Further refinement could be made to the model (such as

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<sup>1</sup>Richard Brealey and Stewart Myers, Principles of Corporate Finance, (McGraw-Hill, Inc. 1981), p. 374.

Investment Tax Credits (ITC's)), however, it is assumed that such items would be available irrespective of locational choice.

By applying the above formula, a firm would be able to calculate the relative worth of a variety of locations and (excluding the availability of incentives for the moment) select an optimal site (optimal in the sense that the firm is attempting to maximize its value as defined by the above assortment of quantifiable factors). The implicit assumption underlying the use of financial incentives by development organizations is that the urban/suburban location comparison will conclude unfavorably for the urban site. Hamer (10) has studied this topic in detail and his estimates of operating cost differentials form the basis for a hypothetical application of this model at the end of this chapter.

### Valuing Incentive Instruments

A discussion of the impact of each of the four major types of incentive instruments described in the previous chapter is presented below:

#### (a) Concessionary Loans

Concessionary loans act to reduce the interest liability which a firm must assume relative to an issue of debt sold in a standard market transaction. To calculate the value of a concessionary loan -- relative to the base-case -- requires only a few changes in the above formulation. The last term in the base-case formula will change since the annual interest liability with a concessionary loan ( $IC_j$ ) will be less than the interest liability from the base-case ( $IM_j$ ). Hence, the firm will now be in a position

where  $Lo > \sum_{j=1}^N \frac{IC_j + P_j}{(1 + Ri)^j}$ . Therefore these last two terms in the formula will not cancel as they did in the base-case and a positive increment to value will result. That is, the present value of the interest and principal payments over the term of the loan, discounted at the interest rate the firm would pay on the base-case loan<sup>2</sup> (i.e. debt with no subsidy), will be less than the cash received from the loan at the start of the project. The advantage of the APV technique is that it isolates the increment to total project value attributable to the interest tax shields. That is, with the lesser interest payments (i.e.  $IM_j > IC_j$ ), the value of the interest tax shield is reduced. Although in net the subsidy is still positive, a certain amount of the interest tax shields -- which have a positive impact on the cash flow of the firm -- have been lost relative to the base-case, hence, the subsidy is worth somewhat less than that represented by the amount of the interest rate spread between the market and concessionary rates. The formula now looks as follows:

$$V = -Co + \sum_{j=1}^N \frac{(R_j - OP_j)(1-T)}{(1+r_a)^j} + \sum_{j=1}^N \frac{T \cdot DEP_j}{(1+r_a)^j} + \sum_{j=1}^N \frac{T \cdot IC_j}{(1+Ri)^j} + Lo - \sum_{j=1}^N \frac{IC_j + P_j}{(1+Ri)^j}$$

With this adjustment to the base-case formulation, the value of a subsidized urban project can be ascertained and compared with a conventionally financed suburban case. Working backwards, the concessionary rate of interest required to make the firm indifferent between locations can be

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<sup>2</sup>Brealey and Myers, p. 402.

"forced" from the difference in the project values calculated for unsubsidized urban and suburban sites.

(b) Loan Guarantees

For purposes of this discussion it will be assumed that the loan guarantee emanates from a Federal government body; hence, the further assumption will be made that the private lending institution faces no risk of default. Given this, the firm should be able to negotiate a loan from the private lender at a rate in the vicinity of that paid on riskless government debt (i.e. Treasury Bills). Hence, in effect, the firm which is provided with a Federal government guarantee is able to sell its debt such that its interest liability is less than that which the firm would assume through a conventional (i.e. unsubsidized) debt issue. Interestingly enough, this state of affairs -- from the firm's viewpoint -- looks quite like that of a concessionary loan. That is, the annual interest liability of the guaranteed debt ( $IG_j$ ) is less than that of the base-case ( $IM_j$ ). Therefore, in a parallel result to the concessionary loan case,  $Lo > \sum_{j=0}^N \frac{IG_j + P_j}{(1 + Ri)^j}$ . The value of the guarantee, therefore, is that attributable to this resultant interest rate spread (between guaranteed and market rates), although once again, the value of lost interest tax shields vis-à-vis the base-case must be accounted for. The model now looks as follows:

$$V = -Co + \sum_{j=1}^N \frac{(R_j - OP_j)(1-T)}{(1+r_a)^j} + \sum_{j=1}^N \frac{T \cdot DEP_j}{(1+r_a)^j} + \sum_{j=1}^N \frac{T \cdot IG_j}{(1+Ri)^j} + Lo - \sum_{j=1}^N \frac{IG_j + P_j}{(1+Ri)^j}$$

An interesting aspect of these guarantees concerns the interest rate which the subsidized firm is able to negotiate once the guarantee has been

obtained. Theoretically, this rate should be the risk free rate, though frequently it exceeds that rate (e.g. as discussed above, the SBA allows the private lender to charge up to 1/2% more than prime in transactions of this sort). Furthermore, the subsidized firms may be charged a percentage point or two by the issuing government agency for this guarantee provision. From the firm's perspective, therefore, if both concessionary loans and loan guarantees are available, a comparison of the effective interest rates represented by each instrument (including any fees in the case of a guarantee) can be made and a selection made accordingly. Clearly, the prime consideration is whether a subsidy would be available large enough to make the firm indifferent between the urban and suburban sites.

(c) Property Tax Holidays

Implicit within the  $OP_j$  term of the base-case formulation is the real value of property taxes assessed in each year of the project's life. In this instance a cut in property taxes will not result in an increase in project value equivalent to the full amount of the tax subsidy. This is due to the fact that these property taxes are typically deductible in the computation of taxable income at the state and federal level. Hence, as  $OP_j$  drops by the value of the cut in property taxes relative to that of the base-case (call this positive quantity  $\Delta PT_j$ ), the value of the project will increase by  $\sum_{j=0}^m \frac{\Delta PT_j (1-T)}{(1+r_a)^j}$  where  $m$  is the number of years over which the tax holiday is in effect. This sum can simply be added to the urban base-case result for comparison with a suburban case and a selection made accordingly.

(d) Industrial Revenue Bonds

This case is actually the most interesting of all since the structure of project financing may be arranged in a couple of alternative fashions -- usually at the option of the subsidized firm. Typically, the funds assembled through issue of an IRB flow to the local government which formally acquires or constructs the facility, which is then leased to the user firm. The flexibility derives from the structuring of this lease agreement. IRS regulations also have an impact here. Namely, if there is some indication that the lease is effectively a debt instrument (such an indication would be a lease clause which permits the lessee to purchase the facility for some trivial amount at the end of the lease) then the lessee must financially treat the facility as its property (i.e. lessee takes depreciation, not lessor). If there is no such indication, the lessor takes the depreciation and the lessee deducts the lease payments from its taxes. (See Stober and Falk (49) for a detailed analysis of this topic.) From this, the key items for consideration by the lessee are as follows:

- the percentage of project cost financed through the IRB (i.e. this percentage may be more than, equal to, or less than that were the project financed through conventional debt channels);
- the potential loss of interest and depreciation tax shields;
- the value of lease payment tax shields;
- the availability of property tax concessions.

One alternative lease structure (which is that typically adopted in Boston arrangements of this sort) involves the effective transfer of title

to the lessee, who is directly accountable for repayment of the IRB (making interest and principal repayments directly to the private lender). Furthermore, this structure enables the lessee to take advantage of the depreciation and interest tax shields. Alteration of the base-case formulation is minimal in this case since the only adjustment involves the substitution of the reduced annual interest payment liability on the IRB (call it  $IB_j$ ) for the base-case market liability ( $IM_j$ ). This case is therefore exactly equivalent in formulation to the concessionary loan case (given normal market conditions in which tax-exempt rates are less than corporate debt rates) since the firm experiences a reduction in the rate of interest which it must pay to the holders of its debt relative to conventional debt financing. Furthermore, there is no loss of depreciation or interest tax shields.

In situations in which the development organization retains title to the facility, the lessee makes regular lease payments which typically cover the costs of the bond issue exactly, thereby passing the savings attributable to tax-exemption on to the lessee. Furthermore, the lessee may not be required to make in lieu of tax payments for its use of the local government's property. The lease payments are tax deductible, thereby creating a tax shield. Such a lease structure does not permit the lessee to use the depreciation tax shields. Interest tax shields will also be lost relative to the base-case with debt financing. The adjustments to the base-case formulation which this lease structure requires are somewhat involved. Since the IRB displaces base-case debt, interest tax shields



are lost. (Note: Brealey and Myers introduce the concept of the "equivalent loan" to value the cash flows resulting from financial leases and point out that in the APV framework the value of the lease is reduced by the loss of interest tax shields which the debt would provide.<sup>3)</sup> Part of the depreciation shield will similarly evaporate since the lessor will have claim to it, (note, some will remain with the lessee since it is assumed that the firm has taken some equity position in the project, as is reasonable). Two new terms appear:  $-\sum_{j=1}^N \frac{LP_j}{(1+R_i)^j} + \sum_{j=1}^N \frac{T \cdot LP_j}{(1+R_i)^j}$  (where  $LP_j$  is the lease payment). The first term represents the present value of the stream of lease payments. The second term represents the present value of the tax shields so generated. If a property tax exemption is also available,  $OP_j$  will fall relative to the base-case. For purposes of this paper, discussion of the "equivalent loan" concept has been limited since this specific lease structure appears to have less appeal to firms utilizing IRB's due to the absolute loss of the depreciation and interest tax shields. That is, from information gathered through interviews conducted by this author, the first alternative lease structure -- i.e. transfer of deductible flows to lessee -- has proven more attractive to firms making this decision, as appears reasonable due to the tax shield effects. One interviewee -- whose firm was still involved in negotiating an incentive package at the time of interview -- noted that it made no sense to waste the tax shields through transfer to a local development organization which would be unable to apply them.

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<sup>3</sup>Brealey and Myers, p. 534.

The IRS restrictions on the use of tax-exempt bond issues to finance private sector projects have substantially reduced the viability of IRB's as financial incentive vehicles. Hellman et al. (12) provide an indication of the extent to which these restrictions (described in chapter 1) have impacted the IRB market. For example, their estimate of the volume of IRB financing in 1968 is \$1.6 billion and of the size of the average IRB issue is \$8.52 million, while the 1974 estimates (the IRS restrictions were imposed in the late 1960's) for these parameters are \$.493 billion and \$1.8 million respectively (all in nominal terms). One can infer that firms undertaking either one large project or a series of smaller projects in rapid succession would be the most likely to find that their capital needs exceeded the IRS ceilings, and the attractiveness of IRB financing reduced accordingly.

Finally, IRB financing is not an incentive instrument reserved for the exclusive use of redevelopment organizations. The "real world" example presented at the end of this chapter demonstrates that suburban communities may compete with central cities for industry by providing IRB incentives of their own.

(e) Non-Financial Incentives

The base-case APV formulation developed above can also be applied to value non-financial incentives. Specifically, the provision of workforce training by a development agency would reduce a firm's OPj term, primarily through lessened training expense (although recruiting costs might be reduced as well if general searches of the labor force for quali-

fied employees were made unnecessary). As discussed in the previous chapter, the firm typically incurs no direct costs for utilizing these training services.

In the case of development agency acquisition and improvement of land, the "Co" term would be reduced since firm expenditures on these items at the time of project start-up (period O) would no longer be required. The typical arrangement is for the development agency to receive Federal government grants to cover the costs of these projects. The development agency may then either sell the property to the firm for an amount sufficient to cover some fraction of its costs (e.g. acquisition costs only) or may lease the property to the firm at an attractive rate which reflects an implicit in lieu of property tax payment. The key point is that the firm does not reimburse the development agency for the total costs of land acquisition/improvement.

#### A Hypothetical Application

In an effort to ascertain the potential financial impact of these incentives, this section will explore the relative strengths of the various incentive programs through application of the analytical framework developed above to hypothetical urban and suburban projects. Parameter estimates for the urban and suburban sites were made through reference to both Hamer's study of comparative costs of urban and suburban location (10) and to information gathered through the interview process. These parameter estimates are as follows (dollars in thousands):

Table 1 -- Parameter Estimates, Hypothetical Exercise

<u>Parameter</u>	<u>Urban Site</u>	<u>Suburban Site</u>
T (Tax Rate) . . . . .	50%	50%
Co-land cost . . . . .	\$ 300	\$ 225
-bldg. cost . . . . .	\$1,520(2 stories)	\$1,200(1 story)
-equip. cost . . . . .	\$1,000	\$1,000
Property tax rate . . . . .	5%	3%
N (project life) . . . . .	25 years	25 years
Inflation rate . . . . .	10%	10%
Rj (revenue) . . . . .	\$5,000/year	\$5,000/year
Operating flows		
-labor . . . . .	.\$1,295/year	\$1,400/year
-materials . . . . .	.\$1,250/year	\$1,250/year
-overhead . . . . .	.\$ 700/year	\$ 550/year
-selling and mktg. . . . .	.\$ 600/year	\$ 600/year
-general admin. . . . .	.\$ 400/year	\$ 400/year
$r_a$ (real capital cost) . . . . .	7%	7%
$R_i$ (interest rate) . . . . .	12%	12%
Depreciation method . . . . .	sum-of-the-years digits	same
Lo (loan) . . . . .	.\$1,400	\$1,400

These estimates were formulated as follows:

- since the aim is to model manufacturing projects, it is assumed that  $R_j$  is invariant with location;

-  $r_a$ ,  $R_i$  and the inflation rate reflect contemporary market conditions as well as the findings of Ibbotson and Sinquefeld (15) on the historical returns on equity and debt;

- it was assumed that the firm would utilize accelerated depreciation in its valuation practice since it serves to increase the present value of the depreciable flows vis-à-vis the straight line method;

- operating cost estimates were made for the suburban site as follows:

- labor costs equal 28% of revenue;
- material costs equal 25% of revenue;
- overhead costs (inclusive of property taxes) equal 11% of revenue;
- selling and mktg. costs equal 12% of revenue;
- general admin. costs equal 8% of revenue;

- operating cost estimates for the urban site are equivalent to those made for the suburban site with the following exceptions:

- labor costs are 7.5% less than in the suburbs;
- overhead costs (inclusive of property taxes) equal 14% of revenue. (Note: beyond the higher urban property tax costs, it was assumed that overhead costs would be about 15% higher at the urban site due to differential inefficiencies such as time-motion problems attributable to operating within a multi-story structure and so on.)

These estimates of operating costs were made through reference to Hamer's research (10) in this area and to firm-specific information gathered through this author's interviewing endeavors;

- again through reference to Hamer's work, it was assumed that the urban facility would be two stories with a ground-floor-space-to-total-land-area ratio of 50%, and that the suburban facility would be a single story affair with a building-space-to-total-land-area ratio of 33%. It was assumed that both structures would be of 50,000 square feet and that urban construction costs would exceed suburban costs by 267% (i.e. \$304 per square foot for the urban facility and \$24 per square foot for the

suburban -- again per Hamer). Equipment costs were assumed to be invariant with location. The relative magnitudes of these investments in property, plant and equipment correspond to those characterizing the specific projects studied directly by this author;

- it is assumed that all relevant "lives" (e.g. project, loan, and depreciation) are 25 years;

- the loan is assumed to be a 25 year discount affair with constant nominal interest payments for 25 years and a "balloon" interest and principal payment in year 25. It was assumed that approximately 50% of "Co" would be debt financed;

- the property tax rate estimates reflect research done by both Hamer and myself and apply to land, building and equipment.

- it was also assumed that land costs per square foot for the urban and suburban communities are \$6.00 and \$1.50 respectively. Two-thirds of the urban land cost per square foot (\$4.00) is required to cover land clearance and improvement costs. These estimates are based on actual projects recently undertaken in the Boston area.

Using these parameter estimates, the formulation developed above was first applied to ascertain the net present value of each project (i.e. site) with no urban incentive assumptions (i.e. the "base-case") and then to estimate the net present value of the urban project under a broad range of incentive assumptions. The following is a description of the incentive assumptions made for purposes of this example:

Table 2 -- Definition of Assumptions, Hypothetical Exercise

<u>Assumption #</u>	<u>Description</u>
1	- a property tax rate of 1.25% to apply for all 25 years.
2	- a property tax rate of 2.5% to apply for the project's first 12 years, 5% thereafter. (Note: this assumption was modelled after Michigan's tax incentive program.)
3	- a property tax rate of 2.5% to apply for all 25 years.
4	- a property tax rate of 0% to apply for the project's first 14 years, 5% thereafter.
5	- development agency acquires, clears and improves land. Firm pays only for acquisition costs (assumed to be \$2.00 per square foot as described above) and pays property tax only on this amount (i.e. on \$100,000 acquisition cost).
6	- the combination of assumptions 3 and 5.
7	- no urban labor cost differential. (Note: this is actually a variation on the base-case rather than an incentive assumption).
8	- through a labor training program offered by the development agency, the firm is able to realize a 10% labor cost saving in the city vis-à-vis the suburb. The implicit assumption is that such a program would reduce the firm's training costs.
9	- same as 8, yet a 12.5% differential is achieved.
10	- the combination of assumptions 3 and 8.
11	- the combination of assumptions 2, 5 and 8.

- 12 - firm does not purchase the property from the city but does pay an annual rent of \$1.75 per square foot of land area which also includes an in lieu of tax payment covering all tax liability (i.e. land, building and equipment).
- 13 - a concessionary rate of 6% on the debt (i.e.  $R_i = .06$ ).
- 14 -  $R_i = 0\%$ .
- 15 -  $R_i = 1\%$ .
- 16 -  $R_i = 9\%$ .
- 17 - the combination of assumptions 5 and 13.
- 18 - the combination of assumptions 2 and 13.
- 19 - the combination of assumptions 2, 5 and 16.
- 20 - the combination of assumptions 2, 8 and 16.
- 21 -  $L_0 = \$2,000,000$  and a concessionary rate of 4% (i.e.  $R_i = .04$ ).

The results are as follows:

Table 3 -- Results, Hypothetical Exercise

<u>Assumption #</u>	<u>NPV of Urban Site</u>	<u>Amount by which Suburban base-case NPV (\$3,270,700) exceeds Urban case NPV under varying assumptions</u>
base-case (i.e. no urban incentives)	\$2,667,700	+\$ 603,000
1	3,280,700	- 10,000
2	2,946,700	+ 324,000
3	3,075,700	+ 195,000
4	3,284,700	- 14,000
5	2,923,700	+ 347,000



<u>Assumption #</u>	<u>NPV of Urban Site</u>	<u>Amount by which Suburban base-case NPV (\$3,270,700) exceeds Urban case NPV under varying assumptions</u>
6	\$3,304,700	-\$ 34,000
7	2,052,700	+ 1,218,000
8	2,868,700	+ 402,000
9	3,072,700	+ 198,000
10	3,279,700	- 9,000
11	3,387,700	- 117,000
12	3,275,700	- 5,000
13	2,996,700	+ 274,000
14	3,326,700	- 56,000
15	3,271,700	- 1,000
16	2,832,700	+ 438,000
17	3,252,700	+ 18,000
18	3,275,700	- 5,000
19	3,349,700	- 79,000
20	3,311,700	- 41,000
21	3,576,700	- 24,000 (Note: in this case, the Suburban NPV is \$3,552,700 due to the assumption that debt amounts at both sites would be same, hence, the Suburban NPV goes up due to the in- creased tax shields resulting from the increase in debt at both sites.)

The base-case result shows that the suburban site possesses an \$603,000 advantage over an unsubsidized urban site. Therefore, any incentive program must overcome this differential in order to attract the firm to the urban site. Assumptions 1 - 4 concern adjustments in property tax liabilities. Note that either a 75% cut in property tax liability (assumption

#1) or a total holiday for 14 years with a standard payment thereafter (assumption #4) would overcome the differential. However, a 50% cut for 12 years (the Michigan model) only eliminates 46% of the differential and its extension to apply for the life of the project (assumption #3) still leaves a differential of \$195,000.

Assumption #5 covers the "non-financial" land acquisition, clearance and improvement program and is modelled after a specific case encountered during the course of this research. The results show that a \$347,000 differential would remain were this program applied to the urban site. Assumption #6 involves the combination of the land acquisition/improvement program with a tax holiday program of more than average generosity (assumption #3). The result is that the differential is overcome with \$34,000 to spare.

Assumptions 7 - 12 cover the potential impact of a labor cost differential and free labor training programs. To provide some indication of the value of the base-case assumption that the firm would realize a 7.5% labor cost saving in the urban location, assumption #7 (i.e. no labor cost differential) was included in this set. The result shows that, were the urban community not able to offer a labor cost advantage of this magnitude, the cost differential between city and suburb would more than double. Assumption #'s 8 and 9 explore the value of further reductions in urban labor costs derived through provision of free labor training, with the result that in either case a substantial differential remains. Assumption #10 models the effect of a combination of a tax holiday program of more than

average generosity (assumption #3) and a labor training program which cuts urban labor costs another 2.5% beyond the original assumption of a 7.5% gap (assumption #8). The result is that the urban site just becomes more valuable than the suburban. Assumption #11 models a package of incentives which includes a Michigan type tax program (assumption #2), a land acquisition/improvement package (assumption #5) and a training program (assumption #8). This program, with some negotiation, probably could be provided by a local development agency today. As the results show, this package overcomes the differential with plenty of room to spare (i.e. \$117,000). Assumption #12 is also interesting since it was also modelled after one of the specific arrangements encountered in the course of this research. As the result shows, this is a very powerful incentive since it overcomes the differential on its own. In effect, this incentive amounts to giving the improved land to the firm and cutting its total tax liability by about 40% for the entire life of the project.

Assumptions 13 - 20 explore the potential impact of the incentives which work through a reduction in the effective interest rate on a firm's debt (i.e. concessionary loans, loan guarantees and IRB's). Assumptions 13 - 16 explore the impact of interest rate concessions offered as the sole incentive. As the results show, with an assumption of a 50% contribution of debt to project financing, the interest rate on the \$1,400,000 of debt must be reduced from 12% to 1% to overcome the differential. Assumption 17 models an incentive package of a concessionary loan extended at 50% of the market rate (probably an unusually generous concession by

contemporary standards) in conjunction with the land acquisition/improvement program. The combination comes just short of eliminating the entire differential and a 5% concessionary rate would provide just enough incremental incentive to do so. Assumption #18 combines a Michigan type tax program with a concessionary loan of what is probably somewhat more generous than the norm. The result shows that this package is just sufficient to overcome the differential. Assumption #19 combines a Michigan type tax program, a land acquisition/improvement program and a realistic concessionary loan program. The results show that this package is more than sufficient to overcome the differential. This is another combination which I believe could be replicated given the development programs in place today. Assumption #20 replaces the land acquisition/improvement package in assumption #19 with a labor training program. Again, the results show that the differential was overcome. Assumption #21 models a case in which the project is financed more heavily with debt. The results show that the concessionary interest rate required to overcome the differential (4%) is still below those rates which would typically be available to firms through concessionary loan programs.

Some general conclusions can be drawn from the above analysis:

- that the NPV differential between suburban and non-subsidized urban sites may be substantial;
- that in and of themselves, each of the incentive programs appear to not be powerful enough to overcome this differential unless they

are of a size far beyond that which could be characterized as typical within the world of contemporary incentive programs;

- that certain combinations of incentive programs (which could be replicated in the "real world" given the offerings of contemporary development organizations) appear to be powerful enough to overcome the differential.

- that the assumption of a labor cost differential in favor of the urban community is central to the above results. That is, without this labor cost advantage it is unlikely that even combinations of incentive programs of normal proportions would be able to overcome the suburban/urban NPV differential.

- that the incentive programs which operate through an interest rate concession of some sort are unlikely to be sufficient to overcome the differential (assuming normal debt contributions to project financing) unless the loans carry almost no interest liability whatsoever.

An empirical look at the role of incentives in the decision processes of firms in this author's interview sample follows in chapter 4. To close out this chapter, a case quite relevant to the above discussion is presented. It indicates that some firms do, in fact, utilize analytical frameworks similar to that presented above in the process of making an urban/suburban locational choice.

### A "Real World" Application

This example involves a Boston-based manufacturer currently experiencing a period of very substantial growth. The planned expansion would more than double the firm's manufacturing employment. It is interesting, not only due to the application of a "present value" analytical framework, but also since it raises a number of interesting issues to be addressed in the chapters to follow. The firm considered two expansion alternatives -- one urban, one suburban. The urban alternative involved plans for construction of separate sites in three different municipalities. The analytical framework applied by the firm is not APV, but does involve a comparison of the estimated present value of operating and fixed costs at the alternative sites. No inflation, depreciation or tax assumptions are made explicit and no rationale is given for the choice of a 12% cost of capital assumption. Nevertheless, this was, by far, the most formal application of a present value evaluation framework to the process of making a location decision encountered by this author. Furthermore, direct estimates of the costs of building and land were made for both locations. Estimated urban costs for building and land exceeded the suburban estimates by 24%. Equipment costs were invariant across locations. Estimates of urban operating costs (for building and building maintenance only) exceeded those made for the suburban location by 12%. The end result of this analysis was that present value suburban costs were some 77% of those for the urban site -- an \$8,750,000 differential.

What is most interesting about this particular case is the way in which IRB financing enters into the analysis. The suburban plan was for the location of one facility in each of three separate municipalities. The rationale behind this particular plan is that the firm can apply for a \$10,000,000 IRB from each jurisdiction -- although the analysis assumed that only two IRB's would be utilized. In contrast, due to this particular firm's heavy capital expenditures within the City of Boston over the past three years, it could only apply for a single \$1,000,000 IRB for issuance through the City due to the IRS limits on such issues (see chapter 1). Therefore, the availability of "incentive" financing within the suburbs creates a net "disincentive" for the firm to locate within the city. To compensate the firm for the urban/suburban cost differential, as well as the net financial disincentives, (note: the firm's present value calculation did take into account the impact of the differential IRB availability on the project's financial structure), a UDAG application for more than \$7,000,000 was made to HUD to be used to finance a very low interest loan to the firm (30-year, \$6,750,000 with principal repayments to start in the ninth year). Note that a \$2,000,000 difference exists between the estimated urban/suburban cost differential (\$8,750,000) and the face value of the loan (\$6,750,000). This \$2,000,000 represents the firm's estimate of the "Value of City Life" derived from the presence of such hard-to-quantify factors as quantity and quality of labor supply and "agglomeration benefits". Agglomeration benefits derive from the concentration of facilities within the city as contrasted with a decentralized

network of three suburban sites and the (existing) central city facility. This example, I believe, reinforces the conclusions drawn from the hypothetical example presented above, namely: that the cost differential between urban and suburban sites is likely to be substantial; that incentives can be made sufficiently large to overcome such differentials; and, that in cases in which the entire subsidy is to be provided through a concessionary loan instrument, it is likely that the concessions will have to be substantial (in this particular case, interest rates well below "market" (i.e. 3% to 5%) plus a provision for deferral of principal repayments). The role of "hard-to-quantify" factors in the location decision process will be discussed in detail in chapter 4. A discussion of some of the implications of the availability of similar incentives in contiguous jurisdictions will be offered in chapter 3 (from the perspective of the local development organizations themselves).



## CHAPTER 3

### The Development Organization

The purpose of this chapter is to discuss some of the implications of the use of "incentives to industry" from the development organization's perspective. The provision of the various financial instruments through government entities, in effect, transforms these public bodies into financial intermediaries. As discussed above, government bodies may offer financial assistance in the following ways: direct provision of low cost funds; provision of guarantees on corporate debt; and, assistance in the placement of corporate debt in the tax-exempt market. The example at the end of the previous chapter demonstrated that certain costs or revenue losses may result from the provision of this financial assistance. This chapter will focus on the various costs incurred by the public issuers of these financial instruments.

### IRB's

IRB's are quite inexpensive incentive instruments from the local issuing government's viewpoint. The funds come from a private lender and (as is the case in Boston) typically, the subsidized firm is directly accountable for the principal and interest payments. In effect, the issuing government body has -- as an intermediary -- transferred its tax-exempt borrowing status to a private sector firm. Hence, the issuing local government body may incur little more than administrative costs. However, the cost of this subsidy is borne by the Federal government

since it sustains a tax revenue loss due to the tax-exempt nature of these vehicles. The local government, through issuance of an IRB, has passed the cost of the subsidy on to the Federal government, and hence, to all taxpayers as well.

From the perspective provided by finance theory, the issuer is marketing a financial instrument which it implicitly assumes will be attractive to high tax-bracket investors. Theoretically, the IRB will carry the interest rate demanded by the marginal investor who is just indifferent between the IRB and normal, taxable corporate debt of similar risk -- given his marginal personal tax rate (see Sanford Rose (37)). If the marginal investor which an IRB issue must attract in order to place the entire issue is taxed at 35%, and the rate on taxable issues of equivalent risk is 13%, then the IRB must offer a tax-free rate of 8.45%. What is most interesting is that the investor with a marginal personal tax rate of 45% receives a windfall by purchasing this bond relative to corporate debt. That is, the 8.45% tax-free is equivalent to approximately 15.4% taxable. Since the average investor in a tax-exempt issue is, by definition, in a higher tax bracket than the marginal investor, "the Treasury invariably loses much more in foregone tax revenues than the municipalities save on interest costs"<sup>1</sup> -- in the case of an IRB, the municipal "intermediary" passes this interest savings on to the subsidized firm. The higher the yield on the IRB relative to taxable bonds of equivalent risk, the worse is the situation from

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<sup>1</sup>Sanford Rose, "The Trouble With Municipal Bonds Is Not Just New York", Fortune, (December 1975), p. 105.

the Federal government's perspective. However, to the extent that the subsidized firm assumes less interest expense with the issue of an IRB, its deductions from income for state and Federal tax purposes are lessened and these tax payments increased relative to the conventional financing case. In sum, beyond the interest savings accruing to the subsidized firm, virtually all purchasers of IRB's receive a bonus as well.

In a subtle way, the issuance of IRB's may cost local governments more than administrative expenses. Due to the increase in the supply of tax-exempt instruments resulting from repeated issuance of IRB's, the prices for tax-exempt instruments in general may fall (i.e. yields increase). If this occurs, local governments which approach the tax-exempt market with a general obligation bond issue will face higher interest rates than had existed prior to the sale of the IRB's. Offsetting this state of affairs, however, is the possibility that the IRB truly induced a firm to locate within the boundaries of the issuing jurisdiction, thereby increasing the property tax revenues flowing to this local government (depending, of course, upon the structure of any lease and/or in lieu of tax provisions).

A final difficulty with IRB's -- less quantitative in nature -- is the potential for abuse in their application. Theoretically, IRB's are issued by a "distressed" community to create employment opportunities "which may represent significant positive externalities"<sup>2</sup> particularly as involves

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<sup>2</sup>Roger Sherman and Thomas D. Willett, "Regional Development, Externalities, and Tax-Subsidy Combinations", National Tax Journal, 22, no. 2, (June, 1969), p. 292.

the local labor force. Here we are entering a zone of hard-to-quantify factors. However, in many cases IRB's are issued to support projects which do not offer many permanent employment opportunities. In Cleveland, for example, there is evidence that these bonds have been issued for such undertakings as fast-food outlets and racketball clubs.

### Property Tax Holidays

This appears to represent a less complex situation. Here the incidence of the incentive falls directly on the local community (i.e. other taxpayers) which provides it. If the tax break is absolute for the subsidized firm, then not only is the firm exempted from funding community services in general, but also any which must be provided exclusively for the subsidized firm. Hence there may be direct costs as well as a lost tax revenue opportunity. If, as in all these cases, the investment is truly induced by the availability of the incentive, then certain social benefits are assumed to offset this cost.

An interesting by-product is that if the subsidized firm accepts this property tax holiday, then it has that much less to deduct from income for state and federal tax purposes, and thus state and federal revenues will increase.<sup>3</sup>

### Concessionary Loans

The role of government entities as financial intermediaries is clearest in this case since a direct transfer from government to firm takes place.

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<sup>3</sup>Daryl A. Hellman et al., State Financial Incentives to Industry, (Lexington, Mass., D.C. Heath and Company, 1976), p. 41.

If the issuer of the concessionary loan is a local government, then the local government's source of funding becomes the key consideration. Typically, a local government receives a grant from a Federal agency to be used in making a concessionary loan. In this case, the local government clearly faces few costs in its issuance of a subsidy, although it should recognize that it has assumed some default risks.

In some instances, the local government issues general obligation bonds and then lends the proceeds to a firm at the same rate as that on the bonds. In this case, (and in cases involving direct loans from a Federal agency) the government has also exposed itself to default risk. Typically, financial institutions (or buyers of corporate debt in general) will require a rate of interest on a loan such that its expected return (i.e. inclusive of the probability of default) is at least equivalent to this lender's opportunity cost of funds on riskless investments (assuming that all risk in this instance is that of default).<sup>4</sup> Similarly, if a government issues bonds and then purchases some firm's debt at the same (i.e. bond) interest rate, and there is some default risk on the debt, then the government's expected return on the debt will be less than the promised return. Also of relevance is the fact that, relative to a loan made through conventional channels, the subsidized firm has less interest to deduct from income for purposes of Federal and state taxes, increasing these tax payments, and

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<sup>4</sup>William F. Sharpe, Investments, (Englewood Cliffs, N.J., Prentice-Hall, Inc., 1980), p. 248.

thereby (as was the case with IRB's) offsetting the Federal tax revenue losses attributable to the use of tax-exempt general obligation bonds to fund the concessionary loan.

### Loan Guarantees

Loan guarantees are the most interesting of the incentives as viewed from the development entity's perspective. Although they are a liability of the issuing body (primarily the Federal government), they are quite popular since this liability is typically not accounted for in the budgetary process. Hence, government bodies may provide substantial incentives/subsidies to firms without the need for a budget approval.

There is evidence that the various development entities recognize this particular advantage of loan guarantees. First, the terms of a guarantee are generally more advantageous than those of a direct loan from the same program. For example, the SBA (502) program provides a guarantee -- and hence a reduction in interest costs -- on up to 81% (90% guarantee on the 90% contribution from the private lender) of the financial package, whereas a direct loan from SBA would only provide an interest cost reduction on 30% of the project financing. Furthermore, qualification terms are more stringent for a direct loan. A more forthright indication of the recognition of this "off-budget" advantage of guarantees is a quote from an EDIC publication on financial incentive offerings: "Due to the limited level of direct SBA funding it is more commonly structured on a guaranteed basis."<sup>5</sup>

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<sup>5</sup>Economic Development and Industrial Corporation of Boston, Financial Assistance Programs, p. 3.

Another item of interest is the interest rate ceilings which are set for the private lenders who wish to participate in these loan guarantee arrangements. The SBA (502) program limits the rate which the private lender can charge for its portion of the loan to  $1/2\%$  over prime. As discussed above, a loan guarantee issued by the Federal government provides the holder of the corporate debt with essentially an investment as safe as Treasury Bills, the return on which is the risk-free rate. If a private lender charges  $1/2\%$  over prime for a guaranteed loan, it is, in effect, receiving a substantial windfall. That is, since the prime rate typically exceeds the T-bill rate, the lender's return on the guaranteed debt will exceed -- potentially by a not insignificant amount -- that on other riskless investments. If such a premium is available, one would expect to see a market for the opportunity to buy such guaranteed debt.

These instruments -- as discussed in chapter 2 -- do have value. From the firm's point of view, the formulation discussed in chapter 2 is appropriate since the firm's only concern is in the net change in interest rate on its debt which results from the guarantee. However, there is an alternative method available for valuation of loan guarantees, a more direct method -- option theory. The literature on the use of loan guarantees to induce investment in the older urban centers does not include a discussion of the option valuation methodology. It is included here since, although these guarantees may be small compared to those issued to Lockheed and Chrysler, it is important to recognize that these guarantees do have value and represent a liability to the issuing government. This value

can be computed directly -- as an alternative to accepting the market's implicit valuation of the guarantee -- through the application of option theory. (The following discussion has referenced the following articles: Merton (25) (26) (27)).

The debt and equity of a firm can be modelled in terms of options. Briefly, a put option (European) on common stocks allows its owner to sell a specific number of shares of that stock at some specified share price (exercise price) on a certain expiration date. The put option will be exercised when the stock price (S) is less than the exercise price (E) (on the expiration date). The value of the put per share in this instance is (E-S). If the exercise price is less than the stock price on the expiration date, then the option is not exercised and has no value. The standard formulation for the value of a put is written as:  $\text{MAX}(0, E-S)$ . This whole process is also known as contingent claims analysis since the value of the option is contingent upon the share price on the expiration date. A put is likened to insurance since the holder is sure that on the expiration date he will be able to sell his stock for E at minimum. The value of a put can be ascertained directly using the Black/Scholes (1) formula which requires as inputs: E, S, time to expiration date, interest rate on riskless securities and the variance on the stock's rate of return. As Merton explains, "Of those, only the variance rate on the stock is not directly observable, and it can be reasonably estimated".<sup>6</sup> (The Black/Scholes

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<sup>6</sup>Robert C. Merton, "An Analytic Derivation of the Cost of Deposit Insurance and Loan Guarantees", Journal of Banking and Finance, 1, (1977), p. 6.



formula need not be described in further detail for purposes of this discussion, see (1)).

Turning now to debt issues, if default risk exists, debt issued with a promised payment (P) will return less at maturity if the value of the issuing firm (V) is less than (P). Hence, the value of debt at maturity can be represented as  $\text{MIN}(V, P)$ . If a guarantee is issued, the debt is ensured to be worth P at the maturity date. "Like a traditional insurance policy, the guarantee has value to the insured and imposes a cost on the insurer."<sup>7</sup> The government has, in effect, absorbed the risk of default and hence, private lenders will be willing to advance funds with a return in the vicinity of the riskless rate. If the firm defaults (i.e.  $P > V$ ), then the insurer must make a payment to the debtholder of  $P - V$ . With no default, no payment by the insurer is required. Hence, at maturity the value of the guarantee is:  $\text{MAX}(0, P - V)$  which looks like the formulation for a put option with P acting as an exercise price and V as the stock price. "Essentially, by guaranteeing the debt issue, the guarantor has issued a put option on the assets of the firm",<sup>8</sup> and can be valued as such.

Two recent articles, Jones and Mason (16) and Sosin (46), have included estimates of the value of such guarantees using this analytical framework and a variety of assumptions regarding the relevant parameters. Sosin concludes: "For firms with variances and capital structure approxi-

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<sup>7</sup>Ibid., p. 7.

<sup>8</sup>Ibid., p. 8.

mating those of the market as a whole ( $r = 1.5$  (standard deviation)),  $s = .75$  (fraction of equity in capital structure) the costs of these guarantees are relatively small for 5 and 10 year terms (4.16% or less of the value of the project)."<sup>9</sup>

Of primary importance for purposes of this paper, is that this methodology explicitly models the increased value of these guarantees as project risk increases, which translates into an increase in the liability of the issuing government. That is, the liability can be valued directly.

Leaving option theory, there remain a few comments to be made regarding these guarantees. As was the case with the other incentives, the reduced interest costs attributable to the guarantee increase Federal and state tax revenues, thereby offsetting the cost of the incentive. Note that since most guarantees emanate from the Federal government, the local government organizations through which they flow once again find themselves in a low cost position. The local government will receive a cash inflow from property tax payments made by the guarantee-recipient firm, although there will be outflows from the local government to cover the costs associated with the firm locating within the community (i. e. incremental services).

#### Non-Financial Programs

Labor training programs and land or building acquisition/improvement programs are the primary non-financial incentives considered in this paper.

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<sup>9</sup>Howard B. Sosin, "On the Valuation of Federal Loan Guarantees to Corporations", The Journal of Finance, 35, (December 1980), p. 1219.

Typically, the development agency receives a grant from a Federal agency to cover the costs of these programs. The grants usually are sufficient to cover any operating or administrative costs which may be incurred. In the case of UDAG funding of property improvements, my interviews with development agency personnel indicated that the chances of HUD acceptance of a UDAG application could be improved through inclusion of a requirement that the subsidized firm (over some period of time) make payments to the local development agency in an amount equal to that of the UDAG plus some nominal interest charge. These funds are then recycled in the redevelopment process. Rental payments for the land might also include an in lieu of property tax component and/or a component to reimburse the local agency for any general revenue bond obligations it may have incurred in financing these undertakings. Finally, the local development agency may sell the land to the user firm, usually for an amount less than its total investment in acquiring and improving the property. In this case, the development agency recaptures a portion of the grant funding provided by the Federal government, although a substantial subsidy is still passed on to the user firm. This arrangement would also result in a property tax inflow to the local community.

To the extent that a community funds its development efforts with its own financial resources, these non-financial incentives may be more costly than some of the other incentives, and/or present more difficulties with respect to liquidity. For example, labor training programs operated by a development organization will involve a number of operating and admini-

stration costs, which may be funded by property tax collections or a general revenue bond issue. Obviously, it is easier for the city to grant a property tax holiday than to collect property taxes and put the proceeds into a training program; easier in terms of both liquidity and the size of the administrative burden taken on by the development organization. Similarly, the acquisition-and-improvement of land and the renovation-and-operation of obsolete structures represent more costly undertakings to a city than do simple property tax concessions.

#### Recognition of Incentive Costs

The role of government bodies as lending institutions raises some interesting issues regarding the financing of "marginal" industrial development projects -- marginal in the sense that they are not viable in a net present value sense for any number of reasons (high cost, high risk, etc.). Private financial institutions may not be willing to advance funds in support of such undertakings. In the area of industrial redevelopment, the use of incentives/subsidies by government are held to be justifiable in cases in which there exist: "Private economic activities which cost more than the sum of the benefits accruing to private participants but less than the aggregate social benefit."<sup>10</sup> This is a "market failure" argument since the implicit assumption is that externalities are not being recognized by the private market. Given this scenario, arguments of the following variety are regularly advanced in the literature:

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<sup>10</sup>E. Philip Jones and Scott P. Mason, "Valuation of Loan Guarantees", Journal of Banking and Finance, 4, (1980), p. 89.

- "Investments that are considered marginal by lending institutions may be viewed more favorably in light of the availability of loan guarantees"<sup>11</sup> as well as other incentive instruments;

- That some firms offer "economically feasible projects" for which they "cannot obtain adequate capital from private lending sources".<sup>12</sup>

- That some projects should be financed by a government since only government "may be prepared to finance high-risk industry which cannot obtain financing elsewhere".<sup>13</sup>

It seems that there is an implicit assumption within statements such as these that (since government represents the entire populace) risk is effectively diversified away through government financing of risky projects. However, assuming the projects under study are characterized by some element of systematic risk, the market has determined that the expected return on these "economically feasible projects" is not sufficient to compensate investors for the level of systematic risk which the projects represent. Hence, from the market's perspective, the projects have been deemed "marginal" or uneconomical. Systematic risk cannot be diversified away simply through provision of government financing. Hence, there are costs which the government has taken on in financing these projects which should be explicitly recognized. For example, as discussed in the pre-

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<sup>11</sup>Hubbell, p. 297.

<sup>12</sup>Ibid., p. 297.

<sup>13</sup>Ralph C. Kimball, "States as Financial Intermediaries", New England Economic Review, (Jan./Feb. 1976), p. 25.

vious section, there is a cost attributable to the provision of loan guarantees to industry -- effectively a free insurance policy issued to the firm's shareholders covering the value of the firm's assets -- which typically is not recognized in the government budgeting process. Hence, in cases where government takes a position in project financing, it should be recognized that an implicit assumption has been made that the value of the positive externalities (social benefits) which are expected to result from undertaking the project is greater than the cost of providing these incentives/subsidies. Where risks are high -- a loan guarantee provided on Chrysler debt, for example -- these costs may not be trivial.

#### Interlocal/Inter-regional Competition

The example given at the end of the previous chapter indicated that financial incentives may be available from the governments of both the central city and contiguous localities. The structure and outcome of such a state of affairs reminded this author of game theory. Only one very brief reference to the applicability of game theory to this issue was uncovered in my literature search (Sherman and Willett (45)), who note that "localities and even states may be caught in the famous prisoner's dilemma, each one competing against the others to attract industry".<sup>14</sup> An application of the prisoner's dilemma framework to the issue follows. Assumptions are as follows:

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<sup>14</sup>Sherman and Willett, p. 293.

- two contiguous localities constitute a region;
- each locality is interested in attracting industry for some reason (perhaps to lessen labor-surplus difficulties);
- each locality perceives that incentives/subsidies are quite effective in attracting a pool of mobile industrial firms which have expressed an interest in expanding or relocating somewhere within the region;
- the incentive instrument choice for the localities is limited to property tax concessions;
- for one reason or another, no firms are attracted to the region solely due to the availability of this particular incentive (the plausibility of this and other assumptions will be the focus of chapter 4).

From the perspective of each locality, there exist a variety of possible outcomes of its decision to offer or not to offer the incentives:

- (A)- both localities offer the same incentives exactly, hence will each attract 50% of the pool of mobile industry. In this case, the use of a tax incentive results in lost property tax revenue opportunities, although each locality's needs for new industry will be addressed to some extent. Assume that this outcome is worth 45 assets of some sort to a locality for purposes of the illustration presented below;

- (B)- neither will offer the incentives, hence, each will attract 50% of the pool of mobile industry. In this case, all local property tax revenues are collected and each locality's needs for new industry are satisfied to the same extent as in case (A). Due to the increased tax revenue, this outcome is worth 50 assets;

- (C) - one locality offers the incentive, and its neighbor does not, thereby causing 100% of the mobile industry to locate within the former locality. In this case, the application of the incentive results in lost property tax revenue opportunities for the incentive-user locality, although this locality's needs for industry will be satisfied to a greater extent than in case (A). Assume this outcome is worth 90 assets to the incentive-user locality and 0 to the non-user.

Given the above structure, the choice situation with respect to the provision of the incentive can be summarized as follows:

Table 4 -- Game Theory, Choice Matrix 1

		<u>Locality A</u>	
		Provide Incentives	Do Not Provide Incentives
<u>Locality B</u>	Provide Incentives	45	0
	Do Not Provide Incentives	90	50
		45	0
		90	50

As in the prisoners' dilemma case, here we find that each locality will selfishly choose to provide the incentives regardless of the choice made by the other locality. This "provide/provide" outcome results in a lower total "regional" result than would the "don't provide" choice were both localities to make it. Note that this result is based only upon the



perception by the localities that the incentives are effective in achieving the desired result of impacting the location decision of mobile firms.

If one assumes that the incentives have no impact on the location decisions of firms and that 50% of the mobile industry would locate within each locality under all conditions, then the choice matrix looks as follows:

Table 5 -- Game Theory, Choice Matrix 2

		<u>Locality A</u>	
		Provide Incentives	Do Not Provide Incentives
<u>Locality B</u>	Provide Incentives	45	50
	Do Not Provide Incentives	45	50

If firms are truly insensitive to incentives in this way, then no dilemma exists and the "don't provide/don't provide" choice results. Difficulty in measuring the effectiveness of these instruments may cause jurisdictions to assume that the first matrix accurately reflects the location decision process and the resultant payoffs. Evidence that this is in fact the case was provided in an interview with an "industrial representative" for the State of Michigan's Office of Economic Development who claimed that Michigan provided a full range of incentive programs since

"everybody has them". "Everybody" was in reference to the states within Michigan's immediate geographic region.

The game can be made considerably more complex. For example, if the two contiguous communities differ with respect to the availability of some factor which firms deem to be of particular importance (e.g. low-cost labor), then the less well-endowed community would have to provide a larger subsidy than its counterpart in order to attract the mobile firms. That is, the less well-endowed community would have to compensate firms for the absence of that factor. This situation is equivalent to that described in the hypothetical example described in chapter 2 in which the size of the subsidy required to overcome the urban/suburban NPV differential doubled under the assumption that the urban community was not able to provide labor-cost savings vis-à-vis the suburban alternative. Hence, there are three players in this version of the game (i.e. the two competing communities and the firm).

Further complications would involve:

- the differential attractiveness of community factor endowments and incentive offerings to firms in different industries. For example, a labor surplus community offering labor training programs would be more attractive to labor-intensive firms than to capital-intensive firms which in turn might be particularly sensitive to environmental protection codes or raw material availability;

- the extent to which firms are capable of accurately computing the value of incentive opportunities;

- the differential accessibility of Federal funds to communities characterized by differing levels of "economic distress".

Clearly, the above discussion raises many questions regarding the actual operation of the location decision process. Of particular interest is the ability of these incentives -- in and of themselves -- to attract firms not otherwise interested in locating within that region. Also of interest is the frequency with which the incentives act as a critical factor in the retention of mobile, local industry. It is to such issues that discussion now turns.

## CHAPTER 4

### Incentives and The Location Decision Process

The purpose of this chapter is to discuss the factors entering into the location decision processes of firms which have received subsidies/incentives from development organizations. Particular attention will be paid to the actual level at which these incentives enter the decision process and to the objectives and activities of the local development agency. Sources of information for this discussion include:

- a set of 21 interviews conducted by this author with individuals representing 8 firms and 5 development organizations directly involved in recent locations of new, expanded or relocated facilities within the three jurisdictions introduced in chapter 1 -- Cleveland, Boston and the State of Michigan. Obviously, in some cases, interviews were conducted with more than one person from a single organization;

- material published by the development organizations describing recent locational activity within their jurisdictions and, in one case, the results of some survey work conducted with firms that had received subsidies;

- a sampling from the literature.

#### I. The Location Decision of Subsidized Firms

##### (a) Key Factors

The location decision process is not easily generalized. Schmenner has noted: "It cannot be stressed enough how difficult the modelling of

industry location appears to be."<sup>1</sup> For each of the firms for which interview data were collected for purposes of this study, it seems that a unique set of factor weights was employed in the location decision process. The factors which entered into these firms' decision processes included the following: labor availability, labor quality, labor relations situation (union/non-union), availability of adjacent property for expansion, amount of space available on one floor, cost of space, proximity to suppliers, proximity to market, tradition, preferences of owners/top executives, proximity to prior location such that existing labor force could be utilized, "business climate" within the locality, access to transportation/distribution systems, proximity to existing facilities of that firm, a commitment on the part of a top executive to the provision of employment opportunities within a particular community, expected operating costs, parking space, personal taxes, property taxes, availability of incentives/subsidies. Note that a number of the above factors can be characterized as "hard-to-quantify". In general, only two or three of these factors acted as primary determinants in the location choice of each firm and as alluded to above, the specific combination of factors varied considerably from firm to firm.

(b) The Operation of The Decision Process - Interview Findings

An initial observation to be drawn from the interview data is that firms do not undertake as rigorous a locational search and analysis of alterna-

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<sup>1</sup>R. W. Schmenner, "City Taxes and Industry Location", revision of his unpublished Ph.D dissertation, (Yale University, 1973), no pagination.

tives as the literature would lead one to believe. Clearly, to make an optimum decision, a firm would have to evaluate and compare a number of distinct locations and possess much information regarding the cost characteristics of each. However, the interview evidence indicates that firms cost out few alternative sites and settle for a "satisfactory location rather than an optimum location".<sup>2</sup> A review of the interview evidence follows.

In general, tradition (i.e. an extended history of operation within a single community) and proximity to suppliers were primary factors in the location decisions of the smaller firms studied by this author (less than 100 employees). The availability of a specific amount of space on one floor and proximity to the firm's prior location (such that the existing labor force could be utilized) were also important considerations for these firms. In these cases, only sites within that community housing the existing facility were considered. Evaluation techniques were not sophisticated, very few alternatives were considered, and moves -- these were relocations of existing operations, not branch expansions -- were very short.

Specifically, one smaller firm had been located in Boston for years and its management had absolutely no intention of locating elsewhere. Its management was looking for at least 35,000 square feet of space on one floor, sufficient off-street parking and ease of accessibility by the workforce. The owners/managers of a second small firm wished to remain

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<sup>2</sup>P. M. Townroe, Industrial Movement Experience in the US and the UK, (Westmead, Farnborough, Hants., England, Saxon House, 1979), p. 142.

within Boston due to a perceived need to remain close to existing suppliers. There was also an interest in a specific amount of space on one floor. From the outset, the owners/managers of both firms restricted the search for a new site to Boston. Both relocated within a few miles of the previous site. Neither formally evaluated the costs of its new site. In both cases the location decision was made by the firm's President. Both noted that high moving costs and interruption of operations were unexpected by-products of these relocations.

The larger firms isolated a broader range of primary factors with which to screen locations. There was evidence of a greater awareness of the financial ramifications of the project (as manifested in the present value example discussed at the end of chapter 2), although, once again, there were indications that few alternative locations were evaluated. Hard-to-quantify factors played a role in many cases, again as demonstrated in the chapter 2 example where a location's proximity to a firm's existing facilities was given a value of \$2,000,000 in the location comparison analysis. Top management played a key role in a number of decisions even for the larger firms.

The primary factors entering into the location decision processes of the larger, interviewed firms are as follows: one was interested in a specific central city location for proximity to major customers; another was very impressed with the performance of the workforce at one of its central city plants and wanted to take advantage of this asset as it expanded; another wished to keep all of its manufacturing operations concentrated

geographically; two were primarily interested -- apparently due to a personal interest on the part of the chief executive -- in providing employment opportunities within specific central city communities. Only two of these larger firms seriously evaluated more than one site in the establishment of these particular facilities, and only one -- that from the chapter 2 example -- evaluated an alternative suburban site. The only direct evidence of a complete attempt at costing out a location was, once again, that described in chapter 2. None of the firms was entering the region for the first time. That is, all had major facilities already located within the central city or in a nearby suburb. The two firms demonstrating a social commitment from the "top" were the only firms whose primary operations were located in the suburbs.

(c) Top-Management and The Social Objective

The issue of a "social commitment" on the part of a top-executive to provide employment opportunities within a certain central city community is an interesting one, particularly since it played a "primary" role in the location decision processes of the suburban-based firms only; (note: these were the suburban-based firms in the interview sample). As will be discussed below, this "social commitment" appears to gain more of its motivation from altruism (in these cases) than from any free advertising or positive public relations returns that might accrue to these firms as a result of these investments.

Another key distinction that can be made involves differences in the importance and size of facilities established within the central city by



urban-based and suburban-based firms in the interview sample. The suburban-based firms -- whose actions contrast with the "flight to the suburbs" phenomenon -- have established central city facilities of only "token" size. For example, one of these firms lists 19 facilities in its 10-K report, the smallest of which is three times larger than the central city facility under study. A smaller suburban-based firm has eight times more manufacturing space in two suburban plants than will be added in the central city. In fact, an interviewee from one of these two firms indicated that the central city facility was not considered to be a big facility or a big effort. Conversely, the firms headquartered within the central city were undertaking major expansions. For example, the firm from the chapter 2 example was increasing its manufacturing space by 50%.

Of interest, therefore, is whether the suburban firms were trading financial return for the satisfaction of a non-profit objective. Unfortunately, no hard data on this issue could be drawn from the interviews, perhaps since it may be a point of particular sensitivity due to any management's primary commitment to shareholders to maximize firm value. At best, the information indicates that these firms perceive costs to be higher in the central city (though they simultaneously claim that these are and must continue to be profitable undertakings). An independent indication that this is an accurate reflection of these firm's perception comes from information gathered on another firm -- not located within the primary jurisdictions under study -- whose CEO has stated that social

programs and profits can be simultaneously achieved. This individual is particularly committed to revitalization of central city areas. This firm has undertaken a variety of innovative projects within central city areas -- one case being an operation staffed entirely by part-time personnel; another a light assembly plant with an accompanying child care facility. This firm also holds 40% of the outstanding voting securities of a company -- formed by this same individual in conjunction with one other person -- which provides development agencies with advice and information on methods of attracting industrial investment to the central city. There are indications that this company is (as of this writing) preparing a plan for the creation of some 1,500 new jobs over three to five years in a labor-surplus area within Boston. (No other information is available at this time.)

The hypothesis that these firms undertook these projects in order to derive valuable "hard-to-quantify" by-products (e.g. free publicity or lessened government regulatory pressure) must be rejected. The hypothesized argument is that these are truly profit-maximizing projects since the total return on them inclusive of these hard-to-quantify benefits is actually greater than that indicated by a look at the easily quantifiable results. None of the interviews indicated that firms considered such supplemental returns in making its location decision, although some did take advantage of them when given the opportunity to do so. In one case, the firm's CEO has indicated that the media, in fact, caused the project to be delayed, thereby increasing costs.

(d) Observations From Other Data Sources

The literature provides substantiation for some of the findings drawn from the interviews. Once again, Schmenner has noted similar phenomena: "not everything that is important can be quantified; (the) decision is typically too complex to be evaluated solely by the numbers."<sup>3</sup> Supplementing my findings regarding the role of top management in the decision process, Schmenner (41), in a study of the location decisions of firms in Cincinnati and New England found that 56.8% of sites involving more than 100 workers were recommended by firm Presidents. Rahe (35), in a similar survey of mobile industry in metropolitan Denver found that within the firm, a single executive made the decision in 41% of the cases. Wasylenko (59) references a survey of mobile firms in Michigan: "Fifty percent cited historical accident or personal reasons (such as it is the birthplace of the founder, or the owner has business connections there) for the specific site choice."<sup>4</sup>

With respect to the financial evaluation of alternatives by large firms, Schmenner (41), in his study of Cincinnati and New England, found that 40% of the new sites with more than 100 jobs were not costed out.

The investigation of firms which had established central city facilities uncovered no cases in which firms with no prior experience in the

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<sup>3</sup>R. W. Schmenner, Summary of Findings The Location Decisions of Larger, Multiplant Companies, summary of research to be published in a book (Prentice-Hall), in late 1981, p. 12.

<sup>4</sup>M. J. Wasylenko, "The Role of Taxes and Fiscal Incentives in the Location of Firms", in Urban Government Finance, Emerging Issues, ed., R. Bahl, (Urban Affairs Annual Reviews, 20, Sage, 1981, forthcoming), p. 11 of draft.

region ("outsiders") entered the central city with a new plant. That is, all of the firms had existing facilities within the central city or in adjacent suburbs. Following along the same lines, a survey (conducted by a state development agency) of subsidized firms in Michigan (33) found that 98.5% of these firms had at least one year of operating experience within the state and 81.3% more than ten years. Summaries of urban industrial location activity within Cleveland and Boston (published by local development agencies) indicate that the vast majority of such activity involves firms already operating facilities within the central city. The only exceptions to this rule were the two suburban-based firms described in the "Interview Findings" section above.

Another general observation made in the "Interview Findings" section was that firms utilizing incentives formally evaluate few alternative sites. In the Michigan survey (33), 56.6% of the subsidized firms considered one site only; 38.6% of the total considered sites outside the state and a lesser percentage considered alternatives within the state.

(e) Universal Factors

Near the top of each interviewed firm's list of primary factors were: space considerations; and, workforce considerations. Space requirements varied from firm to firm. In two interview cases involving small firms, at least 30,000 square feet on one floor was required, and according to one of the interviewees, this was a requirement not easily satisfied within the central city of Boston (i.e. there were not many vacant facilities which could meet this simple criteria). For the larger firms, two methods were

typically employed to provide the requisite amount of manufacturing space within the central city -- construction of new plant on a site cleared of obsolete structures; and, rehabilitation of existing structures. The one interview case exception was a Cleveland manufacturer which found a modern facility within the city which met its requirements exactly. The larger firms were very much concerned with the availability of space for expansion. Both suburban-based firms indicated that one of their standard locational requirements was sufficient room for repeated expansions. In fact, one of these firms expanded its principal suburban site seven times between 1964 and 1980. Its new central city facility offers very limited expansion potential. The other firm negotiated a lease on an adjacent, recently cleared site for future expansion, although even if utilized, its total central city facility will still be significantly smaller than that located at this firm's typical suburban site. The Cleveland firm referenced above was totally "land-locked" in its old location and could not buy or lease adjoining space -- although it vigorously attempted to do so. The central-city based firm from the chapter 2 example not only leased a multi-story central city structure for renovation, but also a quantity of adjacent land. Each of these firms indicated that a major trade-off made in locating in the central city was this lack of space for expansion. The relative lack of the central city manufacturing space usable by modern industry came as a surprise to this author. Existing structures are either not well suited to the needs of industry or a great deal of site clearance and parcel assembly must be carried out to produce a vacant site which

can accommodate a modern, manufacturing facility. A final indication that this is a key issue comes from a number of case summaries from Cleveland in which, once a central city facility had been vacated, an adjacent firm would buy up (in some cases simply to hold for future expansion possibilities) the land and building(s) just vacated.

The workforce considerations are of equal importance to these firms. Each of the smaller firms interviewed -- those relocating their entire operation -- could not afford to move to locations which would result in a large number of resignations. For the larger firms, the quality, cost and availability of labor are key issues. For example, one of the suburban-based firms indicated that it was -- contemporaneously with the undertaking of the central city project -- making plans for a suburban plant eight times larger than the central city facility. This firm felt that labor availability for a facility of this size would be a problem in a central city location. One particularly sensitive topic in the interviews was the union/non-union issue, perhaps due to the fact that most of the interviewed firms run non-union shops. Labor cost is another key factor. Referring once again to the Michigan survey (33) of subsidized firms, 38% would cancel any plans for new or expanded plant in Michigan were unemployment insurance costs to continue to increase at historical rates; 44% would do so if workers' compensation costs did the same. The labor cost issue was singled out by more than 50% of these firms as the most important for the government to focus on in its efforts to encourage industrial expansion within the state.

In sum, these two factors appear to be quite central to firms' location decisions. It seems that both must be satisfied to some minimum extent before a site is considered to be viable.

(f) Locational Factors - Evidence of Some Commonality by Industry

Schmenner (42) in some recent survey work (involving a large number of Fortune 500 firms) finds that locational factor weights in the location decision process differ across industries. The interview evidence collected by this author does not span a broad range of industries, although it does support Schmenner's findings for those industries in the interview sample. The interviews also provide some evidence that factor weights may differ across firms in different stages of growth or of different size.

A few of the specific examples noted by Schmenner will serve to illustrate his point. He notes that capital-intensive firms may be concerned with accessibility to suppliers. High technology firms may be sensitive to the availability of a professional workforce. The perceived "quality of life" within a community may also play a primary role in high tech firms location decisions due to their desire to minimize the turnover of this professional workforce.

Echoing Schmenner's finding regarding the high tech industry's sensitivity to the availability of a professional workforce, top executives from a number of high tech firms in Massachusetts have formed an industrial association which has focused its collective efforts on the issue of educational opportunities in technical fields. The association has been an outspoken advocate of the establishment of part-time academic programs in

technical fields. Such programs would enable persons to gather a technical background without foregoing current earnings. The interview results indicate that high tech firms are also very sensitive to the issue of collective labor activity. Interview data were collected on three high technology firms and each operates within a non-union environment. This sensitivity to the union issue seems to stem from the rapid technological change within the industry which requires that firms have the flexibility to reassign workers to new tasks with some regularity. These firms perceive that they would not have such flexibility within a union environment.

The interview results also indicate that high growth firms are sensitive to space-related factors, primarily in anticipation of future expansions. Such expansions are facilitated if space is available proximate to existing facilities. These firms were also sensitive to the availability of labor, again particularly in anticipation of future expansions.

The smaller firms in the interview sample were more concerned than the larger firms with proximity to proven markets. Locational tradition was also weighted more heavily by these firms than was the case with the larger firms.

## II. Introductory Note to the Role of Incentives

In the first chapter, a simple classification scheme defining three general levels of locational factor importance was introduced. To review, the three levels were defined as follows:



- Primary factors -- those which a firm would consider in its initial screening of candidate regions or localities. A candidate which did not meet this minimum standard would not be evaluated further;

- Secondary factors -- those employed to choose between specific sites equal in all primary respects;

- Trivial factors -- those having no impact on site selection.

### III. The Role of Incentives

As can be deduced from the absence of references to incentives in the above discussion, these instruments did not appear to play "primary" roles in the location decision processes of firms in the interview sample. There is no evidence that incentives caused any of the firms under study to consider a particular locality due to the availability of these instruments. It is clear that other factors were central to each firm's "primary" location search.

#### (a) Financial Incentives

It appears that financial incentives entered the location decisions of firms in the interview sample at one of two levels -- either trivially or secondarily. In most cases the incentives had no impact (trivial case), however, infrequently, the incentives played a secondary role in the choice of a specific site among urban and suburban alternatives. The key issue, therefore, involves some measure of the number of firms which, having chosen a central city location (and having also utilized incentives of some sort), would not have located within that same central city

community had the financial incentive opportunities not been available (i.e. chosen another site identified in the primary search). Incentives provided to firms which consider them to be a trivial factor are wasted by definition. From the interview evidence, all but one firm fit the trivial classification. Excluding the exception for a moment, there is clear evidence that the decision to locate within the specific central city was made well in advance of the point in time in which the firms became aware of (or negotiated for) specific incentive opportunities. That is, these firms chose to locate in the central city irrespective of financial incentives.

In the case of the smaller firms there was no doubt that a central city location would be chosen. In fact, chance played a large part in the eventual location of each within a property-tax-exempt city-owned structure. That is, the firms were not attracted by the tax-exemption, but rather by the characteristics of the structure itself. This chance meeting of firm and development agency led to the use of an additional financial incentive instrument on the part of one of these firms -- again well after the location choice had been made.

Of the larger suburban-based firms (i.e. those primarily interested in establishing central city facilities so as to provide employment opportunities within specific communities), one firmed up its "social commitment" by hiring an individual to be solely responsible for such projects. The commitment to establish an operation within the specific central city area which now houses this firm's urban facility, preceded by some years the negotiation of the incentive package. The interviewee from the other

suburban-based firm indicated that a plant would still have been built within the target locality in the absence of incentives.

The representatives of the urban-based, larger firms made similar statements: one was intent on locating near important central city customers; another wanted to take advantage of what it felt to be a superior labor pool. Neither considered suburban alternatives. The interviewee from this last firm summed up its position on incentives with a statement to the effect that incentives should be utilized if available since they serve to cut costs. In other words, even if they did not attract firms to a central city location, firms locating there in any event would be foregoing an opportunity to reduce costs if they ignored any incentives available to them. My claim is that -- with the exception of one firm -- each of the firms in the interview sample would have chosen the same location for its new facilities even in the event that incentives were not available. The incentives were utilized since they represented an opportunity to reduce costs.

One role which incentives may play, however, is to reassure the firm that a favorable business climate exists within the community within which the firm intends to locate a new facility. This factor was mentioned by the representative of one firm in the interview sample (one of the suburban-based firms) whose CEO has stated that it is very important for industry to feel "wanted". In this instance, the incentives appear to signal (to the firm) that the community desires to attract and accommodate new industrial undertakings. In some cases this simple signal may be sufficient to

successfully induce an industrial entry to the central city. That is, some firms -- due to considerations independent of incentives -- may be on the verge of undertaking a project within a particular central city community and may require only a small indication (perhaps as small as an indication that the "business climate" will be favorable) to tip the balance in favor of going ahead with the project. Unfortunately, as will be discussed below, it is reasonable to expect that firms will negotiate for nothing less than an incentive package as valuable as any provided previously to firms undertaking similar projects irrespective of the actual influence of incentives on the ultimate location decision of any of the firms involved in the process.

The exception is the firm described in the chapter 2 example. This firm is an urban-based manufacturer and the only firm which made an explicit comparison of the costs of alternative urban and suburban locations. The firm's "primary" requirement was to maintain all of its operations within a limited geographic area. Its claim, however, was that the urban location would absolutely not be selected unless the local development organization could provide enough incentive funds to make the firm indifferent between the urban site and nearby suburban alternatives. There is no evidence that the availability of incentives played a role in the primary selection of these alternative sites. However, it does appear that a financial incentive entered as a secondary factor in the decision process. It is interesting to note, however, that the firm had taken a 25 year lease on the urban property prior to the negotiation of the incentive package with

the development entity. My interpretation of this situation is that -- primarily due to the preexistence of a lease arrangement on the urban facility -- this case may be a sophisticated variation on the general theme of utilizing incentives simply because they are available, not because they influence the location choice. That is, it can be argued that the preexistence of a lease indicates a strong intention on the firm's part to locate a facility at that central city site. The urban/suburban comparison may simply have been a vehicle to maximize project return through use of incentives -- in this case a loan at infinitesimal (given current market conditions) interest rates and a deferred principal repayment plan which guarantees that the loan will be repaid in very cheap future dollars.

Another example of this phenomenon of a firm playing one locality off against another to gain additional subsidies came from an interview with a consultant who outlined a recent experience involving a foreign truck manufacturer. The truck manufacturer had narrowed its alternatives down to two sites near cities in two southern states. It had selected these particular sites on the basis of two primary factors: proximity to a significant labor pool within a "right-to-work" state (i.e. lower potential for unionization); and, availability of rail and highway transportation facilities. The development agency (for which this consultant was employed) offered the firm a special 30-year IRB package to facilitate the financing of the project. However, the firm told this development agency that it would select the alternative site unless the quote for the annual in lieu of property tax payment was reduced. The proper property tax liability for the

project was \$3,000,000 per year, the firm was requesting a 50% tax holiday for the first 10 years with lesser tax advantages thereafter. The annual tax savings for the first 10 years would be \$1.5 million (nominal). Compare this figure with a \$300 million initial investment and a \$40 million estimate for annual salary expense (real). Here again it appears that the incentives are playing a role in retaining a firm, which, for other reasons, has demonstrated a strong interest in the community. However, it is also possible that the firm may simply be attempting to maximize the value of available incentives, having already made the site choice.

This author is led to conclude, therefore, that for the firms in the interview sample, locational incentives did not play a "primary" role in their location decision processes. In one case the incentives may have played a "secondary" role to retain an urban-based manufacturer which was contemplating a move to the suburbs.

The results of the Michigan survey (33) of subsidized firms parallel the interview findings. Only 20% of these firms indicated that they would cancel plans for expansion within the state if the primary financial incentive instrument -- a property tax concession -- was not available. Recall from the hypothetical exercise of an earlier chapter that a tax concession program constructed along the lines of this Michigan program (assumption #2 from that exercise) provided a relatively weak incentive given the parameter estimates of that exercise. Thus, the 20% survey result seems to reinforce the result drawn from the hypothetical exercise for this specific incentive. (Note: since only incentive-user firms were included in the

Michigan survey, it is possible that some of the surveyed firms would overstate the importance of the incentives in their locations decisions so as to justify their acceptance of these subsidies, hence, the 20% result may actually overstate the effectiveness of Michigan's program.) Only 3% of these firms indicated that low cost IRB's should be provided to encourage business expansion within the state. This last finding is also in line with the results of the hypothetical exercise (i.e. assumption #16).

Turning to the literature, one notes that this is not the first empirical work to have reached the conclusion that these financial incentive instruments are not particularly effective. (In fact, one is pressed to cite a single study which finds the opposite.) The trendsetting piece of work (cited very frequently in the literature) is an article written by John F. Due (3) on the influence of taxes on the location of industry. Due concluded that taxes did not play a major role in the location of industry and that relatively high tax levels do not have disasterous effects. He also indicated that, in some instances, taxes may play a deciding role in interlocal decisions. A number of statistical studies have been completed and few have found that financial incentives significantly explain location outcomes. Wasylenko (59) in a forthcoming article provides an excellent review of this work.

A variety of surveys have also been conducted. In his study of mobile firms in Cincinnati and New England, Schmenner (41) found that one-quarter of the surveyed firms moved to locations with higher property tax rates and

about one-half moved to locations with similar rates. Sazama (38) in a survey of the impact of state development loans found that "only 8 per cent definitely would have located in another state if they had not received a loan"<sup>5</sup> (note: Sazama only surveyed subsidized firms). A survey referenced by Williamson (60) found that only 4% of surveyed firms considered financial incentives to be a "principal reason" for choosing the plant location. All of these findings seem to parallel those of the hypothetical chapter 2 example which indicated that, taken individually, these incentive instruments may not be powerful enough to compensate firms for the higher costs of central city operation.

Before leaving the issue of the role of financial incentives, one interesting perspective which surfaced in the interview process is worthy of mention. One of the small firms, having located within a property-tax-exempt, city-owned structure, indicated that it had rejected an opportunity to partially fund its relocation with a concessionary loan from one of the incentive programs described in chapter 1, deciding instead to make use of a line of credit extended to it at a higher rate through a commercial bank. Management's reasoning was simple: the concessionary loan required the owners/managers to personally guarantee the loan, an action which would have resulted in the loss of the limited liability protection which derives from the incorporation of the firm. Clearly, this limited liability protection was worth more to the management than the interest savings available

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<sup>5</sup>G. W. Sazama, "State Industrial Development Loans: A General Analysis", Land Economics, 46, (May 1970), p. 177.



through the concessionary loan. Interestingly, even though this firm had no interest in relocating outside of the central city, the subsidies were still readily available.

This decision to reject an incentive/subsidy opportunity brings to mind a hypothesis made by Townroe (55). His hypothesis was that even where significant incentives are available they may rarely prompt a location search since some firms "may be eager to demonstrate that they should not be thought of as exploiting a social or political situation in receiving public money".<sup>6</sup> Clearly, although the firms described above did not consider the incentives to be a primary factor, they did not exhibit any reluctance to utilize the incentives.

(b) Non-Financial Incentives

The firms in the interview sample appear to have been somewhat more responsive to non-financial incentive opportunities made available to them. In these cases, the non-financial programs involved either development agency participation in the assembly and improvement of central city land or the renovation of obsolete structures so as to accommodate modern industry. This responsiveness to these opportunities may reflect the importance of space-related factors to these firms. The evidence involves four firms -- two small/urban-based; one large/urban-based; one large/suburban-based.

Both small firms were under some pressure to relocate -- one due to space limitations, the other due to a lease expiration. Neither considered

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<sup>6</sup>Townroe, Industrial Movement, p. 132.

the possibility of a move to a location outside of the central city which housed their current operations. A secondary concern of both firms was the availability of a certain amount of modern, industrial space on one floor. Both firms finally relocated to the same structure, a multi-story warehouse renovated and improved by the local development entity to accommodate light industry. It is clear that the availability of such space had an impact on the specific site choice made by these firms.

Similarly, both of the larger firms (one urban-, one suburban-based) chose to locate a new facility on property assembled by a local development entity. Though both had made the primary location decision based on other factors (proximity to major customers in one case, a "social commitment" in the other), thereby isolating a target urban area for location, the specific site choices were clearly influenced by the availability of sufficient property upon which to construct a modern facility -- property cleared by a development organization. As stated above, I sense that the responsiveness of these two firms to these opportunities may reflect the heavy weight attached to space-related factors in their location decision processes. However, on a more basic plane, firms may find site improvement assistance attractive due to the difficulties which they face in attempting to acquire sufficient central city space upon which to build a facility of meaningful proportions. That is, the development organization, due to its power of eminent domain and so on, may be better equipped than is a private firm to carry out a number of the tasks related to development of a central city industrial site, as follows: assemble parcels of adjoining

land into a usable industrial site; install services (e.g. water, electric); and, relocate any persons or commercial establishments whose property fell within the redevelopment zone. Without the various powers held by the development organization (which accrue from its close association with the local government), a private firm would face substantial barriers in attempting to develop an urban industrial site on its own.

Schmenner has made observations similar to those described above with respect to the differential sensitivity of firms to financial and non-financial incentives. In a survey of a large number of Fortune 500 firms (42) he found that "physical help with site selection and new plant start ups is used twice as often by large companies surveyed (61%) as is financial help (i.e. tax concessions, industrial revenue bonding) (31%)." <sup>7</sup>

#### IV. The Role of the Development Organization

##### (a) The Development Strategy

Research into the role of the development entity identified a completely unexpected phenomenon. Namely, the emphasis of the city development agency in its efforts "to stimulate increased industrial employment" <sup>8</sup> by "attracting new business to the city" <sup>9</sup> is very heavily on the retention of mobile -- relocating or expanding -- local firms. This reflects a conscious choice made by the development entity: "in the aftermath of the

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<sup>7</sup>Schmenner, Summary of Findings, p. 18.

<sup>8</sup>Economic Development and Industrial Corporation of Boston, Financial Assistance Programs, p. 1.

<sup>9</sup>Ibid., p. 1.

"flight to the sunbelt", . . . nurturing young growth-oriented manufacturing firms which draw upon native professional skills and an available labor supply is a priority above attracting out-of-city and out-of-state firms to locate there".<sup>10</sup> The entry of "out-of-city" or "out-of-state" firms is left to chance: If an "outsider" firm with expansion plans happens to express some interest in the community, then the incentives are rolled out. However, there appears to be no effort to market the available programs to potential "outsider" locators. In an interview with a representative of a Michigan development agency, the indication was that if some firm decides on its own to locate in that general region of the country, then the Michigan programs can have some impact. The impression was that the incentives played no role in this choice of general area. Evidence that this phenomenon occurs elsewhere comes from Rahe's (35) survey in which .6% of 159 respondent firms who were not previously located in Denver but who established facilities there between 1965-1970, "first became interested in Denver through contact with an industrial development agency".<sup>11</sup>

The "reindustrialization" successes achieved by the development agencies reflect this focus. The vast majority of the central city industrial projects are undertaken by firms already located within the city. In Cleveland, this is true absolutely. In Boston, two cases of suburban-

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<sup>10</sup>UDAG application by a development agency within one of the jurisdictions under study.

<sup>11</sup>Charles P. Rahe, "Industrial Development Agencies and the Location of New Plants", Growth and Change, (October 1972), p. 6.

based firms (from adjacent suburbs) locating facilities within the central city were identified. In neither of these cases did incentive offerings play a primary role in the firm's location decision -- although both utilized them. At the state level, as referenced above, the Michigan survey (33) indicated that 98.5% of the incentive users had at least one year of experience operating a plant within the state -- although its marketing program is much more sophisticated than that of the city agencies. Upon discovering that the focus of the "redevelopment" effort was being expended upon local firms, the question of the local firm's purpose in utilizing the incentives was pursued. As discussed above, it appears that very few of these firms would alter a location decision if incentive opportunities were eliminated. (As already noted, twenty percent of Michigan subsidy users indicated that they would cancel plans in this eventuality.) Only one interviewed firm showed indications that the financial incentives -- the key instrument in most development organizations' incentive portfolios -- entered in as much as a "secondary" fashion. The incentives are utilized by local firms because they would forego an opportunity to reduce costs by not utilizing them. In a majority of cases, therefore, the development agency is expending funds (or reducing its own future revenue flows) to "attract" projects that would have been undertaken in any event. Effectively then, the social benefits from the rare case in which the incentive does, in fact, retain the project must outweigh the total costs of all incentives/subsidies (i.e. inclusive of those provided to firms for which the incentives had no influence on the location decision).

As the interviewee from the Michigan development organization indicated, the incentives cannot be offered to just those firms which considered them to be essential to their choice of location. That is, unless some mechanism can be developed which permits development agencies to discriminate between those firms whose investments are contingent upon the provision of incentives and those whose are not, it is likely that the largest single incentive distribution will become the norm for all firms, irrespective of the differential influence of the incentives on their location decisions. Individual firms will not consider the differential importance of incentives in the location decision processes of different firms to be a valid justification for the provision of different subsidies to firms undertaking equivalent projects. Irrespective of motivation, firms will demand that equivalent investments be subsidized equally. Hence, the incentive package assembled to attract that firm whose perspective of the central city cost disadvantage was higher than that of any other firm contemplating a similar project will become the norm for all firms considering such projects.

Hence, the development strategy is best characterized as a defensive one. My research was unable to uncover a single case in which a firm located a plant within a central city with no prior experience in that city or an adjacent community. The "redevelopment" process seems to be one of slowing the "exodus" rather than reversing the trend through attracting the expansion projects of "outsider" firms. To see this more clearly, a Boston development agency -- in an application to a Federal agency for

development assistance -- notes that some 58,000 jobs were lost in Boston between 1970 and 1977. Compare this with the 2,000 permanent new jobs which are expected from the expansion described in the chapter 2 example. The expansions by the other large firms described above typically involve 300-400 expected new jobs. Additionally, some unusual trade-offs occur. In the example from chapter 2, a number of small firms occupied the structure which is now being renovated to house the larger firm's expansion. These firms had to relocate. Some relocated to newly renovated, property-tax-exempt, city-owned manufacturing space, thereby increasing the net subsidy cost of the primary project. In fact, a Federal grant of more than \$1 million was used to renovate this multi-story structure which has been occupied completely by firms previously located within the same central city -- with limited promises of incremental employment opportunities. That is, the interview results indicate that the subsidy of small firm relocations does not present much potential for expanded employment.

(b) The Development Strategy -- Estimated Cost Per "Created" Job

Given this evaluation of the redevelopment strategy, it is of interest to evaluate its effectiveness in terms of dollars expended per job created/retained vis-à-vis other programs designed to lessen unemployment in "distressed areas". Data from a Michigan survey (34) of subsidized firms in Detroit provides the foundation upon which to make such a comparison. The data show that from 1974 to 1978, 1854 jobs were created through the subsidy program and 24,254 were retained. The cost of these subsidies to the city is estimated to be approximately \$5 million per year for an

average duration of twelve years. The present value of this stream -- discounted by the city's opportunity cost of funds -- represents the cost of the benefits derived from those jobs actually created or retained as a result of the provision of the subsidy. If the subsidy makes a real difference in 20% of the cases -- the highest estimate of effectiveness which we have seen -- then the costs of all subsidies must be less than the benefits of 370 new and 4,850 retained jobs (i.e. one-fifth of the totals claimed by the city). The present value of this flow, discounted at a 10% rate, is approximately \$34 million or about \$6,500 per "created" job (in 1978 dollars).

It is interesting to compare this result with estimates of the cost-per-job-created of other employment-creation programs. In the National Commission for Manpower Policy's Fourth Annual Report to the President and the Congress (31) a comparison is made of the costs-per-created-job of various public and private sector employment programs. The public sector job creation programs (CETA Title VI and IID) provide 100% funding to public employers. Title II was designed to be a "continuing program targeted at selected areas experiencing substantial and persistent unemployment."<sup>12</sup> Title VI was designed to be "a general countercyclical tool, directed to what was believed to be a temporary downturn in the economy."<sup>13</sup> The private programs are primarily tax credit programs providing partial

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<sup>12</sup>William Mirengoff and Lester Rindler, CETA: Manpower Programs Under Local Control, (Washington, D.C., National Academy of Science, 1978), p. 8.

<sup>13</sup>Ibid., p. 8.



subsidies to private employers for employment and training programs. The work incentive (WIN) tax credit, passed originally in 1971, reimburses private employers for a flat percentage (50%) of the first \$6,000 of the first year's wages they pay to those receiving AFDC (aid to families with dependent children) for 90 days or more. The credit is restricted such that it applies only to low-wage workers. A lesser flat rate is applicable to the second year's wages. A second private sector program is the targeted jobs tax credit (TJTC) which provides a subsidy structured in a very similar way to the WIN program, although eligibility in this instance is restricted to targeted groups (e.g. disadvantaged youth (18-24), disadvantaged Vietnam vets, and so on). The estimated costs per created job of the two public sector programs (CETA Title VI and IID) were \$10,800 and \$11,400 respectively. The private sector programs (TJTC and WIN credit) were \$6,250 and \$10,000 respectively (all figures in 1978 dollars). Hence, the experience for the city of Detroit compares very favorably with these programs. That is, it appears to be at least as cost efficient as these other employment-creation programs.

(c) The Development Strategy - Summary

It is interesting to note the level of efficiency which the retention strategy must achieve simply to maintain the status quo with respect to employment levels -- let alone to re-employ those who have lost jobs due to the "exodus". Under the retention strategy, maintenance of the status quo can be achieved in one of two ways:

- retention of every job already present within the jurisdiction; or
- retention of local-firm expansion activity (note: many of these firms may be in low-growth or no-growth phases) supplemented by chance "outsider" entries such that at least as many new jobs are created as are lost through any failures to retain existing jobs.

I claim that, given the above evidence, it is unlikely that simple maintenance of the status quo with respect to employment levels is achievable through the application of the retention strategy in either sense just described.

Furthermore, note that this retention strategy is dependent upon the firm to make an initial, "primary" location choice in favor of the target community; a choice which the interview evidence indicates is uninfluenced by incentives offered through the community's development agency. That is, there were no cases uncovered by this author in which incentives had an impact on the "primary" location decision. Each firm was interested in a target locality for reasons independent of the incentives (note: this applies to both the urban-based and suburban-based firms). The key point is that a defensive, retention strategy of this sort does not appear -- from the interview evidence -- to impact the "primary" selection of a set of viable location alternatives by either local firms or those from "out-of-state" or "out-of-city".

Finally, it seems unlikely that a large number of "outsider" firms will be motivated to locate a facility within the central city on the basis of a "social commitment" to the provision of employment opportunities

within same. A fairly direct reading on the extent to which "socially responsible activities" serve as viable alternative corporate objectives can be gained through a review of statistics on corporate charitable contributions. The Conference Board conducts an annual survey of corporate charitable activities and publishes the results along with IRS statistics on the level of corporate contributions nationwide (57). The law permits a corporate tax deduction of up to 5% of net income for corporate contributions to charitable causes. Yet, the national average for corporate contributions has hovered around 1% of pretax income since the early 1950's (e.g. 1951 - .78%; 1964 - 1.13%; 1977 - .98%).<sup>14</sup> The Conference Board's 1977 survey (whose participants account for 35% of the charitable contribution total for the year) found that: 36% of participating firms contribute .49% or less of pretax income; 49% contribute between .5% and 1.99%; 10% between 2% and 3.99%; and, 5% over 4%.<sup>15</sup> The average contribution for this group is 1.25% of pretax income and the standard deviation is 1.5%. Furthermore, the results show that charitable contributions as a percent of pretax income are inversely related to income. For example, in 1977, the median contribution percentage for firms with pretax income of \$10 - \$25 million was .93% while the median for firms with pretax income of \$250 - \$500 million was .33%.<sup>16</sup> Ninety percent of this latter group contributed

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<sup>14</sup>Kathryn Troy, Annual Survey of Corporate Contributions, 1977, (New York, N.Y., The Conference Board, 1979), p. 3.

<sup>15</sup>Ibid., p. 10.

<sup>16</sup>Ibid., p. 11.

less than .75% of their pretax income. These data indicate that there are very few firms contributing anywhere near the maximum deductible of 5%.

Since this 5% tax deduction provision provides a low cost mechanism through which firms could satisfy "social responsibility" objectives, one would expect to see many more firms at the 5% level were such objectives held pervasively. The implication of the very low rate of utilization of this opportunity at the 5% level is that "social responsibility" objectives play an insignificant role for most firms, particularly among the higher income firms from whom one would expect a greater expansion potential and hence, a greater demand for new sites. The conclusion drawn by this author is that there are very few firms in the market for an opportunity to make "social commitment" investments in plant.

(d) Information Availability

The issue of information availability (regarding the characteristics of a community or of any available incentives) to "outsider" firms is an important one. That is, if "outsiders" have no ready source of information regarding a community, then few would be expected to consider it as a viable location alternative, especially if the interview finding that firms do not carry out particularly rigorous location searches accurately reflects the behavior of most firms. In the Boston case, there is little evidence that the firms which eventually did business with a development organization were made aware of the incentive programs through any direct communication initiated by the development organization itself. In fact, one interviewee claimed that his staff was not specifically aware of the avail-

ability of incentives within the jurisdiction of desired investment, but hypothesized (correctly) that, due to the social/political environment in general, subsidies would be available. On this basis, the firm undertook to search them out. Firms were typically made aware of the existence of the incentive programs through a banking or real estate contract. Rahe (35), as referenced above, found that only .6% of "outsider" locators in Denver first became interested in the city through contact with a development agency. Only 1.3% felt that a development agency was the most important source of information. This lack of information flowing to firms at the local level leads this author to conclude that extra-regional firms would be totally ignorant of any incentive opportunities.

I believe that this information issue may provide the link between the hypothetical example presented in chapter 2 and the empirical findings described in this chapter. That is, although all interviewed firms -- save the one which made an explicit urban/suburban cost comparison -- claimed that the incentives did not influence their location decision in a significant way, the incentive packages assembled for two of these firms (one urban-based, one suburban-based) resemble one of the incentive combinations found to be sufficient to overcome the urban/suburban NPV differential in the hypothetical example; (specifically, combination #19 from the chapter 2 example provides the closest match). If one infers from this similarity that these "real world" incentive packages were of significant value to these firms, then their disclaimer as to the importance of the incentive packages in their location decision processes appears to be

something of a puzzle. I claim that this puzzle is easily resolved if one considers the actual sequence of events in both of these decisions. That is, in each case, the location decision predated the negotiation of a specific incentive package and since these two packages were negotiated at approximately the same time and were the first of their kind in the community, neither firm would have been able to anticipate with any certainty the value of the final arrangements. Of interest, therefore, is the firm which made its urban investment contingent upon the provision of a sizeable subsidy (the case described at the end of chapter 2) and which negotiated its incentive package approximately one year after these two firms finalized their incentive arrangements. This chain of events may show that, once information regarding the potential value of incentive combinations reaches mobile firms, the incentives then exert a greater influence on the location decision process; an influence which one might anticipate given the results of the hypothetical chapter 2 example regarding such combinations. By definition, firms acquiring such information only after negotiating a specific incentive package would have to claim that the incentives did not play a significant role in their location decisions. That is, this claim would not represent a contradiction even in cases in which the final incentive arrangements were of substantial value to the firm if the firm had been given no prior indication as to the potential value of such incentive arrangements. It is possible, therefore, that future empirical study of this issue may find that firms having had prior knowledge of the value of various incentive combination opportunities had undertaken

central city projects primarily in response to the availability of such opportunities. The case example referred to above (in which the firm stated up front that a subsidy of a specific size would be required to retain the investment in the central city) may signal the start of such activity. The recently announced plans for a General Motors plant in Detroit (in which it is estimated that some 40% of the project start-up costs will be covered by various incentive programs)<sup>17</sup> provides another example in which a firm has indicated that it will undertake a central city project if sufficient incentives are provided.

Locational incentives have been in existence for some time. It may be that they have only recently been combined in such ways as to represent attractive opportunities for mobile firms not otherwise interested in undertaking central city projects. That is, a single incentive vehicle, in and of itself, may not be sufficient to overcome a locational disadvantage of some sort, yet combinations of same (and the diffusion of knowledge regarding the availability of such combinations) may be sufficient. (Note: the incentive packages provided to the other firms studied by this author were of the single-incentive variety (of standard proportions), hence, the disclaimers of these firms as to the influence of incentives in their location decision processes are in accord with expectations created by the hypothetical chapter 2 exercise with respect to the potential effectiveness of incentive instruments of standard proportions employed individually.)

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<sup>17</sup>William Serrin, "Huge New G.M. Plant, Like Many, to Get Subsidies", The New York Times, (Feb. 25, 1981).

(e) The Negotiating Process

One aspect of the topic which has not been discussed extensively in the literature is the bargaining process which goes on between the development agency and the mobile firm. The amount of funds to be raised, the type of instrument(s) to be utilized, the wording in the various federal grant or loan applications, the timing and amount of interest repayments, the amount of property taxes, any special lease arrangements if an IRB is involved (e.g. hiring practices, amount and timing of lease payments, options for purchasing the property and so on), are all areas which are commonly negotiated between the agency and the locating firm. The interview data indicate that this process was typically a drawn out affair and hence, costly. It appears that much negative publicity (regarding project delays attributed to the development agency) circulated within the industrial community as a result of the difficulties encountered by one of the suburban-based firms in the start-up of its central city plant. Another firm indicated that -- due to the development organization's lack of understanding with respect to the operation of the incentive programs -- they were forced to do much "innovating" in putting together an incentive package. This is the urban-based firm which had stated that an urban site would be selected over a suburban alternative only with the provision of an incentive package of certain value. The interviewee for this firm -- head financial officer -- reported that the central city project would not have been undertaken had he had prior knowledge of the time delays that he would encounter in the negotiating process.



One of the smaller firms in the interview sample indicated that two years were spent in preliminary discussions of lease and loan conditions for one particular project. In this case, the city was owner of a warehouse property being renovated to accommodate light industry. The city was to provide heat and electric capacity. Basic experience with such undertakings was manifested through such events as the provision of electric capacity only sufficient to service office space -- i.e. not sufficient for light industry. Hence, although incentives are available, the firm-specific package requires much negotiation which translates into a large investment of time on the firm's part. The implication is that time delays cost the firm money. That is, a year of lost revenues might easily exceed the benefits derived from an incentive opportunity -- negotiation of which may have caused the delay.

A rough estimate of the relative value of time delays vis-à-vis incentives can be made through a return to the framework of the hypothetical example presented in chapter 2. In that example, the present value of the base-case, urban, after-tax, operating flows was some \$4,402,000 in period 0 terms. If this stream of operating flows was delayed one year, such that the first such flow occurred in year 2 rather than year 1, and assuming no change in the firm's debt obligations, the firm would experience a loss of \$316,000 in period 0 terms due to the delayed receipt of this stream of income and depreciation tax shield inflows. Compare this figure to the \$279,000 present value of the incentive opportunity which provided for a 50% cut in property taxes for 12 years in the hypothetical

chapter 2 exercise (assumption #2). This example indicates that the cost of project delays could nullify a large portion of the advantage gained through the provision of subsidies. Due to the potential impact on project value of such time delays, development organizations would be well advised to expedite the negotiation process. This also implies that, to the extent that the development organization commits itself to some role in the actual construction of the facility, it should ensure that time delays do not result from its failure to live up to these promises.

(f) Game Theory Revisited

The interview work completed for purposes of this paper provides some further insights into the game-like aspects of the location decision process. First, firms making investments in facilities located within an unfamiliar region will experience some degree of uncertainty with respect to the cost outcomes of operating at that particular site. To the firm, this uncertainty represents risk, hence it will require a greater promised return from projects characterized by some degree of uncertainty than from those not so characterized. That is, the incentives must be sufficient to cover any additional costs assigned by the firm to uncertainty. A rational response for the development organization to make would be to reduce this uncertainty through the provision of information to the firm. However, as Spence (47) observes in his analysis of "market signalling", the information provider "presumably. . . will manipulate this image to create favor-

able impressions".<sup>18</sup> Hence, it is likely that the information receiver -- a mobile firm in this case -- will discount this flow of information due to the likelihood of inaccuracies.

A second insight into these game-like aspects of the process involves the various "threat" strategies which firms may employ in order to maximize the inflow of incentive funds. There appear to be two variations on this theme: 1) a local firm threatening to leave the community unless subsidies of a specific size are provided; and, 2) an "outsider" firm playing one community off against another in order to gain a maximum subsidy inflow. The point is that it is very difficult to distinguish between those firms which are bluffing and those which are in fact sensitive to the provision of a subsidy.

A final variable is the role of the Federal government. As discussed in many passages above, the local development organization receives a substantial portion of its incentive funds from various Federal agencies. The local development agency's ability to provide incentives of sufficient size to influence the location decisions of mobile firms is clearly contingent upon the availability of Federal monies. Changes in Federal policy -- such as those manifest at this point in time -- could easily make the game substantially less interesting to play.

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<sup>18</sup>A. Michael Spence, Market Signalling: Informational Transfer in Hiring and Related Screening Processes, (Cambridge, Mass., Harvard University Press, 1974), p. 3.

## CHAPTER 5

### SUMMARY AND CONCLUSIONS

#### Review of Findings

Manufacturing employment within older, American industrial centers has been on the decline for years. City and state governments representing these jurisdictions have responded by developing locational incentive programs designed to attract industry. These incentives take a number of forms: (1) financial instruments which may be supported by either federal, state or local funding; and, (2) "non-financial" instruments such as labor training programs which again may be supported by either federal, state or local funds. The primary financial instruments employed by "redevelopment" authorities are: property tax concessions, low interest rate (concessionary) loans, loan guarantees and tax-exempt industrial revenue bonds (IRB's). The non-financial instruments most commonly encountered in this author's research were: the assembly of parcels of urban land into industrial sites sufficient to meet the needs of modern industry; the renovation of obsolete urban buildings so as to provide a supply of manufacturing space meeting modern standards; and labor training programs.

A primary thrust of this research was to explore the attractiveness of these incentives from the perspective of the firm. As one element in this exploration, the analytical framework provided by modern finance theory (specifically the adjusted-present-value technique of project

valuation) was applied to model the value of each incentive instrument from the firm's perspective. A hypothetical exercise based upon these models provided an indication of the likely impact of these incentives in the "real world". The hypothetical exercise drew upon information gathered by this author as well as work completed by Hamer (10) on the comparative costs of constructing and operating a plant in an urban and a suburban environment. This comparative cost information was utilized to "construct" two hypothetical plants -- one located at an urban site, one at a suburban site. The exercise includes estimates of both start-up and operating costs at each site. The result is that, assuming an initial absence of incentives, the net present value (NPV) of the suburban plant exceeds that of the urban plant by about \$600,000 (about 18%), assuming: a 25 year plant life, a real discount rate of 7%, revenues of \$5 million per year, an urban labor cost advantage of 7.5%, and an amount of debt approximately equal to one-half of urban start-up costs (see chapter 2). A number of incentives were then evaluated in this context. The following conclusions were reached:

- That given measurements of "real world" cost differentials between typical urban and suburban sites, the NPV differential between the suburban and non-subsidized urban sites is likely to be substantial.

- That, taken individually, incentives do not appear to be powerful enough to overcome this differential unless they are of a size far beyond that which could be characterized as typical within the world of contemporary incentive programs.

- That certain combinations of incentives may be powerful enough to overcome the differential.

A second element in the exploration of the attractiveness of these incentive programs involved a series of interviews with representatives of firms which had been recent recipients of incentives. As one would expect, firms consider a number of basic factors (e.g. availability of land, availability of space, proximity to suppliers) in making their plant location decisions. As described above, redevelopment authorities attempt to influence these decisions by supplementing the basic factor-endowments of the areas targeted for redevelopment through the introduction of new factors uniquely available within these areas, viz, the various incentives. The interviews provide evidence as to those factors which play a significant role in firms' location decisions. Interestingly, the weights attached to the various locational factors seemed to be unique for each firm. Only two factors appeared to be weighted heavily by all firms in the interview sample: space considerations (i.e. either vacant land of certain minimum proportions or existing building space of certain minimum proportions); and, workforce considerations. These firms' location decisions were dominated by considerations of the basic, traditional locational factors and not by incentives. There were only a few instances in which the activity of a redevelopment organization was deemed to have had some influence on a location decision (e.g. one firm in the interview sample built an urban plant on a site assembled by a redevelopment authority which, through its exercise of its power of eminent domain, was

able to pull together a number of small contiguous parcels of land). The evidence assembled by this author also indicates that a large majority of incentive-recipient firms are firms already maintaining operations within or proximate to the community from which the incentives emanate. Finally, the firms in the interview sample generally did not undertake an extensive search for alternative locations.

The conclusion to be drawn from these observations is that a sizeable fraction of the incentive dollar is expended on firms whose location decisions are not significantly influenced by the receipt of these subsidies. The results of a State of Michigan survey (33) of incentive-recipient firms demonstrate this inefficiency inherent within an incentive program which expends most of its incentive resources on local firm activity; the results are that only 20% of these subsidized firms indicated that they would cancel plans for expansion within the State were the primary incentive instrument -- a property tax concession -- not available. Some 98.5% of these firms had at least 1 year of previous operating experience within the State.

The predominance of local firms in the population of incentive-recipient firms reinforces the observation made by this author that contemporary redevelopment organizations manifest a "defensive" redevelopment strategy which depends primarily upon influencing local-firm relocations and expansions to offset the unemployment problems created by the out-migration of local industry. That is, development organizations appear to expend little energy in marketing their incentive programs to

mobile, extra-local firms. Further manifesting this defensive strategy is one case encountered by this author in which the role of redevelopment entrepreneur was taken on by the firm rather than by a redevelopment authority. In this case, a firm's management hypothesized that, due to the general cultural climate of the times, incentives-to-industry programs would exist. On the basis of this hypothesis the firm undertook a search (successful of course) for such programs.

As a result of the employment of this defensive strategy, the entry of extra-local firms to a community attempting to effect redevelopment becomes a rare and, in effect, a chance event. Yet, it is this population of extra-local firms which can provide real, incremental employment opportunities to the community since, absent incentive opportunities of sizeable proportions, these firms would most likely not consider an older urban community as a viable plant location alternative. The point is, incentive-to-industry programs will be more efficient the greater is the proportion of total incentive expenditures which flows to extra-local firms which would not otherwise consider an investment in plant within the community and the lesser is the proportion of total incentive expenditures which flows to local firms which, by definition, are already familiar with the community and its factor-endowments and, as such, would tend to undertake projects within the community even in the absence of locational incentives.

This focus on local-firm activity can lead to some other forms of inefficiency. In one case encountered in my research, a large urban-based



firm selected an older urban building to house a major expansion of its manufacturing operations. A number of smaller firms maintaining operations within the building had to relocate. Interestingly, some moved from the original property to a structure owned by the city where they became the recipients of a property tax concession. Hence, a by-product of the principal project -- which was partially financed with a multi-million dollar federal grant -- was an incentive expenditure on firms making intra-urban relocations.

Finally, it should be noted that it is very difficult for redevelopment authorities to distinguish between those urban firms whose location decisions are truly sensitive to incentives and those whose are not. Consider the following illustration. Assume that two urban firms approach a redevelopment organization and claim (or threaten) that they will be forced to relocate to the suburbs (or elsewhere) unless an incentive package of certain proportions is assembled to help defray the greater costs of constructing and operating an urban facility. Assume also that one firm is sincere in its claim and one is bluffing (i.e. it will undertake the urban project even in the event that it does not receive an incentive). The point is, it is quite unlikely that the redevelopment organization would be able to distinguish between the sincere and the bluffing firms. To complicate matters further, even if the development organization could develop some mechanism with which to distinguish between the two types of firms, considerations of equity might require that firms undertaking similar projects receive similar subsidies. Since it is likely that there will continue

to be some firms which would choose to establish facilities within a "distressed" urban community even in the event that incentives were unavailable, and since equity may require that development authorities provide similar incentives to firms undertaking similar projects within these communities irrespective of the factor(s) motivating individual firm's decisions (notwithstanding the difficulties involved in ascertaining these motivations), then there will continue to be some fraction of the incentive dollar expended on firms whose decisions are not influenced by the receipt of an incentive subsidy. That is, some inefficiency will remain. The goal, therefore, is to increase the number of truly incremental job opportunities created per incentive dollar expended. One way to achieve this goal is to attract firms which clearly would not consider a "distressed" community as a viable plant location alternative independent of the provision of an incentive subsidy; by definition, extra-local firms fit this criterion.

#### A Policy Recommendation for the Redevelopment Organization

Clearly, the observations outlined above indicate that those communities truly committed to a redevelopment bid would benefit from instructing their redevelopment authorities to adopt a more aggressive strategy with respect to marketing their incentive programs to extra-local firms. We have seen that a redevelopment strategy which focuses strongly on the retention of local firm activity is inefficient in that a large proportion of the incentive dollar flows to firms whose location decisions are not

significantly impacted by the availability of such subsidies, but which may not pass-up the opportunity to become the recipient of the subsidy since it represents a chance to reduce the burden borne by the firm to finance the project. Hence, a greater efficiency would derive from attracting a large pool of extra-local firms through the provision of incentives sufficient to overcome the cost disadvantages which these firms would face in constructing and operating facilities in "distressed" urban communities vis-à-vis facilities located at the firms' most preferred sites. As was described above, the hypothetical exercise developed by this author indicates that the incentives sufficient to overcome the cost disadvantages which characterize urban operations will be large. In that exercise the urban cost disadvantage amounted to some 25% of the start-up costs of an alternative suburban site. Another indication of the requisite size of incentives sufficient to support meaningful redevelopment projects comes from a General Motors project just underway in Detroit which is slated to receive public subsidies equivalent to 40% of start-up costs -- a transfer of some \$320 million in this case. Hence, a community committed to a truly meaningful redevelopment effort based upon a conventional incentives-to-industry strategy will have to be very well funded.

Upon the assembly of the requisite pool of incentive funds, information describing the various incentive opportunities would have to be diffused to mobile, extra-local firms. Given the likelihood that firms receiving such information would discount it due to their perception that

the community would have manipulated the information so as to project as favorable an image as possible (see Spence (47)), development organizations would have to back up their claims with specific examples of incentive packages which they had put together. (Note: some of the development agencies whose representatives were interviewed by this author do prepare project summaries, so the issue is primarily one of the distribution of this information to extra-local firms.)

#### Review of Development Agency Strategy and Resource Endowments

Although the above strategy is rather obvious, it does not appear to be widely practiced. Redevelopment organizations have been in existence for some time and it is possible that many have reviewed strategies similar to that described above, yet have not been able to implement them. My impression, from the interviews, is that these organizations either have not made the commitment or do not have the resources sufficient to undertake redevelopment programs as ambitious as that recommended above. For example, the redevelopment effort in Cleveland has been a particularly limited one; so limited in fact that the City's development agencies were funding projects in the late 1970's with Urban Renewal funds received by the City many years earlier. Changes in the Cleveland local political scene during the 1970's may account for this relative lack of redevelopment activity. One Cleveland mayoral administration in particular cultivated a very unfavorable "business climate". A number of local councilmen failed to gain reelection during this period largely (it is

said) due to their support of tax concession programs for local industry! In Boston, the City's major redevelopment organ -- the Economic Development and Industrial Corporation (EDIC) -- undertook very few projects until the late 1970's although the agency was established early in the decade. Even now, the EDIC's policy with respect to the scope of its redevelopment effort is to focus heavily on local firm activity. Finally, Michigan's Office of Economic Development has been in existence for thirty years, yet the interviewee from this organization claimed that the organization's only opportunities to successfully attract extra-regional firms occurs when these firms have chosen -- for reasons independent of the availability of incentives -- to locate facilities in a Midwestern industrial state. Michigan's key incentive program -- a property tax concession -- was adopted in 1974 with the hope that it would provide the State with a differential advantage vis-à-vis its neighbors in those cases where extra-regional firms expressed an interest in the region. Contrary to my initial expectations, most of Michigan's tax concessions have been extended to local firms, as noted above. Some 80% of the firms receiving these subsidies in Michigan claim that the subsidies did not significantly influence their location decisions, a fact which highlights the inefficiency inherent in a redevelopment strategy which focuses primarily on the retention of local firm activity.

One can infer, therefore, that the development agencies in the interview sample have either not made the commitment or possess the resources sufficient to extend their programs to include extra-local firms. Given the

results of the above described hypothetical exercise -- which indicated that very large subsidies will be required to overcome the cost disadvantages of urban operation -- we would not be surprised to find that localities did not possess resources sufficient to support ambitious redevelopment efforts, even if these localities desired to undertake such efforts. Once again, the GM-Detroit project provides a useful reference. That is, this project demonstrates the size of the local commitment of resources which a meaningful redevelopment effort would involve, viz, up to \$120 million or about one-third of the total subsidy for this project will be covered by a tax concession.

Clearly, localities will face financial limits as to the number of projects of meaningful proportions which they can support with local resources. The Federal Government represents the primary source of alternative funding. However, Federal resources are also not without limit. For example, HUD's Urban Development Action Grant (UDAG) program -- a key Federal tool for providing financial assistance to the urban redevelopment effort -- was funded with more than \$600 million in 1980. If one used the estimated UDAG subsidy to the GM-Detroit project of \$30 million as a benchmark, it is reasonable to assume that this supply of Federal funds -- a generous supply which reflects a plateau of national political support for urban redevelopment -- would fall short of demand. As of this writing, it is clear that the political winds have changed. The Reagan administration desires to trim the budgets of the Federal redevelopment programs now in place. In fact, it is possible that, just as we have begun to observe Federal funding of incentive programs of proportions sufficient to finance

ambitious redevelopment efforts, the Federal funds which were appropriated during the Carter administration to support such efforts will disappear.

### A Second Policy Recommendation for the Redevelopment Organization

It is this author's opinion that it is not to be concluded that relatively resource-poor redevelopment organizations are totally without the capacity to attract extra-local firms. That is, there are alternative strategies which these organizations might employ to attract these firms.

This author's interviews provide evidence which support Schmenner's (40) and (42) claim that industries may be categorized by the weights which they assign to the various locational factors. For example, Schmenner indicates that firms in the apparel, leather, furniture and consumer electronics industries would consider labor costs to be a primary controlling concern in their location decisions. Printing, plastics fabrication and can making industries would be primarily concerned with proximity to markets due to their sensitivity to transportation costs under Schmenner's framework. Schmenner's work goes on to review a number of other industries. My research provides some further examples as well. For instance, the high-technology firms in my interview sample were quite sensitive to the existence of organized labor. This sensitivity seems to stem from these firms' perception that the rapid technological change which characterizes the industry requires that they retain the flexibility on the plant floor which a non-union environment provides. Along another

dimension, high growth firms in the interview sample were quite concerned with the availability of proximate vacant space upon which to locate future plant expansions. The availability of a labor supply sufficient to man these future expansions was also an important consideration for these high growth firms. (Note: these categorizations do not imply that each firm in any given industry will heavily weight the factor(s) isolated in an analysis such as Schmenner's.)

The thrust of this recommendation is for redevelopment authorities to concentrate the resources which they do possess on incentive programs designed specifically to attract firms within industries which would consider the redevelopment community's existing factor endowment(s) to be attractive as well. It is a strategy of playing to one's existing strengths. If the community represented by a redevelopment authority can be characterized by some set of positive locational factor endowments (e.g. a surplus of skilled labor and proximity to major Midwestern consumer markets as in Cleveland's case), then the resources at the redevelopment authority's command can be used to support incentive programs which would be attractive to the same varieties of firms which would be attracted to the existing factor endowments. That is, the incentive programs would be designed to complement the existing factor endowments. Hence, given the example of the Cleveland endowments, a Cleveland redevelopment organization (after referencing research work such as Schmenner's to identify those industries which might find the City's existing factor endowments attractive) would want to focus all of its resources on incentive



programs which would address any major concerns of firms in such industries which would not be satisfied by the existing factor endowments. As Schmenner's work suggests, the apparel, furniture and consumer electronics industries would be candidates for Cleveland given our assumptions of its factor endowments. If, due to its growth potential, the consumer electronics industry is targeted by the City's redevelopment authorities, then they would be well advised to focus their redevelopment resources on assembling parcels of urban land sufficient to meet the present and (due to the industry's growth perspective) future expansion needs. Once such a focused effort had been undertaken, information describing the total package of beneficial endowments and incentive factors would be distributed nationally to firms in the target industry.

There is no evidence to be drawn from this author's interviews which suggests that contemporary redevelopment organizations attempt to segment the universe of industries in the manner just described. It is not surprising, therefore, that there is also no evidence that these organizations specialize with respect to their incentive offerings in order to attract firms within a specific subset of industries. Nevertheless, development organizations might achieve greater success by specializing in this fashion, rather than spreading their resources across a number of incentives which may not provide a sufficient inducement to extra-local firms in any industries. The greater this focus on extra-local firms, the greater will be the efficiency with which the incentive dollar is utilized, i.e. the

greater will be the number of truly incremental job opportunities created per incentive dollar expended.

### The National Perspective

Another area of research pursued by this author was to evaluate the various incentive instruments from the perspective of the development organization itself. As noted above, a number of programs are federally funded (e.g. HUD's UDAG program) and others place the primary burden on local public finances (e.g. property tax concession programs). Some are reserved exclusively for urban redevelopment (UDAG) and others are accessible by many community (IRB's). This multiplicity of funding sources permits many communities -- not just those interested in effecting industrial redevelopment -- to develop an incentives-to-industry program. As a result of this phenomenon, urban communities attempting to effect redevelopment may not only have to overcome the general cost disadvantage attributable to operating a facility in an urban environment vis-à-vis, for example, a suburb, but may also have to overcome an extra barrier in some cases, viz, an incentive instrument offered to industry by a nearby suburban community; a suburb which may also hold a natural operating cost advantage over the urban community. This phenomenon makes redevelopment all the more expensive, perhaps prohibitively so given the resources of any one urban community whose revenue base has already been eroded by the out-migration of industry.

One case encountered in this research demonstrates how this inter-community competition for industry can drive up the cost of redevelopment. The case involves an urban-based firm which was considering a major plant expansion. The firm (which desired to geographically cluster its operations as tightly as possible) had two location alternatives available to it. One option involved the renovation of an older central city structure. Due to the IRS' restrictions on the issue of IRB's by a single community within which a firm has made capital expenditures which exceed a certain ceiling (see chapter 1), the central city under consideration could only offer to float a \$1 million IRB to assist the firm. However, if the firm split its expansion three ways, locating one new facility in each of three suburban communities (its second option), then -- since the IRS' capital expenditure ceilings would not be exceeded -- it could receive a \$10 million IRB from each suburb. The central city in this case applied for and received a multi-million dollar grant from the Federal Government to cover the basic operating cost disadvantage plus the value of the net incentive-disadvantage. The IRB's, due to their federal tax exemption, are a drain on federal tax revenues. Likewise, the direct grant is clearly an outflow from the federal perspective. Hence, the existence of one federal incentive instrument (IRB's) placed an urban community at a disadvantage in the inter-community competition for industry, requiring that another federal instrument be utilized to effect a balance. The inefficiency from the national perspective is manifest.

One conclusion to draw from such observations is that the redevelopment effort should be centralized, giving a Federal body the power to allocate projects to "distressed" communities as it saw fit. The purpose of such a Federal body would be to establish some order in the allotment of funds across needy communities. The aim would be to reduce that competition which does occur between redevelopment organizations and, hence, reduce the inefficiencies inherent in such competition.

It may also be that the assumption of responsibility for redevelopment policy nationwide by a Federal body would serve to increase the efficiency of the total effort in another, perhaps more important, way. We have seen that local redevelopment organizations focus a majority of the resources available to them (from both federal and local sources) on local firm relocation and expansion activity, perhaps due to their inability to accumulate funds sufficient to undertake an ambitious program of attracting extra-local firms, perhaps due -- in turn -- simply to the great expense involved in such an effort. To the extent that a federal organization is equipped both to provide incentives sufficient to overcome the greater costs of constructing and operating a facility in an urban environment and to focus a greater proportion of its expenditures on projects which bring real incremental jobs to a community, overall efficiency per incentive dollar expended is improved.

A centralized redevelopment effort may produce other by-products. As one interviewee from a redevelopment organization noted, these organizations offer a wide range of incentives because competitive organizations

in nearby communities provide such a broad assortment and so on, the perception being that it is to an organization's detriment to not offer a "competitive line" of inducements. Adopting a uniform, national approach to redevelopment might serve to reduce these "peer" pressures and commensurately, to reduce the pressures which have been placed on local public finances to fund the redevelopment effort.

I sense that a national program of this variety would not be without its difficulties. The essence of such a program would be to transfer from the local to the national level the decision as to the extent to which the older industrial centers continue to serve as viable centers of industrial activity. Clearly, localities will not respond favorably to a reduction in their ability to develop and direct the redevelopment programs which impact their jurisdictions. Martin and Leone (23) note this as well: "In formulating a federal strategy, national policy makers may well decide that it is the responsibility of federal economic policies to reconcile where possible the contradictions between regional and national development objectives. . . . Thus, a local government may not have full control over the destiny of its own geographic area."<sup>1</sup>

I believe that the Federal government -- short of a program which would preempt local authority entirely, as just described -- has available to it alternative methods by which to exert a strong influence over the national dynamics of incentive-to-industry programs. These alterna-

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<sup>1</sup>Curtis H. Martin and Robert A. Leone, Local Economic Development, (Lexington, Mass., D.C. Heath and Co., 1977), p. 111.

tives would focus on a Federal government effort to increase the size of the differential between the Federal incentive funding accessible by "economically-distressed" and economically-strong communities. For example, the right to issue IRB's could be reserved for "distressed" communities. So as to not place a greater burden on Federal revenues, the IRS' single-issue IRB ceilings could be revised upward such that under the new policy, the total, annual, national issue of IRB's would not change from its present level. Furthermore, the national tax code could be revised so that firms locating in "distressed" communities would be able to greatly accelerate the depreciation of new plant and equipment and/or apply very generous investment tax credit provisions compared with facilities located in economically-strong communities. Interestingly, as of this writing, the Reagan administration -- which, as noted above, desires to eliminate the \$600+ million per year UDAG program -- has indicated that it would like to experiment with a tax concession program based on the location of industry in urban "enterprise zones". The proposal calls for a tax concession to be extended to firms that either move to or stay in a neighborhood with twice the national rate of unemployment and 30% of its residents living below the poverty line. Of interest, therefore, is whether this program will provide for tax concessions sizeable enough to provide a sufficient incentive to industry to locate in these neighborhoods, (i. e. large enough to overcome the cost disadvantages of operating within these communities).

## Conclusions and Areas for Further Research

I believe that the key contribution offered by this paper is the analysis demonstrating that incentives can influence the location decisions of firms if the incentives are of a size sufficient to overcome any start-up and operating cost disadvantages which characterize the community targeted for redevelopment. Although my research indicates that, taken individually, incentives of conventional proportions do not provide an incentive of sufficient size, combinations of such instruments can provide a total inducement of the appropriate proportions. It should be noted, however, that the cost of such incentives-to-industry programs may be far greater than the funds practically available for this purpose.

The above discussion of the policy issues from a national perspective provides an indication of the nature of the economic and political complexities which characterize the formulation of an effective and efficient "redevelopment" process. The most fruitful focus for further research, I believe, would involve an evaluation of the various policy alternatives, available at the national level. I have already introduced two such alternatives, one which would call for preemption of redevelopment authority by the Federal government, a second which would maintain some power at the local level but would involve a readjustment of the structure of existing Federal incentive instruments (e.g. revising national tax policy as it pertains to the issuance of IRB's) such that urban "enterprise zones" could access a greater volume of Federal incentive funding vis-à-vis an economically-strong community. Alternatives such as these represent only

a limited change in the focus of the redevelopment effort, i. e., they are based upon incentives-to-industry programs and implicitly assume that the best solution to the unemployment problems which now face the older industrial communities is to reestablish the viability of these communities as strong centers of industrial activity. There exist more radical alternatives: programs which provide direct subsidies to urban laborers to cover the costs of commuting to suburban jobs; programs which provide direct subsidies to urban laborers to cover the costs of their relocation to other regions of the country.

I believe that the evaluation of the economic and political ramifications of alternatives such as those described above provides an important area for future research. Such research may show that such alternative strategies are not characterized by the inefficiencies inherent within contemporary incentives-to-industry programs, and thereby offer superior solutions to the unemployment problems which now exist within the older, American industrial centers.



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