THE IMPACT OF STATE TAX EXPENDITURES

ON ECONOMIC DEVELOPMENT AND AGRICULTURAL DEVELOPMENT OUTCOMES

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ABSTRACT

State tax expenditures are one of the most important, yet least understood tools policymakers use to influence public policy outcomes. Their costs, almost universally, get little acknowledgement, and their effectiveness is rarely evaluated. This paper established a framework to guide further exploration in this area. 910 different economic development and agricultural development tax expenditures across 23 states were inventoried. In 2010, within these states, $20.7 billion was spent on economic development tax expenditures and $4.1 billion agricultural development tax expenditures; figures that often dwarfed values of "above board" programs and funding allocations in state budgets. Yet, tax expenditure effectiveness remains questionable. For 11 surveyed states with available data for an 11 year period, using a 3 Stage Least Squares regression model, controlling for state fixed effects and time, this paper found no significant impact of these expenditures were on related outcomes.

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Research Objectives

State tax expenditures are one of the most important, yet least understood, tools policymakers use to influence public policy outcomes. Their costs, almost universally, get little acknowledgement, and their effectiveness is rarely evaluated. Yet, particularly for economic and agricultural development, the magnitude of taxpayer support granted through these "below-board" credits, subsidies, deductions, and preferential tax treatments, often dwarf the expense of their rigorously challenged and defended counterpart programs and departments regularly funded through "above-board" state budgets.

Accordingly, the goals of this report are threefold:

1. To **set up a framework and rationale** for the analysis of economic development and agricultural development tax expenditures. Solid, sharp definitions are essential for reliable, meaningful understanding and tracking of tax expenditures over time.
2. To accurately **estimate how much is annually spent** by 23 states, including some of our country's largest, on tax expenditures for economic development and agricultural development purposes, including, within those categories, how much has been spent in manufacturing and biofuels support, respectively.
3. To **explore whether tax expenditures have had a discernible impact on related outcomes** (economic development or agricultural productivity) for 11 of the 23 states for which reliable data is available for an eleven year period, 2000 to 2010.

However, the mission of this report is broader than just reaching these three objectives. It is to continue a conversation between policymakers, academics, and economic development practitioners, from the

state to the federal level about the value and the impact these often hidden expenditures are having on our system of government, our budgetary environment, our economy, and our society at-large.

Introduction

In 2010, New York State had a budget of approximately $86 billion. According to the Center for Regional Economic Competitiveness' State Expenditure Database, that year the state spent nearly $300 million on economic development activities and programs. This included line items for the Empire State Development Corporation ($45 million), the Foundation for Science, Technology, and Innovation ($68 million), and the New York State Energy Research and Development Authority (NYSERDA) ($16.2 million). These programs were scrutinized, examined, and justified by administrators that year, and every year prior and since, by and to New York's elected officials.

Program administrators had to vigorously defend their programs' effectiveness, justify their costs, and explain their plans to make those programs ever-more efficient in addressing their targeted ends. It was through this process of public scrutiny, the measuring and evaluating of expenditures, that the determination was made by Governor Andrew Cuomo that an overhaul of the economic development system in the state was needed. Without such scrutiny, new approaches, such as the competitive-region model, currently being tested, might not have been proposed.

By comparison, that same year, **New York State incurred $1.9 billion worth of economic development tax expenditures: six times more than what was allocated through "above board" economic development budgetary line items**. This is a fact largely unknown to most of the state's general population, and even to, presumably, most of its elected officials, despite its enormous, far-reaching implications. These expenditures are rarely part of evaluations of the "economic development" system within a state, and often go overlooked in most non-budget related discussions. Yet their costs and potential impact, arguably, are many times that of expenditures that receive much harsher scrutiny.

Agricultural producers, similarly, find significant support within both New York's budget and its tax code. In 2010, the Governor Cuomo recommended an allocation of $164.6 million for the state's Department of Agriculture and Markets. This department of 543 employees is responsible for not only "encouraging the growth and economic health of the State's agricultural and food industry," but also for protecting and marketing to New York's food consumers. It is responsible for "conducting various inspections and testing programs to enforce laws on food safety, animal and plant health, and accuracy of labeling,"[1] the preservation and conservation of agricultural resources, and the operation of New York's massive annual State Fair. In 2010, with the state facing tough economic and fiscal headwinds, the department absorbed more than a ten percent cut to its budget.

Meanwhile, according to our analysis, **in 2010, New York State spent, conservatively, $127.7 million on agricultural development tax expenditures, up over thirty percent from the previous year, and up more than ten percent from two years prior.** These expenditures are ill-controlled, ill-evaluated, and can often, as in this case, negate policymakers' good faith efforts to balance budgets.

Whether either economic development or agricultural development tax expenditures have resulted in provable, positive outcomes is a topic covered later within this report. But prior to their consideration, two questions should be raised:

1. Between budgetary expenditures and tax expenditures, why is one set of state expenditures treated and challenged so differently than the other, despite comparable (or greater) costs to the state and its taxpayers?
2. For firms (or in the case of agriculture, farms) with limited mobility, is tax expenditure support the type of financial support necessary to foster their long-term growth in New York?

[1] Department of Agriculture and Markets Budget Presentation, FY2010 - http://www.budget.ny.gov/pubs/archive/fy1011archive/eBudget1011/agencyPresentations/pdf/agtmkts.pdf

New York State is just one of fifty similar examples found across our country today, with policy-makers picking tax "winners" and "losers" through use of the tax code. This continuing trend makes identifying, reviewing, and evaluating the effectiveness of these expenditures across all states imperative, and essential to good government policymaking.

Within this report, we are able to examine the state of tax expenditures across 23 states for one year (shown in the table below), and track the economic and agricultural development impacts of 11 states over the period 2000 to 2010 (states italicized).

Figure 1: States Examined in Tax Expenditure Assessment

States Examined in Tax Expenditure Assessment				
Arizona	Georgia	Louisiana	New Jersey	*Pennsylvania*
California	*Illinois*	*Massachusetts*	New Mexico	Texas
Colorado	*Iowa*	Michigan	*New York*	*Washington*
Connecticut	Kansas	*Minnesota*	North Carolina	
Florida	Kentucky	Montana	*Ohio*	

Main Findings

In 2010, for the 23 states wherein tax expenditure data was reliable and verifiable:

- Approximately $20.7 billion was spent on economic development tax expenditures, amounting to 1.4 cents "spent" on economic development tax expenditures for every dollar of revenue collected
- Over 50 percent of all economic development tax expenditures went to support manufacturing-related industries

- Approximately 39 percent of all economic development tax expenditures went towards supporting investments in "Business Property or Capital"
- Just over $2 billion was spent to support targeted industries, with the industries differing state by state
- Approximately $4.1 billion was spent on agricultural tax expenditures, with 47 percent of that support going towards "Livestock and Crop Inputs"

For the 11 surveyed states with available and reliable tax expenditure data for the 11 year period, 2000 through 2010:

- While the total amount spent on economic development tax expenditures has remained largely constant since 2000, spending for these states has shifted away from manufacturing support: in 2000, manufacturing-focused tax expenditures made up over two-thirds of economic development tax expenditure spending, but by 2010, for these states, it dropped to 43 percent
- "Research and Development" tax expenditure spending, since 2000, was up by over 133 percent, while "Enterprise Zone" and geographically-targeted expenditure spending was up by 353 percent
- From 2000 to 2010, state spending on agricultural development tax expenditures have increased nearly fifty percent, from $1.26 billion in 2000 to $1.86 billion in 2010
- State biofuel tax expenditure spending peaked in 2008, accounting for 9.4 percent ($147.3 million) of agricultural development expenditures

Further, for these 11 states, based upon a state-by-state three step-least-squares (3SLS) instrumental variable regression model, the following tax expenditure impacts were found:

- Our regressions found no impact, all else held equal, of corporate tax rates (TCorpInc) on number of large (Firms100) in a state

- Taxes on those individuals making over $100,000 was not found to have a significant impact on the number of large firms within this sample of states
- Sales taxes (Tsales) were, however, found to have a significant impact on the number of large firms within a state
- States with greater percentages of an employed population and those with a higher average workforce wage also had greater numbers of large firms
- Republican control of the Executive branch of a state did have a minimal, but significant impact on the number of large firms within the state
- The amount spent on economic development tax expenditures, our variable of interest, was also found to be insignificant
- Every percent increase in crop and livestock revenue resulted in a 1.14 percent increase in farm income
- A full Republican controlled Executive branch and legislature was found to have a positive impact on farm income
- States with a higher density of Interstate, unlike within economic development, did show a positive effect on agricultural development outcomes through farm profits
- Farm size, expectedly, was positively correlated with crop and livestock revenue
- Agricultural development tax expenditures were not found to have a significant impact on agricultural revenues (in this case, our proxy for agricultural economic development) when state effects were taken into account

Chapter II: State Tax Expenditures Explained

Understanding State Tax Expenditures

Tax expenditures are reductions or refunds of taxes from a baseline tax level. They include tax credits (e.g. first time home-buyers' tax credit), deductions (e.g. charitable giving), exemptions (e.g. basic food stuffs), and preferential tax rates (e.g. capital purchases given a lower tax rate). Tax expenditures amount to money removed from revenue streams before those streams "pour" into a budgetary pool, from which, then, governmental departments, programs, and initiatives receive funding.

At the federal level, tax expenditures have been given significant consideration since the publication of the seminal 1974 Congressional Budget and Impoundment Control Act, wherein tax expenditures were first legislatively defined:

> "The term 'tax expenditures' means those revenue losses attributable to provisions of the Federal tax laws which allow a special exclusion, exemption, or deduction from gross income or which provide a special credit, a preferential rate of tax, or a deferral of tax liability, and the term 'tax expenditures budget' means an enumeration of such tax expenditures."[2]

The evaluation of federal expenditures is now a standard part of the government's operating procedures, with Congress' Joint Committee on Taxation[3] regularly releasing updates on their costs. In 2010, the Committee estimated that federal tax expenditures for individuals and corporations exceeded $1 trillion.

Thanks to organizations such as the Pew Charitable Trusts and their SubsidyScope program, and the Center on Budget and Policy Priorities, it is easier than ever for policymakers and taxpayers to

[2] "Congressional Budget and Impoundment Control Act." Page 508.
[3] https://www.jct.gov/publications.html?func=startdown&id=4386

understand where federal tax expenditure dollars are going. In 2010, for instance, according to SubsidyScope's analysis of the Joint Committee on Taxation's report[4], $360 billion was allocated for "Commerce and Housing" purposes; another $208 billion was for "Income Security"; and $5.3 billion went directly to "Community and Regional Development."[5] This transparency has enabled the regular production of governmental, think tank, and academic reports each year evaluating the efficacy, fairness, and effectiveness of these expenditures.

At the state level, however, the transparency comparison could not be starker. According to the Pew Center on the States' 2012 report, "Evidence Counts: Evaluating State Tax Incentives for Jobs and Growth"[6], only 13 states were "leading the way" in opening their "tax expenditure books," "meeting both criteria for scope of [their] evaluation and/or both criteria for quality of information." Another 12 states had "mixed results," "meeting only one of the criteria for scope and/or quality of evaluation." 26 states, more than half the states in America, were "not meeting any of the criteria for scope or quality of evaluation."

Research done for this report largely supports what the Pew Center on the States concluded: that states have, generously, a mixed record on tracking, assessing, evaluating, and/or disclosing their annual tax expenditures. Most states, even those selected for use within this report's analyses, lack at least a handful of major tax expenditures within their reports, whether through full omission or through non-disclosure of total credit amounts. This missing data may result in understatements of tax expenditure totals.

[4] http://subsidyscope.org/tax_expenditures/summary/
[5] Though it should be noted that this is not a one-to-one comparison with our economic development tax expenditure definitions, which, as later discussed, includes job creation and training programs, technology investment incentives, and other items, which are included in several various SubsidyScope categories.
[6] http://www.pewstates.org/research/reports/evidence-counts-85899378806

Encouragingly, however, more states appear to be releasing their tax expenditure data, perhaps just now setting up internal programs themselves to compile and track these expenses.

The Impact of State Tax Expenditures

Understanding what tax expenditures are is critical to comprehending their costs (report objective two), as well as to setting up a proper framework (objective one) to begin to rigorously challenge their intended economic and agricultural impacts (objective three). Unlike their "above-board" budgetary programmatic and departmental line items though, the impacts of these hidden expenditures can be far greater than simply foregone revenue.

Nearly every state, excluding Vermont, unlike the federal government, is required to annually balance its budget. To again use New York State as an example, in 2010, the state had a budget of $86 billion. This figure represented the approximate sum of all the revenues the state expected to collect equal to (or hopefully greater than) the amount of the budgetary expenditures it was expecting to allocate out. If expenses were to unexpectedly rise or revenues unexpectedly decline, the broken equilibrium would require either items to be cut, new revenues to be raised, or monies to be pulled from "rainy day" funds. In other words, unlike at the federal level, consistent deficit-driven borrowing is not feasible, making the impact of tax expenditures that much greater.

Tax expenditures impact the state budgetary environment in two primary ways:

1. Most directly, by governing the amount of revenues entering state coffers; and
2. With their individual variability, adding uncertainty to revenue projections, a critical budgetary process.

Assuming a balanced budget environment, both of these can have substantial implications on state budgets, and ultimately, on the distribution of the tax burden.

To the first point, **tax expenditures divert money away from being collected and used by the state**. After passing new, special tax treatment bills to chosen persons, industries, firms, or individuals, the state, budget already set, must then pay for the introduced gap: between the expenditures that are still demanded and the new amount of expected revenue to-be collected. This can be achieved either through higher taxes on those not receiving preferential treatment or through cutting above-board programs and services[7], assuming a balanced budget.

If achieved through higher tax rates elsewhere, tax expenditures will wind up serving both as an incentive (to the targeted industry) and well as a disincentive (to those not targeted, but who would wind up paying a higher tax rate). If achieved through cutting budgetary programs and services, tax expenditures would have an ironic deleterious impact on those programs that have been far more heavily evaluated for their effectiveness, efficacy, and efficiency. **State tax expenditures are paid for through higher tax burdens on those not receiving preferential tax treatments and/or through agency or programmatic cuts**.

To the second concern with tax expenditures, state budgets, fundamentally, are based upon a set of assumptions and projections, particularly about the level of revenues to be collected year-to-year. Economic variations, industry slumps, population shifts, and even the weather can play significant factors in whether a state raises the level of revenue it expects, and needs, from its citizenry and its enterprises during any given year[8]. Tax expenditures add another portfolio of variables to weigh, understand, and project when making these estimations. Not fully understanding the impact of even

[7] As a side note, this is why the "Grover Norquist" pledge taken by politicians, to never raise taxes, also precludes the cutting of tax expenditures. Doing so would, in effect, allow more money to flow into state coffers, as opposed to creating a "starved" budget environment wherein the only option, given the pledge, would be to cut spending to achieve equilibrium. Further, in consideration of the argument that future growth would result in higher tax revenues, for our focus herein, we are just considering the reality of the next budgetary fiscal year: within that next year resulting industry growth would far from make up the gap in revenues.

[8] States also receive a significant amount of revenue from the federal government annually

one of these tax expenditures can have significant budget consequences, a cost that is hard to quantify, but one that is undeniably substantial.

A 2011 report by the Center on Budget and Policy Priorities highlighted two such instances[9]:

> "In 1989, Georgia passed a law exempting video tape rentals from sales tax. This exemption currently costs the state more than $4 million per year... The exemption is permanent, so there is no requirement that policymakers even reconsider whether it is a good use of state dollars. Nor is there evidence that policymakers even have reviewed it."

> "In 2000, Arizona passed a tax credit for vehicles that [could] run on alternative fuels. The state estimated that the credit, which paid up to half of the vehicle's cost, would cost $3 million to $10 million per year. In its first year, however, the credit cost the state $680 million before the legislature could repeal it."

Tax expenditures have the potential to be highly variable from year-to-year (particularly given added complexities with refundability and carry-over provisions), can cost a great deal, and can be virtually hidden from regular public and even policy-maker scrutiny. In other words, their annual costs are hard to project, can be substantial, and can far exceed projections before states can appropriately review and adjust. Tax expenditures make the normal budgetary process that much more difficult to manage.

Additional Tax Expenditure Consequences

Beyond state budgetary consequences, tax expenditures have other repercussions on the marketplace.

State legislatures, for decades, have used tax expenditures to incentivize the purchase of items, such as hybrid cars, to promote a social or environmental good: to achieve a particular policy end. In fact, many of the economic and agricultural development incentives examined herein were established to achieve

[9] http://www.cbpp.org/files/5-11-11sfp.pdf

some social and/or economic goal. Community development credits and enterprise zones, for example, were not only designed to economically revitalize an area, but also to reenergize and build communities.

However, policy-maker led interventions that incentivize individual actions/ activities, by their nature, disincentive others, potentially resulting in unintended consequences or long-term, economic, sub-optimal results. For instance, subsidizing fuel for particular types of production could, while making production more cost-competitive in the short-term (at least until other states follow suit), result in industries not modernizing and investing in capital at a rate which would make them more long-term competitive.

Also disturbing is the perversity that could arise not from the marketplace consumers and producers, but from the "consumer-state" itself. By the nature of our republic, each state, in effect, operates in a competitive environment with all other states to, among other things, grow and attract industry and commerce, bringing jobs, tax revenue, and political riches. Tax expenditures create an inter-state dynamic wherein states, especially in tough economic environments, as "consumers" of industry, demanders of mega-institutions and the jobs they would inject, are forced to bid against one another to attract these large, mobile firms. The dynamic, ultimately, creates a classic "race to the bottom" scenario, where states bid down any potential direct tax revenue they would collect from businesses that are prepared to – presumably, regardless of the state – open up shop.

These additional consequences of state tax expenditures are not stated solely to paint a negative portrait of their usefulness in reaching policy ends; there are, no doubt, many such tax expenditures that have far surpassed their economic and/or social goals, perhaps even many times "paying back" their cost through subsequent industry growth (as we will discuss within the next "theory" section). The highlighting of these consequences, however, is meant to illustrate that without proper and transparent

methods for accounting for the costs of tax expenditures, it is virtually impossible to understand and wield these powerful policy tools.

The Economic Rationale behind Tax Expenditures

In May 2011, in Owensboro, Kentucky, a developer was granted up to $5 million in state tax incentives to build a Hampton Inn & Suites in the city's downtown. The package, granted by the Kentucky Tourism Development Finance Authority, would defer up to 25% the $20.3 million cost of the 150-room hotel through sales tax refunds. "It's wonderful for Owensboro and the convention business," the developer professed[10]. The developer also "struck a deal with [the city of] Owensboro in which the hotel isn't required to pay city property taxes in any year in its first 10 that averages less than 65% occupancy."[11] This investment was one of many to support the city's master plan, reinvesting in its downtown and "capitalizing on Kentucky's musical heritage and Owensboro's annual blue-grass festival."[12]

In this city of 56,000, with an unemployment rate of 9 percent, and per capita income at slightly over $33,000, policy-makers offered such incentives to foster new industry, encourage downtown reinvestment, and attract much needed jobs. They likely turned to such incentives because these tools, in practice, are what have been used before and what are used by their competitors. However, there is significant economic theory behind the original use of such incentives to generate economic growth.

Theory for tax incentives originate with broader, well-worn economic concepts. John Maynard Keynes, in his seminal work, *The General Theory of Employment, Interest, and Money*, presented the basic rationale behind why producers choose to invest in capital (such as, in the aforementioned example, the building of a new hotel):

> "When a man buys an investment or capital-asset, he purchases the right to the series of prospective returns, which he expects to obtain from selling its output, after

[10] Vied, Steve. "State OKs Hotel Incentives."
[11] Hudson, Kris.
[12] Thomson, Susan.

> deducting the running expenses of obtaining that output, during the life of the asset…[this is] the *prospective yield* of the investment."[13]

Tax expenditures, effectively, reduce the cost or "running expenses" of such investments, thereby inducing producers to, according to Keynesian thinking, purchase more of those assets.

In Owensboro, it lowered the cost of building the hotel from over $20 million to closer to $15 million, over the ten year period.

Keynes also noted that two types of risk impacted the "volume of investment", which are relevant to our conversation: borrower's risk and lender's risk. Borrower's risk, quite simply, is "the probability of [the entrepreneur, in this case the developer,] earning the prospective yield for which he hopes."[14] The lender's risk, if lending is necessary, stems from moral hazard or "the possible insufficiency of the margin of security".

Tax expenditures – and, in fact, most direct economic development expenditures – work to remove such risk from both the borrower and the lender by either reducing the initial or ongoing cost of a project, as was the case with Owensboro's conditional tax breaks, or by simply shifting the risk to the government itself, as with government loan guarantees.

States, cities, and communities engage in such market-influencing behavior for, among many reasons, two prominent, theoretical ones, each backed with long histories of research: multiplier effects and location theory.

[13] Keynes, John Maynard. 123.
[14] Keynes, John Maynard. 129.

The theory of multiplier effects, or Keynesian multiplier effects, actually comes from one of Keynes' students, Richard Kahn. In discussing the benefits of constructing a road, he notes how the economic effects extend beyond the direct, attributable ones:

> "The increased employment that is required in connection actually with the increased investment will be described as the 'primary' employment. It includes the 'direct' employment, and also, of course, the 'indirect' employment that is set up in the production and transport of the raw materials required for making the new investment. To meet the increased expenditure of wages and profits that is associates with the primary employment, the production of consumption-goods is increased. Here again wages and profits are increased, and the effect will be passed on, though with diminished intensity. And so on *ad infinitum*. The total employment that is set up in this way in the production of consumption-goods will be termed the 'secondary' employment. The ratio of secondary to primary employment is a measure of these 'beneficial repercussions' that are so often referred to."[15]

These "beneficial repercussions" or what went on to become known as "multiplier effects," drive many of the arguments made for and behind the use of tax expenditures. Combining this with Keynes' economic framework, the often costly investments made by municipalities to lower the cost of business investment will not only result in greater employment within the firm, but will multiply to greater employment within the area itself.

To put this in context, let's return to the Owensboro example. If 100 jobs were created from the Hampton Inn & Suites project, the $5 million investment alone would equate to a per job subsidy of $50,000 per job (over the ten years). With most of these workers likely making considerably less than

[15] Kahn, R.F. 1.

$50,000 per year, the City of Owensboro would essentially be covering staff costs for well over a year. Such an investment was made, however, not just to create those jobs within the hotel, but rather, to induce additional spending and investment within the community.

Owensboro officials estimated that, with the dozen or more such projects and investments taking place within its downtown, the city would feel an "economic impact" of $1.3 billion, based on "standard economic impact multipliers."[16] Beyond the direct and indirect effects of investments, such as the $425.5 million being spent on the Owensboro Medical Health System's hospital construction project, and the "beneficial repercussions" referred to by Kahn, creating "secondary" jobs, Owensboro officials are also counting on another type of multiplier impact: spill-over effects.

E.J. Mishan summarizes the evolution of the "spill-over effect" or positive externalities in his 1971 article, "The Postwar Literature on Externalities". Responding to the increasing intersection of economic and social theory during the period – while self-depreciatingly pointing out that "economists respond to real world problems with a time lag" – Mishan pushed the earlier theories set-up in Marshall's *Principles*, Pigou's *Economics of Welfare,* and R.F. Kahn's work to encompass a type of multiplier condition of "spillovers" (for his interest, specifically, environmental spillovers). Using a welfare economic analysis, Mishan purported that:

> "In popular expositions, an external effect is commonly defined in terms of the response of a firm's output, or a person's utility, to the activity of others. Insofar as the standard smoke and noise examples are cited, the correct impression is conveyed. This casual definition is unsatisfactory…some further light is shed on the nature of an externality by the notion of 'internalizing' it. If the effluent of an upstream firm damages the product of a downstream firm, a merger of the two firms will internalize the spillover- for the

[16] Vied, Steve. "Projects Boosting Employment, Economic Growth."

upstream branch of the new firm has now to adjust its output in the light of the damage its effluent causes to the downstream firm."

Beyond multiplier effects, the very combination of firms and the ways industry is aligned can result in stronger economic outcomes through positive externalities. Mishan notes the "classic solution" for achieving an "optimal output", the "tax/subsidy solution."[17] His important, summative work - connecting government purpose in industry organization - arose during a period where economists also began to explore the economic potential of agglomeration economies, industrial economics, and industry clusters[18], which set the stage for the regular government intervention into private markets that we see today.

In full, this theoretical work left practitioners and policy-makers with a few key take-aways related to private sector investments:

- Investments that lead to hiring will have a multiplied impact, given how those hired will also consume, spurring additional demand;
- Investments can impact a system, not only of economies and industries, but of social "goods" and ends – and impacting that system can lead to other, positive and desired externalities, whether it is better environmental outcomes or further industry growth.

This literature, which we, by virtue of our purposes herein, give only a cursory treatment, did have a lasting impact on the way the public sector views the private sector and its potential role, at various points, to foster the private sector's well-being. It was carried on, and was brought into a more applied context, by Michael Porter and Paul Krugman[19] in their influential work on regional development.

[17] Mishan, E.J.. 16.
[18] Porter, M.E.
[19] Krugman, Paul.

Location theory, another factor driving government support of such programs as tax expenditures, has also long been at the backbone of economic literature with strands running as far back as David Ricardo and his *On the Principles of Political Economy and Taxation* in 1817. Location theory, in effect, puts forth that there are reasons why economic activity takes place in one location over another. From Ricardo's theory of comparative advantage, to Johann Heinrich von Thunen's addendum of transportation costs reducing the economic rents able to be garnered by producers[20], an entire literature was created around the dynamics that cause firms – and economies – to move.

Douglass North, in 1955, recognizing the importance of the work and its implications, in particular, for the United States and regional economic development, began to use these theories as a lens through which one could view the American system:

> "During the past several decades there has been a growing interest in location theory in America. Building on the pioneering works of Thunen, Weber, Losch, Palander, and others, a number of economists and geographers have extended the analysis to apply to a wide range of problems and have attempted to synthesize location theory with other fields of economics. However, very little work has been done in using the principles of location of analyze the historical growth of regions in America."[21]

Within his paper - wherein he outlines a "sequence" of development for American regions, from a subsistence economy, to one focused on transportation investments, to trader, to a move from agriculture to industrialization, to exporter of manufactured goods – he puts forth a few important guiding concepts which took hold, both in the literature and practice:

[20] Found in his work *Der Isolierte Staat*, 1826
[21] North, Douglass C.

1. "For economists' purposes the concept of a region should be redefined to point out that the unifying cohesion to a region, over and beyond geographic similarities, is its development around a common export base."[22]
2. "The importance of the export base is a result of its primary role in determining the level of absolute and per capita income in a region, and therefore in determining the amount of residentiary secondary and tertiary activity that will develop. The export base has also significantly influenced the character of subsidiary industry, the distribution of population and pattern of urbanization, the character of the labor force, the social and political attitudes of the region, and its sensitivity to fluctuations of income and employment."
3. "The role of the state and federal government in creating social overhead benefits has created new exports in many regions."[23]

In summary, he presented a case for: regions to be, to some extent, defined by the industries within it; the development of export-oriented industries not just for their direct effects, but for their multiplier effects, and their potential impact on the area or region itself; and finally, and perhaps most critically, the role of government, through both indirect and direct manners, in creating such new industries. This philosophy of economic governance, often referred to as industrial economic policy, and has been at the cornerstone of economic policymaking, especially in European countries, for much of the past century.

However, also within his paper, ironically, exists echoes of other, countering trains of thought: theories and ideas put forth that run counter not only to what North, himself, is proposing, but also Mishan, Kahn, and even Keynes, at least as related to the government's role (and effectiveness) in fostering private sector development through tax expenditures. He notes: "Footloose industries, where transfer

[22] North, Douglass C. 257
[23] North, Douglass C. 254

costs are not of significant importance in location. A great many such industries develop purely by chance in some location."[24]

This statement is supported by an equally lengthy and worthy segment of economic thought and theory that beg two questions, at simplest: 1) do *most* large "footloose" firms, for which transportation costs are not a large factor, develop "by chance", despite the often heard protestations of business advocacy groups?, and 2) given how small the percentage of firms is that states "compete" to attract, as compared to the number of firms they currently host, are the incentive packages offered actually cost effective?

In the case of Owensboro, according to the Federal Reserve Bank of St. Louis[25], federal funds and such incentive packages (as well as tax increases on citizens) will "generate 9,000 jobs over the next three to five years," including many of those spillover effects, as the downtown becomes a "premier destination for citizens to live, work and play."[26] Such stories and expectations have played out, often to tremendous success and publicity. But another segment of these investments (to be left to the reader to determine whether this segment is in the majority or not and to what effect), have not had the economic impact otherwise predicted. Countering economic theories may help us to explain why.

In 1957, economist Milton Friedman proposed a theory known as the "permanent income hypothesis". Per his proposition, counter to Keynes' basic premise of "inducement", consumers and firms will only spend differently if they know that the change in income or costs they are experiencing will be a *permanent* change. In other words, if a firm's leadership is aware that a particular tax credit will be expiring or a grant will only cover one-time costs, it will not significantly change how much it will invest after settling in or how many it will hire. Per Friedman:

[24] North, Douglass C. 253
[25] Thomson, Susan C.
[26] http://edc.owensboro.com/downtown/downtown_development.php

> "Some of the most strikingly uniform characteristics of computer regressions between consumption and income are simply a reflection of the inadequacy of measured income as an indicator of long-run income status…differences among various groups of consumer units in observed marginal propensities to consume may not reflect differences in underlying preferences for consumption and wealth at all."[27]

Thus, municipalities looking to induce investment or job creation through short-term perks or incentives may simply be giving up revenues for little to no return. Further, municipalities may be competing to provide these incentive packages, while firms, for permanent location purposes, may only be worried about the basic economic factors they need for their businesses on an on-going basis; factors such as overall tax rates, the quality and price of the workforce, access to markets, and other input prices (e.g. energy). Short-term tax breaks, or longer term ones which have sunset clauses (e.g. PILOTs) or those that may face repeal in an uncertain political environment, may be great to bolster short-term income, but may not actually drive long-term firm location decisions. In other words, firms may make decisions based on long-term factors besides economic development (or agricultural development) tax incentives, though may fight for the largest short-term package of such incentives when their decisions are already made.

An additional economic concern that ran counter to Keynesian thought that rose to prominence through the twentieth century in the United States, driving global movements towards deregulation in the 1980s, was about the role of government in the private sector. "Government failure, it was argued, was just as pervasive as market failure"[28]. Policy-makers selecting "winners", such as through the tax code, was shown to result in often less that "pareto efficient" outcomes.

[27] Friedman, Milton. 37
[28] Michie, Jonathan.

Celebrated economist Paul Krugman was not blind to these dangers, despite his earlier work in favor of it, as he mentions in some of his later work[29]:

> "The key question [for Krugman in his work is] over the promotion of regional industrial specialization is whether the potential advantages are outweighed by the likelihood of greater regional instability and shocks, and the risk of structural depression…for the case of Massachusetts, regional industrial specialization is a double-edged sword: it can be the basis of a high rate of export-led local economic growth in one period, but the source of prolonger local economic depression if that demand subsequently collapses or is captured by other competing regions."

In other words, policy-makers, by the end of the century, had the power and precedent to influence market outcomes, but still did not – and never will – have all the information they need to select the "right" industries to support. Policy-makers are also ill-equipped to determine whether to support one, two, or more industries – supporting diversification over specialization – and, in a catch-22, lack the evaluations necessary to determine the best tools to use to do so.

The theoretical debates around the role of government in the economy and the long-term effectiveness of policy-mechanisms, such as tax expenditures, remain active, with equally strong voices on each side. However, practitioners continue to use these tools under the assumption and precedence of their effectiveness. This paper hopes to empirically examine whether clear answers are possible.

[29] Martin, Ron.

The Literature on Agricultural Development Incentives

Agricultural development incentives are, by the nature of their industry, different than those designed to target and promote manufacturing, for example. Instead of states "competing" for large, mobile farms, they are instead "competing" to preserve the vitality of industries that are not only economically important to them and their citizens, but also that generate a level of state-pride not often seen within other industries. The "family farm" is an almost mythical symbol in the American zeitgeist with few other industry comparisons.

Given agriculture's inherent differences, the goals of agricultural incentives are different (while much of the base theory and motivations, as previously discussed, remains constant). Agricultural development incentives largely fall into two categories: 1) Value-added industry supports; and 2) Farm income and revenue supports. Value-added industry supports often directly focus on developing value-added industries (e.g. biofuels, food manufacturing) to indirectly support farmers, by developing new, local markets for their products (i.e. yogurt manufacturing in Upstate New York). Farm income and revenue supports, provide more direct support, often through "above-board" U.S. Farm Bill and other statewide support programs, that take such actions as placing floors on crop prices and providing subsidies on other crop production, as well as through reducing the costs for production itself.

Tax expenditures largely fall into the "value-added industry supports" category (which follow the same economic theories as discussed earlier), as well as the cost reduction sub-category of "income and revenue supports." To this latter point, whereby states tend to focus on increasing existing industry income, over providing "attraction incentives," we wish to take a moment to highlight one of the largest tax expenditures granted within this area, and the rationale behind it.

One of, if not the largest, agricultural development tax expenditures in the United States is for the preferential tax treatment of land. "Over 60 percent of the private land in the 48 contiguous states of

the U.S. is in farms and ranches"[30]; 75 percent of a farm's assets are land; and "approximately one-fifth of the agricultural return to agricultural land is paid in real property taxes." Impacting the cost of this key input for farmers directly impacts their bottom-line, and thereby impacts the industry's vitality within each state[31].

States have, accordingly, recognizing the industry's importance, promoted targeted tax expenditures in this area. All 50 states have some preferential tax treatment for agricultural land[32].

These preferential tax rates result in lower assessed land values and taxes collected, as states try to preserve this existing industry within its borders. The *economic* rational for supporting such "firms" without mobility is one worthy of question, and belies our simultaneous evaluation of agricultural development tax expenditures besides economic development tax expenditures within this report.

[30] Wunderlich, Gene.
[31] "The scope, character of management of the real property tax [as established via Article 1 of the US Constitution] is based on state law"
[32] Wunderlich, Gene.

The Literature on the Impacts of State Tax Expenditures

Academic and professional publications have long challenged the effectiveness of state tax expenditures to achieve economic development outcomes. Many have made attempts, sometimes successfully, to identify and inventory the number and depth of tax expenditures. Others have taken it further, either focusing on a select set of states or particular cross-state incentives (e.g. R&D tax credits) to test incentive effectiveness – though most studies appear to have tested effectiveness on the characteristics and generosity of the expenditures (i.e. the percentage of the tax break on research and development equipment versus the amount of research and development equipment "induced" to be purchased), not necessarily on the amount actually disbursed or spent by the state on these incentives.

A number of academics and reporters have also documented the externalities, or unintended consequences, of these incentives, on state budgets, on generating a national "race to the bottom," and on the general shifting of the tax burden. In this section, we will briefly survey the literature that has, to-date, attempted to inventory tax expenditures across states, and provide a brief view of the literature available that relates to the impact of these expenditures. For a complete list of articles and publications cited and reviewed in the process of writing this report, please see the Bibliography.

Inventories

In a ground-breaking piece released during the production of this paper, the *New York Times* declared the following:

> "A Times investigation has examined and tallied thousands of local incentives granted nationwide and has found that states, counties and cities are giving up more than $80 billion each year to companies. The beneficiaries come from virtually every corner of the

> corporate world, encompassing oil and coal conglomerates, technology and entertainment companies, banks and big-box retail chains."[33]

In its extensive investigation, similar, though not congruent, to the one carried out in this report, the *Times*: "analyzed more than 150,000 awards and created a searchable database of incentive spending. The survey was supplemented by interviews with more than 100 officials in government and business organizations as well as corporate executives and consultants." It found that "Texas awards more incentives, over $19 billion a year, than any other state. Alaska, West Virginia and Nebraska give up the most per resident."

Similarly, this report also found Texas to have the highest state economic development/ business incentive tax credits, though at a much smaller $2.2 billion valuation (if a large, arguable tax credit is included, this increases to $12 billion). This is due, in part, to a broader *NYTimes* definition of tax incentives, and their use of FY2013 information (this information was gathered for this report, but to maintain an accurate state-by-state comparison, 2010 was used as the comparative year across states). The *NYTimes* also appears to have estimated and compared unlike years, using data not publically available, as most states still do not maintain comprehensive, accurate tax expenditure information, as discussed earlier in this report.

Other reports and papers have similarly attempted to compile an inventory of state tax expenditures, though the *NYTimes*' work is certainly, henceforth, the watermark.

Impact

> "The New Hampshire legislature voted in favor of a R&D tax credit in the spring of 2007 and the legislative bill was signed by the Governor and then became law in the fall of 2007. Economic considerations…influenced the legislative discussions and the creation

[33] Story, Louise.

> of the R&D tax credit in New Hampshire…There is significant evidence that nations and states that adopt an R&D tax credit will experience an increase in R&D investments. The New Hampshire modeling and simulations are consistent with these findings and those that a R&D tax credit policy can have positive impact on employment and income growth."[34]

Tax expenditures across the United States – at the federal, state, and local levels – are regularly used to influence economic and agricultural development outcomes. R&D tax credits, as mentioned above, are just among the most common, though, as shall be discussed later, represent just a small percentage of those credits available.

The literature on the effectiveness of tax expenditures is mixed, and in evaluating many of the broader, less popular credits (such as manufacturing sales tax exemptions), sparse. The New England Public Policy Center in late 2009 pulled together a broad survey of the literature. Within it, they presented a strong case where "results clearly suggest that state investment tax credits are effective in generating capital investment – their targeted activity – and estimate the average magnitude of that effect. [economists, Chirinko and Wilson, in their multiple regression study] also found evidence that a state is likely to draw at least some portion of the new capital investment away from other states."[35] The Center presents this, however, with the caveat that such cross-state studies often don't account for what would happen within any individual state.

At the individual state level, the results again are mixed, and depend upon whether investment tax credits, R&D credits, or film credits are being evaluated, for example, and within which state. North Carolina's M&E credit, according to a 2003 assessment, resulted in "firms invest[ing] about $12.3 billion in qualified machinery and equipment…generating close to $860 million in tax credits over the

[34] Gittell, Ross. Page 93.
[35] Weiner, Jennifer. Page 20.

program's first six years… each dollar of M&E [actually claimed though] was associated with $106 in capital investment,"[36] a clear win.

However, in Rhode Island, a 2000 study of the state's film credit would that "for every dollar spent on film tax credits, the [Rhode Island] government recoup[erated] $0.28 to $0.32 in new revenue from direct economic effects…[and] the authors also did not attempt to adjust for any film activity that might have occurred without the credit."

A number of other academic publications and papers confirm these mixed results[37]. Yet, states, to both remain competitive and chase the "big win" (such as the mid-1990s South Carolina model of attracting 1,400 new businesses and creating 200,000 new jobs through the use of tax expenditures[38]), continue to develop and implement expenditures, and do so within linking them to proper evaluations[39].

This paper hopes to continue the growing discussion about state-level tax expenditure effectiveness.

(Not) Understanding Tax Expenditures

Measuring the basic financial impact of tax expenditures, as done within this report, is far from a simple or easy task. As previously mentioned, states have not been entirely forthcoming with their tax expenditure data, providing an initial, critical hurdle. However, accessibility is only one reason the cost of tax expenditures are hard to accurately determine. Others include:

- **A "tax expenditure" dollar is not necessarily equal to a dollar budgeted for a government program**. For instance, if new manufacturing capital is taxed at a lower rate than other purchases, that difference, between what would have been collected at the "normal" rate, and what was collected, is not necessarily a one-to-one comparison. At the normal, higher tax rate,

[36] Weiner. Page 21.
[37] See: Luger, Michael; Blanchard, Christopher; Bartik, Timothy
[38] Blanchard. Page 12.
[39] Pew, "Evidence Counts"

business consumers would be faced with a higher product cost, and would, therefore, purchase a lower quantity. This lower quantity purchased would result in lower tax revenue than that assumed by simply multiplying the number of entities claiming the tax credit and multiplying it by the average tax credit amount. Thus, determining the exact amount "spent" or given up on individual tax expenditures is an estimate, at best.

- **"Normal" or base tax rates are different from state to state, and even from item to item**. While some states, such as Montana or New Mexico, might have lower amounts of declared tax credits, even accounting for industry size, their base tax rates might be lower than others, like New York or California. Simply comparing totals from one to another to determine which states have the lowest cost of doing business would be misleading. Additionally, even within states, tax expenditures take away from tax revenue streams based upon different rates. For instance, states tax individual income, corporate income, and sales taxes at different levels; further, some states also tax fuel use, mineral extraction, and basic industry-sector activities at different rates. Where they do, analysts must make the choice, given available data to either: 1. Inventory these different rates, then account for the tax expenditure departures from that "normal;" or 2. Determine a standard "normal" tax rate across all sectors, and calculate how these structural preferences deviate from that. Later, within this report's regression analyses on the potential impact of tax expenditures, we try to, to our best, account for these base tax variations.
- **Again, tax expenditure costs are estimates and are subject to change**. Agencies actively submit departmental and program budgets annually. States then publish these requests, to varying levels of detail. Tax expenditures, on the other hand, require time to calculate, and then are only an approximation, at best. State revenue departments can count the number of individuals and enterprises taking advantage of various tax credits and deductions, and then multiply that

by the average credit or deduction taken; but even then, late tax filers and carry-overs can cause those numbers to retro-actively change.

Further, many policymakers at the state government level may also have their own incentives not to share this information:

- **Tax expenditures and their implications can be difficult to understand and explain**. Openly debating the estimated costs of expenditures "paid for" with funds that are often never actually collected, often requires explanation. Making cases for or against such expenditures, especially given the political ambiguity as to whether it would amount to an increase in taxes, is not a straightforward task, and carries with it its own political dangers.
- **Perhaps for competitive purposes, states have historically been reticent to publically release their tax expenditure information**. Of the 23 states surveyed for this report, for instance, only two had any sort of reliable information available online in 1999. However, thanks to the work of organizations like the Pew Center on the States, and a large public-accountability and transparency movement over the past decade, more states than ever are releasing this information. By 2003, as shown in Chapter 3 of this report, 10 of the 23 states surveyed had information readily available; and by 2010, 20 of the 23. That said, even by 2010, "released" information had still had significant limitations: all of the data was released in analytically inaccessible PDF form (versus Excel); only a handful of states had consistent information on individual tax expenditures extending back more than two years; three of the states had data that was massively incomplete and unusable; and, as aforementioned, even many of Pew's "leading the way" states did not inventory and capture the expenses of various large and important tax expenditure items.

These limitations should be kept in mind when reviewing any tax expenditure information, including those presented in this report.

Chapter III

Methodology

For this report, dozens of previous reports, articles, and scholarly publications – on both federal and state tax expenditures - were reviewed (as displayed in this report's bibliography, and discussed in the previous chapter). Various state tax expenditure reports, noted as being particularly comprehensive (e.g. Washington), were then examined to determine the extent of the possible definitions for tax expenditures that promoted economic development or agricultural development ends. These definitions were then constructed and sub-categorized, as appropriate.

Economic Development Tax Expenditures
Definition: Any tax credits, deductions, exemptions, and otherwise preferential tax treatment instituted to directly catalyze or support business development and/or job creation within the state.
Categories: Research and Development; Business Property or Capital; Job Creation/ Retention; Job Training; Geographically Targeted; General "Business Friendly" Investments; and Industry Specific Incentives.

Agricultural Development Tax Expenditures
Definition: Any tax credits, deductions, exemptions, and otherwise preferential tax treatment instituted to directly catalyze or support agricultural development within the state.
Categories: Categories for these tax expenditures included: Livestock and Crop Inputs; Machinery and Capital; Fuel; Housing and Property; Production; Services; and Industry Specific Incentives.

Additionally, within each of these tax expenditure categories, manufacturing and biofuel foci were noted, respectively.

This report was not intended to be a full fifty-state survey, but rather, a broad step in moving towards such a comprehensive assessment of state tax expenditure costs. As such, states that had been previously highlighted as having particularly strong reports were more often chosen for closer examination than others. There was, however, also an attempt to achieve geographic and economic diversity in the states chosen for closer examination.

Ultimately, **23 states were selected for analysis**. These states are shown in the table below.

Figure 2: States Examined in Tax Expenditure Assessment

States Examined in Tax Expenditure Assessment				
Arizona	Georgia	Louisiana	New Jersey	Pennsylvania
California	Illinois	Massachusetts	New Mexico	Texas
Colorado	Iowa	Michigan	New York	Washington
Connecticut	Kansas	Minnesota	North Carolina	
Florida	Kentucky	Montana	Ohio	

For each of these states, tax expenditure reports and/or budget documents were identified, inventoried, and downloaded for as far back as 2000. This resulted in **227 different sources and 202 primary data documents being identified**. Note, however, that some states, which have recently adopted Tax Expenditure requirements, such as New Mexico and New Jersey, had far fewer documents (and related years of information), than others with longer histories of such public disclosure like Florida, Massachusetts, New York, Ohio, Pennsylvania, and Washington.

Each of these files were then reviewed, from most current to oldest, inputting program data and cost estimates in reverse chronological order (as states often report past costs, as well as project future

costs, in a single document). Data input was done in this way under the assumption that the latest information would be the most reliable for past years, given continual adjustments necessitated by late-filers and carry-over effects.

This extensive data collection process, which included identifying all current and past programs that fit the aforementioned definitions, resulted in a mixed picture of available public tax expenditure data. This is depicted in the table below.

Figure 3: State Tax Expenditure Data by Year

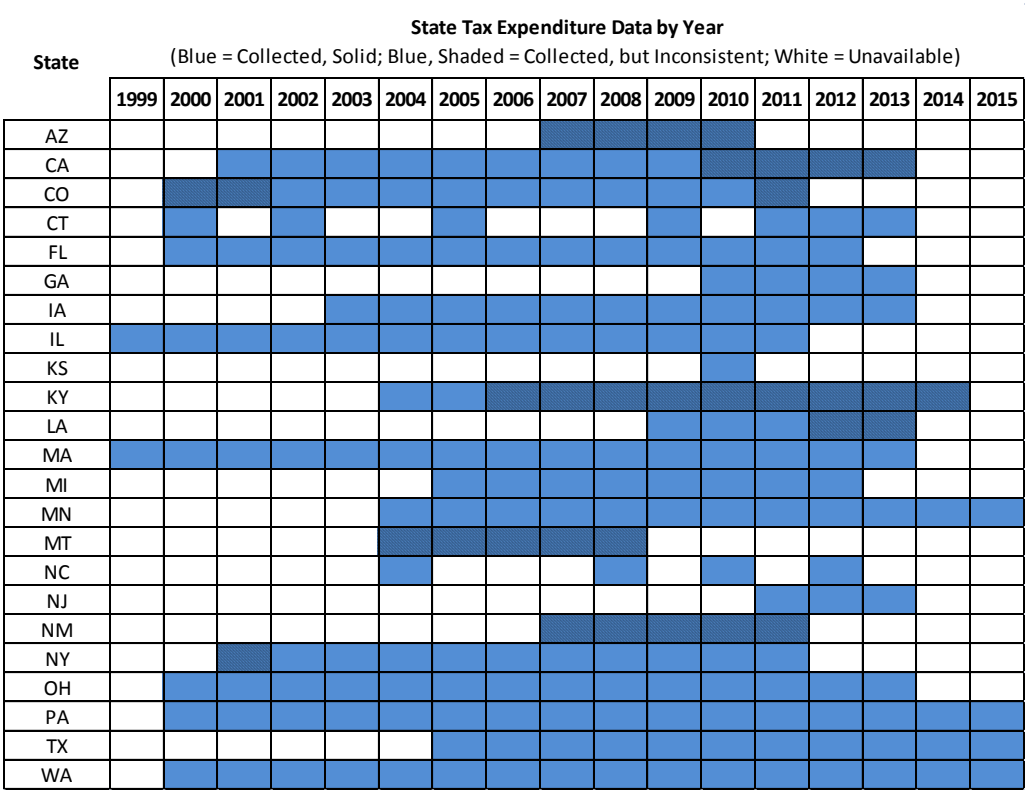


Figure 4: Tax Expenditure County by Type

State	Expenditure Type	# Tax Expenditures Inventoried
AZ	Economic Development (incl mfg)	18
	Agricultural Development (incl biofuels)	4
CA	Economic Development (incl mfg)	10
	Agricultural Development (incl biofuels)	5
CO	Economic Development (incl mfg)	32
	Agricultural Development (incl biofuels)	17
CT	Economic Development (incl mfg)	38
	Agricultural Development (incl biofuels)	5
FL	Economic Development (incl mfg)	32
	Agricultural Development (incl biofuels)	9
GA	Economic Development (incl mfg)	20
	Agricultural Development (incl biofuels)	14
IA	Economic Development (incl mfg)	18
	Agricultural Development (incl biofuels)	6
IL	Economic Development (incl mfg)	23
	Agricultural Development (incl biofuels)	6
KS	Economic Development (incl mfg)	20
	Agricultural Development (incl biofuels)	5
KY	Economic Development (incl mfg)	33
	Agricultural Development (incl biofuels)	29
LA	Economic Development (incl mfg)	26
	Agricultural Development (incl biofuels)	9
MA	Economic Development (incl mfg)	29
	Agricultural Development (incl biofuels)	9
MI	Economic Development (incl mfg)	34
	Agricultural Development (incl biofuels)	12
MN	Economic Development (incl mfg)	23
	Agricultural Development (incl biofuels)	19
MT	Economic Development (incl mfg)	18
	Agricultural Development (incl biofuels)	8
NC	Economic Development (incl mfg)	32
	Agricultural Development (incl biofuels)	38
NJ	Economic Development (incl mfg)	17
	Agricultural Development (incl biofuels)	1
NM	Economic Development (incl mfg)	14
	Agricultural Development (incl biofuels)	6
NY	Economic Development (incl mfg)	35
	Agricultural Development (incl biofuels)	7
OH	Economic Development (incl mfg)	20
	Agricultural Development (incl biofuels)	4
PA	Economic Development (incl mfg)	16
	Agricultural Development (incl biofuels)	16
TX	Economic Development (incl mfg)	18
	Agricultural Development (incl biofuels)	12
WA	Economic Development (incl mfg)	55
	Agricultural Development (incl biofuels)	88
	Economic Development (incl mfg)	**581**
	Agricultural Development (incl biofuels)	**329**

As depicted on the previous page, some states, such as Illinois, Massachusetts, Ohio, Pennsylvania, and Washington provided long-running assessments of their tax expenditure programs. Others such as New Mexico and New Jersey, while having comprehensive recent reports, are only more recently involved with publically disclosing (or even calculating) these detailed tax expenditure costs. Connecticut and North Carolina, while having calculated and tracked individual tax expenditure (both, it should be noted, doing so fairly comprehensively), only released estimates for particular years.

Figure 5: Economic Development Tax Expenditure State Totals

Economic Development (incl Mfg) Tax Expenditure Totals (2010) (in millions)	
AZ	$1,554.0
CA	$2,156.5
CO	$1,402.4
CT	$262.85*
FL	$876.4
GA	$357.5
IA	$215.1
IL	$380.6
KS	$3,578.7 $729.9**
KY	$338.6
LA	$460.6
MA	$682.0
MI	$2,137.0
MN	$279.7
MT	$62.0
NC	$465.9
NJ	$315.0***
NM	$94.6
NY	$1,864.3
OH	$2,045.9
PA	$1,186.3
TX	$12,595.6 $2,196.4^
WA	$593.9
TOTAL^^	**$20,657.5**

* - Avg btwn 2009 & 2011;
** - W/o one outlier exp
*** - Est based on levels of 2011 and 2012;
^ - Without one outlier exp
^^ - Total incl TX minus outlier

Depending upon the analysis and purpose, these states and their related data are broken up into various state-groupings later within this report. Again, all results should be taken with the aforementioned declaimers and cautions in mind. With few exceptions, most of these state tax expenditure reports,

even some of the most "comprehensive," have left out costs for key tax expenditures. However, information gathered herein can serve as the foundation for future understanding of state tax expenditure issues and measures.

State Tax Expenditures: Data

As detailed in the on the next page, **910 different tax expenditures were identified across all 23 states over an 11 year period (2000-2010)**. This included 581 economic development tax expenditures, including those related to manufacturing, and 329 agricultural development tax expenditures, including those related to biofuels.

Washington State, by far, had the most inventoried number of tax expenditures at 143: having both the highest number of itemized economic development tax expenditures (55) and agricultural development tax expenditures (88). North Carolina (70), Kentucky (62), and Colorado (49) also had high numbers of identified and inventoried tax expenditures within these categories.

Some states presented far greater numbers of economic development tax expenditures than agricultural tax expenditures. This was the case in Connecticut (38 over 5) and New Jersey (17 over 1). While this could partially be attributed to the less agrarian nature of certain states, and therefore, presumably, less of a policy focus on promoting such development, it could also simply indicate that not all agricultural-supporting tax expenditures have been accounted for in these reports.

New Jersey and New Mexico, two states new to regularly publishing and reporting on tax expenditures, present among the least detailed reports, at least in terms of economic and agricultural development. Arizona, California, Iowa, Kansas, and Ohio all also present fewer than 25 tax expenditures in these categories.

Not all of these inventoried tax expenditures were active for all years, nor were they all given cost estimates for all the years they were active.

State Tax Expenditures: Overall Costs

Economic Development Tax Expenditures

In 2010, approximately $20.7 billion was spent by the surveyed 23 states in economic development (including manufacturing) tax expenditures. This is broken out on a state-by-state basis below.

Generally, the larger states, such as California, Michigan, New York, Ohio, and Texas spent the greatest amount on tax expenditures for economic development purposes. However, others, like Arizona, Colorado, and Kansas, all smaller states, reported having larger than expected tax expenditures than one might assume for states of their size; while Illinois, New Jersey, and Florida, by comparison to their size, reported having smaller than expected expenditures. This comes out most clearly on the next table.

When examining state economic development tax expenditures for 2010 by the amount of state revenue collected, certain states' proclivity for using tax expenditures as an economic policy tool become more apparent. Colorado, for instance, "gives up" five cents per every dollar of state revenue collected, just for economic development purposes. Arizona, Kansas (even without the outlying manufacturing input tax expenditure), and Michigan all, also give up between three and five cents to economic development tax expenditures for every dollar of revenue collected.

On the other hand, California, with $2.1 billion in reported state economic development tax expenditures in 2010, falls to the lower half of the pack, given its enormous state tax base, as does New York.

Figure 6: Tax Expenditures by State Revenue Dollar

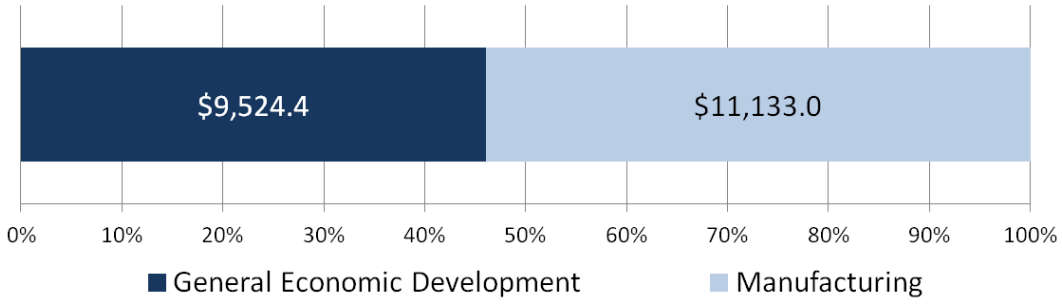
States by Economic Development Tax Expenditures per Revenue Dollar Collected (2010)			
State	**Tax Expenditures (in millions)**	**State Tax Revenues (in millions)**	**Expenditures per Revenue Dollar**
CO	$1,402.4	$27,990.5	0.050
AZ	$1,554.0	$32,830.0	0.047
KS	$729.9	$16,538.2	0.044
MI	$2,137.0	$66,524.4	0.032
OH	$2,045.9	$89,623.1	0.023
TX	$2,196.4	$120,389.8	0.018
LA	$460.6	$32,176.9	0.014
PA	$1,186.3	$83,623.1	0.014
MA	$682.0	$50,367.7	0.014
WA	$593.9	$44,306.8	0.013
KY	$338.6	$27,771.8	0.012
IA	$215.1	$21,162.5	0.010
CT	$262.9	$26,791.4	0.010
FL	$876.4	$91,758.7	0.010
NY	$1,864.3	$195,460.0	0.010
MT	$62.0	$7,476.9	0.008
NC	$465.9	$57,467.4	0.008
GA	$357.5	$44,878.0	0.008
CA	$2,156.5	$279,360.9	0.008
MN	$279.7	$39,887.0	0.007
NM	$94.6	$17,485.4	0.005
IL	$380.6	$71,292.6	0.005
NJ	$315.0	$66,531.20	0.005
TOTAL	**$20,657.4**	**$1,511,694.3**	**0.014**

On average, for the 23 states surveyed for 2010, approximately 1.4 cents is spent on economic development tax expenditures for every dollar of revenue collected; that is, from every dollar that comes to the state from personal income tax, corporate income tax, sales tax, intergovernmental revenue, license taxes, etc, 1.4 cents is given up to support economic development ends. Where these expenditures are spent within economic development also produces interesting results.

In 2010, again, holding all previous analysis approximations and assumptions constant (see bottom of first table), it becomes clear that **the majority (nearly 54 percent or $11.1 billion) of all economic development tax expenditures goes specifically to manufacturing-based purposes**. This includes, for instance: $77.1 million for electricity used in manufacturing in Florida; $828 million for industrial processing in Michigan; $217 million for capital equipment in Minnesota; $614 million in manufacturing machinery and equipment in Texas; and $1.4 million for the manufacturing of semiconductor materials in tech-heavy Washington.

While perhaps initially unexpected, given that manufacturers now employ less than ten percent of the US workforce, when thinking about the payoffs policymakers expect when instituting economic development incentives, it perhaps becomes more clear: one of the main rationales behind instituting economic development tax incentives is to create (or retain) jobs. Manufacturing plants are mobile and large – both in the amount of capital investment they bring, as well as the number of people they employ. Attracting and retaining these mega-employers would often fit the goals of policy-makers looking for quick economic infusions.

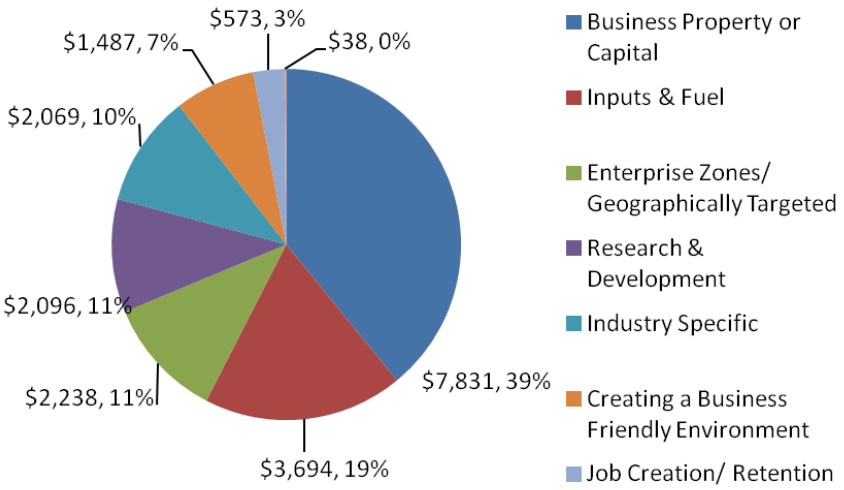
Figure 7: Economic Development Tax Expenditures, 2010



In 2010, when economic development tax expenditures are taken in total (including manufacturing) then categorized by target area, it is shown that **39 percent of economic development tax expenditures**

go toward supporting investments in "Business Property or Capital" (as shown above). Another 19 percent go towards "Inputs & Fuel," while 11 percent goes each to "Enterprise Zones/ Geographically Targeted" incentives and "Research and Development."

Figure 8: Economic Development Tax Expenditures by Type, 2010



However, **ten percent, or just over $2 billion across the sampled 23 states goes to support specific industries**. Some notable highlights from these specific industry supports include:

- $14 million in Arizona for solar energy devices;
- $55 million in California for motion picture credits;
- $19.5 million in Connecticut for electronic data processing;
- $62 million in Florida for the sale or use of satellites or other space vehicles;
- $25 million in Kentucky for various horse breeding incentives;
- $164 million in Louisiana for motion picture incentives;
- $5 million in Massachusetts for a life sciences incentive program;
- $4.2 million in Michigan for NASCAR safety and speedway credits;

- $116 million in New York for Empire State Film Production Credits;
- $23.5 million in Ohio for Qualified Call Center exemptions; and
- $95.8 million in Washington for the manufacturing of commercial aircraft.

States with concentrated industries – solar in Arizona, film in California, automobiles in Michigan, aircraft manufacturing in Washington – often have multiple tax expenditures designed, specifically, to benefit those industries.

Agricultural Development Tax Expenditures

In 2010, approximately $4.1 billion was spent between the 23 states on agricultural tax expenditures. States like Texas ($433 million), Washington ($363 million), North Carolina ($346.7 million), and Kentucky ($335 million), led the group, reporting the most generous agricultural tax expenditures. Only approximately $165 million of that $4.1 billion was spent on biofuel incentives (or around four percent).

Figure 9: Agricultural Development State Tax Expenditure Totals

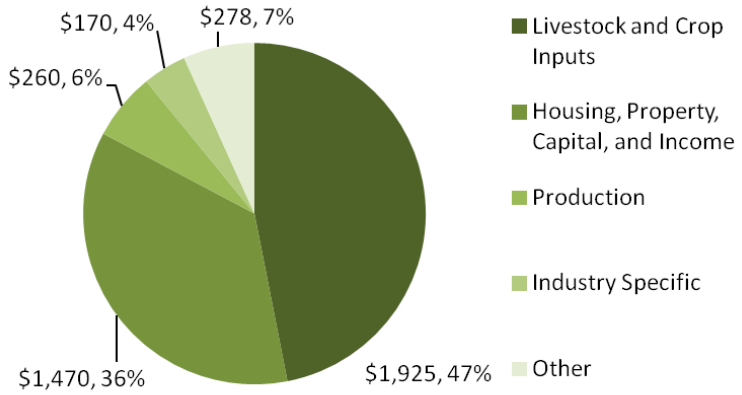
Agricultural Development (incl Biofuels) Tax Expenditure Totals (2010) (in millions)	
AZ	$25.4
CA	$16.0
CO	$254.2
CT	$12.7
FL	$178.0
GA	$257.5
IA	$15.2
IL	$331.5
KS	$289.5
KY	$335.0
LA	$3.3
MA	$27.2
MI	$532.1
MN	$122.9
MT	$0.0
NC	$346.7
NJ	$0.0
NM	$3.0
NY	$127.7
OH	$264.7
PA	$164.0
TX	$433.3
WA	$363.2
TOTAL	$4,102.9

Of those expenditures in 2010, approximately **47 percent, or $1.92 billion, went to "Livestock and Crop Inputs."** This includes, for instance, an estimated $271 million in sales tax breaks for farmers in Texas on "Agricultural feed, seed chemicals, and supplies." Kansas, again, for "Sales of animals, fowl, aquatic plants, and animals used in agriculture or aquaculture…", sales tax breaks are given at a cost to the state of nearly $210.4 million.

Another 36 percent of agricultural development tax expenditures, or about $1.5 billion, went to incentives or breaks that directly impacted farmers' housing, property, capital investments, or their bottom-line. This included fairer treatment of farmland for property taxes ($71 million in breaks in Washington; $66.5 million in Minnesota), tax credits or waivers on purchases of farm machinery ($68.9 million on "agricultural machinery and equipment" in Texas, $53 million for a "farm machinery and equipment exemption" in Illinois), and even credits for loans ($700k in Minnesota) and income averaging ($200k in Kentucky), the latter a common expenditure across states, given the volatile nature of farm income year to year.

While agricultural tax expenditures go to, presumably, make farming more competitive in one state over another, the question, like with economic development tax expenditures, must be asked: to what ends?

Figure 10: Agricultural Development Tax Expenditures by Type, 2010



Policy-makers, particularly at the federal level, must examine where competition between the states does result in better long-term outcomes, and where it could result in sub-optimal national scenarios. For instance, if state policymakers believe that these agricultural development tax incentives *do* have an impact on farm growth and location, what does that mean? Does that mean that some states are fostering more of an agricultural base than would be optimal, nationally, given the quality of the

weather, soil, and infrastructure? If the concern is international competitiveness, should those incentives then be handled at the national level? And if so, would they violate WTO trade agreements?

The question of tax incentives not only focus on their impact and their efficacy in regards to the overall tax burden, but stretch into the role of competition between states, and whether it is in the nation's interest for that competition to be monitored to serve states' long-term interests.

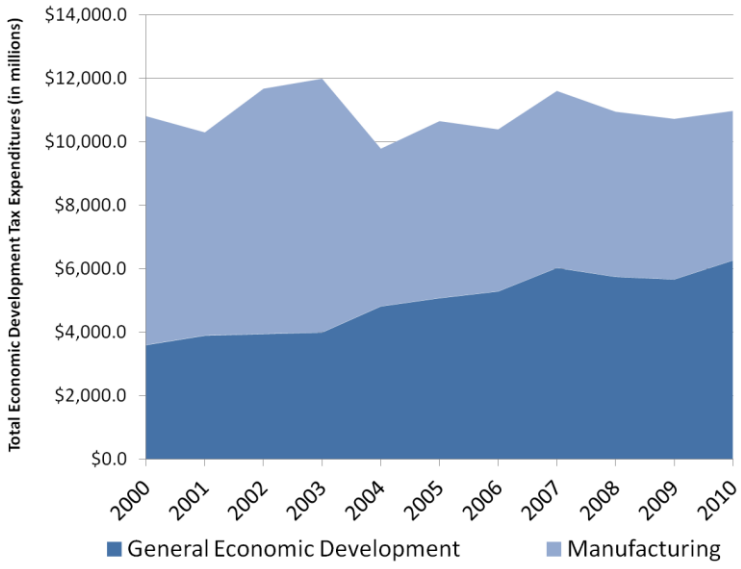
State Tax Expenditures: Cost Changes Over Time

To measure potential economic development and agricultural development tax expenditure changes over time, for this study, we have selected eleven states for which the data are most complete. These eleven states, and the years (and estimates) used in this subsequent descriptive analysis, are shown in the chart below.

Figure 11: States Examined in Tax Expenditure "Over Time" Assessment

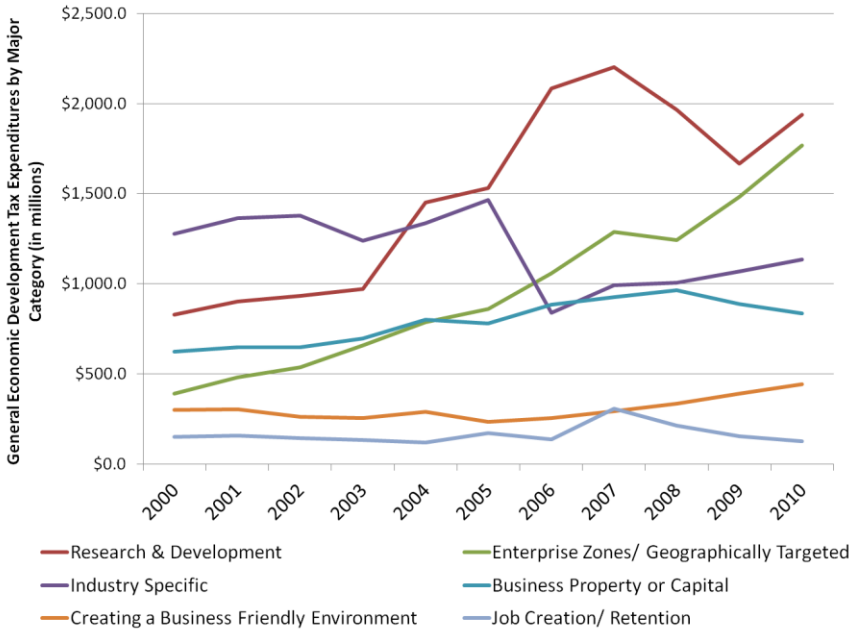
States Examined in Tax Expenditure over Time Assessment			
California	2000 (est), 2001-2009, 2010 (est)	Minnesota	2000-2003 (est), 2004-2010
Colorado	2000-2001 (est), 2002-2010	New York	2000-2001 (est), 2002-2010
Florida	2000-2010	Ohio	2000-2010
Iowa	2000-2002 (est), 2003-2010	Pennsylvania	2000-2010
Illinois	2000-2010	Washington	2000-2010
Massachusetts	2000-2010	* Estimates made carrying through prev years' trends	

Figure 12: Economic Development Tax Expenditures over Time



These **eleven states spent $10.98 billion in economic development tax expenditures in 2010, about on par with the $10.8 billion in economic development tax expenditures they offered eleven years prior in 2000**. What has changed, however, as shown in the graph above, is the distribution of the economic development tax expenditures. In 2000, two thirds of economic development tax expenditures were spent directly on manufacturing related credits, deductions, preferential tax treatment; in 2010, that has slipped by 23 percentage points, to make up only 43 percent of all economic development expenditures. **Thus, while total state economic development tax expenditure have remained largely constant for since 2000, state tax expenditure spending has shifted dramatically away from manufacturing purposes.**

Figure 13: Economic Development Tax Expenditures over Time, by Type



Within "General Economic Development" tax expenditure spending, two categories have seen particularly notable growth: **"Research and Development" tax expenditures spending, since 2000, was up by over 133 percent for the eleven state samples, while "Enterprise Zone" expenditure spending along with other geographically targeted expenditures, was up an astounding 353 percent.** Within this eleven state sample, there were 27 tax expenditure items inventoried; 15 of these 27 had either posted gains over the eleven years or did not exist at the beginning of the period. The largest gains were seen in California, where its "Research and Development Expenses Credit" grew from a cost of $445 million in 2001 to $1.2 billion in 2010. In Iowa, the "Research Activities Credit" grew from $28.1 million in 2002 to $45.7 million in 2009.

"Enterprise Zones/ Geographically Targeted" tax expenditures similarly saw broad-based cost increases across the 76 expenditures inventoried (with 42 either showing decade gains or previously not existing), though were largely driven by particular states' large investments. Again, in California, their "Enterprise

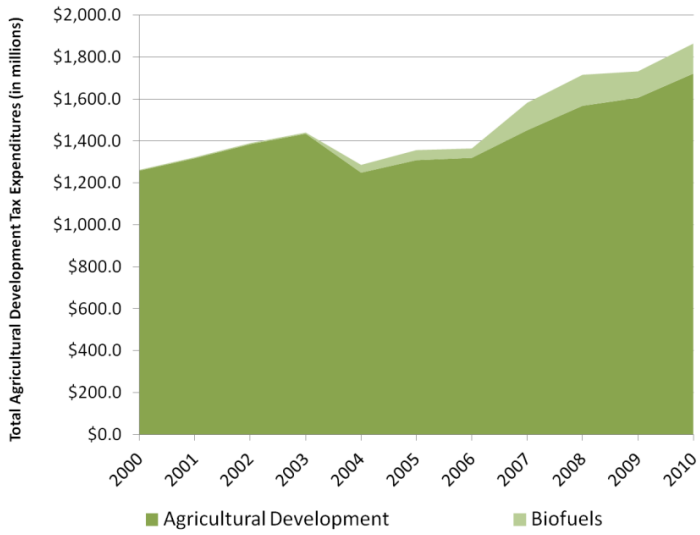
Zones" and "Special tax treatments for economically depressed areas" tax expenditures saw their costs nearly tripled from $200 million in 2001 to $550 million in 2010. In Florida, its credits for "credit for job creation in enterprise zones" increased in cost from $1.2 million in 2000 to $5.3 million in 2010. In Illinois, its "Enterprise & FTZ high economic impact business exemption" saw a cost increase of nearly $10 million, to $44.9 million, while New York invested heavily into its brownfield programs (totaling over $623 million in 2010, up from nominal-costing, similar tax credits in 2000).

Over the eleven year period for the eleven states only two of the major general economic development categories saw declines in spending: Industry Specific expenditures (down 11 percent) and Job Creation/ Retention expenditures (down 18 percent). However, with the latter, this belies significantly 2007 and 2008, recessionary-reaction expenditures that, temporarily, doubled such programs (from $137 million in 2006 to $305.4 million in 2007 and $211.3 million in 2008).

Agricultural Development

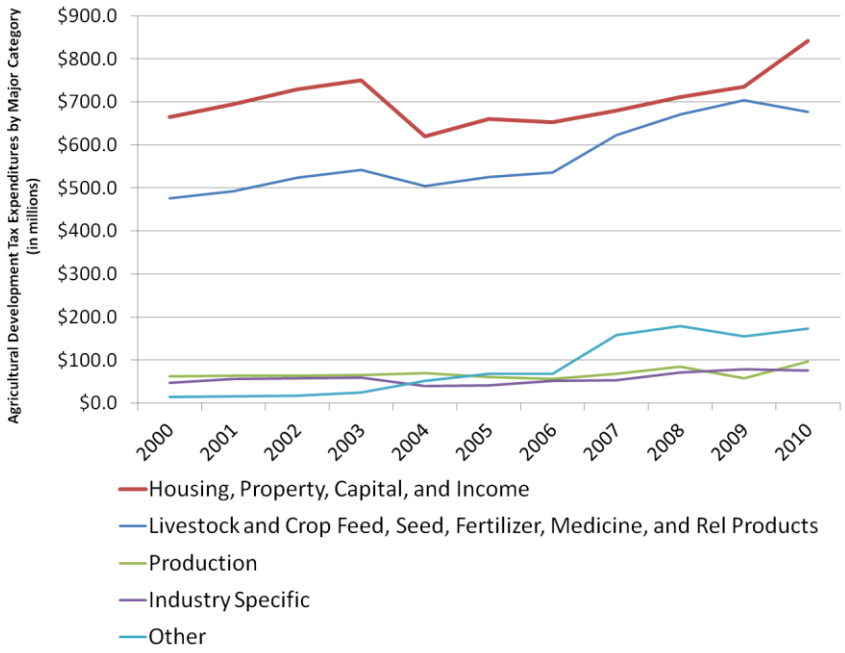
Unlike with economic development tax expenditures, agricultural development tax expenditures have two notable differences: 1. **From 2000 to 2010, the eleven states have spent nearly fifty percent more on such tax expenditures, increasing from $1.26 billion in 2000 to $1.86 billion in 2010**; and 2. **The subcategory of biofuels, even at its peak (2008), only accounted for 9.4 percent of agricultural development expenditures.**

Figure 14: Agricultural Development Tax Expenditures over Time



Agricultural tax expenditure growth crossed all categories, ranging from 27 percent growth over the eleven years for "Housing, Property, Capital and Income" to 62 percent growth for "Industry Specific" support.

Figure 15: Agricultural Development Tax Expenditures over Time, by Type



Chapter IV: Tax Expenditure Impact on Economic & Agricultural Development

Models

Form

To determine the impact economic and agricultural development tax expenditures have had on economic and agricultural development, a Three Stage Least Squares (3SLS) was employed for our eleven state, eleven year sample.

While this technique uses OLS, it takes steps to further alleviate the inherent correlation between our models' dependent variables (number of firms with more than 100 employees, net farm income, and crop and livestock revenue) and potential independent variables. 3SLS accomplishes this by including each other's dependent variables as instrumental variables in the other's regression.

Limitations

While 3SLS, computed using STATA Version12.1, did alleviate some of the correlation between dependent variables, significant endogenous and exogenous limitations continued to impact the ultimate model produced.

Variables most directly accounting for population, for instance, had to be dropped to avoid simultaneity bias with the "Firms100" variable. This does make theoretical sense, as larger population states would also likely have larger firms, hand-in-hand. Determining causality in those circumstances are, however, tough. The R-squared of 0.979 between these variables forced the dropping of "POP" or "PopSh" from our models (though replaced, in some runs, with EmplPop, or the percentage of the population currently in the workforce).

Other variables also had high correlations between one another, creating multicollinearity issues. Every variable was tested to determine the correlation it had, empirically, to every other variable. Some examples of problematic correlations included:

- GOPLegLU and GOPLegGov: R-Squared of 0.71
- TIncFDed and TCorpInc: R-Squared of 0.466
- Firms100 and Empl: R-Squared of 0.9916

Accounting for state fixed effects, while bringing significant benefits in picking up individual state characteristics that would otherwise go unaccounted for, also brought to our models its own issues. Iowa, for example, was perfectly correlated with TIncFDed. Rght2Wrk, another variable of interest, also had to be dropped because of its near perfect correlation with two states. Our final models also, given these fixed effects, had tremendously high R-squares.

These issues, hopefully, in the future, will not continue, as more states over a greater period of time, will be accounted for. These are all issues symptomatic of a small sample size, the greatest limitations of our modeling.

Dependent Variable

Within our first, broader model, we set out to estimate the impact the variables had over an eleven year period on "economic development outcomes." To quantify economic development, a number of potential variables were at our disposal, including employment, payrolls, and industry output or revenues. For the purposes of this paper, however, the question had to be asked as to *which* firms most often know and take advantage of available economic development tax incentives. The answer to that question, as experienced in the field, almost always, is the larger corporations and the firms able to afford site selectors.

Accordingly, in selecting an appropriate measure of "economic development" related to tax expenditures, the proxy chosen was "the year-over-year change in the number of firms with greater than 100 employees" in a given state. This would, hypothetically, allow the model to test characteristics of an area at which a hypothetical firm would weigh, if and when it chose to establish itself within a state.

Model 1: Y = Year-over-Year Change in the # Firms with > 100 employees

Data used for this dependent variable originated with County Business Patterns (CBP). It should also be noted that "establishments," by CBP's accounting, does *not* equate to a firm's headquarters or main location; a firm can have "multiple units" or locations, like auto manufacturing plants located across many states in the American Southeast[40].

Note, that this dependent variable, and thus this model, makes the assumption that growth is not occurring endogenously (firms with <100 employees one year are not simply growing to have an >100 employee count that severely biases the model).

Over the eleven year period, the eleven states used within our analysis accounted for between 45.6 percent (2010) and 46.5 percent (2000) of all firms with over 100 employees in the United States.

[40] http://www.census.gov/econ/cbp/methodology.htm

Figure 16: Firms with Over 100 Employees

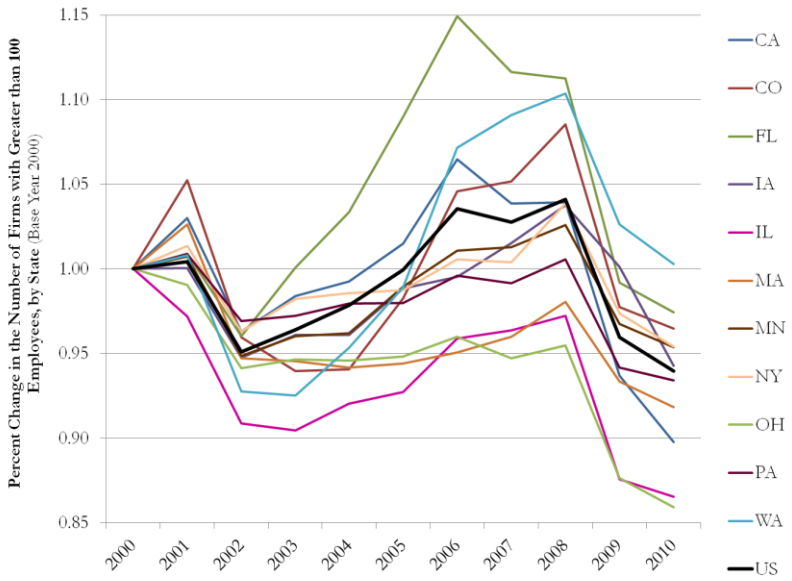
 # firms with over 100 employees

States	2000	2010	Pct Change (00-10)	Pct Change US Comp
CA	19,687	17,675	-10.2%	-4.2%
CO	2,853	2,752	-3.5%	2.5%
FL	9,389	9,149	-2.6%	3.5%
IA	1,890	1,782	-5.7%	0.3%
IL	8,886	7,689	-13.5%	-7.4%
MA	4,960	4,555	-8.2%	-2.1%
MN	3,865	3,686	-4.6%	1.4%
NY	10,755	10,260	-4.6%	1.4%
OH	8,034	6,903	-14.1%	-8.0%
PA	8,141	7,605	-6.6%	-0.5%
WA	3,277	3,286	0.3%	6.3%
TOTAL	81,737	75,342	-7.8%	-1.8%
PCT of US	***46.5%***	***45.6%***		
US	175,692	165,063	-6.0%	0%

Source: County Business Patterns

From 2000 to 2010, the number of firms with over 100 employees in the United States decreased by six percent to 165,063 (note though, that does not represent the number of employees employed by these firms). The eleven state sample, during this period, performed significantly better than the US average, posting a decrease of only 1.8 percent. In fact, eight of the 11 states performed better than the United States (with Washington leading the pack with a 6.3 percent gain), while five performed worse (dragged down by Ohio, which lost 8 percent of firms in this size category).

Figure 17: Firms with Over 100 Employees, Pct Change



With the second model, wherein we estimate the impact the variables had over an eleven year period of "agricultural development outcomes," a simple profitability proxy was ultimately used. While agricultural revenues, employment, and acreage all could arguably be used, each had flaws that could undermine the causal relationship: agricultural revenues fluctuate, largely, based upon world market prices and government subsidy support levels, not whether farmers were given tax incentives; employment in the industry, regardless of tax consequences, continues to decline, replaced by ever-more efficient capital; and acreage does not accurately represent "development," but could even represent the opposite, with farmers having to plant and harvest land for extra revenue that might otherwise have been left fallow.

"Net farm profit" was chosen as the dependent variable in the second model, not because it was perfect, but rather, because it best represented a reliable proxy likely impacted by tax expenditures, for which data was available during the highlighted period.

Model 2: Y = Net Farm Profit

Net farm profit data was collected from the USDA's Economic Research Service.

Figure 18: Net Farm Income

Net Farm Income (in $000s)

States	2000	2010	Pct Change (00-10)	Pct Change US Comp
CA	$5,566,899	$10,949,761	96.7%	38.1%
CO	$816,231	$1,170,242	43.4%	-15.3%
FL	$2,718,975	$2,055,676	-24.4%	-83.0%
IA	$2,434,393	$4,983,076	104.7%	46.1%
IL	$1,691,197	$3,386,952	100.3%	41.6%
MA	$95,863	$106,284	10.9%	-47.8%
MN	$1,407,384	$4,638,647	229.6%	171.0%
NY	$560,356	$1,187,333	111.9%	53.3%
OH	$1,449,172	$2,246,962	55.1%	-3.6%
PA	$1,120,031	$1,397,147	24.7%	-33.9%
WA	$1,021,478	$1,903,302	86.3%	27.7%
TOTAL	$18,881,978	$34,025,380	80.2%	21.6%
PCT of US	*37.3%*	*42.3%*		
US	$50,684,874	$80,404,063	58.6%	

Source: ERS/ USDA

Net farm profit across the United States from 2000 to 2010 increased by nearly 60 percent to $80.4 billion. The eleven state sample made up 37.3 percent of the US' Net Farm Income in 2000 and 42.3 percent in 2010. Minnesota (230 percent), New York (112 percent), Iowa (105 percent), and Illinois (100 percent) all posted triple-digit percent gains over the eleven year timeframe. Massachusetts (11 percent), Pennsylvania (25 percent), Colorado (43 percent), and Ohio (55 percent) all lagged the nation in net farm income gains.

For our final models, we also added a third independent variable, "Crop and Livestock Revenue", to account for independent variation in revenue, and to account for the inherent correlation between farm income and farm revenues.

Model 3: Y = Crop and Livestock Revenue

Crop and Livestock Revenue data was collected from the USDA's Economic Research Service, and was used, in a third model, to better explain the variation within Net Farm Profits.

Independent Variables of Interest

The first model tested for the impact of economic development tax expenditures, as a percentage of each state's budget, on the number of firms that employed over 100 individuals.

Model 1: H_O: $B_{\text{Econ Dev Exp}} = 0$

Model 1: H_1: $B_{\text{Econ Dev Exp}} \neq 0$

The second, agricultural model tested for the impact of agricultural development tax expenditures (via revenues), as a percentage of each state's budget, on the aggregate net farm profit of each state.

Model 2: H_O: $B_{\text{Ag Dev Exp}} = 0$

Model 2: H_1: $B_{\text{Ag Dev Exp}} \neq 0$

The third, agriculture-related model directly tested for the impact of agricultural development tax expenditures, as a percentage of each state's budget, on the aggregate farm revenues of each state.

Model 3: H_O: $B_{\text{Ag Dev Exp}} = 0$

Model 3: H_1: $B_{\text{Ag Dev Exp}} \neq 0$

Both economic development and agricultural expenditures were weighted against the state budgets to account for the differences in average tax burden within each state. For instance, in a higher tax and higher revenue state, such as New York, one could expect to also see higher tax expenditures or tax breaks (and per our earlier chart, while it does have the fourth highest level of tax expenditures for our 23 state sample, when weighted against its actual tax collection, it ranks 15th). Therefore, weighting

identified economic development tax expenditures against budgetary levels provides a more accurate depiction of the depth of the tax breaks, per level of taxation, the more relevant indicator against our dependent variable.

Other Independent Variables

The variables used in this report's regression analyses are shown in this report's Appendix. Not all were used in each model; they also do not represent all variables examined for this analysis. These factors, certainly, are not exhaustive to determining economic development outcomes, but were hypothesized to be major factors in determining site locations and/or net farm income.

Regression Results

Within this section, results of our top three models are presented in level-level and log-log form, respectively, then results – relying most heavily on the first, our primary, model – discussed.

3 Step Least Squares Equations

All State and Year dummies are based on New York and year 2000, respectively

Equation 1 - Level-Level Form

Variable	Included	Level/Log	Coefficient	P-Value
Firms100	x	Level		
	R-sq = 0.997		Chi2 = 64,026	
TCorpInc	x	Level	4,535.095	0.153
Tsales	x	Level	-51,669.680	0.000
TInc100k	x	Level	-11,651.740	0.006
Rt2Wrk				
EmplPop	x	Level	4.510	0.037
WFWage	x	Level	3.123	0.086
GOPGov	x		487.805	0.000
GOPLegLU	x		-145.496	0.192
Interstate_sqmi	x	Level	-35,646.800	0.088
EconDev_PBudgetDollar	x	Level	-9,027.243	0.064
PIndElec	x	Level	10.869	0.363
FrmInc	x	Level	-0.002	0.023
CA	x		10,073.720	0.000
CO	x		-11,952.850	0.000
FL	x		-37.795	0.677
IA	x		-9,617.687	0.000
IL	x		-178.215	0.754
MA	x		2,989.974	0.533
MN	x		-8,755.036	0.000
OH	x		313.609	0.783
PA	x		-978.773	0.119
WA	x		-8,970.618	0.000
Y2001	x		5.739	0.959
Y2002	x		-405.784	0.001
Y2003	x		-133.920	0.392
Y2004	x		-90.567	0.699
Y2005	x		-183.557	0.456
Y2006	x		-161.439	0.581
Y2007	x		-30.494	0.935
Y2008	x		107.868	0.804
Y2009	x		-327.264	0.425
Y2010	x		-511.562	0.286
_cons	x		3.710	0.000

Variable	Inclusion	Level/Log	Coefficient	P-Value
FrmInc	x	Level		
	R-sq = 0.949		Chi2 = 2,071	
CropLvskRev	x	Level	0.270	0.000
TCorpInc2	x	Level	-1,667,386.000	0.481
GOPLegGov	x		173,799.300	0.318
WFWage	x	Level	-113.222	0.875
Interstate_sqmi	x	Level	413,520.400	0.725
Port	x	Level	-43,791.460	0.368
PIndElec	x	Level	11,888.300	0.489
Firms100	x	Level	40.873	0.149
_cons	x		-496,329.500	0.334
CropLvskRev	x	Level		
	R-sq = 0.996		Chi2 = 30,044	
Pop	x	Level	-520.2328	0.208
FarmSize	x	Level	32,708.100	0.000
GOPGov	x		3,191,179.000	0.000
GOPLegLU	x		-574,153.200	0.214
AvgTemp	x	Level	-307,314.000	0.042
AvgPrecip	x	Level	32,908.070	0.173
AgDev_PBudgetDollar	x	Level	599,000,000.000	0.000
CA	x		37,600,000.000	0.000
CO	x		-33,200,000.000	0.000
FL	x		7,595,261.000	0.049
IA	x		3,083,603.000	0.639
IL	x		-1,082,876.000	0.729
MA	x		-5,237,521.000	0.339
MN	x		-7,214,705.000	0.237
OH	x		-729,877.000	0.834
PA	x		6,420.867	0.998
WA	x		-13,100,000.000	0.021
Y2001	x		682,386.400	0.164
Y2002	x		870,190.900	0.077
Y2003	x		1,207,832.000	0.023
Y2004	x		1,912,501.000	0.000
Y2005	x		1,934,681.000	0.000
Y2006	x		2,614,661.000	0.000
Y2007	x		6,566,890.000	0.000
Y2008	x		7,226,633.000	0.000
Y2009	x		6,435,705.000	0.000
Y2010	x		7,449,758.000	0.000
_cons	x		14,000,000.000	0.206

3 Step Least Squares Equations

All State and Year dummies are based on New York and year 2000, respectively

Equation 1 - Log-Log Form

Variable	Included	Level/Log	Coefficient	P-Value
Firms100	x	Log		
	R-sq = 0.997		Chi2 = 64,026	
TCorpInc	x	Log	0.004	0.590
Tsales	x	Log	-0.161	0.004
TInc100k	x	Log	-0.024	0.460
Rt2Wrk				
EmplPop	x	Log	0.350	0.000
WFWage	x	Log	0.454	0.023
GOPGov	x		0.026	0.001
GOPLegLU	x		0.009	0.446
Interstate_sqmi	x	Log	-0.777	0.022
EconDev_PBudgetDollar	x	Log	-0.014	0.259
PIndElec	x	Log	-0.014	0.574
FrmInc	x	Log	-0.097	0.000
CA	x		0.582	0.000
CO	x		-2.345	0.000
FL	x		-0.697	0.741
IA	x		-2.135	0.000
IL	x		0.029	0.662
MA	x		-0.274	0.369
MN	x		-1.732	0.000
OH	x		0.075	0.539
PA	x		-0.037	0.627
WA	x		-1.842	0.000
Y2001	x		0.004	0.707
Y2002	x		-0.079	0.000
Y2003	x		-0.029	0.126
Y2004	x		-0.020	0.480
Y2005	x		-0.028	0.391
Y2006	x		-0.024	0.535
Y2007	x		-0.019	0.689
Y2008	x		0.007	0.898
Y2009	x		-0.066	0.214
Y2010	x		-0.073	0.234
_cons	x		3.283	0.064

Variable	Inclusion	Level/Log	Coefficient	P-Value
FrmInc	x	Log		
	R-sq = 0.949		Chi2 = 2,071	
CropLvskRev	x	Log	1.137	0.000
TCorpInc2	x	Log	-0.007	0.703
GOPLegGov	x		0.124	0.096
WFWage	x	Log	-0.191	0.498
Interstate_sqmi	x	Log	0.188	0.016
Port	x	Log	0.006	0.480
PIndElec	x	Log	0.163	0.262
Firms100	x	Log	-0.085	0.363
_cons	x		-1.676	0.357
CropLvskRev	x	Log		
	R-sq = 0.996		Chi2 = 30,044	
Pop	x	Log	-0.675811	0.004
FarmSize	x	Log	0.999	0.000
GOPGov	x		0.013	0.495
GOPLegLU	x		0.010	0.720
AvgTemp	x	Log	-0.674	0.103
AvgPrecip	x	Log	0.072	0.129
AgDev_PBudgetDollar	x	Log	0.017	0.141
CA	x		2.348	0.000
CO	x		-2.076	0.000
FL	x		0.765	0.000
IA	x		-0.168	0.690
IL	x		0.219	0.102
MA	x		-1.902	0.000
MN	x		-0.411	0.188
OH	x		0.202	0.129
PA	x		0.459	0.001
WA	x		-0.920	0.000
Y2001	x		0.047	0.105
Y2002	x		0.049	0.091
Y2003	x		0.091	0.003
Y2004	x		0.174	0.000
Y2005	x		0.156	0.000
Y2006	x		0.212	0.000
Y2007	x		0.504	0.000
Y2008	x		0.582	0.000
Y2009	x		0.480	0.000
Y2010	x		0.563	0.000
_cons	x		18.639	0.000

3 Step Least Squares Equations

All State and Year dummies are based on New York and year 2000, respectively

Equation 2 - Level-Level Form

Variable	Included	Level/Log	Coefficient	P-Value
Firms100	x	Level		
	R-sq = 0.9963		Chi2 = 33,503.84	
TCorpInc	x	Level	-754.480	0.825
Tsales				
TInc100k				
Rt2Wrk				
EmplPop				
WFWage				
GOPGov				
GOPLegLU				
Interstate_sqmi				
EconDev_PBudgetDollar	x	Level	5,045.619	0.231
PIndElec				
FrmInc	x	Level	0.000	0.113
CA	x		10,089.770	0.000
CO	x		-7,923.203	0.000
FL	x		-796.795	0.000
IA	x		-8,374.855	0.000
IL	x		-2,105.127	0.000
MA	x		-6,076.220	0.000
MN	x		-6,565.998	0.000
OH	x		-3,255.363	0.000
PA	x		-2,673.782	0.000
WA	x		-7,358.226	0.000
Y2001	x		93.197	0.448
Y2002	x		-373.981	0.003
Y2003	x		-222.678	0.077
Y2004	x		0.192	0.999
Y2005	x		79.807	0.617
Y2006	x		302.212	0.029
Y2007	x		314.052	0.065
Y2008	x		463.518	0.021
Y2009	x		-251.064	0.106
Y2010	x		-338.189	0.088
_cons	x		10,808.280	0.000

Variable	Inclusion	Level/Log	Coefficient	P-Value
FrmInc	x	Level		
	R-sq = 0.925		Chi2 = 1,416.71	
CropLvskRev	x	Level	0.257	0.000
TCorpInc2	x	Level	232,057.800	0.911
GOPLegGov				
WFWage				
Interstate_sqmi				
Port				
PIndElec				
Firms100	x	Level	35.372	0.021
_cons	x		-316,192.900	0.055
CropLvskRev	x	Level		
	R-sq = 0.9683		Chi2 = 3,833.35	
Pop		Level	36341.93	0.000
FarmSize	x			
GOPGov				
GOPLegLU				
AvgTemp	x	Level	-521,915.500	0.006
AvgPrecip	x	Level	53,433.080	0.066
AgDev_PBudgetDollar	x	Level	521,000,000.000	0.008
CA	x		31,800,000.000	0.000
CO	x		-27,400,000.000	0.001
FL	x		14,000,000.000	0.004
IA	x		9,182,131.000	0.000
IL	x		2,171,924.000	0.391
MA	x		1,938,841.000	0.171
MN	x		-318,162.000	0.870
OH	x		4,034,248.000	0.002
PA	x		4,166,145.000	0.000
WA	x		-7,864,487.000	0.021
Y2001	x		862,209.300	0.168
Y2002	x		912,762.500	0.141
Y2003	x		499,098.600	0.414
Y2004	x		1,500,840.000	0.016
Y2005	x		1,723,264.000	0.006
Y2006	x		2,632,818.000	0.000
Y2007	x		5,075,491.000	0.000
Y2008	x		5,451,532.000	0.000
Y2009	x		4,754,796.000	0.000
Y2010	x		5,907,256.000	0.000
_cons	x		15,200,000.000	0.096

3 Step Least Squares Equations

All State and Year dummies are based on New York and year 2000, respectively

Equation 2 - Log-Log Form

Variable	Included	Level/Log	Coefficient	P-Value
Firms100	x	Log		
	R-sq = 0.998		Chi2 = 66,027	
TCorpInc	x	Log	0.011	0.166
Tsales				
TInc100k				
Rt2Wrk				
EmplPop				
WFWage				
GOPGov				
GOPLegLU				
Interstate_sqmi				
EconDev_PBudgetDollar	x	Log	0.006	0.719
PIndElec				
FrmInc	x	Log	-0.035	0.194
CA	x		0.688	0.000
CO	x		-1.300	0.000
FL	x		-0.058	0.009
IA	x		-1.680	0.000
IL	x		-0.211	0.000
MA	x		-0.889	0.000
MN	x		-0.995	0.000
OH	x		-0.326	0.000
PA	x		-0.284	0.000
WA	x		1.111	0.000
Y2001	x		0.011	0.323
Y2002	x		-0.063	0.000
Y2003	x		-0.042	0.000
Y2004	x		-0.021	0.263
Y2005	x		-0.005	0.765
Y2006	x		0.026	0.058
Y2007	x		0.026	0.083
Y2008	x		0.047	0.015
Y2009	x		-0.037	0.006
Y2010	x		-0.051	0.010
_cons	x		9.809	0.000

Variable	Inclusion	Level/Log	Coefficient	P-Value
FrmInc	x	Log		
	R-sq = 0.9423		Chi2 = 1,837	
CropLvskRev	x	Log	1.029	0.000
TCorpInc2	x	Log	0.004	0.859
GOPLegGov				
WFWage				
Interstate_sqmi				
Port				
PIndElec				
Firms100	x	Log	0.113	0.017
_cons	x		-2.877	0.000
CropLvskRev	x	Log		
	R-sq = 0.9959		Chi2 = 29,336	
Pop	x			
FarmSize	x	Log	1.185	0.000
GOPGov	x			
GOPLegLU	x			
AvgTemp	x	Log	-0.761	0.069
AvgPrecip	x	Log	0.087	0.071
AgDev_PBudgetDollar	x	Log	0.017	0.147
CA	x		1.864	0.000
CO	x		-1.390	0.000
FL	x		0.847	0.000
IA	x		0.975	0.000
IL	x		0.389	0.001
MA	x		-0.995	0.000
MN	x		0.373	0.000
OH	x		0.572	0.000
PA	x		0.837	0.000
WA	x		-0.306	0.018
Y2001	x		0.043	0.137
Y2002	x		0.037	0.197
Y2003	x		0.052	0.059
Y2004	x		0.157	0.000
Y2005	x		0.135	0.000
Y2006	x		0.187	0.000
Y2007	x		0.488	0.000
Y2008	x		0.556	0.000
Y2009	x		0.452	0.000
Y2010	x		0.527	0.000
_cons	x		11.303	0.000

3 Step Least Squares Equations

All State and Year dummies are based on New York and year 2000, respectively

Equation 3 - Level-Level Form

Variable	Included	Level/Log	Coefficient	P-Value
Firms100	x	Level		
	R-sq = 0.6609		Chi2 = 378.71	
TCorpInc	x	Level	15212.69	0.194
Tsales	x	Level	-64191.6	0.034
TInc100k	x	Level	-71053.68	0.000
Rt2Wrk	x	Level	-283.6089	0.728
EmplPop				
WFWage	x	Level	20.61416	0.000
GOPGov	x	Level	132.9854	0.797
GOPLegLU	x	Level	2642.692	0.000
Interstate_sqmi	x	Level	19459.53	0.000
EconDev_PBudgetDollar	x	Level	24774.12	0.191
PIndElec	x	Level	29.12883	0.682
FrmInc	x	Level	0.002545	0.000
CA				
CO				
FL				
IA				
IL				
MA				
MN				
OH				
PA				
WA				
Y2001	x	Level	-365.414	-0.400
Y2002	x	Level	-1,100.544	-1.200
Y2003	x	Level	-1,693.615	-1.810
Y2004	x	Level	-2,790.198	-2.820
Y2005	x	Level	-2,799.912	-2.860
Y2006	x	Level	-3,413.955	-3.360
Y2007	x	Level	-5,550.760	-4.690
Y2008	x	Level	-6,224.525	-5.140
Y2009	x	Level	-5,576.336	-4.670
Y2010	x	Level	-6,942.299	-5.530
_cons	x	Level	-10,364.420	-2.590

Variable	Inclusion	Level/Log	Coefficient	P-Value
FrmInc	x	Level		
	R-sq = 0.9191		Chi2 = 1,433.18	
CropLvskRev	x	Level	0.243	0.000
TCorpInc2	x	Level	24,013.140	0.992
GOPLegGov				
WFWage	x	Level	-168.768	0.792
Interstate_sqmi	x	Level	-88,591.810	0.936
Port	x	Level	-42,569.060	0.290
PIndElec	x	Level	-1,680.317	0.921
Firms100	x	Level	96.790	0.000
_cons	x	Level	-350,260.500	0.426
CropLvskRev	x	Level		
	R-sq = 0.6617		Chi2 = 258.12	
Pop	x	Level	321.508	0.000
FarmSize	x	Level	-7,429.380	0.059
GOPGov	x	Level	-2,321,266.000	0.034
GOPLegLU	x	Level	-1,169,471.000	0.334
AvgTemp	x	Level	267,324.300	0.005
AvgPrecip	x	Level	-448,614.900	0.000
AgDev_PBudgetDollar	x	Level	-658,000,000.000	0.000
CA				
CO				
FL				
IA				
IL				
MA				
MN				
OH				
PA				
WA				
Y2001	x	Level	-387,627.400	0.851
Y2002	x	Level	359,090.000	0.861
Y2003	x	Level	1,799,945.000	0.389
Y2004	x	Level	2,479,102.000	0.233
Y2005	x	Level	2,093,733.000	0.213
Y2006	x	Level	2,110,126.000	0.308
Y2007	x	Level	2,323,908.000	0.271
Y2008	x	Level	5,489,979.000	0.010
Y2009	x	Level	3,305,173.000	0.119
Y2010	x	Level	4,000,155.000	0.061
_cons	x	Level	12,600,000.000	0.002

3 Step Least Squares Equations

All State and Year dummies are based on New York and year 2000, respectively

Equation 3 - Log-Log Form

Variable	Included	Level/Log	Coefficient	P-Value
Firms100	x	Log		
	R-sq = 0.9112		Chi2 = 1,136.43	
TCorpInc2	x	Log	0.086	0.045
Tsales	x	Log	-0.598	0.006
TInc100k	x	Log	0.018	0.778
Rt2Wrk	x	Log	-0.781	0.000
EmplPop				
WFWage	x	Log	1.727	0.011
GOPGov	x	Log	0.042	0.451
GOPLegLU	x	Log	0.198	0.001
Interstate_sqmi	x	Log	0.763	0.000
EconDev_PBudgetDollar	x	Log	0.033	0.671
PIndElec	x	Log	0.440	0.000
FrmInc	x	Log	0.635	0.000
CA				
CO				
FL				
IA				
IL				
MA				
MN				
OH				
PA				
WA				
Y2001	x		-0.053	0.501
Y2002	x		0.014	0.867
Y2003	x		-0.251	0.004
Y2004	x		-0.489	0.000
Y2005	x		-0.518	0.000
Y2006	x		-0.558	0.000
Y2007	x		-0.761	0.000
Y2008	x		-0.865	0.000
Y2009	x		-0.732	0.000
Y2010	x		-0.889	0.000
_cons	x		-12.396	0.001

Variable	Inclusion	Level/Log	Coefficient	P-Value
FrmInc	x	Log		
	R-sq = 0.9576		Chi2 = 2,097.27	
CropLvskRev	x	Log	1.082	0.000
TCorpInc2	x	Log	-0.028	0.576
GOPLegGov				
WFWage	x	Log	0.047	0.879
Interstate_sqmi	x	Log	0.165	0.064
Port	x	Log	0.022	0.346
PIndElec	x	Log	-0.003	0.990
Firms100	x	Log	-0.092	0.450
_cons	x		-2.020	0.251
CropLvskRev	x	Log		
	R-sq = 0.7978		Chi2 = 369.21	
Pop	x	Log	0.675	0.000
FarmSize	x	Log	1.914	0.000
GOPGov	x	Log	0.085	0.604
GOPLegLU	x	Log	1.107	0.000
AvgTemp	x	Log	1.499	0.100
AvgPrecip	x	Log	1.076	0.000
AgDev_PBudgetDollar	x	Log	-0.246	0.000
CA				
CO				
FL				
IA				
IL				
MA				
MN				
OH				
PA				
WA				
Y2001	x		0.086	0.742
Y2002	x		-0.038	0.886
Y2003	x		-0.142	0.591
Y2004	x		0.034	0.898
Y2005	x		-0.039	0.881
Y2006	x		0.028	0.915
Y2007	x		0.578	0.038
Y2008	x		1.013	0.000
Y2009	x		0.997	0.000
Y2010	x		1.063	0.000
_cons	x		-13.249	0.000

The Impact of Economic Development Tax Expenditures

Our primary **3 Step Least Squares economic development regression found no impact, all else held equal, of corporate tax rates (TCorpInc) on number of large (Firms100) in a state**. This was further confirmed in our second and third equations, adding a degree of consistency and power to this finding.

Similarly, **taxes on those individuals making over $100,000 was not found to have a significant impact on the number of large firms within this sample of states**, per the two equations including this variable.

Sales taxes (Tsales) were, however, found to have a significant impact, at the 99% level, on the number of large firms within a state. Within the primary log-log equation, this equated to a one percent increase in the sales tax in a state, all else held equal, to a .16 percent decrease in the number of large firms in a state.

States with greater percentages of an employed population and those with a higher average workforce wage also had greater numbers of large firms. While the first is expected – states with larger companies also have larger employed populations, all else held equal – the measure and direction of workforce wage runs counter to the business advocacy community: for every percent increase in the average workforce wage, there is a resulting .45 percent increase in the number of large firms within that state. With state-by-state variability accounted for within the model, this finding does run against the idea that large firms are solely driven to low wage locations. This was also found to be significant at an even greater rate in the third equation, where state-by-state variability is not taken into consideration.

Political affiliation of state bodies also, interestingly, demonstrated an impact on the number of large firms within a state. While Republican majority control of both Chambers did not result in a significant effect in the number of large firms within a state, Republican control of the executive branch (governorship) did. The effect is minimal, but significant: **for each year a Republican governor was in**

office, for the eleven years for the eleven states, those states saw an average increase, all else held equal, of .026 percent of "large" businesses.

Counter to our hypothesis, the number of Interstate miles per square mile of the state (density of Interstates within a state) showed a negative correlation with the number of large firms within that state (of .77 percent decrease for every one percent increase). This impact reversed in equation 3, as individual state fixed effects were eliminated. Thus, accounting for individual state characteristics and circumstances, there existed a negative correlation between the two. This, potentially, could be because our equation does not take into account how, as within large states like Texas, firms may be located along Interstates, though those Interstates may only account for a small percentage of the actual landmass. This would stand in contract to another, smaller state, such as New Jersey, which has multiple major Interstates running through its limited area.

The price of industrial electricity was found to be insignificant in our primary equation.

The amount spent on economic development tax expenditures, our variable of interest, was also found to be insignificant, indicating that the amount each state spends on economic development tax expenditures, per budgetary dollar, did not have a discernible impact, all else held equal, on the number of large firms in a state.

Interestingly, for every percent increase in average farm income in a state, all else held equal, states sustained a decrease of .1 percent of the number of large firms.

Further, our primary equation accounted for state differences, using a base of New York, and year differences, using a base of 2000. For states, California (.582), Colorado (-2.345), Iowa (-2.135), Minnesota (-1.732), and Washington (-1.842) showed significance to positive and negative effects. For

years, only 2002 demonstrated significance, likely resulting from the 2001-2002 recession, of -0.079 percent of all firms, across the board, all else held equal.

The Impact of Agricultural Development Tax Expenditures

Our primary agricultural development found a clear, and expected, impact of crop and livestock revenue on farm income. **Every percent increase in crop and livestock revenue resulted in a 1.14 percent increase in farm income**. Corporate tax rates, workforce wages, a state's port capacity, price of industrial electricity, and the number of large firms all were insignificant[41].

A full Republican controlled Executive branch and legislature was found to have a positive impact on farm income at the 90% level, with states having such GOP control experiencing, on average, all else held equal, a lift of .124 percent of income.

States with a higher density of Interstate, unlike within economic development, did show a positive effect on agricultural development outcomes through farm profits. For states with one percent more interstate per square mile, they experienced .188 percent greater income. This could be, as previously mentioned, due to either smaller states focusing on higher margin and/or revenue products (though this is hopefully accounted for with CropLvskRev) or, as we had hoped to capture, being in proximity to solid infrastructure to get products to producers and/or market.

Given the number of factors impacting crop and livestock revenues, a third equation was captured in this 3SLS model. Within it, state and year fixed effects were calculated, accounting for each state's unique characteristics and composites of agricultural products, as well as overall crop price changes, year over year. Most of the state and year variables, on a base of New York for 2000, showed significance at least at the 90% level, with the exceptions of Iowa, Minnesota, and Ohio, and 2001.

[41] Firms100 did become significant at the 95% and 99% levels in equations 2 and 3, respectively, when other state-specific factors and states-entirely, were not accounted for in the CropLvskRev model. The other variables remained in significant.

Interestingly, for every percent increase in the population of a state, there was a 0.67 percent decrease in the amount of revenue received by that state's farmers. This clearly pushed back against the notion that geographic proximity to markets, as one would presume in-state farmers would have, would necessarily result in the ability to command higher prices, all else held equal.

Farm size, expectedly, was positively correlated with crop and livestock revenue, almost on a one-to-one percent basis, with every percent increase in the average farm size resulting in a one percent increase in revenue, all else held equal.

As seen within this equation, the political temperament of a legislature or governorship does not show significance on the impact of crop and livestock revenue[42].

A state's average temperature is only significant at an 89% level, but negatively so when state effects are taken into account (also taking into account how different states, based, historically on their weather, plant appropriate crops). Average precipitation is significant at the 86% level, but positively. Both of these variables become positive and significant when state's individual characteristics are not taken into account, indicating that more rain and higher temperatures, on average, all else held equal, are better for agricultural revenues. These variables would likely, we presume, be better explained in a parabolic model.

Our variable of interest, **agricultural development tax expenditures, was found not to have a significant impact on agricultural revenues (in this case, our proxy for agricultural economic development) when state effects were taken into account**. When state effects are not taken into account, as within model three, the impact is small and negative, with states possibly with more suffering agricultural sectors perhaps relying on these incentives to a greater extent.

[42] The third equation, without accounting for individual state differences, does find positive significance for GOP legislature control.

Chapter V: Discussion & Conclusions

Regression Result Implications

From our analysis within, from our sample of states and eleven years worth of data, **we do not find evidence supporting the assertion that state tax expenditures have a positive impact on state economic or agricultural development**, as measured by the change in the number of firms with greater than 100 employees and the net farm income and crop and livestock revenue of a state, respectively. This supports theoretical positions of Friedman and others, indicating that such packages, while perhaps impact short-term income of firms, may not result in the state-level employment outcomes desired.

However, for economic development outcomes, sales tax rates were found to be a significant factor in site location. For net farm income, the density of interstate mileage, farm size, and GOP control of all branches of government were all shown to be significant in contributing to growth.

Conclusions

In 2010, among 23 states, approximately $20.7 billion was spent on economic development tax expenditures. Another $4.1 billion went to agricultural tax expenditures. For 11 states with available data for an 11 year period, while aggregate economic development tax expenditure amounts have remained relatively constant over time (while allocation has shifted between policy priorities), agricultural expenditures have increased nearly fifty percent over the same period. These tax dollars are given up, or spent, based upon the theory that the government can and should play a role in inducing private sector activity. Our findings herein take issue with that notion, and add to the literature finding little, statistically significant impact of these expenditures on publicly-stated corporate attraction and farm incomes goals.

Our 3SLS regressions, besides finding no impact of economic development incentives on the number of large firms located in a state and no impact of agricultural development incentives on farm revenues (and ultimately profits) in a state, also found no impact, all else held equal, including state fixed-effects, that corporate taxation levels had a deleterious effect on the increase of large firms within a state. Another surprising result, though one that does not stand alone in the literature.

The findings of this report, however, should not be taken to mean that all economic or agricultural development tax expenditures have been, and will continue to be, ineffective. Conversely, many states, cities, and regions have seen demonstrated success in using such policy tools. It has been these success stories, widely shared, that have driven policymakers in other communities to consider taking similar action and that have supported a national narrative about the importance of low-tax environments for business and agricultural development outcomes.

It is the hope of this paper, however, that the reader takes away three conclusions:

1. That proper transparency and evaluation for tax expenditures is a critical issue;
2. That the economic dynamics at-hand are incredibly complicated and entangled with political and policy-advocacy dynamics that cannot – and should not – be ignored;
3. More study of the actual effectiveness of tax expenditures (beyond interest group testimonials) is needed for policymakers to make informed decisions.

Ultimately, states and communities alike must strike their own balance between hosting a low-tax (or targeted low-tax) environment and providing many of the services and amenities many citizens and potential employees desire. That conversation is a personal one, between policy-makers and their constituents, but one that should be informed based upon more data, information, and analysis than is currently available.

Appendix A: Variable Names

Variable	Description	Units
AgDev_PBudgetDollar	Agricultural Development Funding Per State Budget Dollar	Dollars
AvgPrecip	Average Annual Precipitation	Inches
AvgTemp	Average Annual Temperature	Degrees
CA	California	
CO	Colorado	
CropLvskRev	Revenue from Crop and Livestock Proceeds	Dollars
EconDev_PBudgetDollar	Economic Development Funding Per State Budget Dollar	Dollars
EmplPop	Employed Population as a Percentage of the Entire Population	Percent
FarmSize	Average Farm Size	Acres
FL	Florida	
FrmInc	Average Farm Net Income	Dollars
GOPGov	Republican Governor in Office	
GOPLegGov	Repubican Governor and Republican Majorities in Both Houses	
GOPLegLU	Republican Majorities in Both Houses	
IA	Iowa	
IL	Illinois	
Interstate_sqmi	Interstate miles per square mile of state land	Mi per Sq Mi
MA	Massachusetts	
MN	Minnesota	
OH	Ohio	
PA	Pennsylvania	
PIndElec	Price of Industrial Electricity	
Pop	Population	
Port	In-State Port Volume	Tonnes
Rt2Wrk	Right to Work State	
TCorpInc2	State Corporate Income Tax Rate	Rate
TInc100k	State Income Tax Rate for Those Making $100,000	Rate
Tsales	State Sales Tax	Rate
WA	Washington	
WFWage	Average Workforce Wage	Dollars
Y2001	Year 2001	
Y2002	Year 2002	
Y2003	Year 2003	
Y2004	Year 2004	
Y2005	Year 2005	
Y2006	Year 2006	
Y2007	Year 2007	
Y2008	Year 2008	
Y2009	Year 2009	
Y2010	Year 2010	

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