Express Busways and Economic Development:
Case Study of the Miami-Dade South Express Busway

Arthur C. Nelson
Professor of Planning and Real Estate Development
University of Arizona

Robert Hibberd
Doctoral student
University of Arizona

Nilia M. Cartaya
Principal Planner
Miami-Dade Transit

Acknowledgements
Support for this article came from the National Institute of Transportation and Communities with numerous co-sponsors including Utah Transit Authority, Portland Metro, TriMet, Lane County Transit, City of Provo, Utah, Transportation for America (a subsidiary of Smart Growth America), City of Tucson, Regional Transportation Commission of Southern Nevada, Mid America Regional Council, and Portland Metro. The contents of this article reflect the views of the author, who is solely responsible for the facts and the accuracy of the material and information presented herein.

December 2017

Express Busways and Economic Development
Case Study of the South Miami-Dade Express Busway

Abstract

Few studies report the association between economic development and such fixed-guideway modes of transit as light rail transit (LRT) and bus rapid transit (BRT) but none do so with respect to express bus transit (XBT) service. While conceptually one may expect similar outcomes there is no evidence confirming or rejecting it. Using shift-share analysis applied to the South Miami-Dade express busway transit system, this article helps close the gap in literature. The article further assesses differences in shift-share outcomes over three time periods: before the Great Recession (2004-2007), during the Great Recession and early recovery years (2008-2011), and after the Great Recession (2012-2014). We find that over the entire study period (2004-2014), total jobs grew within one-half mile of XBT stations. Using shift-share analysis, we find that (a) XBT station areas gained share of jobs relative to the central county (Miami-Dade) before the Great Recession, (b) continued to gain share albeit at a slower pace during the Great Recession, but (c) lost share during the post Great Recession period. We also find that over the entire study period, land-extensive jobs (such as in manufacturing and non-manufacturing industry) lost share as well as lower-wage retail-lodging-food service jobs and higher-wage health care jobs. Jobs in knowledge, office, education and arts-entertainment-recreation economic groups gained share overall. We surmise that XBT stations have shifted firm dynamics mostly displacing land extensive or lower wage jobs away from station areas. Planning and policy implications are offered.

Introduction

Cities emerge largely because agglomeration economies create economic development synergies: the larger and more densely developed, the more jobs are created (Ciccoine and Hall 1996; Bettencourt and West, 2010). This can stress transportation systems as congestion may lead to inefficient economic interactions that reduce advantages of agglomeration (Glaeser 2011). In the US, one solution is to build new highway networks connecting downtowns to suburbs, suburbs to each other, and even metropolitan areas to one another (Duany, Plater-Zyberk and Speck 2000). Opening vast amounts of cheap land for development allowed people to move outward where housing was cheaper (per square foot) which in turn attracted firms to locate near its labor supply (Bruegmann 2006). But these highway networks also became congested, arguably undermining overall metropolitan economic performance (Duranton and Turner 2011; Litman 2017).

During the last quarter of the 20th century, dozens of metropolitan areas built and expanded fixed guideway transit (FGT) systems, in part to overcome the diseconomies of congestion (Nelson 2017). Indeed, studies have shown that overall metropolitan economic performance improves with the presence of FGTs generally (American Public Transportation Association 2007; Weisbrod, Cutler, and Duncan 2014). Studies attributing economic development outcomes to specific modes of public transit have focused on rail services and bus rapid transit (BRT) (Belzer et al 2011; Nelson, et al. 2015; Nelson 2015). Other work by Higgins and Kanaroglou (2015) assesses the contribution of rail transit and BRT to property values, which is a proxy for economic development (see also Institute for Transportation and Development Policy 2013).

Yet, no study has explored the relationship between express bus transit (XBT) and economic outcomes. This article helps close this gap in research.

But just what is express bus transit (XBT)? For instance, while Levinson et al. (2003) offers these features of BRT systems, we contend they are features of XBT systems (Levinson et al., 2003: 36):

- High-occupancy vehicle (HOV) busway
- Freeway HOV lanes have express bus service and stations
- Busway along abandoned railroad line
- Express buses use contra-flow bus lanes on freeway
- Peak-period freeway bus lane busway with stations along unused railroad

In contrast, BRT systems are characterized as having uniquely designed buses in part to achieve brand identity; stops, stations, terminals and corridors that clearly define the BRT operating area; and enjoy intersection signalization priority (see Nikitas and Karlsson (2015: 2):

While many XBT systems have features similar to BRT systems, there is an important difference. In our view, express bus services do not principally operate on surface streets. They instead operate substantially (though perhaps not exclusively) in freeway high-occupancy-vehicle lanes, abandoned railroads and other abandoned transportation routes, or other means not associated with regular streets. Put differently, where bus rapid transit operates substantially on surface streets, though ideally within dedicate travel lanes and synchronized intersections, express bus service operates substantially on entirely separate conveyances.

Our distinctions may be subtle but they are important because, without clarity, attempts to measure such things as economic development outcomes may be compromised. In this particular context, we are interested in knowing whether XBT systems per se may be associated with economic development. We explore this proposition in in this article. We begin with a theory, method and model of associating XBT systems with economic development followed by its application to the South Miami-Dade Express Busway, results, and discussion with implications.

Theory, Method and Model

A key purpose of FGT systems is to connect people to their jobs. In theory, doing so will enhance a region's overall economic development performance (Rodrigue and Notteboom 2017). If so, they should alter the pattern of job location by influencing jobs to locate toward FGT stations over time (Belzer et al. 2011; Guthrie and Fan 2016). Literature suggests that the largest share of the shift in jobs should occur within the first one half mile of those stations (Belzer at a. 2011; Guerra and Cervero 2013).

Shift share analysis lends itself to detecting shifts in the share of jobs with respect to FGT stations. Pioneered by Nelson et al. (2013) for application to the Eugene-Springfield BRT system, the technique has since been applied to light rail transit, streetcar, and commuter rail transit systems (see Nelson 2015; Nelson et al. 2015).

Shift-share analysis assigns the change or shift in the share or concentration of jobs with respect to the region, other economic sectors and the local area. The "region" can be any level of geography and is often the nation or the state. When evaluating shifts in the share of jobs associated with the presence of an FGT system, the central county within which the system

operates is the appropriate region (Nelson 2015; Nelson et al. 2015), R. The "local" area is any geographic unit that is smaller than the region. When applied to FGT systems, the local area is customarily defined as being within one-half mile of the nearest transit station (see Belzer et al. 2011; Guerra and Cervero 2013; Nelson 2015; Nelson et al. 2015) though it can be smaller distances (Nelson et al. 2013). The local area would be a certain distance around express bus transit XBT stations, XBT. As shifts in the share of jobs may vary by sector over time because of changes in economic sector mixes, there is also an "industry mix" adjustment, IM. Using notations by the Carnegie Mellon Center for Economic Development (undated), the shift-share formula is:

$$\mathbf{SS = R + IM + XBT}$$

Where:

SS = Shift-Share

R = Region share

IM = Sector Mix

XBT = Express Busway Station Area shift

The R share measures by how much total employment in an XBT station area changed because of change in the metropolitan area economy during the period of analysis. If the region's employment grew by 10 percent during the study period, then employment in the XBT station area should have also grown by 10 percent if there is no XBT effect. The Industrial Mix (IM) identifies fast-growing or slow-growing economic sectors in an XBT station area based on the R growth rates for the individual economic sectors. For instance, an XBT station area with an above-average share of the region's high-growth sectors would have grown faster than an XBT

station area with a high share of low-growth sectors. The XBT station area shift, also called the "competitive effect," is the most relevant component for our analysis as it identifies a XBT station area leading and lagging sectors. In effect, the competitive effect compares the XBT station areas growth rate in a given economic sector with the growth rate for that same sector in the region. A leading sector is one where that sector's XBT station area growth rate is greater than its region's growth rate. A lagging sector is one where the sector's XBT station area growth rate is less than the region's growth rate.

Shift-share analysis can be characterized as a pre-post, quasi-experimental research design. In our case, that means it assesses the magnitude of employment change around transit stations based on change in employment at the beginning and end of a study period, controlling for regional and industry-specific growth trends over time. It is not a causal analysis meaning that the reason for any shift in jobs toward or away from transit stations cannot be absolutely attributable to the station itself, though the technique nonetheless offers substantial circumstantial evidence.

Application to the South Miami-Dade Express Busway Transit System, 2002-2014

As there are no studies reporting the relationship between XBT systems and change in employment location with respect to XBT station areas over time, we sought a case study where an XBT system operated over a sufficient period of time to measure those changes. The South Miami-Dade Busway meets this critical criterion (see Figure 1). This XBT system began in 1997, as an eight-mile, two-lane roadway designed for exclusive use by buses and emergency vehicles along a former railroad right-of-way running parallel about 100 feet from US 1 (Baltes,

Perk, Perone and Thole, 2003). By 2004, the system had grown into much of its current 20-mile, dedicated bus-only system.

Land use planning plays a major role in XBT system design. Since the late 1980s, the State of Florida has required local governments to engage in comprehensive planning to achieve multiple objectives such as coordinating transportation and land use planning to advance economic development (Arrant, 2012). Since then, Miami-Dade County has prepared and amended land use plans that explicitly target transit stations for mixed-use development and especially economic development (Miami-Dade Government, 2015).

For its part, two major efforts to stimulate economic development along the South Miami-Dade Busway include both its designation as a rapid transit corridor in the County's Comprehensive Development Master Plan (CDMP) as well as the designation of various urban centers along the Busway to encourage mixed-use compact development at key activity nodes.

Accordingly, the county's CDMP designates the existing XBT as a rapid transit corridor. It is the policy of the Board of County Commissioners, through the CDMP, that of establishing transit supportive land uses along the designated rapid transit corridors. The CDMP thus designates the area surrounding major rapid transit stations as urban centers and the corridors between stations as mixed-use corridors. It provides for significantly higher densities and intensities and variety of land uses within these designated areas with the dual purpose of generating additional transit ridership and to establish pedestrian-friendly urban centers, which over time will serve as hubs of activities for the surrounding communities.

Data for our analysis come from the Longitudinal Employment-Household Database (LEHD) for 17 of the 20 two-digit North American Industrial Classification Scheme (NAICS) economic sectors. We exclude agriculture, mining and construction because those workers do not

normally occupy building spaces in urban areas. We use LEHD data for 2004 (when the data first became available) through 2014, allowing for a decade-long study period. Our analysis uses the smallest unit of geography available through the LEHD—the census block. We compare change between the central county (CC) – being Miami-Dade County, and the blocks whose closest point is within 0.50-mile XBT stations. For our analysis, we combine the 17 urban-related, space-occupying sectors into eight categories in the manner shown in Table 1. This is similar to the combinations used by others (Levinson et al. 2003).

Given the general shift-share model applied to our analysis:

$SS = CC + IM + XBT$

The model is comprised of these components:

$CC = ({}_iXBT\ station\ area^{t-1} \bullet CC^t / CC^{t-1})$

$IM = [({}_iXBT\ station\ area^{t-1} \bullet {}_iCC^t / {}_iCC^{t-1}) - CC]$

$XBT = [{}_iXBT\ station\ area^{t-1} \bullet ({}_iXBTstation\ area^t / iXBT\ station\ area^{t-1} - {}_iCC^t / iCC^{t-1})]$

Where:

$iXBT\ station\ area^{t-1}$ = number of jobs in the XBT station area sector (i) at the beginning of the study period (t-1)

$iXBT\ station\ area^t$ = number of jobs in the XBT station area in sector (i) at the end of the study period (t)

CC^{t-1} = total number of jobs in the central county at the beginning of the study period (t-1)

CC^t = total number of jobs in the central county at the end of the study period

(t) iCC^{t-1} = number of jobs in the central county in sector (i) at the beginning of the study period (t-1)

iCC^t = number of jobs in the central county in sector (i) at the end of the study period (t)

There is another analytic feature our study period and data allow for: the extent to which there are differences in shift-share outcomes before (2004 through 2007), during (2008 through 2011)[1] and after (2012 through 2014) the Great Recession. Results are thus reported for the study period as a whole (2004 through 2014) and then for each of the individual study periods.

[1] Though the Great Recession began officially in December 2007 and ended June 2009, the national unemployment rate remained above or near 10 percent through 2011, after which it began to fall as jobs were added to the economy. We this use the period 2008 through 2011 as the Great Recession time frame for our analysis.

Figure 1
South Miami-Dade Express Busway

Table 1
NAICS Sectors Converted into Economic Groups for Analysis

Manufacturing
Manufacturing
Industrial
Utilities
Wholesale Trade
Transportation and Warehousing
Retail-Accommodation-Food Service
Retail Trade
Accommodation and Food Services
Knowledge
Information
Professional, Scientific, and Technical Services
Office
Finance and Insurance
Real Estate and Rental and Leasing
Management of Companies and Enterprises
Administrative and Support and Waste Management and Remediation Services
Other Services (except Public Administration)
Public Administration
Education
Educational Services
Health Care
Health Care and Social Assistance
Art-Entertain-Recreation
Arts, Entertainment, and Recreation

Results

We present results for the overall study period in Table 2 while results for individual study periods are presented in Table 3. We review and discuss results for each set of study periods next.

Overall Study Period, 2004-2014

Over the entire study period, jobs among most economic groups lost share of jobs compared to the central county (Miami-Dade) as a whole. However, the aggregate loss was small—about 600 jobs. The largest negative shift was in the low-wage retail-lodging-food economic group, perhaps because of gains among such higher wage economic groups as knowledge, office and health care.

While there was a negative shift in the share of jobs relative to the county as a whole, the XBT station areas nonetheless gained about 10,500 total jobs or about 3.3 percent of the 323,000 jobs the county added. The county's nonresidential development occupies about 140 square miles.[2] The 56 XBT stations include about 8 square miles of nonresidential land (net of rights-of-ways and other land uses), or about 5.7 percent of the total. It appears that XBT station area job growth at 3.3 percent of county growth is also well below the XBT station area share of nonresidential land, at 5.7 percent of the county. But overall trends can be deceiving, as will be shown in the results and discussion for individual study periods.

Pre-Great Recession Period, 2004-2007

During the four year period preceding the Great Recession, the XBT station areas saw a shift of about 2,200 jobs from the county as a whole to them. Indeed, XBT station areas gained share of jobs in all economic groups except health care. The overall increase of about 5,100 jobs

[2] See http://www.miamidade.gov/GreenPrint/planning/library/milestone_one/land_use.pdf.

accounted for 5.8 percent of the county's 87,400 new jobs. Clearly, before the Great Recession, the XBT station areas kept pace with overall job growth while also, more importantly, gaining share in the shift of jobs across nearly all the economic groups.

Great Recession Period, 2008-20011

We find it notable that during the Great Recession, XBT station areas continued gaining share of job change, accounting for more than 1,000 new jobs. Only the office and arts-entertainment-recreation economic groups lost share, but in a reversal from the pre-recession period, health care increased its share of job change. While smaller than the pre-recession period, total jobs added by the county were also quite a bit lower, at about 38,000. Indeed, the more than 2,400 jobs added to the XBT station areas accounted for 6.3 percent of the county's total job growth, a higher percentage than during the pre-recession period.

Post-Great Recession Period, 2012-2014

Trends changed during the post-recession period as not only the XBT station areas lose share of job change relative to the county—about 3,700, but its share of total county job change was 1.1 percent—about 1,700 new jobs compared to about 156,000 new jobs in the county. Indeed, only the education and health care economic groups gained share. We suggest reasons for this next.

Table 2
Miami-Dade South Busway Shift-Share Results for the Entire Study Period, 2004-2014

Economic Group	XBT2004	XBT 2014	CC 2004	CC 2014	XBT Change	CC Change	CC Share	IM Share	XBT Shift
Manufacturing	866	694	54,469	46,077	-19.9%	-15.4%	690	43	(39)
Industrial	2,429	2,581	165,847	191,217	6.3%	15.3%	1,935	866	(220)
Retail-Lodging-Food	18,721	23,070	225,493	306,782	23.2%	36.0%	14,914	10,556	(2,400)
Knowledge	3,585	4,403	120,599	146,157	22.8%	21.2%	2,856	1,489	58
Office	8,413	12,137	518,280	648,371	44.3%	25.1%	6,702	3,823	1,612
Education	189	1,064	31,009	42,239	463.0%	36.2%	151	107	807
Health Care	2,792	3,405	128,052	176,548	22.0%	37.9%	2,224	1,625	(444)
Arts-Entertain-Recreation	239	378	21,554	30,912	58.2%	43.4%	190	152	35
Total	37,234	47,732	1,265,303	1,588,303	28.2%	25.5%	29,662	18,660	(590)

Note: CC means Miami-Dade County; IM means economic industry mix; XBT means express bus transit station areas.

Table 3
Miami-Dade South Busway Shift-Share Results for Individual Study Periods

Economic Group	Busway 2004	Busway 2007	CC 2004	CC 2007	Busway Change	CC Change	CC Share	IM Share	Busway Shift
Pre-Great Recession Results									
Manufacturing	866	975	54,469	51,987	12.6%	-4.6%	810	17	148
Industrial	2,429	2,531	165,847	168,606	4.2%	1.7%	2,272	197	62
Retail-Lodging-Food	18,721	20,721	225,493	246,297	10.7%	9.2%	17,511	2,937	273
Knowledge	3,585	3,720	120,599	124,881	3.8%	3.6%	3,353	359	8
Office	8,413	11,394	518,280	557,514	35.4%	7.6%	7,869	1,181	2,344
Education	189	224	31,009	33,598	18.5%	8.3%	177	28	19
Health Care	2,792	2,443	128,052	145,121	-12.5%	13.3%	2,612	553	(721)
Arts-Entertain-Recreation	239	307	21,554	24,716	28.5%	14.7%	224	51	33
Total	37,234	42,315	1,265,303	1,352,720	13.6%	6.9%	34,828	5,321	2,166
Great Recession/Early Recovery Results									
Economic Group	Busway 2008	Busway 2011	CC 2008	CC 2011	Busway Change	CC Change	CC Share	IM Share	Busway Shift
Manufacturing	935	844	48,424	41,293	-9.7%	-14.7%	910	(112)	47
Industrial	1,986	2,071	165,886	166,723	4.3%	0.5%	1,932	64	75
Retail-Lodging-Food	20,460	21,667	247,820	259,702	5.9%	4.8%	19,903	1,538	226
Knowledge	4,099	4,577	124,729	124,403	11.7%	-0.3%	3,988	101	489
Office	10,365	9,891	555,890	573,906	-4.6%	3.2%	10,083	618	(810)
Education	298	723	36,243	39,742	142.6%	9.7%	290	37	396
Health Care	2,541	3,324	151,715	161,609	30.8%	6.5%	2,472	235	617
Arts-Entertain-Recreation	355	345	25,065	26,303	-2.8%	4.9%	345	27	(28)
Total	41,039	43,442	1,355,772	1,393,681	5.9%	2.8%	39,923	2,507	1,012
Post-Great Recession Results									
Economic Group	Busway 2008	Busway 2011	CC 2012	CC 2014	Busway Change	CC Change	CC Share	IM Share	Busway Shift
Manufacturing	724	694	41,474	46,077	-4.1%	11.1%	653	152	(110)
Industrial	2,911	2,581	174,963	191,217	-11.3%	9.3%	2,625	557	(600)
Retail-Lodging-Food	21,563	23,070	272,179	306,782	7.0%	12.7%	19,443	4,861	(1,234)
Knowledge	4,671	4,403	128,777	146,157	-5.7%	13.5%	4,212	1,090	(898)
Office	12,002	12,137	582,160	648,371	1.1%	11.4%	10,822	2,545	(1,230)
Education	690	1,064	37,987	42,239	54.2%	11.2%	622	145	297
Health Care	3,119	3,405	166,811	176,548	9.2%	5.8%	2,812	489	104
Arts-Entertain-Recreation	367	378	27,825	30,912	3.0%	11.1%	331	77	(30)
Total	46,047	47,732	1,432,176	1,588,303	3.7%	10.9%	41,521	9,914	(3,703)

Note: CC means Miami-Dade County; IM means economic industry mix; XBT means express bus transit station areas.

Discussion and Implications

From the pre-recession period through the Great Recession, XBT station areas gained overall share of jobs relative to county, with gains in the shift in the share of jobs occurring in nearly all sectors. But this changed during the post-recession period as well as for the whole study period. These outcomes are reported in Table 4 and illustrated in Figure 2. Why?

We note that the XBT station areas comprise a very small share of the county's entire nonresidential land base, less than six percent. Moreover, the XBT route is along some of Miami-Dade county's most built out areas as it was designed to serve substantially developed areas. In a sense, we find it remarkable that the XBT station area job growth matched the county's pace during the pre-recession and Great Recession periods. Job growth usually occurred through the redevelopment of older, low-rise, and low FAR. Floor-area-ratio (FAR) is the ratio of built space to land area. If a 10,000 square foot building sits on a site of 40,000 square feet, the FAR is 0.25. The higher the FAR the more intensively land is developed, and the more costly it is to repurpose or redevelop (Nelson 2013, 2014). It was during the first two study periods that much of the vacant sites, sites used for parking, or sites with older, lower FAR structures were developed or redeveloped. In effect, the easy redevelopment opportunities have substantially disappeared.

We surmise that the XBT facilitated more rapid development and redevelopment than would have occurred otherwise. Advance planning and development regulations that encouraged development near XBT stations seems to have been a contributing factor. How can the momentum be sustained, especially in light of post-recession outcomes?

The CDMP already recognizes the need for greater public involvement in redeveloping sites near FGT stations, including XBT station areas. Indeed, several XBT station areas are

included community redevelopment areas (CRAs) with access to special redevelopment financing options.[3]

There is another factor that will be the topic of future research. The XBT stations are also attractive to residential development, the extent to which needs to be determined. Indeed, about a quarter to a third of station areas are already used for various types of residential land uses. Market survey research suggests that at least a quarter of American households would choose to live within walking distance of an FGT station if they had a change (Nelson 2013). There may thus be competition between commercial and residential development for location within XBT study areas. If so, some lower-wage jobs may be displaced—and may have already begun based on results from the post-recession shift-share analysis as the biggest negative shift in share was in the low-wage retail-lodging-food economic group, followed by the middle-wage office economic group. This is also the topic of future research.

After many years of solid employment gains along the Miami-Dade South Express Busway line, market opportunities for sustained gains may be stressed. A new era of XBT station area redevelopment may await as the next wave of development/redevelopment may be higher FAR, higher value, and likely higher wage projects near XBT stations.

[3] See http://www.miamidade.gov/redevelopment/ and http://www.miamidade.gov/redevelopment/about-community-redevelopment-areas.asp.

Table 4
Summary Share of Shift by Economic Group between Time Periods, 2007-2004, 2008-2011, 2012-2014

Economic Group	Pre-Recession 2004-2007	Recession 2008-2011	Post-Recession 2012-204	Study Period 2004-2014
Manufacturing	148	47	(110)	(39)
Industrial	62	75	(600)	(220)
Retail-Lodging-Food	273	226	(1,234)	(2,400)
Knowledge	8	489	(898)	58
Office	2,344	(810)	(1,230)	1,612
Education	19	396	297	807
Health Care	(721)	617	104	(444)
Arts-Entertainment-Recreation	33	(28)	(30)	35
Total	2,166	1,012	(3,703)	(590)

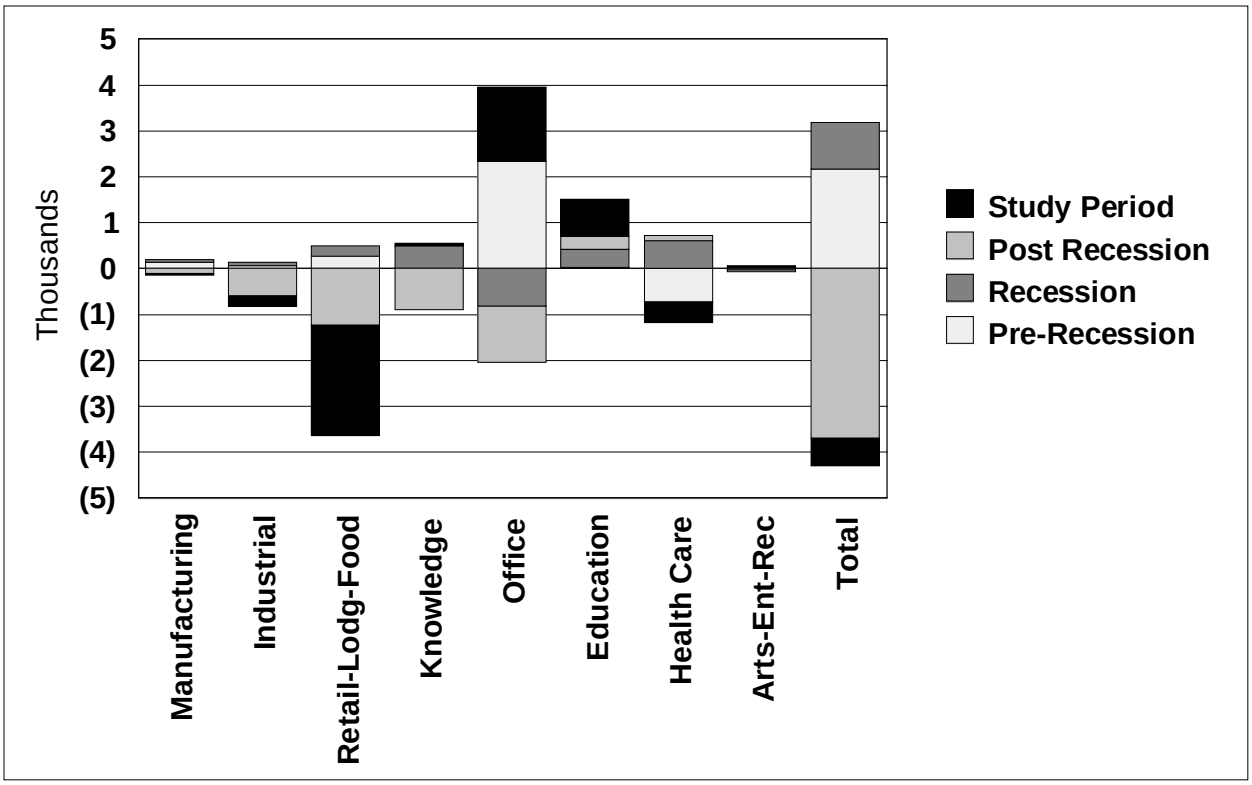

Figure 2
Share of Shift by Economic Group between Time Periods, 2004-2014, 2007-2004, 2008-2011, and 2012-2014

References

American Public Transportation Association (2007), *Public Transportation: Benefits for the 21st Century* Washington, DC: American Public Transportation Association.

Arrant, Tony. “Planning and Growth Management”, Chapter 11 in Florida Association of Governments. *Florida County Government Guide*. Tallahassee, FL: Florida Association of Governments. (2012). 111-127

Baltes, Michael, Victoria Perk, Jennifer Perone, and Cheryl Thole. "South Miami-Dade Busway System Summary." *National Bus Rapid Transit Institute, University of South Florida* (2003).

Belzer, Dena, Sujata Srivastava, Mason Austin, Tyler Bump, and Jeff Wood.*Transit and regional economic development*. No. FTA CA-26-1007-03. 2011.

Bettencourt, Luis and Geoffrey West, “A unified theory of urban living.” *Nature* 467: October 2010.

Bruegmann, Robert (2006). *Sprawl: A Brief History*. Chicago: University of Chicago Press.

Carnegie Mellon Center for Economic Development. *Methods of regional analysis: Shift-share*. Pittsburgh, PA: H. John Heinz School of Public Policy and Management, Carnegie Mellon University. Undated. Accessed from http://www.andrew.cmu.edu/user/jp87/URED/readings/Shift_Share.pdf.

Ciconne, Antonio and Robert E. Hall (1996). Productivity and the Density of Economic Activity, *American Economic Review* 86(1): 54-70.

Duany, Andres, Elizabeth Plater-Zyberk and Jeff Speck (2000). *Suburban Nation: The Rise of Sprawl and the Decline of the American Dream*. New York: North Point Press.

Duranton, Gilles, and Matthew A. Turner (2011). The Fundamental Law of Road Congestion: Evidence from US Cities. *American Economic Review,* 101(6): 2616-52.

Glaeser, Edward (2011), *Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier*. New York: Penguin).

Guthrie, Andrew and Yingling Fan (2016). *Economic Development Impacts of Bus Rapid Transit*. Minneapolis: Center for Transportation Studies University of Minnesota.

Higgins, Christopher D., and Pavlos S. Kanaroglou. "40 Years of Modelling Rail Transit’s Land Value Uplift in North America: Diverse Methods, Differentiated Outcomes, Debatable Assumptions, and Future Directions." In *Transportation Research Board 94th Annual Meeting*, no. 15-4103. 2015.

Institute for Transportation & Development Policy. “Best Practices 2013.” https://www.itdp.org/library/standards-and-guides/the-bus-rapid-transit-standard/best-practices-2013/

Kim, Keuntae. “Using ArcGIS to Identify Ten Comparable Points for Counter-Factual Analysis.” Salt Lake City, UT: *Metropolitan Research Center*, University of Utah. (2015).

Levinson, Herbert, Samuel Zimmerman, Jennifer Clinger, Scott Rutherford, Rodney L. Smith, John Cracknell, and Richard Soberman. "Bus rapid transit, volume 1: Case studies in Bus Rapid Transit." Transportation Research Board, Washington, D.C. (2003).

Litman, Todd (2017). *Evaluating Public Transit Benefits and Costs*. Victoria, BC: Victoria Transport Institute.

Miami-Dade Government. “ Regulatory and Economic Resources: Comprehensive Development Master Plan (CDMP) Adopted Components.” Last Edited: Thu Aug 6, 2015**.** http://www.miamidade.gov/planning/cdmp-adopted.asp.

Nelson, Arthur C. *Foundations of Real Estate Development Financing: A Guide to Public-Private Partnerships*. Island Press, 2014.

Nelson, Arthur C. Nelson (2017). Transit-Oriented Developments Make a Difference in Job Location. *Fordham Urban Law Journal*, 44(4): 1079-1102.

Nelson, Arthur C., Bruce Appleyard, Shyam Kannan, Reid Ewing, Matt Miller, and Dejan Eskic. "Bus Rapid Transit and Economic Development: Case Study of the Eugene-Springfield BRT System." *Journal of Public Transportation* 16, no. 3 (2013): 3. 41–57.

Nelson, Arthur C. Nelson**,** Matt Miller**,** Dejan Eskic**,** Keuntae Kim**,** Reid Ewing**,** Jenny H. Liu**,** Matt Berggren**,** Zakari Mumuni (2015). *Do TODs Make a Difference?* Portland OR: National Institute for Transportation and Communities, Portland State University.

Nikitas, Alexandros, and MariAnne Karlsson. "A Worldwide State-of-the-Art Analysis for Bus Rapid Transit: Looking for the Success Formula." *Journal of Public Transportation* 18, no. 1 (2015): 3 1-33.

Rodrigue, Jean-Paul and Theo Notteboom. *Transportation and Economic Development*. Retrieved November 5, 2017from https://people.hofstra.edu/geotrans/eng/ch7en/conc7en/ch7c1en.html.

Weisbrod, Glen, Derek Cutler and Chandler Duncan (2014). *Economic Impact of Public Transportation Investment*. Washington, DC: American Public Transportation Association.