

APPENDIX #3:
UNDERSTANDING FISCAL
IMPACT STUDIES

Counting the Costs and Benefits of Growth

A Fiscal Impact Analysis
of Growth in the
City of Charlottesville and
Albemarle County, Virginia

By Craig Evans
December 2012

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Table of Contents

How Studies Should be Used	1
How Study Results Should be Interpreted	1
Types of studies	1
The preferred approach.....	2
Comparing studies	2
How Much Weight Should be Given to Specific Numbers?	2
Questions to Ask	3
Additional Considerations	4
LACK OF STANDARDS	4
THE CAPITAL SIDE.....	4
The challenge of accounting for shared infrastructure	4
Basic methods for estimating capital costs.....	5
A special caution regarding school costs	5
COMMON PROBLEMS IN FISCAL IMPACT ANALYSIS.....	6
CUMULATIVE IMPACTS IN CHANGING COMMUNITIES	6
Service costs in rapidly developing jurisdictions.....	6
Revenues in changing jurisdictions	7
RESIDENTIAL IMPACTS FROM COMMERCIAL PROJECTS	7
ROSY REVENUE PROJECTIONS	8
CHECKLIST: ELEMENTS OF A GOOD FISCAL IMPACT ANALYSIS.....	9

Counting the Costs and Benefits of Growth

Appendix #3: Understanding Fiscal Impact Studies

Economic and fiscal impact studies are valuable policy making tools. They can:

- *Inform* decisions,
- *Point out* issues that need attention, and
- *Frame* issues for discussion, by providing *perspective* and *context*.

Here are some points that are useful to keep in mind about:

- How economic and fiscal impact studies should (and should not) be used,
- How study results should be interpreted,
- How much weight should be given to specific numbers reported, and
- What can be done to measure the accuracy (and policy making value) of study.

How Studies Should be Used

Studies should be used as a *guide*, not as *gospel*.

Studies also should be used in *combination* with other information and considerations, not in *isolation*. They are just *one* policy making tool, just *one* factor that should be taken consideration in making a decision.

How Study Results Should be Interpreted

Studies should *start with a question* and use an open study process to provide potential answers or alternatives

Studies should NOT *start with a specific premise* and use the study process to prove or disprove that premise.

It always is best to be able to compare findings from a study with information from other sources to help put the findings in context, and help verify or underscore the outcomes, trends and findings reported by the study.

If a study produces results or findings that are unique, it is worth considering a second study by another party to provide context and comparison.

Types of studies

Studies can fall into several categories. These include:

- *Transparent* or *open* studies – the individual/entity preparing the study is completely open about all aspects of study; the reader can see everything that is done, even replicate calculations and draw different conclusions, if desired.

- *Selective* studies – the individual/entity preparing the study selects only the information that will provide a favorable result; all other information is ignored (suspect studies: those with obscure formulas, highly subjective assumptions, and convoluted explanations about their methods, and those that obscure or don't show how results were derived).
- *Bait and switch* studies – the individual/entity preparing the study acknowledges that only some information has been selected, and makes up a reasonable sounding rationale for why other (often harmful) information is not used.
- *Tortured data* studies – the individual/entity preparing the study takes the information down to the basement and tortures it until it says what is wanted.

The preferred approach

The best studies are *transparent* – in other words, all sources of data, all methodologies, all calculations, and all assumptions (if any) that have been made are described and are included as part of the study.

This information, in turn, can be reviewed to obtain a *complete* understanding of *each and every step* that was taken to generate the findings that are reported.

Moreover, calculations can be *spot checked or replicated* by independent parties, and *tested with different methodologies or a different set of assumptions*, to verify results, make comparisons, and provide context and perspective on the study's findings.

That is not to say that, if all these steps are taken, independent parties will draw the same conclusions from the findings that are generated. But that's the point. That's what makes studies of this type valuable as public policy tools: they facilitate debate and discourse.

Comparing studies

Another approach to stimulating this kind of debate is to commission a second study, or to encourage different interest groups within the community to commission or conduct studies, so all the different approaches to generating findings can be identified, the pros and cons of each can be analyzed, and a more informed understanding about potential outcomes and results can be obtained.

This process takes the emphasis off of the *specific numbers and findings* that are produced by a study – i.e., the “headline” that is produced from a study's findings. This “headline” often will take on a life of its own and will be cited, referred to and repeated time again without reference to any of the caveats, cautions or clarifications that might have been contained in the report, and without reference to later corrections that might have been made to the report.

Instead, this process puts the emphasis on understanding *how findings are derived* and *the range of findings that might be produced* if different approaches, assumptions, or points of view are applied, which is where the emphasis should be.

How Much Weight Should be Given to Specific Numbers?

Few studies that deal with economic and fiscal impacts are ever 100% precise. Different data sets, gaps in information, and different reporting methods, all can create variances and inaccuracies. The best studies develop equitable, reasonable ways to treat these issues, so there is as much consistency and reliability as possible.

This study, for example, had to collect data on the commercial and industrial uses, and factors such as the number of people commuting into and out of the county to work, from different reporting services and different years. Hence, adjustments had to be made, using well-established, widely-accepted methods to convert dollar numbers and numbers of people employed that are reported for one year into equivalent numbers for another year, so comparisons could be made in “constant dollars” and “constant numbers.”

There is no magic "right" answer with fiscal impact analysis (it's an art, not a science). Moreover, any study dealing with a projection is really just an *estimate*, which allows a lot of room for variance from actual results.

Hence, a study should be viewed as a *carefully constructed point of view* that has followed a highly structured process to arrive at a conclusion. But it should not be accepted as fact.

Questions to Ask

What can be done to measure the accuracy (and policy making value) of study?

One needs to know what goes into a study to be able to accurately interpret results. Here are some questions to ask to ensure the best possible results.

- **How did researcher/consultant arrive at findings?** What other approaches (i.e., methodologies) could have been used? Why did researcher/consultant choose this approach? What would occur if a different approach was used?
- **What data sources were used?** What data was generated specifically for the study? How was it generated? Is this the most complete, reliable data available?
- **Were some data sources not used?** Why not?
- **Were all factors that could influence outcomes taken into consideration?** What was included? What, if anything, was left out? Why? What would the results be if these factors were changed?
- **What findings are the most sensitive to incremental changes?** In other words, if changes are made in the individual cells in the spreadsheets used to generate the findings, which findings would show the most significant changes as a result of small changes in data?

The purpose of this question is twofold:

First, to identify *factors* that are highly susceptible to change as a result of small changes in conditions; this information is valuable to know in making decisions, since these are *factors* that need to be carefully watched.

Second, to ensure the accuracy and reliability of a study, it is important to be sure that all data entry and formulas are carefully checked. Special emphasis and care need to be given to cells that have a high sensitivity to change, since any error, in one calculation, or in one number entered incorrectly, can have a major impact and cause major inaccuracies in the final results.

- **What assumptions were made in how different data sets should be allocated, weighted, adjusted, and used or not used?** Is there an objective basis for these assumptions? Or are the assumptions subjective? To what degree are these assumptions based on the

researcher/consultant's personal opinion? How susceptible are they to bias? Are the assumptions indicative of a particular viewpoint held by a specific interest group in the community? Are they more favorable to one specific interest over another? What happens if these assumptions are changed?

- **What results did the consultant expect to obtain at the onset of the study?** Did the final findings meet with these expectations?

Researchers and consultants always will defend their own approaches and results. It is valuable to have an independent review and verification of a study's findings – not by a competing firm or vested interest, but by a reliable third party with experience in the types of analyses being conducted.

Additional Considerations

Finally, here is some additional information about fiscal impact studies, excerpted from *Developments and Dollars: An Introduction to Fiscal Impact Analysis in Land Use Planning* by Michael L. Siegel, Public and Environmental Finance Associates, and Jutka Terris and Kaid Benfield of the Natural Resources Defense Council, available for viewing and download at:

<http://www.nrdc.org/cities/smartGrowth/dd/ddinx.asp>

LACK OF STANDARDS

The lack of consistent standards for fiscal impact analyses can often present ... complicating factors. Only a few states or localities explicitly require a fiscal impact analysis as part of their formal zoning, permitting, or planning process. As a result, there are few formal procedures or requirements for the preparation of such analyses, and few such analyses are subjected to outside review or judicial scrutiny. Indeed, methodologies applied to analyze individual projects or development scenarios can be highly variable even within the same jurisdiction.

Whatever the regulatory environment, project-level fiscal analyses constitute by far the large majority of fiscal impact analyses. Since most are prepared by and for developers in support of applications for required project approvals or rezoning, it is not surprising that most also project a positive fiscal impact.

THE CAPITAL SIDE

Local governments also have a capital component, which can be substantially affected by new development: studies have found that the capital costs associated with new development can potentially amount to tens of thousands of dollars per household¹. Fiscal impact analysis can be highly sensitive to the assumptions and methodologies used in estimating capital costs, and the consideration of capital costs and revenues involves complicating factors that are not present on the operating side of the budget.

The challenge of accounting for shared infrastructure

First, the consideration of capital outlays required for a particular development can be complicated by the "lumpy" nature of capital investments. Major capital facilities - such as schools, arterial roads, or sewer-line extensions - are ordinarily not built to

¹ Fodor, E., *The Cost of Growth in Oregon* (1998).

accommodate each new person or unit of development separately. Rather, the timing and location of new facilities is determined by the capacity of existing facilities and the long-range capital improvements and land use plans of the local jurisdiction. As a result, the cost of facilities required to serve any particular new development can be difficult to estimate, particularly if these facilities will serve both existing and new development. Sometimes the only way to determine an appropriate growth share of existing or new capital facilities is to obtain "guesstimates" from a knowledgeable local official.

Basic methods for estimating capital costs

There are two basic approaches for estimating the impact of new development on a jurisdiction's capital budget. The first is analogous to the average per capita method described in the section on operating costs and revenues: since capital investments are usually paid for with bonds or other debt mechanisms designed to spread the cost over time, some fiscal impacts analyses divide all of the jurisdiction's existing debt service or the total cost of its capital facilities by its current population (or service units).

The result is then multiplied by the anticipated new population or number of units in the proposed development to determine the portion of capital costs that may be attributed to the development. A serious shortcoming of this approach is that it tends to under-represent the cost of new capital facilities if the derived per-capita cost is based on the cost of such facilities constructed several years earlier or the cost of bonds related to their construction, since these amounts are rarely representative of current costs [emphasis added]. In addition, focusing exclusively on debt service can exclude the cost of facilities with no outstanding debt or those paid for out of current revenues or reserves.

Another approach involves determining required capital facilities based on the service or design capacity of individual facilities. For example, one fire station may be required for every 10,000 residents or jobs. Dividing the cost of the fire station by its service population results in a per capita capital cost. The cost of a needed new facility may be based on the cost of similar facilities that have been recently constructed elsewhere, or the projected cost in the jurisdiction's capital improvements plan. For jurisdictions that rely on long-term debt to finance capital facilities, the net capital cost per capita can be annualized to determine the recurring debt service associated with the facility.

A special caution regarding school costs

Determining education-related capital costs can be especially tricky.

In particular, newcomers to a community may have a higher (or lower) number of school-age children per household than the historical average or that for existing households.

For example, Loudoun County, Virginia averages 0.45 pupils per household, including long-time residents, across the county. But, based on survey and other data, the county estimates that the average new single-family, detached dwelling unit generates 0.90 pupils per household, twice the average for all households; it estimates that a new townhouse generates 0.45 pupils per household and a new multi-family apartment or condominium unit generates 0.20 pupils per unit.

With Loudoun's future development expected to consist of 39 percent detached, 38 percent townhouses and 23 percent multi-family units, the average future housing unit in the county can be expected to generate 0.57 pupils, or 26 percent more enrollment than the current average household in the county.

If a fiscal impact analysis were to apply the county's current average to estimate the number of new pupils from anticipated new residential development, it would underestimate the capital and operating cost for new schools by 26 percent, a significant error considering that the cost of local public schools can often exceed the cost of all other general-purpose local government services.

To complicate matters further, communities experiencing slow growth rates can deviate from this pattern, since the higher number of pupils per new household can sometimes be offset by a decline in enrollment of pupils from existing households. And a community experiencing substantial new retirement or second home development may have a lower number of pupils per new household than the current average.

COMMON PROBLEMS IN FISCAL IMPACT ANALYSIS

It is important to be aware of certain thorny issues that tend to recur in fiscal impact analyses and that may be difficult to resolve. These may distort the findings of the analysis or render it incomplete in providing an assessment of a project's impact on local finances. Some of these issues are inherent in the state of the art of fiscal impact analysis, while others can be overcome with use of better methodologies. Most are related to the tendency of fiscal impact analysis to take too narrow a focus in one way or another.

CUMULATIVE IMPACTS IN CHANGING COMMUNITIES

Virtually all project-level analyses are incremental in that they address the impact of only one project at a time and in isolation from other projects. This piecemeal approach can yield misleading results, because the combined fiscal impact of multiple new projects can significantly differ from the sum of their impacts when considered one at a time. In particular, a smaller individual project, considered alone, will rarely cause a shift in the revenue base or service demands for a jurisdiction, which in either case can dramatically affect the jurisdiction's fiscal position. But several smaller projects or a few larger projects, considered together, can indeed cause such a shift.

A cumulative approach can often yield a better view of how new development can affect a jurisdiction's fiscal position. Discussed briefly above, cumulative analyses are concerned with the expected fiscal impact of all anticipated projects within a jurisdiction over time. This ordinarily corresponds to fulfillment of the community's comprehensive plan and may sometimes be referred to as the "build-out" analysis.

Service costs in rapidly developing jurisdictions

Significant shifts in a jurisdiction's revenue base or service demands are most likely to occur in communities experiencing rapid new development that differs significantly in rate, type, character, location, or intensity from previous development.

For communities facing these types of transitions, fiscal impact analyses that rely on constant service levels or revenues (as when existing per capita costs and revenues are

used to estimate the impact of new development) can seriously misrepresent the actual fiscal impact of new development.

For an example, in Loudoun County, Virginia, which has been one of the fastest-growing counties in the United States since the mid-1980s, relative per capita operating outlays (in inflation-adjusted dollar terms) have increased substantially for all the county's major service functions, from 27 percent for the judicial branch of government on up to 350 percent for public works between 1985 and 1997.

Most of the change in these outlays has been statistically correlated with changes in the county's land use, economic, and development characteristics.

Revenues in changing jurisdictions

The revenue side of the budget is also sensitive to changes in developing jurisdictions. In particular, local revenues may be sensitive to the incomes of new residents, the market value of newly developed property, and changes in the type and amount of employment within the jurisdiction. If new residents have higher incomes on average than existing residents, and the per capita market value of new development is also greater than that of existing development, then revenue sources that are sensitive to income levels and property values can also be expected to increase over time on a per capita basis.

A revenue category that tends to be a notable exception to this pattern is state aid for local public schools. Statutory aid formulas typically create an inverse relationship between local wealth and income and the per-pupil amount of basic state aid for local public schools. As the average income or wealth per pupil increases in a school district, the per-pupil level of state aid tends to decline. To compensate for decreasing state aid, either the local share of per-pupil outlays must increase or service levels may decline.

This effect can be significant because local schools often rank among the most costly of local government functions. Furthermore, the per-pupil costs for local schools have also been shown to be sensitive to the underlying economic and demographic characteristics of the school district, with per-pupil operating outlays for local schools tending to increase along with increases in the per capita and per-pupil income and market value of property. As a result, local schools can be placed under fiscal pressure from two sources - - at the same time they face an increase in costs, they may be eligible for less state aid on a per pupil basis.

RESIDENTIAL IMPACTS FROM COMMERCIAL PROJECTS

According to conventional wisdom, commercial projects make money for localities. The general belief is that they yield a net surplus since they generate both real property taxes and business tax receipts, but impose fewer costs than residential developments (no school-related expenses, for example). Given this expectation, jurisdictions are often eager to attract commercial development. Many may even offer substantial subsidies and tax breaks to do so.

However, what often gets overlooked is that commercial development may generate a demand for additional nearby residential development, which in turn brings additional costs that may wholly or partially offset the fiscal benefits of the commercial development. To put it simply, new workers must live somewhere. Whether they will

create a demand for housing within the locality, or commute from elsewhere, depends on the size and location of the jurisdiction (in the case of a small jurisdiction, the surrounding communities may bear some or most of the burden of new housing), the location of the commercial development within the jurisdiction, the attractiveness of the surrounding area, and the available labor force.

Before embracing a commercial project, localities may wish to examine closely the likely level of demand for residential development that it may generate. When the fiscal impact of the related residential demand is also taken into account, jurisdictions might better consider the combined fiscal impact, particularly if any tax breaks or other subsidies are to be provided to the new commercial development.

Such a study in Montgomery County, Maryland, found that while business activities alone produced positive net fiscal impacts, those positive impacts were greatly reduced (to the point where some land use types resulted in a net fiscal deficit) when employee residences were included in the calculation².

ROSY REVENUE PROJECTIONS

Finally, some fiscal impact analyses not only underestimate costs but also overestimate the revenues likely to be associated with a project. Two mistakes are particularly common.

First, developers may have unrealistic expectations about their ability to capture a share of the local or regional market for housing and commercial space. The developer of a commercial project, for example, may base the project's fiscal impact analysis on 100 percent of the planned space being developed and occupied. Yet the project may not achieve full "build-out" for several years or decades, if ever. Large projects are often "phased" by their developers, with later portions developed over the course of the development only if the previous phases are successful and local economic conditions are favorable. Particularly if a commercial or mixed-use project fails to achieve build-out of a significant portion of its commercial space, the project's impact on the local jurisdiction's budget will likely be affected significantly.

In reality, each individual project competes with similar projects within the market area for whatever growth the jurisdiction can reasonably be expected to capture. Not all will be successful. Fiscal impact analyses of speculative projects should consider the impact of a range of build-out scenarios so that reviewers can assess the risks of partial or complete market failure of such projects, in terms of both market absorption and assumed sales prices or rents.

Second, some analyses take "credit" for various planning and permitting fees paid by the developer to local governments. These fees are collected to offset the cost of providing administrative and other development-related public services to developers. But the costs associated with those services may not have been included in the fiscal analysis. Credit should not be taken unless the costs are also assessed.

² Alan A. Altshuler and Jose Gomez-Ibanez, *Regulations for Revenue: The Political Economy of Land Use Exactions*, Washington, DC and Cambridge, MA: Brookings Institution and Lincoln Institute of Land Policy, 1994.

CHECKLIST: ELEMENTS OF A GOOD FISCAL IMPACT ANALYSIS

There is no single "correct" approach to fiscal impact analyses, but their reliability and usefulness can be enhanced when a number of factors are present. While the list we present here is by no means exhaustive, an interested reviewer should determine whether the analysis contains the following elements:

- *The chosen methodology is appropriate to the analysis and the jurisdiction.*
- *The accrual of costs and benefits to different jurisdictions is recognized and accounted for. Consideration is given to impacts on other major overlapping jurisdictions and service providers, particularly those responsible for schools (particularly when the development has a residential component).*
- *A reasonable basis for selection of service levels and revenues is provided. If existing service levels, per capita costs, and revenues are applied, an explicit justification should be given for their selection.*
- *Both revenues and costs are linked to demographic and economic characteristics of the project or scenario.*
- *The basis for determining capital costs is explicitly stated.*
- *Use of multiplier approaches is limited only to regional analyses, and multipliers are applied to the cost side as well as to the revenue side.*
- *Realistic valuation data and build-out scenarios are used.*
- *The key variables to which the analysis is most sensitive (such as valuation, number of pupils, build-out rate, etc.) are identified and sensitivity analysis of these variables is provided.*
- *All findings are presented in constant-dollar terms.*