

# Why Tax Incentives Don't Work: The Altered Landscape of Local Economic Development

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**Abstract:** This paper presents a microeconomic model of local economic development practices in the United States. Using data on its major elements: footloose firms, capital labor ratio in firms, and the size of firms, I simulate changes to the benefits of economic development activities since the Great Recession. I find that benefits to communities of traditional business attraction efforts have significantly declined over the past three or four decades, and are likely to continue to decline through the middle of this century. This is particularly driven by changes to the composition of household consumption, productivity gains in manufacturing, and shifts to the elasticity of substitution in firms and a smaller number of large footloose firms. This has led to dramatic declines in the share of employment and incomes in footloose or attractable firms over the past half century.

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## Introduction

Municipal economic development has a long pedigree in the United States, but it wasn't until the Great Depression that many municipalities, primarily in the American South began a formal effort to lure new business establishments to their regions. These efforts included tax incentives and industrial development zones which offered a precursor to the modern industrial park (Mitchell and Jucia, 1934; Graves, 1938).

Despite the significant policy innovation in economic development practices, there has been considerable disagreement by researchers over its effectiveness and efficacy. While some early research hailed these developments (Graves, 1938) most empirically rich modern research has reported no more than a modest influence of economic development practices on actual economic outcomes (See Fisher and Peters, 2003; Reese, 2013, 2014).

Moreover, even among those researchers who report the largest impacts of state and local development efforts find the public costs to achieving these effects are high (LaFaive and Hicks, 2011; Faulk and Hicks, 2013). This challenges the premise that municipal, quasi-nongovernmental or non-profit economic development efforts play an important role in economic outcomes between regions.

Still, in 2014 many, if not most local economic development efforts remained focused narrowly on attracting and retaining businesses in their region. These efforts concentrate on 'footloose' firms, which comprise those businesses which can locate their production or headquarters untethered to local demand for goods or services. Even in places where alternative strategies have begun to influence local economic development efforts, resource allocation to those efforts are dwarfed by those used to attract and retain business. The most recent survey by the International City/County Management Association (ICMA) reports a mean municipal expenditure on economic development at \$1.3 million per year with traditional business attraction services comprising most of the expenditures (ICMA, 2010). In Indiana, perhaps \$100 million is spent directly on supporting local business attraction efforts. Abatement of taxes for new business comprise a full quarter of all Business Personal Property Tax and other activities such as Tax Increment Financing (TIF) employs tax dollars to other development activities. All told, local economic development in Indiana is a billion dollar quasi-governmental enterprise. This would seem a ripe venue for more research.

To that end this study examines the net benefit of economic development activities in communities. I do so by creating model of economic development which addresses the optimal level of economic development efforts towards attracting and retaining business. Using this model I examine the changes to factors which would influence benefits and costs, focusing on the period since the Great Depression.

To begin this paper I first briefly review the practice of economic development, and then outline the type of current research into its effectiveness. I then present a formal model and examine the empirical evidence which links that model to net benefits in a community. I end with a summary with policy implications.

## Review of Development Practices

Local economic development efforts are underway in most counties and municipalities in the United States. A survey by ICMA provides the best explanation for the scope of activities undertaken by local economic development organizations (LEDO) in the course of attracting and retaining business.

This survey identified local government activities partnering with local Chambers of Commerce in more than eight out of ten municipalities or counties, and conducting business surveys or partnering with other groups in more than half of the municipal governments responding.

Two recent studies evaluated local and state policies in Michigan, categorizing business attraction activities into four types: tax abatements, renaissance zones, tax increment financing districts and a technology workforce based 'Cool Cities' initiatives (Reese, 2013;2014). These practices have fairly consistent characteristics in other states.

The International County/Municipal Association (ICMA) conducts frequent surveys of development activities. This survey is useful because it asks specific questions about activities undertaken by development officials. In the most recent survey, from 2009, the ICMA reports that between sixty and seventy percent of municipalities or counties do three things to attract business: directly contact prospective companies, promote and advertise the municipality and participate in trade shows.

The ICMA survey also asks about specific incentives. Tax abatements and credits are offered by 68.8 percent of communities, TIF districts by 54.5 percent, direct infrastructure assistance by 57.1 percent. Direct grants are offered to companies by more than a third of communities and between a quarter and a third of communities report offering local or federal enterprise zones, special assessment districts, free or reduced price land, low cost loans and training support. In all, more than 95 percent of municipalities or counties reported offering business incentives.

Surprisingly, fewer than half of counties or municipalities reported using performance measures for their development efforts, and just over a quarter counted the cost of such things as staff hours towards development. Just over half did count the number of businesses they assisted and almost sixty percent implemented a payback for companies who did not comply with the terms of development incentives. Overall regular reporting of performance measures took place in roughly a third of communities, with fewer than a quarter of communities reporting regularly to taxpayers.

Over the past two years economic development practices have come under increasing scrutiny. In 2012 the Pew Center for the States began a comprehensive review of state economic development incentives. This program partnered with states to focus on review and analysis of incentives focusing on transparency and implementation of performance metrics. This effort also spawned a review of incentives in Indiana (Faulk and Hicks, 2013) and a continued evaluation of incentives in Indiana of which this paper is a part. The same year, Good Jobs First offered an online collection of economic development activities in a searchable database.

In September, 2014 the State of Nevada offered an electrical car producing company, Tesla, \$1.3 billion in incentives for the promise of 6,300 direct jobs. This was a highly visible incentive offering for which Nevada was willing to offer more than \$200,000 per job. It is clear that there is likely to be a growing interest in economic development practices, their effect and efficacy. Fortunately, research has not been silent on these issues.

## **Research and New Findings on the Effectiveness of Development Efforts**

State and local governments use a variety of economic development incentives for which a critical body of research has developed in recent years. Wasylenko (1997) reviewed over 90 studies that evaluated the role of fiscal policy in economic growth in the United States. More recent studies attempt to explain differences in growth, wages, and industrial composition through analysis of interstate tax policy. A large research literature also evaluated whether infrastructure expenditures influence growth (see Fox and Porca, 2002). A considerably smaller number of studies attempted to evaluate the influence of individual targeted tax policies on economic growth. Bartik (2002) offers a comprehensive review of these studies.

Among the more notable contribution to research include Gabe and Kraybill (2002) who evaluate firm level tax incentives on over 350 firms in Ohio from 1993 through 1995 which received targeted tax incentives. Using a treatment and control pool of over 350 firms, these authors discovered two phenomenon of interest. First, self-reported employment growth in firms receiving the incentive was substantially overstated. Firms that did not participate in the program were more accurate. Secondly, they found no positive, and in some instances a negative influence of the tax credit on job growth. Sohn and Knapp (2002) found that targeted incentives in Maryland generate some mild positive regional and sector-specific impacts, but conclusions regarding their magnitude were beyond the capacity of the available data.

In a very influential study Greenstone and Moretti (2004) constructed a quasi-experimental sample of plant openings using site selector data. This data included both the county in which a plant located and other counties considered by the firm. The authors reported growth in earnings (a one-time increase of 1.5 percent), and a one-time 1.1 percent increase in property values in the counties in which the new plants located.

Other studies find smaller impacts of large new firms. These include Edmiston (2004), Fox and Murray (2004), Hicks (2004, 2007), and Hicks and LaFaive (2011). Edmiston finds that the impact of new large firms is almost always overstated, with actual multipliers often less than one. He further reports that expansion of existing firms generate substantial effects, exceeding those of new firms. Fox and Murray test the local impacts of large firm relocation and report no significant net impacts in the regions in which they locate. Using a quasi-experimental approach, Hicks (2004) found that large gambling and wholesale/retail facilities generate no net employment or income gains in the counties in which they locate.

Of the more recent studies of direct business aid, Hicks (2007) reported that extensive grants to a single large firm across many US jurisdictions failed to generate net employment growth despite what was, in several instances more than \$50 million invested in a single firm. In a review of the

impact of Michigan’s Economic Growth Authority (MEGA) incentives on county employment growth in manufacturing, wholesale, and construction Hicks and LaFaive (2011) found no discernible effect on employment in these sectors. However, the receipt of an incentive increased construction employment, with job effects of roughly \$126,000 per construction job.

Research on the efficacy of economic development practices has primarily focused on individual efforts. With the exception of Reese (2013, 2014) and Faulk and Hicks (2013), few know of no recent studies that have approached the evaluation of multiple development practices on economic outcomes within regions. Reese studied development efforts in Michigan, and reports a very small impact on overall economic development outcomes of these efforts. She compares her findings to Fisher and Peters (2002) reporting that no more than one in ten dollars spent on development have any effect. Faulk and Hicks (2013) modeled the effect of state and local tax incentives/abatements and Regional Development Authorities on a number of economic development outcomes. This study was very complimentary to selected state tax abatements, finding that a new job was created for less than \$5,000 in employment tax credits. However, the capital incentives offered by local governments resulted in a new job only after as much as \$30,000 in abated property, mostly Business Personal Property Tax. These authors also found that RDA’s increased employment, suggesting that a regional effort mattered to development outcomes.

However, in these efforts to model the impacts of incentives, formal modeling of the benefits and costs of incentives has been offered. Bartik (2005) hinted at an approach that would implicitly incorporate a benefit cost analysis in his prescription to solve the problems with economic development incentives. I take seriously this approach, and offer a model of development incentives.

### A Model of Economic Development Benefits

A community makes explicit decisions regarding economic development efforts either through a public-private partnership, quasi-nongovernmental organization or direct governmental actions. These decisions include quantity, type and timing decisions regarding economic development efforts. We model these decisions in a traditional neoclassical framework beginning with an indirect utility function for an individual, summed across the members of community  $i$ , which is well behaved.<sup>1</sup>

$$\sum v_i(p, w, \mathbf{Z}, e) \tag{1}$$

This function consists of a vector of prices,  $\mathbf{p}$ , income  $w$ , and a matrix of regional characteristics  $\mathbf{Z}$ , which includes both amenities and economic mix, and an idiosyncratic component  $e$ , which represents individually varying preferences for regional characteristics.

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<sup>1</sup> The function is continuous ( $\mathbf{R}^+ \rightarrow \mathbf{R}$ ),  $\frac{du}{dp} \leq 0$ ,  $\frac{du}{dw} > 0$ , homogenous  $f(\beta X) = \beta^z f(X)$ , and quasi-convex.

Economic development efforts may be viewed as an effort to optimize some limited component of utility,  $v$ , for the aggregate community. This is a very discrete choice typically focuses on those elements of  $Z$  which can be influenced by traditional business attraction policies. In practice, economic development efforts often target investment and incomes. A focus on employment is the most common target of economic development efforts. So simplify this model I treat the development incentive effort as one of job attraction, though obviously both investment, incomes and other development targets can be explicitly modeled within this framework. This process of maximizing  $v$  permits us to use standard economic modeling tools to assess what the decision elements of this optimization problem may entail. One result of this is that this model allows for assessing the net benefits of alternative efforts. Explicitly stating the components of incremental changes to benefits and costs is the first step in this process.

I begin with the expectation of employment increases from economic development efforts. This takes the form:

$$E(J) = \theta F_F^\alpha N_{KL}^\beta \Omega_F^\delta \quad (2)$$

where the expected employment effect ( $J$ ) is a function of a fixed coefficient  $\theta$ , the number of footloose firms  $F_F$ , the elasticity of substitution between capital and labor  $N_{KL}$  and a size measure of the footloose firm  $\Omega_F$ . Decisions regarding the marginal benefit of development efforts are then made according to the expected job creation effect of the effort and the level of distress of a community or  $MB_i = f(E(J), D_i)$ .

This is expressed explicitly as:

$$MB_i = \theta F_F^\alpha N_{KL}^\beta \Omega_F^\delta D_i^\rho \quad (3)$$

Where  $\theta, \alpha, \beta, \delta$  and  $\rho$  are coefficients.

The motivation for these elements is fairly straightforward, but benefits from a description.

First, the number of jobs that could be attracted through development efforts clearly influences the expected jobs that could be brought to a region. Thus, the abundance of footloose jobs is part of the benefit function. Likewise, the size of firms within the targeted sample of firms will also affect the number of jobs brought to a region through development efforts. Bigger firms have bigger impacts.

The elasticity of substitution between capital and labor is important since employment growth within a region will also be linked to the degree to which business substitute capital for workers in their production process. A more labor intensive firm will all things equal, result in higher job growth than a more capital intensive firm. The choice over the relative share of capital is influenced by the relative cost of labor and capital, which can be influenced by incentives.

Finally, the level of economic distress obviously influences the level of benefits of development efforts. Places that are distressed will experience more benefit from direct business development than less developed places.

These variables together express the benefit function from relatively easily observed data but as with any effort to make decisions we must consider also the costs.

The marginal cost function includes the economic distress of a region, the options available for economic development (incentives, abatements, infrastructure, etc.), the number of competing municipalities, the public pressure to perform economic development, and the number of footloose firms to target with development efforts. This appears as:

$$MC_i = \Gamma F_F^\pi \bar{X}^\tau M^\nu D_F^\sigma \quad (4)$$

where marginal cost in community  $i$ , is a function of a constant parameter  $\Gamma$ , the number of footloose firms  $F_F$ , a matrix  $\mathbf{X}$  of development options,  $\mathbf{M}$ , the number of competing municipalities, and  $\mathbf{D}$ , the distress of the local community.

The arguments for including these variables are straightforward. The available choices of development programs, or tools, likely influences cost, but in a manner that is uncertain. While it seems apparent that more development options would permit a community to more carefully tailor their incentives to the needs of a specific firm, there is also evidence (Faulk and Hicks 2013) that most recipients receive a broad set of incentives and so there may be a tendency to add incentives beyond that which is needed to attract or retain the company. This would increase costs.

The number of competing municipalities influences costs through competitive pressure. More competing communities, the more costly the elements of economic development practice which must be used to differentiate municipalities. Finally, the distress of a community increases costs, as development officials are forced to offer greater incentive deals. The coefficients to be estimated are  $\Gamma$ ,  $\pi$ ,  $\tau$ ,  $\nu$ , and  $\sigma$ . The technical intercepts for both equations are used for statistical purposes, not policy development.

Unfortunately there is scant available data for most of these variables. Where data is available it is for a short time series and I wish to explain the changes to the benefit of development practices over the past three quarters of a century. This necessitates a series of reasonable assumptions.

**Table 1, Coefficient Assumptions**

Variable	Coefficient	Expected Sign	Comments
<b><u>Marginal Benefit Function</u></b>			
Technical intercept	$\theta$	?	
Number of footloose firms	$\alpha$	+	
Elasticity of substitution	$\beta$	-	
Size of firms	$\delta$	+	
Community Economic Distress	$\rho$	+	
<b><u>Marginal Cost Function</u></b>			
Technical intercept	$\Gamma$	?	
Number of footloose firms	$\pi$	-	
Development options	$t$	?	matrix
Number of municipalities	$\omega$	+	
Community economic distress	$\sigma$	+	

The equilibrium conditions for maximizing net benefit of development efforts result in a total benefit that is expressed as:

$$B = \int_0^E MB - \int_0^E MC \quad (5)$$

which is simply the difference between marginal benefits and marginal costs integrated from the origin to the equilibrium level of development activities. This yields the total benefit to a community for all the economic development activities which are undertaken. See the graphical appendix for an expansion of this concept.

The questions of interest from this analysis are the impact of changes to individual elements of both the cost and benefit function since the Great Depression. These changes can combine to provide evidence of the changes to total benefit of economic development activities over time over time.

### **Changes to Net Benefits since the Great Depression**

The model insights offer some clarity regarding economic development efforts since the Great Depression. In the initial observations regarding tax abatements (Groves, 1938) the experience was treated as successful for most southern states. Since the Great Depression there have been significant changes to factors influencing both benefits and costs of economic development activities. In this section, we discuss each in turn.

From the 1930's to the 1960's there was slow growth in the number of municipalities engaged in economic development activities. These activities concentrated in the U.S. south, but by the mid-1980's most U.S. municipalities had formal economic development activities. Since 1990 there

appears to have been little change in the number of municipalities engaged in economic development activities, so that the bulk of change occurred in the previous two decades.

Local economic distress has both a short term dimension, which is closely related to the business cycle. The long term level of local economic distress shifted heavily from the south to the industrialized Midwest following the 1970's. Still, this remains a primarily local condition. The other variables of interest offer a more direct explanation for the impact of changes on the benefits to economic development efforts since the Great Depression.

*The number of Footloose Firms*

U.S. Consumer Demand for goods and services shifted over the past century. Prior to the development of the automobile, most expenditures were focused on food, housing and apparel comprising 81.4 percent of household expenditures. These are all goods. Total services probably comprised less than 10 percent of consumption. By the late 1990's the share of earnings allocated to these areas dropped to 51.9 percent, with transportation growing from an unmeasured category to 18.7 percent. This comprises services and the purchase of automobiles and petroleum products. Other services grew dramatically as a share of household spending. Insurance and direct healthcare expenditures, education and entertainment all grew as a share of earnings.

From the mid-century to the end of the 20<sup>th</sup> century, with the exception of transportation, the share of spending on goods clearly declined. This is important because the manufacturing of goods is not necessarily tied directly to the local population base. The provision of services requires close attention to the physical location of consumers and so will be far less footloose than most service producing firms. See Table 2.

**Table 2, US Household Consumption Patterns in the 20th Century**

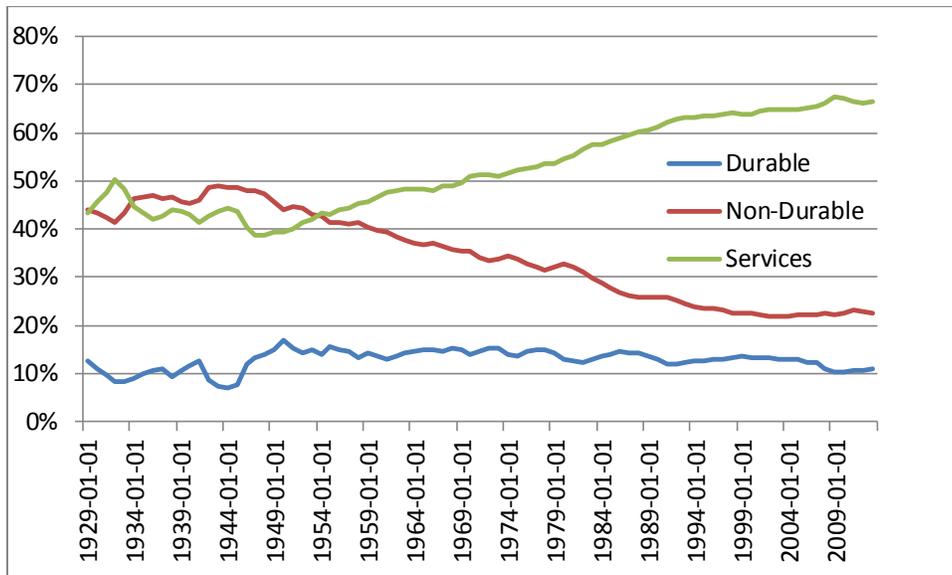
	1901	1934-6	1960	1996-7
Food + Alcoholic Beverages	44.1%	33.6%	23.2%	14.7%
Housing	23.3%	32.1%	26.4%	32.1%
Apparel	14.0%	10.6%	9.8%	5.1%
Transportation	0.0%	8.3%	13.2%	18.7%
Healthcare	5.2%	3.9%	5.9%	5.3%
Entertainment	1.6%	5.4%	3.6%	5.3%
Personal care products and services	0.0%	2.0%	2.6%	1.5%
Reading and education	1.0%	0.5%	1.8%	2.1%
Miscellaneous & tobacco	9.5%	2.1%	3.6%	3.2%
Donations	1.3%	1.6%	5.0%	2.8%
Personal insurance (including healthcare)	0.0%	0.0%	5.0%	9.2%
<b>Consumption share of earnings</b>	102.5%	99.2%	90.1%	88.0%

Source: Bureau of Labor Statistics, *100 Years of U.S. Consumer Spending, May 2006, Report 991*.

The aggregate data from the national income accounts provides an even clearer analysis of expenditures in broad categories. In 1929, the first year the data became available, U.S.

households spent 56.6 percent of income on manufactured goods including food. The remainder was spent on services including healthcare, financial services and entertainment. While the share spent on durable goods (consumables designed to last more than a year), the share of non-durable good consumption, including food plummeted to 22 percent of total income by 2013. The share of services rose from 43.4 to 66.4 percent in 2013. See figure 1 below.

**Figure 1, Share of US Consumption in Goods and Services 1929-2013**



*Source: Bureau of Economic Analysis, National Income and Product Accounts, Author's Calculations*

The shift in household consumption from goods towards services is important to business attraction efforts since most services are provided locally. Some firms that provide goods may be attracted through local economic development efforts. Firms that provide services typically respond to local demand, which is a function of population and income. In the following sections we will link this change in consumption patterns to employment in firms which may be attracted to a region through development activities.

### *Elasticity of Substitution between Capital and Labor*

Economic development practices which focus on attracting capital, such as property tax abatements may be anticipated to influence employment as well. However, the level of capital investment for which businesses will require an additional unit of labor is not constant. The elasticity of substitution measures the ability of firms to substitute a unit of capital for a unit of labor while keeping production levels constant.

The elasticity of substitution is an important concept since many economic development efforts are designed to reduce the cost of capital. For example, Business Personal Property Tax abatements reduce the cost of business equipment (and some structures) in their production process. While the intent is to incentivize firms to relocate to a region, this abatement also incentivizes the substitution of capital for labor in the production process.

I measure the national manufacturing elasticity of substitution using a canonical Cobb-Douglas production function  $Y_{kl} = AK^\alpha N^{1-\alpha}$ . This estimate on U.S. manufacturing capital and labor from 2001 through 2012 yields an elasticity of substitution of 2.04.<sup>2</sup> A value of 1 would mean that capital (K) and labor (N) are perfect substitutes, and that a small relative change in the cost of either would have no effect on the ratio of capital and labor used to produce a fixed set of goods. A higher number (such as the reported 2.04) means that capital and labor are highly substitutable and that a small shift in the relative cost of these two factors of production would yield a large shift in the mix of machinery and workers a factory chooses to use to produce a fixed quantity of goods.

A result of this is that firms receiving property tax abatements on capital would experience a higher capital to labor ratio than the average firm. As evidence of this our recent study on property tax abatements (Faulk and Hicks, 2013) reported that roughly \$1,000,000 in Business Personal Property was abated for each additional job created by that firm. Nationwide, in 2012, the average amount of capital used in all U.S. manufacturing firms for each worker is \$211,000. So, this may suggest that firms which are incentivized have higher capital to labor ratios.

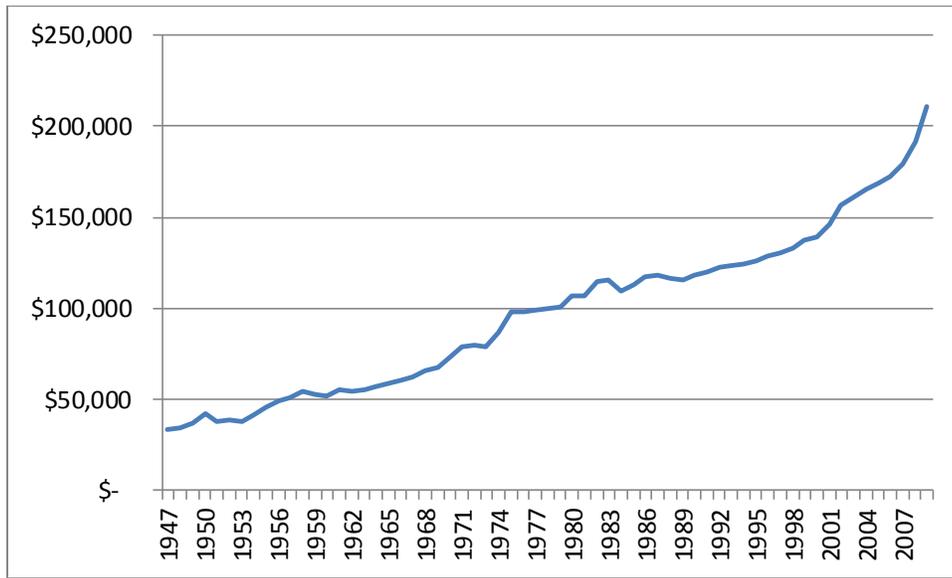
It is important to note that a high elasticity of substitution does not mean that there are fewer jobs in an economy, simply that firms which receive property tax abatements should be expected to shift some of their inputs towards capital, raising the capital to labor ratio at that firm only. Economy wide, this would shift employment from the industries which receive abatements to those that do not.

The shift towards a higher capital to labor ratio is not only confined to local property tax abatements, but also through traditional technological growth. The following graph depicts the value of private capital stock on a per worker basis in manufacturing firms from 1947 through 2011. All these are in inflation adjusted, 2013 dollars. As is clear, a strong capital bias is occurring as firms increase their capital to labor ratio in U.S. manufacturing. See figure 2.

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<sup>2</sup> The estimate was  $Y = 1.43 + 0.403K + 0.598N$ ; with MRTS = 1.48 and elasticity of substitution 2.04.

**Figure 2, Capital to Labor Ratio in U.S. Manufacturing (2013 constant dollars)**

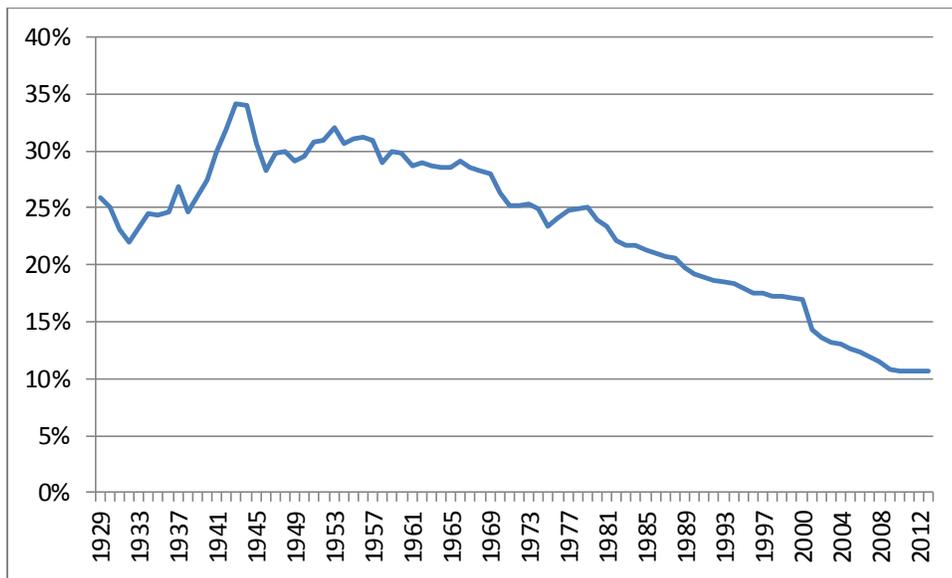


*Source: U.S. Census, National Income Accounts, U.S. Department of Labor, author's calculations*

The immediate conclusion of the higher capital to labor ratio and the high elasticity of substitution in manufacturing firm is that it is far more difficult to increase local employment through traditional economic development incentives in 2014 than in the 1970's.

Combining the effect of household consumption shifts from the preceding section, with the increased capital to labor ratio implied by the observed behavior of firms since the end of World War 2, we can observe that the share of jobs which could conceivably be attracted to any particular location has shrunk dramatically. To illustrate this I examine income and net job creation. As the following graphics illustrates, the share of worker income in footloose or attractable firms has declined in a nearly uniform rate since the late 1940's. Today no more than ten percent of incomes could conceivably relocate, the remaining ninety percent respond to local demand and so respond to population and income changes, not development incentives. Examining actual jobs does not permit as lengthy a review, but since incomes are higher in attractable jobs, the best data available suggest that much less than 10 percent of jobs, and maybe less than two percent lie in firms that could conceivably relocate to any municipality. See figure 3.

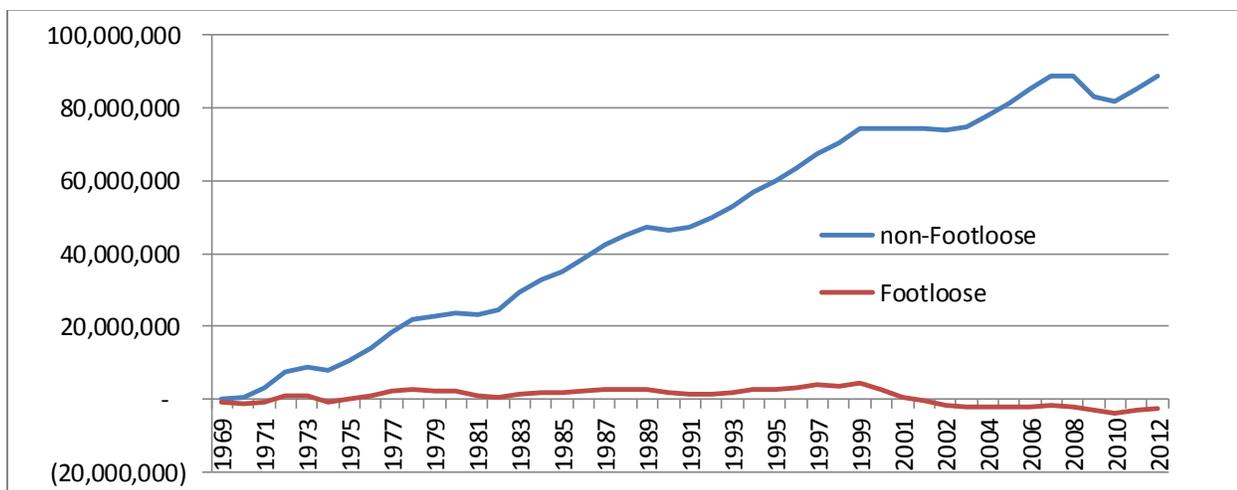
**Figure 3, Share of Income in Footloose Firms (ceiling estimate)**



Source: Bureau of Economic Analysis, Author's calculations

Examining net employment growth from the late 1960's to the present provides a very clear picture. During this time period total employment has almost doubled as the population and labor force participation have risen. However, this period saw no net job growth in footloose firms. Indeed the actual number of footloose jobs shrank, so that more than all the net job growth in the United States since 1969 has occurred in firms which choose locations based primarily on local demand for their services. See figure 4.

**Figure 4, Cumulative Job Growth in Footloose/Non-Footloose Firms , USA**



Source: Bureau of Economic Analysis, Author's calculations

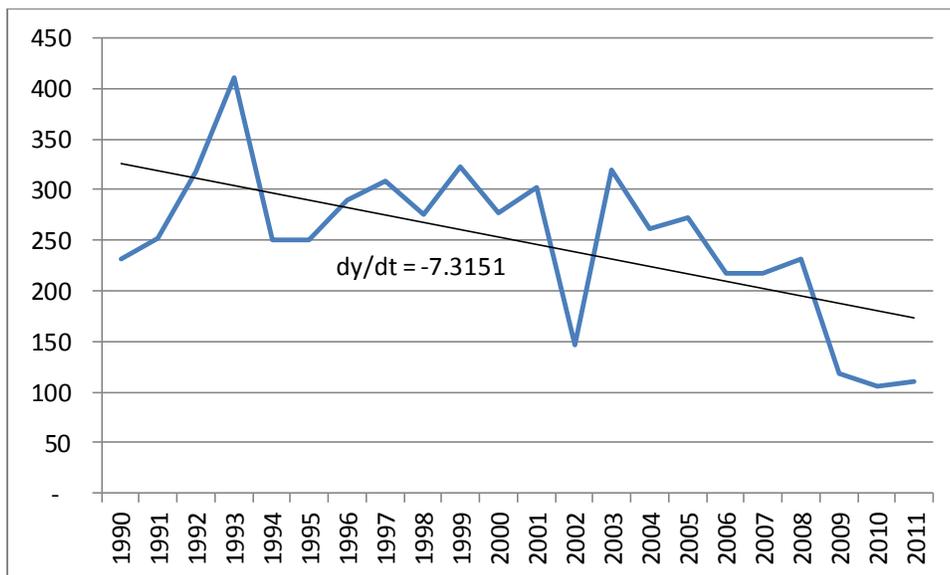
These estimates represent the high end estimate of employment and incomes, for most firms which are not tied to a population base to provide services remain bound to a region due to

specific input requirements which cannot be realized in alternative locations. It is worth restating that fewer than one in twenty jobs are in firms which can relocate to other locations without sacrificing profitability. This has important implications for local economic development policies.

### *Firm Size*

The average size of America manufacturing firms has been decreasing for more two decades. While most of this has been due to activity among smaller firms, a clear trend among large manufacturing firms is also apparent (see Choi and Spletzer, 2012). The most useful data to explain this phenomenon with business attraction efforts is to review the birth of large manufacturing establishments (those with more than 500 employees) over time. The following figure illustrates this from 1990-2011.

**Figure 5, Birth of Manufacturing Firms with more than 500 Employees**



Clearly the number of new large firms available which could be attracted to a particular region has declined significantly in the past two decades. This finding still reveals an interesting observation. If these new establishment births were randomly distributed across the nation's 3,144 counties, we would expect each county to receive roughly one new manufacturing establishment with more than 500 employees every eleven years.

### *Equilibrium Effects*

Reviewing this model of economic development we can simulate the equilibrium benefits to economic development efforts over time. To do so I first review the equilibrium conditions of each of the effects. To do this I perform the net benefit calculation:  $= \int_0^E MB - \int_0^E MC$ , which provides, in most instances, clarity on the effect of changes observed in each variable over time, on net benefits. For example, it is clear that the number of footloose firms positively affects marginal

benefits and reduces marginal costs, but in estimating net benefits, this effect clearly finds that an increase in the number of footloose firms would yield higher net benefits of economic development efforts. In the following table, I review each of these and where possible identify both the direction of effect on benefits, and the actual observed level of each variable in the economy over the past 75 years. See table 3.

**Table 3, Equilibrium Effects on Total Benefit**

Variable	Coefficient from model	Impact on net benefit	Actual changes					
			1930-1950	1950-1970	1970-1990	1990-2010	2010-2030	2030-2050
Number of footloose firms	$\alpha - \pi$	+	-	-	-	-	-	-
Elasticity of substitution	$\beta$	-	?	+	+	+	+	+
Size of firms	$\delta$	+	+	+	-	-	-	-
Community Economic Distress	$\rho - \sigma$	+	+	?	?	?	?	?
Development options	$t$	?	+	+	+	0	0	0
Number of municipalities	$\omega$	-	+	+	+	0	0	0

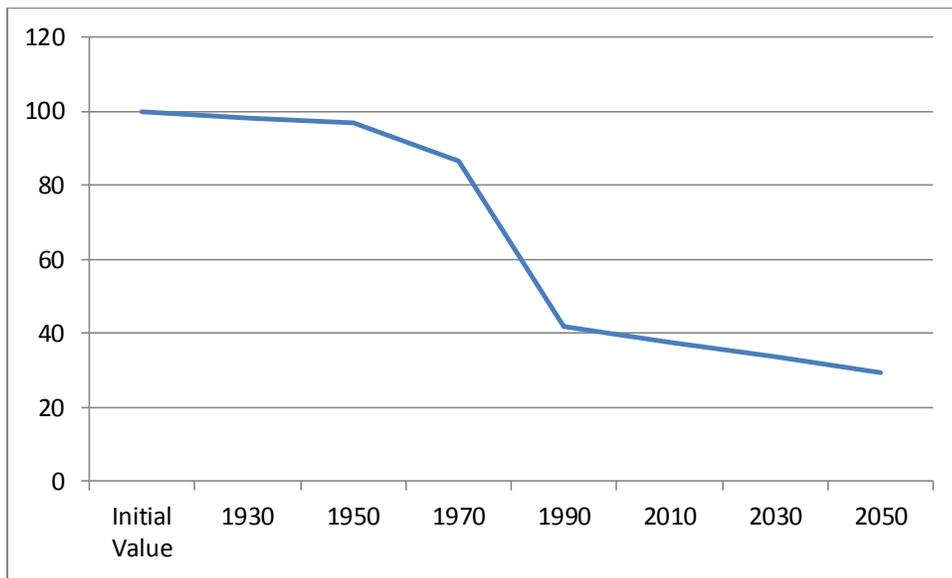
For the development options variable, I cannot clearly determine the effects of this on costs and benefits, making this an important area for further research. It is possible that more development options increases costs, but equally plausible that targeted efforts reduce costs. For the actual changes over time, I cannot aggregate the effects of community distress or public pressure since this will vary within community. Likewise, I do not possess reliable data to estimate the elasticity of substitution prior to the late 1940's. These are limitations in the data which more extensive research must be called upon to remedy.

For the remaining variables, where direction and actual changes are available, it is possible to construct a simulation model of equilibrium net benefits to economic development efforts. Again, this simulation is derived from creating a Laspeyre's Index of values of the following function:

$$B = \int_0^E \theta F_F^\alpha N_{KL}^\beta \Omega_F^\delta D_i^\rho - \int_0^E \Gamma F_F^\pi \bar{X}^\tau M^y D_F^\sigma \quad (6)$$

which combines equations 3 and 4 into the total benefit calculation, which is integrates development efforts across the dimensions of cost and number of deals (see the graphical appendix). The results appear below.

**Figure 6, Net Benefit Simulation of Economic Development Activities**



This simulation is an Index, not actual dollars per deal as the integral in equation 5 suggests. As a consequence, it is more useful to consider the direction, not level of change as representative of the actual effects. However, what is clear is that the relationship between key factors of benefits to economic development efforts and their changing pattern over the past 75 years suggests that the benefit to communities of engaging in economic development is less than at any time in the past in which it was conducted.

### **Summary and Policy Discussion**

This paper has reviewed some of the literature which portrays individual economic development efforts as minimally effective in altering regional economic outcomes. Among the newer work which has jointly reviewed multiple development efforts, these results of minimal effectiveness are confirmed (Faulk and Hicks, 2013; Reese, 2013; 2014).

In order to better understand how development efforts yield benefits, I present a model of benefits and costs in a neoclassical framework. This tractable model is then informed by data on its major elements: footloose firms, capital labor ratio in firms, and the size of footloose firms. These data are then used in a simulation model which suggests the benefits to communities of traditional business attraction efforts have significantly declined over the past three or four decades. This directly leads to several policy implications.

First, the factors which influence the benefits to local economic development efforts offer a path towards alternative policies. The declining share of employment options in footloose firms has the opposite effect on households. Today, workers are free to choose among a wide variety of communities with a lessened dependence on the location decision of their employer. One clear implication is that efforts to attract households should receive a greater share of emphasis and

local resources than policies attempting to attract businesses. This implication has effects on the behavior of local development organizations, counties and municipalities and state government.

Boards of local economic development organizations should consider explicit shifts of effort from traditional business attraction to quality of place efforts. This should include specific efforts to support local schools directly, and through their efforts to incentive businesses. Performance measures for economic development organizations should very explicitly shift from counting 'contacts' or 'prospects' and measure instead actual economic performance of a region (employment and incomes). This will institutionalize priority towards developing conditions fruitful for non-footloose firms and away from activities to focus attraction efforts on the shrinking share of our economy.

Local governments should require greater focus on policies which promote quality of place and human capital from supported local development organizations. This should include a closer review of development activities which involve direct fiscal effects, such as property tax abatements, TIF districts and direct spending activities. Of particular concern is that evaluation of economic development efforts are limited to such factors as gross new jobs created from an activity, and not on benefits in particular.

State governments should consider limit development incentives for offered by local governments and require local governments to establish transparency goals for development spending.

It is natural that municipal and county governments concern themselves with the development of their economy. There is abundant research to suggest that the role of amenities and taxes play a significant role in prosperity. However, economic development in practice does little to improve either of these factors, focusing instead on the gross movement of jobs to particular projects, without any specific linkage to benefits to communities. This paper offers evidence that these benefits are significantly lower than at any previous time over the past century and by extension these benefits will continue to shrink over the coming decades.

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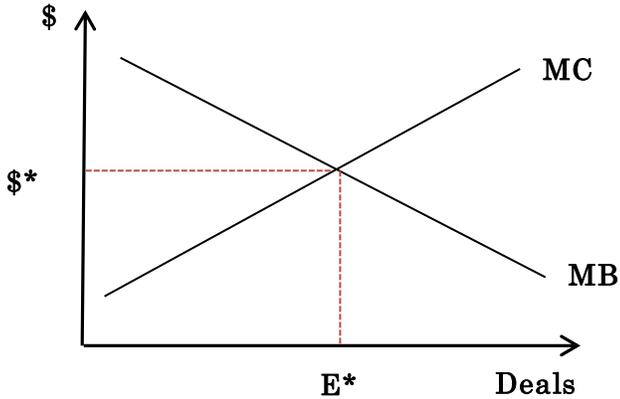
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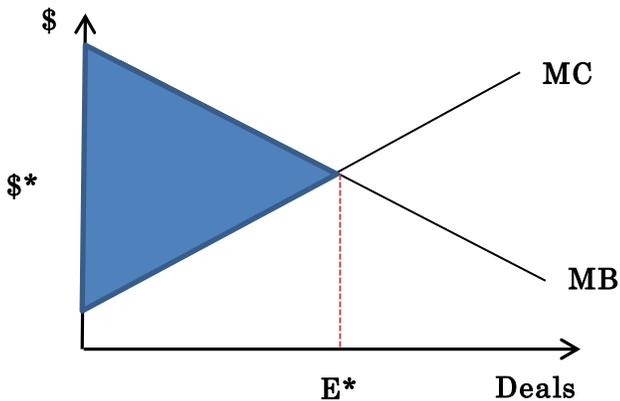
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## Graphical Appendix

In equilibrium,  $MC = MB$  and the community maximizes its net benefit from development efforts. This appears graphically below.



Total benefits are calculated as the area under the marginal benefit function from the origin to the equilibrium level, minus the area under the marginal cost function. This is illustrated by the triangle below:



Under shifts to equilibrium described in the text, there are adjustments to the marginal benefit and marginal cost curves. Take for example, the effect of a decrease in footloose firms. This reduces marginal benefit and increases marginal cost, shifting both curves to the left. The consequence of this is that it reduces net benefit. A shift to equilibrium then changes net benefit to communities.