# What Will the Future Bring?
# The Economic Development Impacts of Transportation Investment and a Look at the Interstate 86 Project


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## Introduction

One of the most difficult aspects of economic development is figuring out what projects or improvements can be done in an area to make it more attractive to development and can have measurable effects. Transportation investments, including new or improved highways, hold out the promise of having a measurable effect on the economic development prospects of an area, while most often being useful to the entire community. Genevieve Giuliano (1995) puts it succinctly:

> *"Highway facilities (usually expressways) are often promoted as a means to attract economic growth by increasing access to skilled labor markets and cheap land in remote areas."*

For regions that are experiencing economic hard times, cheap land and low-wage skilled labor markets are often their two best selling points for attracting new business. These do not mean much if the land and workers are not easily accessible to businesses and each other. Businesses also need markets, and whether exploring distant ones when the local economy is down or the developing the local market when the region is booming, efficient and reliable access is vital for product and service delivery. From this logic, politicians and business leaders look to transportation infrastructure investments to promote economic development across the widest possible range of businesses and citizens.

The economic development benefits of transportation development are not guaranteed, and infrastructure does not always support the claims that are built upon it. What type of transportation infrastructure to build that would best benefit a region in the short and long-term is not always a given either. Business leaders, especially in areas with large commercial and industrial components, are often in favor of roadway expansion or improvement. Think of the

modern tendency to name technology growth corridors after their main access highway. (Weiss, 2002) Rural areas without the population concentration to support mass transit or the business centers for freight rail are also likely to be candidates for highway investment. Development often follows transportation investment; on the other hand, so long-range planning for compact development could have an influence on the type of transportation investment. It will also have an effect, though most likely very difficult to quantify, on the economic development outcomes of that investment.

This paper will look at the general case of transportation investment having an effect on, or contributing to economic development. The paper will outline some of the major issues in transportation investment and its effects on economic development, including productivity, business relocation decisions, and employment. For context, the second half of this paper will talk about a specific case of the conversion and upgrading of Route 17 into Interstate 86 along the Southern Tier East counties of Southwestern New York State. A full economic development study of this conversion will not be developed, but the conversion will be discussed in relation to the area's economic situation and the research investigated in the first half of the paper. The second half will develop three themes on this project: that infrastructure is necessary but not sufficient; local conditions and context are important; and the question of accessibility leading to attraction of business. The paper concludes that this project should prove beneficial for the Southern Tier East region, though like the research this conclusion is not certain and relies on many factors.

## *Section One*

**Economic Development**

The movement of goods and people is fundamental to commerce and the economic and social lives of people. If one were looking for a way to invest in something that would functionally benefit all areas of society in a primarily economic way and also have some generally positive effects on other aspects of human endeavor, transportation infrastructure is a good place to start. The idea of using transportation investments to spur economic development is an old one, and its first discussion in the United States can probably be traced back to Albert Gallatin, Thomas Jefferson's Secretary of State, who in the early 1800s argued in favor of nationally financed transportation infrastructure projects for regional development. (NYCRoads.com, 2005)

The term economic development will be used extensively throughout this paper, so a proper definition of what is meant in the context of transportation and infrastructure investment is in order. Berechman and Bannister provide this extensive and useful definition (2000):

> *"The concept of economic development is used primarily when examining the effect of additional investment in specific types of infrastructure on the urban and regional economy. Moreover, this concept also encompasses some non-growth objectives such as changes in urban form, equity effects and reductions in environmental quality. [...] In general we regard the change in economic opportunity resulting from accessibility improvements, which is capitalized in the form of a greater use of input factors, expanded output or enhanced welfare, as economic development."*

Infrastructure, such as roads, is not very useful in and of itself. The benefit comes when it allows users greater accessibility to markets and employees -- some of the input factors -- creating the opportunity for enhanced productivity, profits and quality of life -- some of the output factors -- and can be said to contribute to economic development.

Roberts (2002) expands on the idea of economic development with the term ‘community development.’ The full scope of community development comprises social, political, natural and economic aspects, incorporating the idea that developing people and social resources is just as important as developing economic resources. Transportation is one of the tools that influence development in all of its forms. This paper will focus on the economic development effects of transportation infrastructure, but if planned correctly and with regard for the people and communities that are affected by it, transportation infrastructure has the ability to assist all forms of development -- economic and community.

**Transportation Infrastructure**

Another term that will be used often in this paper is ‘transportation infrastructure.’ Transportation infrastructure is part of the durable capital of the city or region in question and fixed in location. Transportation infrastructure has the following characteristics: the parts make up networks; it forms an indispensable part of the total production costs of goods; it has substantial elements of natural monopoly; sunk/capital costs are high, but running costs are low. (Berechman and Bannister, 2000) Investments in transport infrastructure are long-term and do not generally lead to more infrastructure investment, but towards greater economic production in the ability of business and industry to leverage the infrastructure for greater output. What distinguishes transportation from other types of infrastructure is a combination of its involvement in the production of goods and its high capital costs.

**Examining the Effects of Transportation Infrastructure Investment**

Determining the impacts of investment in transport infrastructure is complicated, as it can be difficult to separate out the direct impact that a particular investment has from its secondary effects in an environment with existing infrastructure. The spatial extent of the infrastructure

investment must also be a primary consideration, whether it is local or regional, as its extents in relation to the area of economic analysis are important. (Rienstra et al., 1994) Investments in an urban area should be handled with particular care, as the amount of existing infrastructure can make both the size of impact and area of effects rather small. In general, a particular investment should be examined in light of its relative size, type or any externalities it may generate. Any and all relevant factors should be considered with the investment and the network it is part of. (Berechman and Bannister, 2000)

There are many different lenses through which to view the effects of transport investment. As might be expected from investments with high capital/sunk costs, the construction and useful lifetimes of projects are often quite long, often measured in decades or more. This allows for looking at the short and long-term effects of investment. Rienstra et al. (1994) combine this view with an economic analysis of demand and supply side affects to produce an effect matrix. Temporary effects come mainly on the demand side, with positive local effects generally coming in the form of increased construction employment and local spending. Construction jobs are often cited by unions as a major benefit of capital projects, with major projects often having non-trivial construction schedules. Negative temporary effects come in the form of decreased availability of funds for other projects and funding areas.

The long-term demand side effects are chiefly in continuing operations and maintenance of projects after initial construction. Heavily traveled and exposed roadways can involve significant maintenance budgets throughout their useful lifetimes. The most significant results of infrastructure investment in terms of this paper and many others are the permanent effects on the supply side. Constructed transport infrastructure can possibly affect the transport costs, employment levels, environmental quality, economic output, welfare and social equity of an

area. These changes are all often interrelated through the effects that new transport infrastructure can have on an area's growth levels, firm employment and firm placement. In short, what are the economic development effects of the infrastructure investment?

The different types of short and long-term effects can be looked at in other ways. One way to separate them is by differentiating gains from the multiplier effect of infrastructure projects -- construction jobs and spending, business relocations and starts -- from the efficiency gains. Gains from the multiplier effect would come primarily in the early years of the project due to the construction spending, with the relocations and operational spending continuing in the long-term. Efficiency gains would mainly be a long-term effect, coming to existing businesses from the addition or expansion of the infrastructure and the positive effects on their efficiency. (Bannister and Berechman, 2000)

These various ways of looking at the infrastructure investment would allow one to get a sense of how and when the economic development potential of an area was affected by a project. They generally say little about the causality of inputs, but at least allow for the connection that inputs are having measurable output effects. Delineating these effects is important to formally analyze an investment, possibly using one of the methods detailed in the next section.

**Quantitative Methods for Examining the Effects of Investment**

Cost-benefit Analysis (CBA) is the oldest way of analyzing the possible effects of a transportation investment, with an aggregate savings in travel time, accident costs, vehicle operating costs and potentially environmental costs determining the social benefit of a project. (Forkenbrock, 2002; Bruinsma et al., 1995) A more recent approach looks at the change in productivity from the investment, which focuses the analysis on its implications on the Gross Domestic Product (GDP) of the area under study. A third approach looks at the change in

employment, which might be used when levels of job creation are of interest. Employment analysis also has an important spatial component, as the employment effects will vary in geographic relation to the infrastructure investment. (Bruinsma et al., 1995) Use of the methods will vary depending on the specific parameters that are under study.

The history of cost-benefit analysis allows for some specific comments on its relation to the delineation of economic development benefits. Forkenbrock (2002) states that the link between transportation and economic development is primarily that new investment has the capability to lower the transportation costs for individuals and businesses. These are direct cost savings absorbed by these entities, and as in all CBA, care must be taken to exclude nonuser and secondary economic benefits. One of the criticisms of CBA is that it does not take into account other possible direct benefits that are considered intangible, or have not yet been converted into monetary terms. A more recent technique is to include a “goals achievement matrix” which allows the monetary outcome of the CBA to be combined and weighed with other non-monetary factors. CBA has been the main technique of state and local highway departments across the United States, and is the most developed of the three techniques mentioned here. (Rephann, 1993)

**Transport Infrastructure and Its Effects on Productivity**

Transportation infrastructure can change a firm's productivity level by affecting the rate at which goods and materials can be shipped in or out, the reliability at which such shipments can take place, and the efficiency at which the firm's services can be delivered. Changes in general transport costs through shorter distances, higher speeds, or more reliable timing and planning for travel can allow for reductions in fuel, capital and labor costs. (Rienstra et al., 1994) Productivity gains rarely come from the expansion of transport infrastructure for new territory

coverage. The improved efficiency that comes from enhanced reliability is far more important for gains in productivity. (Forkenbrock, 2002)

The case of reliability converting to productivity becomes clear as one looks at the growth of just-in-time delivery services. The move from static warehouses with large inventories to just-in-time shipping and custom products from small manufacturing-connected warehouses and "road-warehousing" requires tight logistical planning. Reliability of the transport network, as opposed to absolute shortest journey time, is essential in supporting this planning. Especially in the case of semi-rural areas where much of the cargo transfer and just-in-time logistics industry is based, a reliable transportation network is a key factor in contributing to a strong regional economy. (Rose and Landau, 2002)

**Transport Infrastructure and Its Effects on Employment**

Changes in accessibility are the main way that transportation infrastructure investments can affect employment levels and growth. Increases in accessibility in an area could increase the number of firms deciding to locate there, increasing the total commercial output for the area. An increase in accessibility could also increase the amount of potential employees available to a firm, creating job competition and lowering wage costs to the firm although some job sites can be more susceptible to this effect than others. There is conflicting evidence whether changes in accessibility might have as great an effect on employment decisions as other factors such as wage rate. (Bannister and Berechman, 2000; Weinberger, 2000) All these factors produce somewhat of a complicated picture for employment in an affected area. Raising the number of jobs in an area would be difficult to dispute as a positive benefit, but the quality of the jobs and their wages and their effects on housing and income levels in the area should also be taken into account.

The type and quality of jobs created in any economic growth can be definitely affected by the type of infrastructure investment. Is this an interstate investment, with the expected targets of economic development programs commercial and industrial users? Business users of mass transit investments might create jobs of a different profile. The transportation and communications sectors are the only ones that have consistently had a direct impact on employment growth from transportation investments. (Bruinsma et al., 1995) Highway investments can also create jobs at roadside and rest-stop type restaurants and stores -- these are jobs, but are they the skilled enough jobs to justify the investment? (Hodge, Weisbrod, Hart, 2003; Weiss, 2002)

**Relocation Decisions**

New transportation infrastructure increases accessibility, and with that possibly plays a role in influencing the decisions of businesses and people when they relocate. As transportation is a direct cost, location and access to infrastructure have a direct impact on costs for businesses and families. (Roberts, 2002) This simple relationship was shown in the decentralization of the postwar era, as accessibility grew and transportation costs stayed low. More recent rises in transportation costs have raised demand for development at the very edge of urbanized areas, where accessibility to the largest area is the greatest. Countering this trend is evidence that transportation and its costs seems to play a decreasing role in the location decisions of households and businesses. (Bannister and Berechman, 2000)

In a survey over 500 firms in the Netherlands pertaining to (among other things) relocation decisions based on the construction of a new highway, Bruinsma et al. (1995) found the firms valued roads as the most important type of infrastructure, nearly 2-to-1 over telecommunications and public utilities. The same survey found that the average relocation distance over a 14 year period was 28% closer to the highway. In affecting these types of relocation decisions, road

infrastructure can be said to have push and pull factors – 'push' in that it would create an impetus for relocation, and 'pull' in that it would have importance after a relocation decision was already made. In the survey, road accessibility was more often a 'pull' factor, which would mean that businesses attached importance to accessibility only after they decided to relocate. This might correspond with the theory that transportation does not play as big a role as other factors in the decision to relocate.

**Industry-specific Effects**

Different types of businesses have different transportation needs. Industrial manufacturers and heavy users of raw materials have large transportation needs, and economical transportation is essential to keeping their input and final product costs low. (Stingo, 2002) In the financial sector and certain service industries, transportation costs have decreased rapidly due to the heavy use of telecommunications. In these sectors, a good communications infrastructure is more of a concern. (Kawamura, 2001) The amount of cost of goods made up by transportation varies highly from industry to industry. In any case, the ultimate value of a transportation investment depends highly on the value to the industries that it will largely serve. (Forkenbrock, 2002) Investments in rail lines where there are no heavy materials industries and bulk shippers who would be the main users would be underutilized, as would port improvements were there is no demand for shipping.

**Interregional Effects**

The effects of infrastructure investment are not isolated only to the area in which the investment has occurred. The outcome of an analysis can depend greatly on the spatial dimensions within which that analysis is performed, as previously mentioned. An improvement in transportation infrastructure may decrease transportation costs and allow firms greater business opportunities in

another region. This expanded market reach may allow the firm to grow through economies of scale. While positive for the firm and the region it is located in, this is a negative for the firms in the new region which have just encountered new competition, while consumers in the new region should benefit through increased competition and lower prices. (Rienstra et al., 1994) Analysis at the interregional level also makes the notion of firm relocation more complicated, as movement from one region to another is no longer a benefit but is net neutral.

**Local Issues**

A host of local issues play a large role in determining the effectiveness of transportation investments. Local land-use policy, development incentives and taxes can be primary motivators or restrictions for businesses or families looking to relocate or develop near new infrastructure. (Kawamura, 2001) This additional business or development is often one of the primary selling points of rural transportation infrastructure, and so having complementary local policies can be of great importance. (Rychnowski, 2002) If a highway exit is built in an area, but the local zoning and regulation do not allow for any of the corresponding transportation related businesses to be placed within easy access of the exit, its accessibility benefits will have been greatly diminished.

The demographic and economic characteristics of the region must be taken into account also. (Bannister and Berechman, 2000) A depressed rural region will not prosper due to transportation investment alone, but will require coordination of other development efforts. Will there be population growth in the region, or is the area aging and be population stable? If an infrastructure investment is hoped to encourage commercial and industrial development, will the requirements of that conflict with the requirements of increased residential development brought on by the same infrastructure?

Infrastructure investment will also have an effect on the value of real estate that is affected by its improved access. Gains in real estate value from improved access and possibly higher densities from zoning changes can be a windfall to a landowner, producing higher rents and resale values. They can also impose additional financial burdens on a property through higher property taxes. (Weinberger, 2000) Changes in the transportation system can also affect or create agglomeration economies -- collections of similar firms that locate in proximity for economic efficiency. Several firms could locate in a newly developed and highly accessible area, with both the landowner and the local economy and job market benefiting from this clustering. (Boarnet and Haughwout, 2000; Weinberger, 2000) Conversely, more efficient transportation access could also cause the scattering of agglomerated firms, as it would reduce the incentive for them to locate in close proximity.

The existing density of an area also plays a role in the development outcomes of a transportation investment. Rural areas may have one highway or major access road, and the improvement of one or addition of another can greatly change or increase their accessibility. There is most likely a lower limit to the density in a rural area that can be benefited from infrastructure projects such as interstates, and Boarnet and Haughwout (2000) suggest that some prior urbanization -- 25,000 people or more in a county -- is probably needed. Denser urban areas will probably have more existing transportation and accessibility options, meaning that additional transportation infrastructure or improvements will experience diminishing marginal returns. (Bannister and Berechman, 2000; Rephann, 1993) The selection of transportation infrastructure in urban areas means that any development effects from infrastructure improvements will extend a shorter distance from the infrastructure. (Weinberger, 2000) In rural areas, these effects can spread over a wider distance.

**Who Pays the Cost?**

No matter where transportation infrastructure is developed, one of the elements that allow states and localities across the nation to benefit from their projects is the fact that so much of the cost is borne by the federal government. In analyses done at varying local and regional scales, funds for the improvements come from an outside source, not detracting from the economic benefits to the area in question. If infrastructure improvements were required to be paid for by locally generated funds, it would probably encourage a more complete consideration of costs and benefits. (Boarnet and Haughwout, 2000) However as the current situation stands, local governments have incentives to overstate highway project benefits and underestimate their costs. The practice of economic development is difficult to quantify, and it is much easier to feel confident about the positive benefits of a project if someone else is paying most of the bills.

## *Section Two*

**Case Study: The Conversion of Route 17 into Interstate 86**

This half of the paper will look at a current project, the conversion of Route 17 into Interstate 86 in the Southern Tier East counties of New York State. This project is an ongoing conversion to interstate specifications of a rural four-lane state highway extending from Orange County in the Hudson Valley area through several counties going northwest and then west until the road hits the New York-Pennsylvania border at the farthest western extent of New York State. The map in Figure 1 shows the roadway and its surrounding connections. This case study will focus on the economic development effects of the investment, specifically in the nine Southern Tier East counties: Broome, Chenango, Chemung, Delaware, Otsego, Schuyler, Steuben, Tioga and Tompkins.

The conversion project was started in 1997 when the Route 17 corridor was designated “High Priority Corridor 36” under the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1997. An amendment to the Transportation Equity Act For the 21st Century (TEA-21) introduced shortly thereafter officially designated "Corridor 36" as I-86. This project is also part of the Appalachian Development Highway System Corridor “T” and is receiving part of its funding through the Appalachian Development Section of the Federal Highway budget. About 185 miles of Route 17, comprising the section from Corning west to I-90 in Pennsylvania (in the Southern Tier West), became I-86 on December 3, 1999 after improvements were made to bring the highway up to Interstate standards. However, officials from the New York State Department of Transportation (NYSDOT) said that much work is needed on the eastern portion from Corning to the New York State Thruway in Orange County. They expect the I-86 conversion project to be completed by 2009. (NYCRoads.com, 2005)


**Figure 1: Interstate Highways of New York and Surrounding States**

The counties of the Southern Tier East section of the project were chosen because they are economically and socially often grouped together, and work together in many planning functions. Many political leaders and residents of the Southern Tier consider this project important to helping reversing the long declining local economies of this region. Former 2004 New York State 29th District Democratic congressional candidate Samara Berend (2004) calls Interstate 86 the “Southern Tier's great hope” and that its “future relies upon [I-86’s] speedy completion.” Thomas J. Santulli (2004), the Chemung County Executive, says that the “completion and maintenance of [I-86 is] crucial for sustaining the economy and quality of life for the entire Southern Tier of New York.”

The counties in the Southern Tier West (Chautauqua, Cattaraugus, Allegheny) were excluded from this analysis as the conversion to interstate status has already happened there at minimal cost. Much of the analysis in this paper can apply directly to these counties. The Hudson Valley counties (Sullivan, Orange) were excluded as they fall more within the New York City regional economy, although Sullivan County is arguably on the border. The Southern Tier East counties were chosen mainly because they represent a generally rural area in which to analyze a major transportation investment.

The total projected cost of the entire conversion project, in 2003 dollars, is around $620 million. The New York State Office of Local Government Services gives the cost of the highway conversion of everything west of Binghamton out to the New York State border -- the part that makes up the extent of the Appalachian Corridor “T” -- at $260 million. The cost of converting the highway from Binghamton down to Orange County is given at $360 million. A rough estimate of the section in the Southern Tier East counties, which have the most at-grade intersections and non-interstate compliant curves and exits, is about $400 million. These twists and turns in the highways come from the Appalachian Mountain Range, which runs up through this part of New York State.

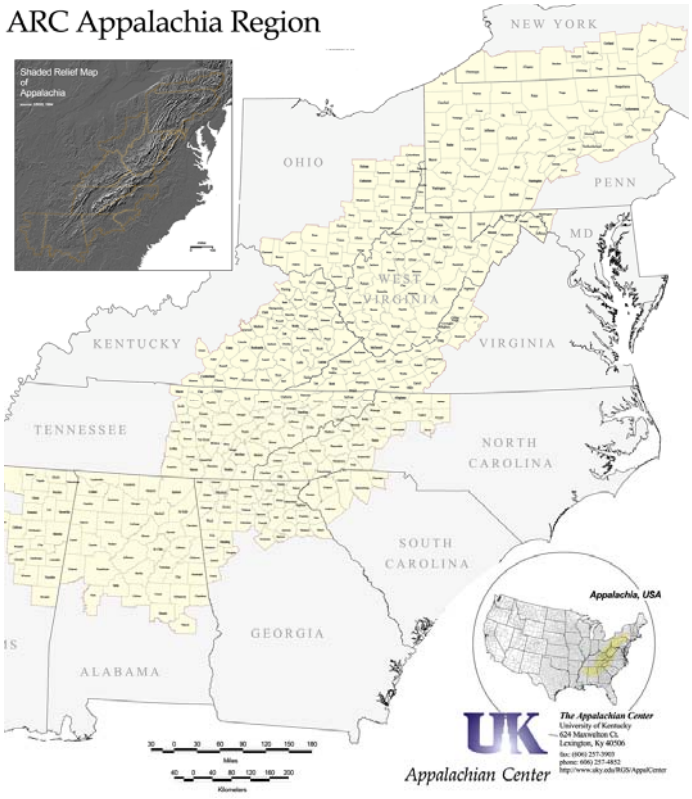


**Figure 2: Appalachian Region and Counties**

## The Southern Tier Counties

The Appalachian Region, as shown in Figure 2, extends from Mississippi to New York, with the nine counties that make up the core of the Southern Tier of New York State making up the far northeastern end of the region. These counties, like many in the Appalachian region, are generally rural and on the lower end of the economic spectrum. The map in Figure 3 shows the population of the counties of New York State, with all but one of the Southern Tier counties, Broome -- which contains the city of Binghamton -- falling into the lowest category. These counties also have low median household incomes as compared to the rest of the state, as shown in the map in Figure 4. The table in Figure 5 gives the median household incomes of these counties for the years 1990 and 2000, and also of New York State and the United States. The table also shows the 1990 median income adjusted into 2000 dollar amounts. This adjustment shows that over this decade the median income of most of these counties changed little, with

Chenango even decreasing. The next table in Figure 6 shows the percentage of families below the poverty level, which for most of these counties increased between 1990 and 2000. These data support the basic claim of many local residents and officials of an area in need of positive economic development.

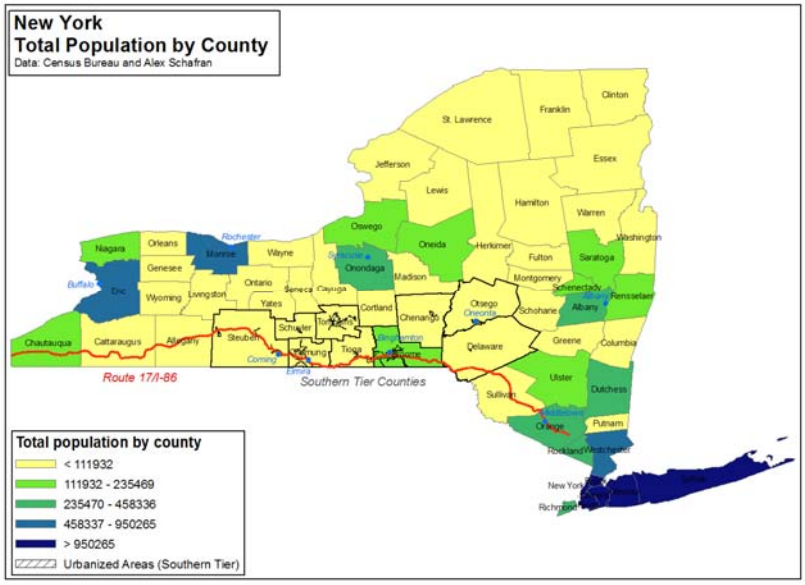


**Figure 3: New York State Population, by County**

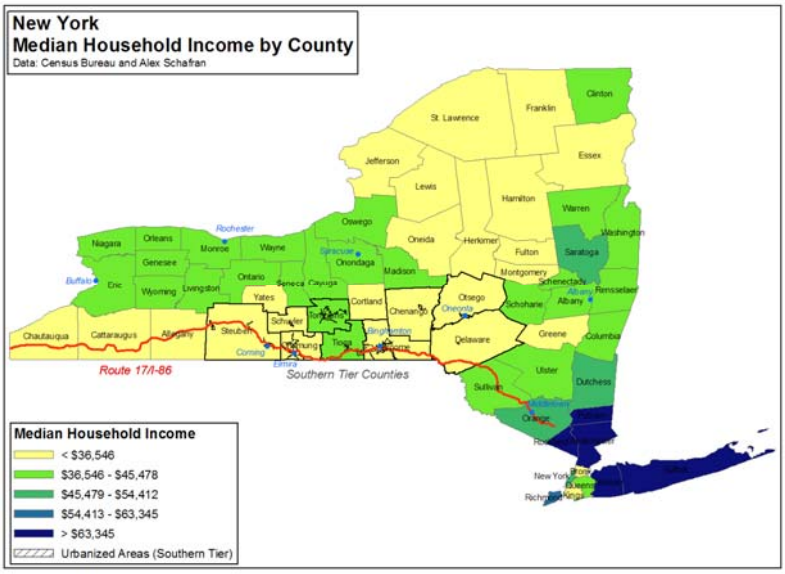


**Figure 4: New York State Median Household Income, by County**

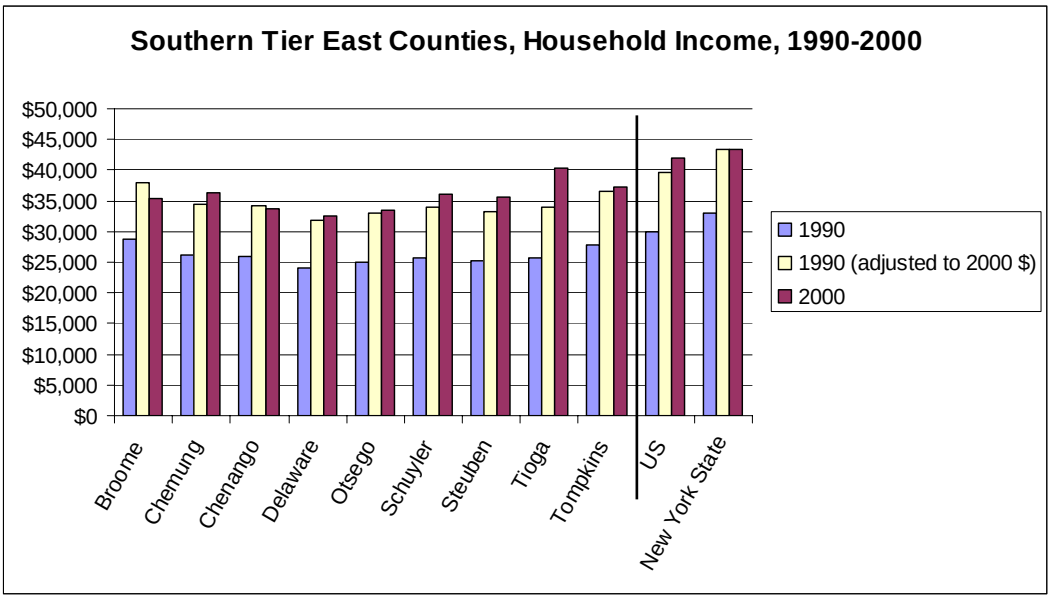


**Figure 5: Southern Tier East Counties, Household Income (Census)**

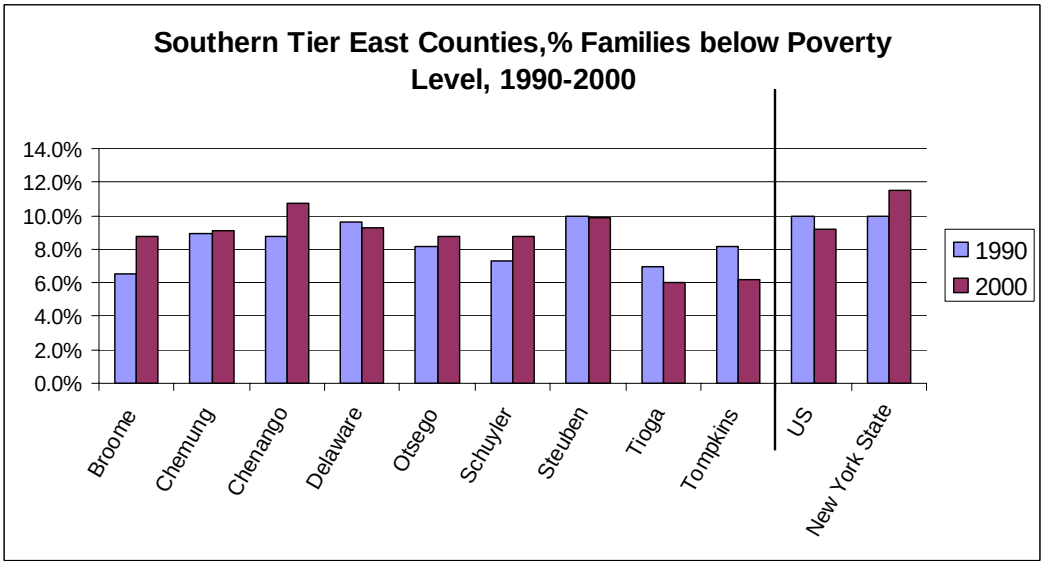


**Figure 6: Southern Tier East Counties, % Families below Poverty Level (Census)**

## Economic Development Claims for the Project

In her testimony to the New York State Advisory Panel on Transportation Policy for 2025 (2004), Samara Berend stated that the late Senator Daniel Patrick Moynihan believed the Southern Tier's persistent economic decline began with the region being bypassed by the Interstate System in 1956. He and others felt that jobs and development passed this region due to

a lack of interstate access. In the industrial flight and recession of the seventies and eighties that followed, this region was hit harder than others because it had not reached the level of development that other more accessible regions had. Although the late Senator Moynihan first voiced his beliefs nearly half a decade ago, experts currently believe a good intermodal transportation system is essential for any region to compete in a global economy. (Terry, 2002) An interstate for the trucking portion of an intermodal system could be a first step.

The hope that Ms. Berend and others hold is that interstate improvements and designation will bring new tourism, travelers, development and business to the region. Ms. Berend (2004) cites Frito-Lay, Sealy Mattress and Best Buy all recently establishing distribution/manufacturing centers in the Southern Tier, development that is "largely attributed to I-86." In his testimony (2004), Thomas J. Santulli cites three industrial developments in which the interstate designation was a factor: a NuCor Steel fabrication plant; CAF USA, a railcar manufacturing facility; Synthes USA, an orthopedic implant manufacturing facility. He also goes on to mention that access and interstate designation is key to finding commercial tenants for a new commercial office park.

In mentioning this commercial and industrial development, these officials were hoping to convince New York State to continue its commitment to funding its part of the development of the I-86 conversion. A commonly anticipated final outcome of the project is given in a Wilbur Smith Associates (2000) study that estimated a $2.4 billion value to the regional economy (defined as the Southern Tier and Hudson Valley) and $3.2 billion overall total dollar impact (including non-business and accident savings) for the entire I-86 conversion for the period up to 2020. (Berend, 2004; Santulli, 2004; Augenstern and Burger, 2004; Bubniak, 2004; Local Government, 2004) The study also included an estimate of over 3400 new jobs and 6200 new

residents for the region. The scale of these numbers may be hard to digest individually, but they are not insignificant given the smaller population and revenue sizes of these rural counties.

**Economic Development Claims in Context**

Given the foundation of economic development effects for transportation investment discussed in the first half of the paper, could the I-86 conversion benefit the Southern Tier East counties? The investment in these counties will be in the range of $400 million, and the benefit could be expected to be some significant fraction of the $2.4 billion/$3.2 billion mentioned previously. This paper will not go so far as to calculate monetary values, but it will look into some of the issues that may or may not assist these counties in achieving those outcomes.

**Infrastructure Is Necessary but Not Sufficient**

The first and most important factor that comes up in research on economic development effects can be mostly summed up this way:

> *"A new highway segment does not make economic development happen automatically." (Rychnowski, 2002)*

New (or improved) roadway will not, on its own, start economic development. In most instances, roadway investments are used as catalysts, as on their own they are "necessary but not sufficient" tools for regional economic growth. (Hodge, Weisbrod, Hart, 2003; Roberts, 2002; Forkenbrock, 2002; Rephann, 1993). Transportation infrastructure investment is but one of many factors used in an area to stimulate economic development.

To the credit of local supporters, the testimony given for the I-86 project reflects this consensus opinion. Development caused by the interstate will be most significant around interchanges, and unless resources are directed to planning for these areas in land-use, regulation and connecting transportation facilities, suboptimal development patterns could produce less than expected

economic benefits. (Berend, 2004; Bannister and Berechman, 2000; Boarnet and Haughwout, 2000) Development at interchanges is significant in this case because Route 17, as a rural highway, has several at grade crossings and exits that will be removed or changed into over/underpasses in transition to a limited access interstate highway. Some businesses may lose their direct access or advantageous position at what was a Route 17 intersection, to find themselves displaced in a large interstate interchange. As Tim Gilchrist, the former NYS DOT Director of Planning and Strategy puts it:

> *"It's a potential dilemma for some. They want the Interstate road because of the economic advantage it brings. At the same time, it's going to be an Interstate road with limited access." (NYCRoads.com, 2005)*

There is evidence that local communities understand the necessity of proper regulation and investment in areas around interchanges -- where these communities are often located. A study of the economic development effects in the Southern Tier West counties noted that the I-86 conversion spurred land-use planning and economic development promotion activity. (Rychnowski et al., 2003) The strength of the evidence on this point and the experience of neighboring communities bode well for the coordinating efforts of the Southern Tier East communities.

**Local Conditions and Context**

Probably the second most important factor to the outcome of the highway investment is the context and setting of the region and the transportation investment in it. As mentioned before, a highway does not itself create economic development; it can only act as a catalyst or tool in the process. On a basic level, a region which receives infrastructure investment, which can generally be said to always have some economic development purpose, must have the potential for

development in terms of other factors: workers, businesses, land, other infrastructure, political support, etc. To this end Rephann (1993) states that there is little quality empirical research that examines how these other factors make up a region's potential to affect subsequent regional development. One conclusion he does come to is that highways can have the best potential effect for urbanized areas near metropolitan areas located in less industrialized and less developed regions, with the caveat that severely underdeveloped regions are not good candidates for investment. The smaller cities and urbanized areas in the Southern Tier East region would seem to fit this description well. Places like Binghamton, Oneonta and Elmira all have some level of development and are within 2-3 hours traveling distance of major metropolitan areas.

The data on the Southern Tier East counties previously given does not allow for a full demographic and economic picture, but comments in the testimonies and a poll of Southern Tier accounting professionals does allow for the assumption that the region has had a “stagnant economy” for several years. (Berend, 2004; Whitehead, 2003) When this assumption is taken into account, studies of Appalachian regions cast doubt on the idea that highways can stimulate economic activity without additional program coordination and planning -- further reinforcing the importance of the first factor. (Rephann, 1993) A region's other resources -- workforce, non-transport infrastructure, etc. -- and its costs of doing business often make up a larger portion of production costs than transportation, making it difficult to generalize about how important transportation infrastructure is in effecting economic development. (Bannister and Berechman, 2000)

Looking at the Southern Tier East counties, their other resources are generally complementary to the highway investment for producing economic development. The mostly rural counties have low land costs for development. The low median incomes translate into lower wages for

employers in this area, although it seems the economic development work so far has gone into attracting commercial and industrial businesses that should be able to pay more than minimum wages. Much of the commercial and industrial development that could be spurred by this highway investment will be near the highway and in commercial parks, areas with good non-transportation infrastructure. In hoping to attract more tourism business, the region has good destinations -- the Finger Lakes, the Corning Museum, Watkins Glen, wineries (although the Southern Tier West has the Lucille Ball Museum) -- that can draw visitors who would see the newly labeled interstate on road maps.

**Does Accessibility Lead to Attraction?**

The Southern Tier certainly has tourist attractions, but is the conversion to I-86 enough in economic development terms to attract businesses and keep growth in the region? The $2.4 billion amount forecast in economic benefits from the Wilbur Smith Associates (2000) study assumes part of that in attracted and expanded businesses in the region. This potential for attraction of new businesses is one of the most difficult aspects to analyze when looking at economic development benefits of highway investments. The best way to study this aspect is to look at how the investment will affect change in location decisions by firms. In a 2000 Roundtable on industrial site selection for upstate New York, two thirds of the projects discussed required immediate highway access (2 miles or less), and the remaining required one-hour access to an interstate via good roads. (Hodge, Weisbrod, Hart, 2003) That this project investment allows many sites in the Southern Tier to be included in this selection process is an important consideration in itself.

The previously given examples of new business attraction in the region in which the interstate conversion played a part are also important to proving the economic development benefits of this

project. Even though the entire project is not completed yet, firms are making relocation decisions based on the potential of the area given its future access enhancements. The best evidence for showing the new business attraction capability of the I-86 conversion comes from two studies, the first being the Southern Tier West interstate conversion, which showed new businesses and development, new land-use plans and rising land values within two years of completion of that project. (Rychnowski et al., 2003) The second is a Wilbur Smith Associates study for the Appalachian Regional Commission (1998) of select Appalachian highway corridors, showing a positive economic return and benefit cost ratio over the group. While there is no guarantee that gains in one area will translate to another, the similarities of these neighboring regions and the project make them the best existing comparison.

**Conclusion: Will There Be Benefits?**

The big question of this paper is if transportation investment creates economic development benefits? The balance of some of these prior arguments keeps this paper from leaning too far in one direction. Martin Weiss (2002) expresses the current state of affairs well:

> *"We don't know enough to make quick and confident judgments regarding economic development outcomes for use in developing [transportation investment plans]."*

The biggest benefit that is hoped-for from these investments is job creation, which is intimately tied to expansion of existing businesses and the opening of new ones. Will the money spent on concrete and steel translate into more money spent on wages and products?

As with many things, the answer could probably be simplified to "it depends." The research consensus says that the investment is most likely to succeed if coordinated with local development efforts. The local planning boards and economic development offices of the

Southern Tier East seem to have gotten this lesson early on, and are attempting to coordinate their land-use, regulation and development efforts with the interstate conversion. (Augenstern and Burger, 2004; Santulli, 2004; Southern Tier East, 2004) The Southern Tier East is a mainly rural region, and the businesses attracted so far have been of the manufacturing and distribution type, sitting well with the area and its distances from other major metropolitan areas. The city of Binghamton in Broome County is the largest in the region, and is where the technology and skilled job development is focused. Making sure the transportation development does not happen in a vacuum is probably the best thing that can be done to ensure some level of economic development success, and in this area the regional actors seem to be making headway.

The Southern Tier East region seems an appropriate place for this investment to be able to convert into positive economic development benefits. Although Route 17 has existed for many years, the lack of interstate if designation has apparently been a barrier to business and commercial transportation development. Some of the development that has already happened has depended on this conversion, giving a relatively direct indication of the project's usefulness. The interstate designation will also make I-86 a darker and different color line on hundreds of maps, possibly changing the travel decisions of the enough drivers to boost tourism and retail revenue in towns along the interstate. This enhanced accessibility leading to the attraction of businesses and consumers point to positive economic outcomes from the I-86 investment.

Do these hints at success make the I-86 conversion in the Southern Tier East an exception to the ambiguity in the research on the economic development benefits of transportation research? Not necessarily, given that the project is not yet done and what looks positive now may not end up that way. The successes in various parts of the Southern Tier West and lessons learned in interstate investments in other Appalachian regions have given planners and development

officials good information on what works and what doesn't. They seem to be following these lessons and have achieved some success so far. Unfortunately, that does not mean in the final analysis the project will turn out to have been economically positive.

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