



Virginia Department of Housing and Community Development



A Review of the Virginia Enterprise Zone Program



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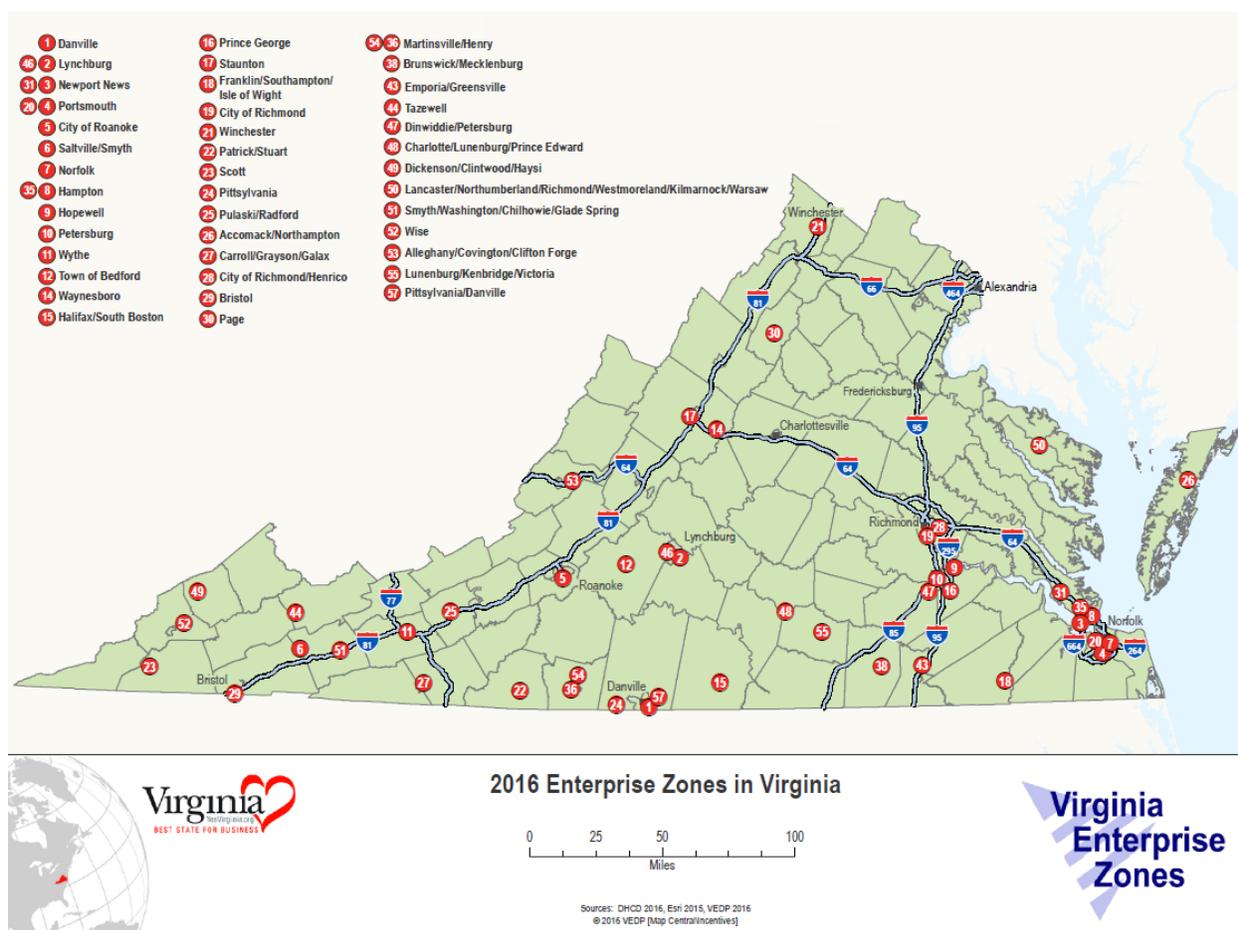
Table of Contents

Acknowledgments	iii
Executive Summary	1
1. Introduction and Overview	5
Introduction	5
An Overview of the Virginia Enterprise Zone Program	6
2. Research Questions and Methodology	9
Quantitative Method	10
Qualitative Method	14
3. Quantitative Analysis	16
Enterprise Zone grants	16
Virginia job and business growth between 2000 and 2015	19
Enterprise Zone job and business growth between 2000 and 2015	22
Industry structure within Enterprise Zones	26
Industry growth within Enterprise Zones	29
Industry growth within rural and urban Enterprise Zones	31
Business and employment growth of Enterprise Zone groups and localities	35
Ripple effect of Enterprise Zones on job and business growth	38
Performance evaluation: Enterprise Zone versus Control Zone	40
4. Qualitative Analysis	72
Survey results: Enterprise Zone businesses	72
Survey results: Enterprise Zone Stakeholders	78
Focus Groups	81
5. Analysis and Discussion	88
Enterprise Zones, Locality, and State Performance	88
Rural vs Urban EZ Performance	89
Enterprise Zones Vs Control Zone	90
Performance of State and Local Grants	90
6. Conclusion and Recommendations	95

Executive Summary

This report is prepared as a part of a service contract in which the Center for Urban and Regional Analysis (CURA) at Virginia Commonwealth University (VCU) had been assigned to conduct a scientific review of the Virginia Enterprise Zone program by the Virginia Department of Housing and Community Development (DHCD). The Enterprise Zone program utilizes spatially targeted grants in areas meeting certain economic conditions to incentivize job growth and property investments (see Figure 1 for Enterprise Zone distribution throughout Virginia). The CURA research team used appropriate quantitative and qualitative methods to conduct the analysis using Enterprise Zone-specific data provided by DHCD, employment information obtained from the U.S. Bureau of Labor Statistics, and data collected through the survey instruments and focus group protocols. Some of the important highlights of the study are summarized below.

Figure 1: 2016 Enterprise Zones (DHCD)



1. The Virginia General Assembly revised the Enterprise Zone program in 2005, creating a grant-based incentive program with two prominent types of grants: Job Creation Grants (JCG) and Real Property Improvement Grants (RPIG). Demand for JCG was rather low between 2005 and 2010, after which it gradually increased. Most of the interested businesses were already enjoying the

tax credit-based Enterprise Zone incentives that pre-dated JCG, which precluded them from applying for the revised incentive package. JCG disbursements have increased significantly, from \$285,000 in 2005 to \$3.1 million in 2014.

2. RPIG disbursements have constituted a majority of total grants each year, ranging between 98 percent of all grants in 2005 to 75 percent in 2014. Between 2005 and 2015 a total of \$118 million was disbursed as real property grants, which spurred private real property investments of at least \$1.25 billion.
3. Between 2000 and 2015, Virginia Enterprise Zones experienced an increase in the number of businesses of 15 percent, while their host counties saw 17 percent growth in businesses. Similarly, the Enterprise Zones saw an 11 percent increase in the total number of jobs, while host localities experienced 21 percent overall job growth. The Enterprise Zones have been successful in recruiting businesses at a rate comparable to localities; however, the growth in businesses did not directly translate into corresponding growth in jobs. Part of this phenomenon is attributed to the Enterprise Zones' success in attracting primarily manufacturing industries. Manufacturing sector businesses do not produce as many jobs today as they did two decades ago. Development in advanced manufacturing and automation technologies has allowed for steady gains in production with fewer and fewer employees.
4. Industry sectors in Enterprise Zones that experienced significant job gains during 2000-2015 period were:
 - a. Health Care and Social Assistance
 - b. Accommodation and Food Services
 - c. Professional, Scientific and Technical Services
 - d. Management of Companies and Enterprises
 - e. Arts, Entertainment, and Recreation

It should be noted that some businesses grouped under the industries listed above do not qualify for the state Job Creation Grant. For example, only private and for profit Health Care and Social Assistance providers qualify for the grant and so do hotels and accommodation providers, but food services and companies providing personal services do not qualify for the grant. However, these sectors can get the RPIG if they invest in qualifying real property improvement projects.

5. Even though Enterprise Zones reported increase in manufacturing businesses over the period, and the focus group discussions substantiated the fact that manufacturing businesses have been the primary recipients of the JCG, the quantitative analysis used in this study is not able to address those correlations. In today's context where conventional manufacturing jobs are shrinking due to advancements in automation technologies, new types of jobs that focus on development of computer applications, information processing, and data analytics are taking roots. However, these new companies are not big enough (at least in their early stages) to substantially benefit from the existing job creation grant. Besides, they face a dearth of skilled workforce that severely limits their choice of localities. Other sectors that are not eligible for the JCG but that have shown potential for growth are arts and entertainment, accommodation and food, and professional services. Extending JCG benefits to these industries will help to enhance the economic environment of the zone and make the zone attractive for other businesses.

6. Most of the success of the Enterprise Zone program comes from the RPIG. Requests for RPIG have been increasing since 2010, and so has the amount disbursed. The RPIG grant disbursement trend strongly correlates with business and jobs growth in the following private industry sectors:
 - a. Construction
 - b. Professional, scientific, and technical services
 - c. Management of companies and enterprises
 - d. Arts, entertainment, and recreation
 - e. Accommodation and food services
 - f. Information
 - g. Transportation and warehousing
 - h. Health care and social assistance

Even though RPIG does not play a direct role in recruiting businesses and creating jobs in these sectors, newly constructed or renovated rental spaces attract various tenant businesses into the Enterprise Zones.

7. RPIG has been found to significantly improve local property values. The ripple effect of the impact can be seen up to a quarter mile outside the zone boundaries.
8. The two state-administered grant programs have the following weaknesses:
 - a. JCG requirements favor large businesses, primarily in the manufacturing sector. However, not all Enterprise Zones have the capacity to attract such industries due to the lack of skilled workforce and due to competition with other economically stronger counterparts in the state.
 - b. Small or medium sized businesses that are easier to recruit do not see much benefit from the existing job creation incentives. The incentive amount is not large enough to encourage these businesses to engage in the application and attestation process, or to hire a third party to do the job. It should be noted that selected small-business applicants that have fewer than 100 employees and are adding fewer than 25 employees go through much simpler attestation requirements. Despite that, the transaction cost is higher than the benefits to be gained by participating in the program. In its present state, the JCG grant per employee per year is equivalent to about a week's wage of that employee.
 - c. The scope of JCG is limited. Whereas most Enterprise Zones report sustained business and job growth in professional services, accommodation and food, arts and entertainment, and other services sectors, certain businesses under these categories that provide personal services do not qualify for the job creation grant.
 - d. RPIG, on the other hand, faces uncertainty caused by proration. Since RPIG gets paid only after the JCG is disbursed in full, there is no way to know how much money will be available for the grant each year.

9. We recommend the following policy changes to make the program more responsive in coming years:
 - a. Increasing JCG grant per qualifying position: Double the existing grant payment per position and lower the cap from a maximum of 350 jobs to a maximum of 200 jobs. This will add just about 14 percent burden in the program budget.
 - b. Making JCG attractive to small and medium sized businesses: Using variable rates such as \$1,000 for the first 100 jobs, \$750 for 100-200 jobs, and \$500 for 200-350 jobs, etc. can help small or medium sized businesses to overcome the transaction cost and start accessing the benefits.
 - c. Simplifying the administrative process: Make the application and attestation processes easier, preferably using a well-designed website that makes the process simple enough to navigate for an average employee.
 - d. Focusing on workforce development: Provide grants or credits for workforce training through the Enterprise Zone program itself or in coordination with other existing workforce development programs.
 - e. Making JCG accessible to all sectors: The JCG grants currently available to certain industry sectors can be extended to other sectors so that they can qualify for the grant in its current form or a modified form to match the requirements of specific industry types. The idea is to provide one or the other types of grant to all industries so that every industry has something to look forward to when they relocate to an Enterprise Zone.
 - f. Improve the RPIG by addressing the issue of proration: To provide investors with greater certainty regarding their grant payments, one of three possible modifications to the RPIG program may be implemented:
 - i. Fully fund RPIG program so that applicants receive full payment upfront or over time.
 - ii. Divide the current 20 percent reimbursement of qualifying expenses into two 10 percent pieces. Pay 10 percent of the qualifying costs upfront, and pay the remainder—up to 10 percent—after one year as a prorated amount based on the percentage change in assessed property value relative to the average property value change in the rest of the locality.
 - iii. Maintain the existing proration method, but convert the unpaid remainder after proration into a tax credit that may be redeemed within a specified period (5 or 10 years) in the future.

1. Introduction and Overview

Introduction

Enterprise Zones made their debut on the American public policy stage in the late 1970s as a British import, inspired by Hong Kong's robust economy where, it was said, the relative absence of government regulations and taxes had stimulated explosive economic growth. Although Enterprise Zones never became US national policy,¹ most states eventually enacted Enterprise Zone programs.

The state-level Enterprise Zone retains the fundamental idea of the British model—cutting business costs in designated zones to stimulate business investment and growth beyond that which would otherwise take place. But whereas the British version has focused solely on incentivizing business growth, Enterprise Zones in the United States are also meant to function as place-based economic revitalization tools in distressed communities. This broadens the scope and mission of the Enterprise Zone, and it should also broaden the methods by which Enterprise Zone effectiveness is evaluated.

Because so many states have adopted Enterprise Zone programs, evaluations began as early as the 1980s, and they have appeared fairly frequently since then (see, for example, Green, 1991). Both academic research and applied studies of Enterprise Zone performance present a mixed picture. Most studies focus on employment effects; some evaluate effects on property values as well.

Prior evaluations of Enterprise Zones present an inconclusive picture. Elvery (2008) found that Enterprise Zones in Florida and California had no effect on employment growth. Bondino and Engberg (2000) examined Enterprise Zones in California, Kentucky, New York, Pennsylvania and Virginia, and concluded that none of the programs produced noticeable impacts on employment growth in neighborhoods surrounding the zones. In a related study, Greenbaum and Engberg (2000) found that Enterprise Zone programs in these same states had no positive impacts on housing markets, income, or employment. Neumark and Kolko (2010) also found that the California Enterprise Zone program had no effect on employment creation.

However, the Florida Office of Economic and Demographic Research determined that Florida's Enterprise Zones had a direct and positive impact on property values in the zones and in surrounding areas. And Kolko and Neumark (2010) found that some Enterprise Zones in California did, indeed, exhibit favorable employment effects, specifically in non-manufacturing industries and in zones where managers conducted aggressive marketing and outreach activities. Similarly, Boarnet (2001) and the Delta Development Group (2011) found that program implementation and management are important determinants of Enterprise Zone success.

Taken together, these studies show that American Enterprise Zones are complex and that financial incentives alone do not necessarily bring about business investment, employment growth, or property-value gains. Therefore, one must approach Enterprise Zone evaluation with important points in mind:

¹ In 1994 the federal government enacted the Empowerment Zones, Enterprise Communities and Renewal Communities program. Although similar to the Enterprise Zone programs of most states, it offers an array of social services not typically included in Enterprise Zones and it also requires substantial community participation and multi-stakeholder partnerships in the planning of the zones.

- First, Enterprise Zone incentives are tools. Their potential value lies in the extent to which they are used to implement well-planned, place-based economic revitalization strategies. Thus, to evaluate the efficacy of the tools, one must also understand the strategies they are expected to implement. Then one can ask questions such as: How good is the fit between the needs of businesses, the community's economic revitalization goals and strategies, and the Enterprise Zone tools? Do the Enterprise Zone incentives address the gaps or deficiencies that businesses experience so as to render those locations more productive for businesses? Do the state Enterprise Zone incentives complement, or create synergies with, other (state and local) revitalization programs and strategies in the area?
- Second, as noted in some studies, the success of an Enterprise Zone may have much to do with how well the zone, and the locality in general, are administered. In addition to the basics—access to suppliers, markets, a high-quality labor force, infrastructure, and utilities—most businesses want reliable government services (e.g. public safety), a community of compatible businesses or other compatible uses, assistance with troubleshooting government or community-related challenges, and reasonable and predictable taxes and other costs. Enterprise Zones without these features may find it difficult to compensate for them with incentives alone. Moreover, Enterprise Zones that burden businesses with red tape to receive the incentive payments, such as documented in New Jersey by the Delta Development Group (2011), may fail to deliver the hoped-for business and employment gains.

An Overview of the Virginia Enterprise Zone Program

Virginia was among the pioneers in adopting the Enterprise Zone program as a targeted area development tool in 1982. In 2005, the Virginia General Assembly passed the Enterprise Zone Grant Act, which made important modifications to the program. The 2005 EZ Act replaced various tax-credit based incentive packages, created in 1995, with two grant incentives – the Real Property Investment Grant and the Job Creation Grant.

The statute also limited the number of Virginia Enterprise Zones to 30. At the time of preparing this report, there are 46 Enterprise Zones in Virginia. No new zones will be designated until a sufficient number of current Enterprise Zones expire following their 20-year designation periods to reduce the total number below 30.

The objective of the program is to attract private investment in order to stimulate the economic growth and revitalization of targeted distressed areas. However, the distress factors that determine zone eligibility are measured for the entire locality. Once designated, localities are free to put zones anywhere within their boundaries that they anticipate the most benefit from the grants. This does not necessarily imply that the program will be implemented in the most distressed areas within localities. The distress factors considered for designating a zone are:

- Average unemployment rate
- Average median adjusted gross income
- Average percentage of public school students receiving free or reduced-price lunches

Each locality can have up to three zone designations, and each designated zone can have up to three non-contiguous areas. There are also limits on the total size of the zones depending on where they are located. Enterprise Zones in towns and cities can range from one-quarter (0.25) square mile to one square mile. These zones can be larger than one square mile provided that the zone area is less than seven percent of the total land area of the locality or the zone contains less than seven percent of the total population of the locality. For unincorporated areas of counties and consolidated cities, the size of a zone ranges from a minimum of one-half (0.5) square mile to a maximum of six square miles.

In addition, all Enterprise Zones designated after 2005 are designated for an initial 10-year period. Upon the recommendation of the Director of the Department of Housing & Community Development, the Governor may renew zones for up to two five-year periods. Zone renewal is a noncompetitive process; however, recommendations for five-year renewals are based on the continued need for such a zone, the zone's effectiveness in creating jobs and capital investment, and the locality's performance of Enterprise Zone responsibilities. Calendar Year 2015 represents the first year in which renewals were approved under the 2005 Enterprise Zone Act. Zone renewals were approved for the Town of Bedford, Wythe County, and the cities of Hampton, Hopewell, and Petersburg.

State Incentives

The program administers two performance-based grants: the Job Creation Grant and the Real Property Investment Grant.

Job Creation Grant

Businesses are eligible for cash grants for permanent net new jobs created over a four-job threshold. Qualifying jobs must provide health benefits and pay at least 1.75 times the federal minimum wage rate. As of 2010, firms in High Unemployment Areas (HUAs) may qualify for the JCG at a reduced wage threshold of 1.5 times the federal minimum wage. HUAs are localities with unemployment rates that are equal to or greater than 150 percent of the state average unemployment rate. Positions created over the four-job threshold paying at least 1.75 times the federal minimum wage (1.5 in HUAs) are eligible for a \$500 grant per position per year for up to five years. Positions created over the four-job threshold that pay at least twice the federal minimum wage rate are eligible for a grant of \$800 per position per year for up to five years. Jobs without health care benefits are not eligible for the grant. Positions in retail, personal service, or food and beverage service, and units of local, state, or federal government are not grant-eligible.

Businesses must qualify for the JCG annually and can receive grants for up to 350 positions per year. Businesses may qualify for subsequent five-year grant periods with additional job creation. The JCG receives funding priority from the state, and all eligible JCG applications are fully funded before any consideration is given to eligible Real Property Investment Grant applications.

Real Property Improvement Grant

Zone investors (businesses and individuals) making qualified real property investments within the boundaries of Enterprise Zones are eligible for a cash grant. To qualify, the zone investor must invest in rehabilitation or expansion projects that exceed \$100,000 in qualified real property improvements or new construction projects that exceed \$500,000 in qualified real property improvements. The grant is equal to 20 percent of the eligible real property investment over the applicable threshold up to a maximum of \$100,000 for investments of less than \$5 million or \$200,000 for investments of \$5 million or more. Grant awards are capped per building or facility over a five consecutive year period. Real Property Investment

Grant applications are subject to proration when eligible application requests exceed the total remaining Enterprise Zone budget after Job Creation Grants are awarded.

Local Incentives

Local participation is an important component of the Enterprise Zone program. Localities are required to complement state incentives with local incentive packages that are designed to improve the climate for private business development, overcome barriers to business operations, and be consistent with the local revitalization and development goals. Localities can provide tax incentives within the Enterprise Zones such as rebates or refunds of BPOL and Utility taxes. They can also waive permit fees and user fees, make public land available at reduced or no rent for a limited time, and provide machinery & tools grants. Localities may also provide non-monetary benefits such as special zoning, fast-track permitting, granting exemptions from local ordinances, or investing in infrastructure improvement and crime reduction. Businesses that do not qualify for state incentives (such as retail, personal services, and food and beverages sectors) can benefit from local incentives.

2. Research Questions and Methodology

The Virginia Enterprise Zone program has sought to stimulate job creation, private capital investment, and revitalization in economically distressed communities since 1982. The program has grown and evolved through legislative changes, the most recent of which occurred in 2005. Since 2005, 160 businesses have received a combined \$19 million in Job Creation Grants, and about 1,650 businesses have received a total of \$118 million in Real Property Improvement Grants.

This study seeks to answer the question of how successful Virginia Enterprise Zones have been in utilizing state and local incentives to achieve their intended outcomes. Economic growth is the primary metric by which the performance of the Enterprise Zones can be evaluated. James (1991)² suggests that the Enterprise Zone performance be evaluated using a quantitative estimation of how the economy of the zone is different as a result of the program using one or more of the following methods:

- Before and After Studies
 - This method is most useful when the zones receive no treatment (grants) before the study period. However, incentive data for the updated Enterprise Zone program only dates as far back as 2005, and only a handful of EZs were designated around that time. Other EZs had been receiving incentives before the program change took effect. Hence, a before and after analysis will not represent the actual effect of the updated incentive program.
- Attitudinal Studies of Zone Participants
 - This method involves a survey of zone participants to collect information about how effective the Enterprise Zone incentives have been in their decision to relocate to use the benefits. A weakness of this method is that the participants may be biased to exaggerate their responses in favor of the EZ program since they are the direct recipients of the incentives.
- Study Using Comparison Areas
 - This is a quasi-experimental method that uses secondary data to compare the economic trends in the Enterprise Zones with that of similar non-EZ areas nearby. The pairs of geographic areas that are being compared need to be as similar as possible in terms of other socio-economic characteristics.

This study uses Comparison Areas and Attitudinal Studies of Zone Participants to evaluate the economic performance of Virginia Enterprise Zones. It uses growth in the number of businesses, growth in the number of jobs, and relative increase in the property value as metrics for local economic growth.

This multi-method study is designed to answer the following questions:

² James, Franklin J. (1991). The Evaluation of Enterprise Zone Programs. In R.E.Green (Ed.), *Enterprise Zones: New Directions in Economic Development* (pp.225-240). Newbury Park, CA: Sage.

1. To what extent has the Enterprise Zone program increased businesses, employment, and real estate values inside the zones?
2. What are the features of the Virginia Enterprise Zone program that work well in various contexts?
3. Has the Enterprise Zone program been instrumental in helping to achieve the community goals and strategies?
4. What are the wider impacts of the Enterprise Zone program strategies on their communities?
5. How can the Commonwealth improve the program outcomes?

Quantitative Method

Geography Delineation

The primary unit of analysis in this report is the Enterprise Zones. Department of Housing and Community Development (DHCD) has provided map polygons that represent each of the Virginia Enterprise Zones, along with their designation and expiry dates. A map of 2016 Enterprise Zones is available on page 11 (Figure 2). Although there are 46 active Enterprise Zones in Virginia at the time of the study, the analysis considers incentive trends from 2005 to 2015. All zones active during this timeframe have been included in the analysis, totaling 100 old and new Enterprise Zones (including sister zones). Some of the Enterprise Zones discussed in this document are not shown in Figure 2, as their designations expired prior to 2016.

A number of localities have sister Enterprise Zones designated under the same numeric code but differentiated by an alphabetical identifier such as 57A, 57B, 57C, etc. Even though they follow the same zone designation, they have been treated as separate Enterprise Zones for the purpose of this study.

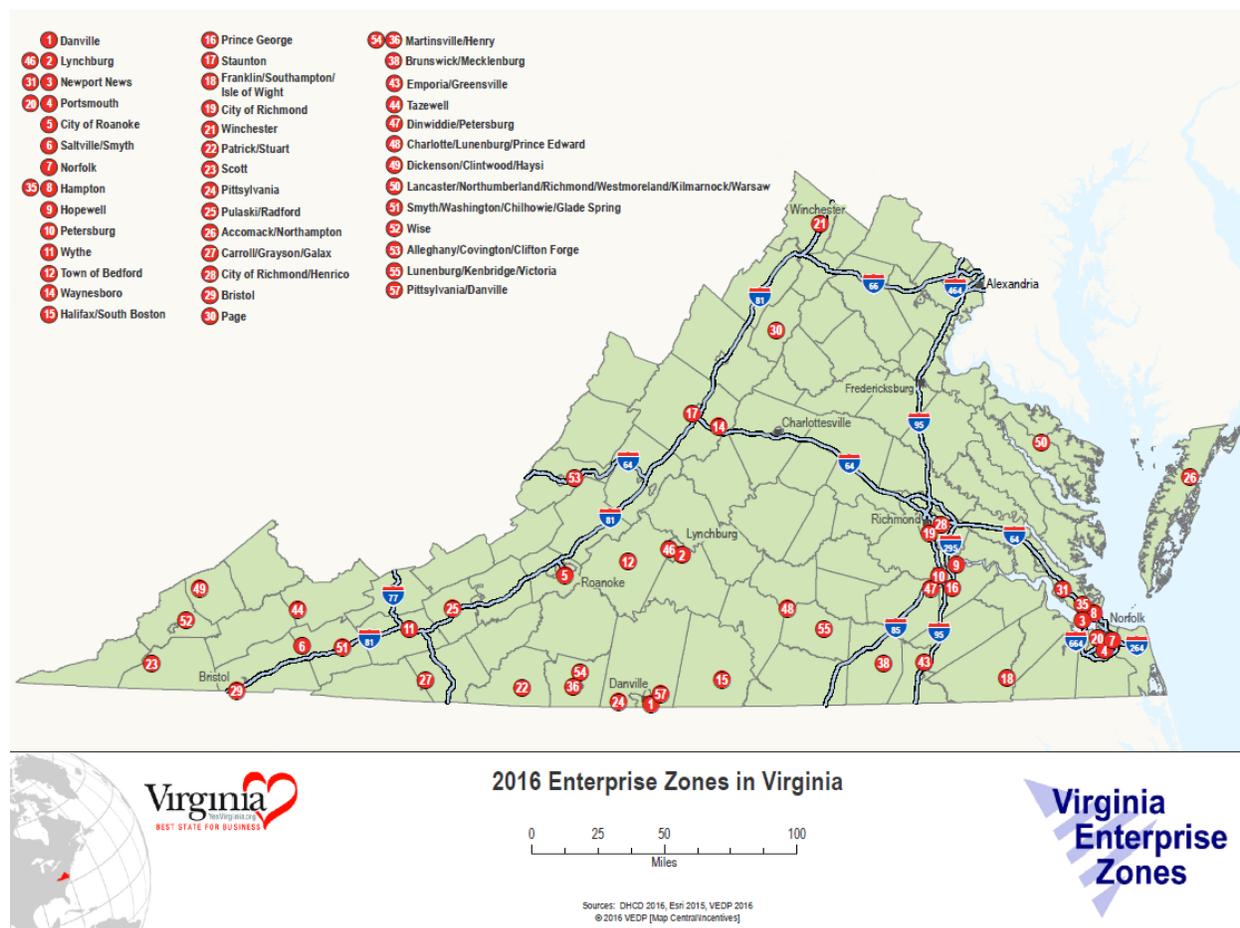
Some of the zones that expired during the study period overlap with current zone boundaries. Some zones are so near to each other that they would make it difficult to identify unique control zones. In order to maintain consistency in the way that variables are measured, geographic boundaries for overlapping Enterprise Zones were merged using the following rules:

1. Merge geographic boundaries for fully or partially overlapping old and new Enterprise Zones.
2. Merge boundaries for Enterprise Zones less than a mile apart from each other if they are within the boundaries of the same local jurisdiction.³
3. As an exception to the rule #2, Enterprise Zones that are located in two different jurisdictions are considered unique and studied separately, even if they are less than a mile apart.

Application of these standards result in a total of 68 polygons that are a composite of all Enterprise Zones active from 2005 to 2015. To make reverse identification possible, zone identifiers for the merged zones were retained. For example, the geography of zone 25A and zone 41 of Pulaski County are merged together into zone 25A_41. This operation is intended to keep the aggregate statistical analysis simple. For the analysis of individual zones, we have used their original geographies and zone identifiers.

³ It is logically feasible to merge Enterprise Zones within the same locality as they qualify for same (or similar) local incentives, and in most cases, are also governed by the same zone administrator.

Figure 2: 2016 Virginia Enterprise Zones (DHCD)



Source: Virginia Department of Housing and Community Development

Urban and Rural Zones

Enterprise Zones have been classified as urban or rural based on the classification criteria used by the Census Bureau. For details please refer to <https://www.census.gov/geo/reference/ua/urban-rural-2010.html>.

Trend Analysis

This study utilizes state-of-the-art statistical methods to measure zone performance in two distinct categories – business and job growth, and change in property value. The information needed to measure business and job growth are obtained from the Quarterly Census of Employment and Wages (QCEW) published by the Bureau of Labor Statistics. We have used the data at individual establishment level for the years 2000, 2002, 2006, 2011, and 2015. We present growth trends as an aggregate of the number of business establishments and the number of jobs, and also analyze them by individual industry sectors using 2-digit NAICS codes.

We compare business and job growth trends between three geographic scales – the Enterprise Zones, the localities (cities or counties) containing the Enterprise Zones, and Virginia overall. Geospatial analysis software such as ArcGIS is used to overlay map polygons that represent the Enterprise Zones, the localities, and the Commonwealth of Virginia. Individual businesses from the QCEW data for the selected

years are geolocated on the map using the physical addresses of the businesses or the latitude and longitude information, whichever works best⁴.

We selected all business establishments within each of our selected geographic units⁵ for five different years from the year 2000 through 2015. We compared raw numbers as well as percentage changes in the number of establishments and number of jobs between each time period, as well as overall between 2000 and 2015. Further, we dig deeper to analyze the trend at 2-digit NAICS industry sectors. We compare changes in business establishments and employment numbers in 21 industry sectors between the Enterprise Zones, the localities, and Virginia. This gives us an insight over which industry sectors inside the Enterprise Zones are attracting maximum investment and which are performing poorly.

Similarly, we have used parcel level information on assessed value⁶ obtained from the respective localities' assessor's offices to study the change in local property value over time. However, obtaining parcel-level data for the entire Commonwealth would be cost-and time-prohibitive. Hence, we focused on four major metropolitan areas – Richmond, Hampton, Roanoke, and Norfolk – to conduct the trend analysis of the property value.

Control Group Analysis (Comparison Areas Analysis)

The control group analysis is a quasi-experimental method that has been used in this study to compare business and job growth trends between the Enterprise Zones and the areas not in the Enterprise Zones. The delineation of the control zone boundaries has been done using geospatial analysis software such as ArcGIS. The control zones are formed by aggregating block groups based on their socio-economic characteristics. The control zones provide good comparison when they are sufficiently closer to the Enterprise Zone. On the other hand, the areas in the immediate neighborhood of the Enterprise Zones are directly influenced by their economic activities and are highly likely to mirror the growth pattern similar to the Enterprise Zones. During our analysis, we measured the influence to Enterprise Zones in the surrounding areas in quarter-mile intervals and found that the effect is more pronounced within the first quarter mile outside of the Enterprise Zones. The effect sharply diminishes beyond the quarter-mile buffer. The effects completely disappear at the distance of about one mile from the existing Enterprise Zone boundaries.

⁴ The multi-year QCEW data at individual business establishment level have various degree of accuracy when it comes to geo-location. We found that the data for the years 2000 and 2002 had missing or less accurate street address for businesses compared to the data years 2006, 2011, and 2015. We used latitude and longitude information to geocode those businesses. Latitude – longitude data have been known to plot differently while using different projection systems. We have tried to overcome this issue by consistently using *NAD 1983 Virginia Lambert South Plane* projection system across all of our data. Despite our best efforts we got about 83% and 85% of businesses geo-located for the data year 2000 and 2002 respectively. Similarly, for the year 2006 and 2011, we were able to geo-locate 95% of the businesses, and the accuracy rate for the year 2015 was 99%. In order to make our comparisons consistent, we have used proportional ratios to correct for the variation in geo-location accuracy.

⁵ Whereas, by definition, businesses in the Enterprise Zones are also in the containing locality (City or County), and in the State as well. However, in order to accurately compare the trends between the Enterprise Zones with the localities and the State, we excluded all businesses that are inside the Enterprise Zones when we aggregated them for the localities and the State. This prevents double counting of the establishments that are inside the Enterprise Zone boundaries.

⁶ Assessed value provide a closest approximation of the real market value or transaction value of the properties.

In an ideal world, we would have created a one-mile buffer around the Enterprise Zones and delineated the control zones using block groups outside of that buffer. However, we came across areas where economic activities completely disappear at a distance of one mile, and the characteristics of the areas change from commercial to residential. Delineating control zones outside the one-mile boundary would have defeated the purpose of having a control zone altogether. Hence, we delineated our control zones in such a way that they are at least a quarter-mile away from the existing Enterprise Zone boundaries. In order to capture a sufficient number of block groups to be able to run the grouping analysis (explained later), we used block groups within a two-mile radius (outside the quarter-mile buffer) to form our control zone.

We aggregated socio-demographic information by block groups both within the Enterprise Zones and the control zone and used the information to form block-group clusters. We used variables such as *State Incentives*, *Local Incentives*, *Total Population*, *Average Household Size*, *Average Commute Time*, *Median Household Income*, *Percentage of Population with High School Diploma*, *Percentage of Black or African American Population*, and *Unemployment Percentage* to form Enterprise Zone clusters. Similarly, we used all of the variables except state and local incentives while creating clusters of control zone block groups. Based on the information we fed into the statistical model, a two-group solution was considered to be the most appropriate⁷ in both the cases. We compared the demographic characteristics of each cluster to identify pairs of Enterprise Zone groups and control zone groups. We then analyzed the pairs using difference-in-difference method.

Control groups could not be created for conducting real property analysis using the method explained above because we did not have sufficient parcel data to cover the entire control group areas. Hence, in the case of comparing real property value, we consider property parcels inside the Enterprise Zones as the treatment group and the ones outside as the control group.

Analysis of the Ripple Effects

In addition to influencing the growth trends of businesses, jobs, and property values inside the designated geographies, Enterprise Zones are also expected to impact the economy of the surrounding areas. This study tracks the economic trends outside the Enterprise Zones in quarter-mile increments. This information also helps to exclude the impacted surrounding areas from the control zone.

Difference-in-difference (DD) Analysis

Difference-in-difference, introduced by Ashenfelter and Card in 1985⁸, is a widely-used method in econometrics to compare between pairs of the treatment group and the control group before and after the treatment. For the purpose of this study, the *treatment* is the incentive packages provided by the State to the treatment *group* which is the Enterprise Zones. We run the analysis at two levels: one at the aggregate level where information from all Enterprise Zones are summed together and compared with the control zones, and another at the level of individual Enterprise Zones where the business and job

⁷ The formation of Enterprise Zone clusters and control zone clusters was carried out using the *Grouping Analysis* tool in ArcGIS that is used for cluster mapping. The tool can be used to compare a variety of cluster solutions and an informed decision be made based on the probability statistics. In our case, a two-group cluster solution had the highest *Pseudo F-Statistic*.

⁸ Ashenfelter and Card. 1985. "Using the Longitudinal Structure of Earnings to Estimate the Effect of Training Programs." *The Review of Economics and Statistic*. Vol. 67, No. 4, pp. 648-660

numbers from before the zone designation date are compared with the numbers after the designation for each pair of Enterprise Zone and control zone.

In the simplest form, this method involves measuring outcomes for two different time periods separately for the treatment and the control group. The outcome for each group at t2 is subtracted from its outcome at t1 resulting into a longitudinal difference in outcome D12 within the groups. The difference is then compared between groups by subtracting D12_treatment from D12_control, represented by DD12. In our case since we have five data points from the year 2000 to 2015, there are four different values for DD12, each measured in the year 2002, 2006, 2011, and 2015. Those four points plotted on a graph will result in a trend line, the positive slope of which signifies that there is substantial positive growth in the treatment group compared to the control group. A slope of zero or a horizontal trend line suggests that the Enterprise Zone and Control Zone have experienced the same growth trend over time. A negative slope of the trend line suggests that the control zones have been experiencing higher business and job growth compared to the Enterprise Zones.

Multi-Variate General Linear Modeling

General Linear Modeling is a technique to identify the causal relationships between the Response Variable (also known as the Dependent Variable) and the Predictor Variables (also called Independent Variables) while removing concurrent effects of other possible variables (also known as Control Variables). The response variables, in this case, are the change in the number of businesses and the number of jobs. The predictor variables that have been hypothesized to impact the response variables are the state incentives and the local incentives disbursed through the Enterprise Zone program. However, other factors such as proximity to markets and labor force, easy access to highways, the size of the population, location in an urban or a rural area, and income and educational characteristics of the population might influence business and job growth in the Enterprise Zones. These factors are included in the model as control variables. Data have been standardized so that the resulting coefficients represent the percentage change in the response variables caused by a unit percentage point change in the individual predictor variable.

Qualitative Method

Enterprise Zone grants are one of the many incentive tools available to businesses in Virginia. Depending upon their location within the Commonwealth, businesses can qualify for benefits of other economic development programs such as Historic Rehabilitation Tax Credit program, Tobacco Region Opportunity Fund, Commonwealth's Opportunity Fund, Virginia Investment Partnership, Virginia Economic Development Incentive Grant, and Virginia Jobs Investment Program to count a few. To isolate the economic effects of the Enterprise Zone program from the rest will require tracking of combined incentive data of all the other programs, which is outside the scope of this study. A qualitative method is an easier way to measure the impact of Enterprise Zones alone on local economic development. However, since the respondents are somehow linked to the program—either as recipients of the grants or administrators of the program—there is always a possibility of selection bias.

Survey

Surveys of zone participants (business owners) and stakeholders were conducted to collect direct information about the general perception of zone performance. Respondents were asked to provide their satisfaction rating on various aspects of the Enterprise Zone program. The survey instruments asked zone participants about their satisfaction with the incentive programs, their administration, other locality

characteristics, and their expected behavior after the zone designation expires. Similarly, zone stakeholders are asked about their satisfaction about program implementation, strengths and weaknesses, and about any policy recommendation they would like to suggest. The surveys were electronically implemented using RedCap survey application. The sets of questions used in the survey instruments are presented in Appendices D and E.

Focus Groups

Eight Focus Group meetings were conducted to collect in-depth information about the Enterprise Zone program. Four localities—two urban and two rural—were selected for the meetings. Richmond and Hampton cities represented the urban Enterprise Zones, while Halifax and Wythe counties represented rural zones. Separate meetings with the EZ participants and stakeholders were conducted in each location. The protocol used during the meetings are presented in Appendix-B.

3. Quantitative Analysis

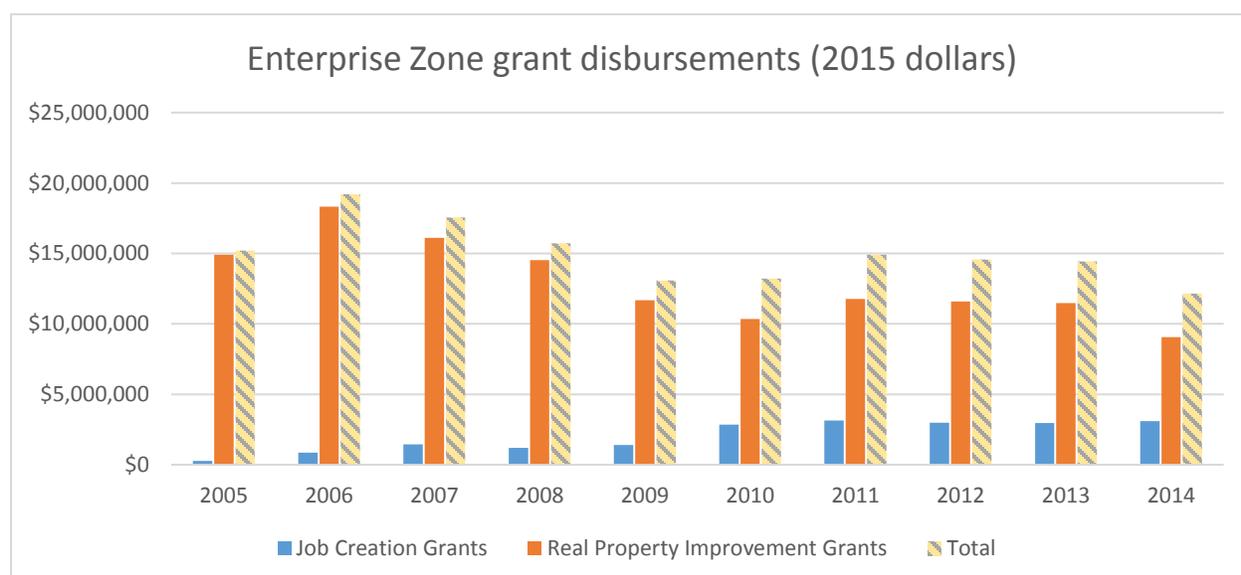
Enterprise Zone grants

Virginia offers two grant programs through the Enterprise Zone program: Job Creation Grants (JCG) and Real Property Improvement Grants (RPIG). JCG applications receive funding priority, and RPIG applications are funded based on any funds remaining after JCG funds are disbursed.

Total Enterprise Zone grant disbursements have ranged from a high of \$19.2 million in 2006⁹ to a low of \$12.2 million in 2014¹⁰. Total grant funding declined through the economically turbulent years between 2006 and 2009 before climbing slightly through 2013 and falling again in 2014 (see Figure 3).

RPIG disbursements have constituted a majority of total grant funding each year, ranging between 98 percent of funding in 2005 to 75 percent in 2014. RPIG disbursements have followed the trend of total funding, due in large part to the proportion of total disbursements RPIG represents. However, JCG disbursements have increased significantly year over year, from \$285,000 in 2005 to \$3.1 million in 2014.

Figure 3: Enterprise Zone grant disbursements by grant type, 2005 to 2014



Source: Virginia Department of Housing and Community Development

Some of the participants were already benefitting from the older tax credit-based incentive program through 2010. These firms could not have qualified to receive grants under the revised Enterprise Zone program, which may play a role in lower disbursement rates of the JCG program in the years between 2005 and 2010. Lower disbursement rate during this period is also resulted due to proration. Figure 4 shows the trend of total funds requested and total disbursed between 2005 and 2010. Proration was removed from JCG in the year 2010.

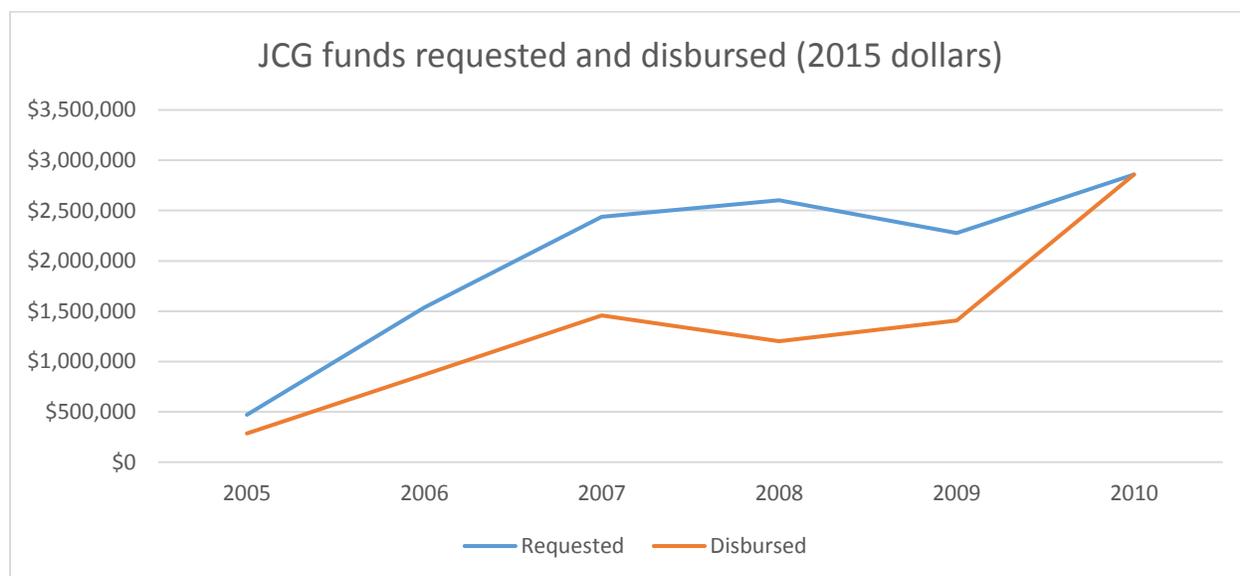
Real Property Improvement Grants may apply to two different types of improvement: building improvements and facility improvements. Building improvements cover construction or renovation work

⁹ All dollar amounts have been inflated to 2015 dollars.

¹⁰ The dataset provided to CURA covers 2005 through 2014.

completed on a single structure. Facility improvements cover construction, rehabilitation, or expansion work completed on a complex of buildings co-located at one location.

Figure 4: Job Creation Grant funds requested versus disbursed, 2005-2014

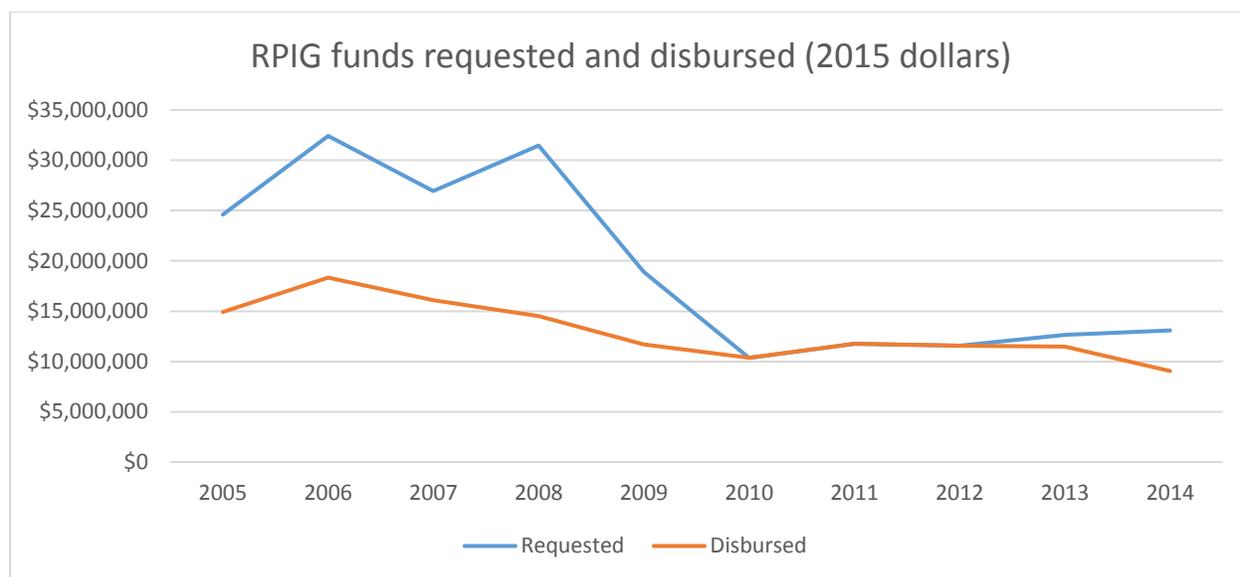


Source: Virginia Department of Housing and Community Development

RPIG disbursements are subject to proration based on the proportion of Enterprise Zone funds available after Job Creation Grants—the funding priority—have been applied for and approved. As such, trends in the amount of RPIG funds disbursed likely reflect JCG utilization, particularly after 2010 (see Figure 5).

Building improvements have represented the bulk of RPIG funds disbursed each year from 2005 to 2014 (see Figure 6). Building improvement grant disbursements reached a high of \$16.3 million in 2006—about 90 percent of total RPIG disbursements. Building improvement disbursements reached a low of \$7.4 million in 2014, also falling as a proportion of total RPIG disbursements to 82 percent.

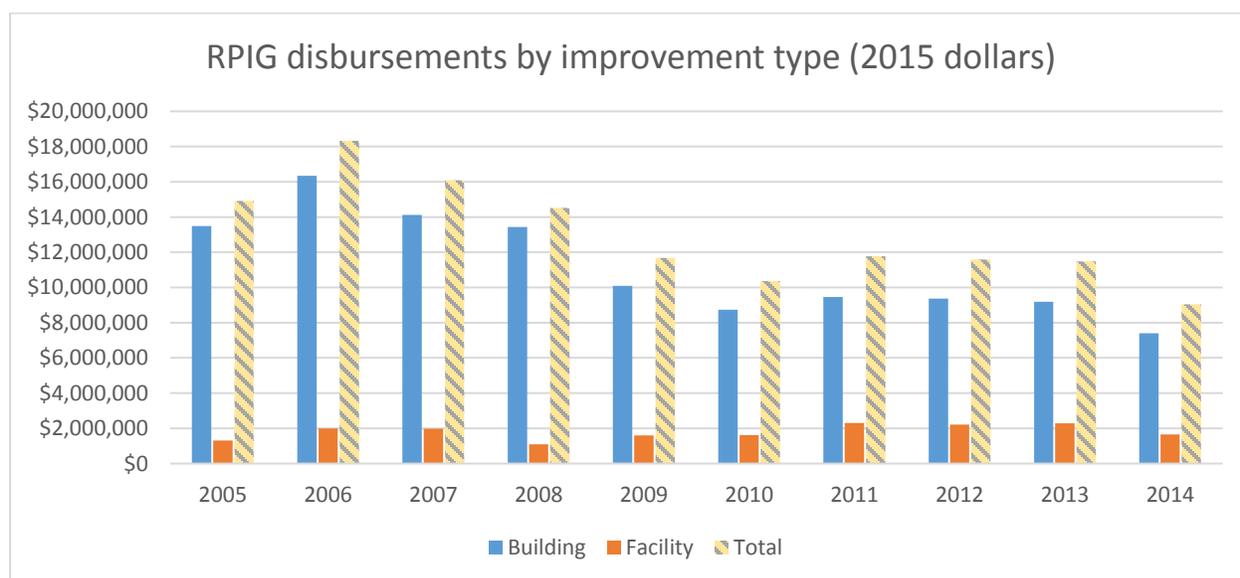
Figure 5: Real Property Improvement Grant funds requested versus disbursed, 2005-2014



Source: Virginia Department of Housing and Community Development

Facility improvements have consistently been a relatively small part of the RPIG program, ranging between 7 percent and 20 percent of total disbursements. Although facility improvement disbursements declined following a 2006 peak of \$2.0 million, the decline was short-lived. Disbursements rose to \$2.3 million in 2011 and fell to \$1.6 million in 2014.

Figure 6: Real Property Improvement Grant disbursements by improvement type, 2005 to 2014



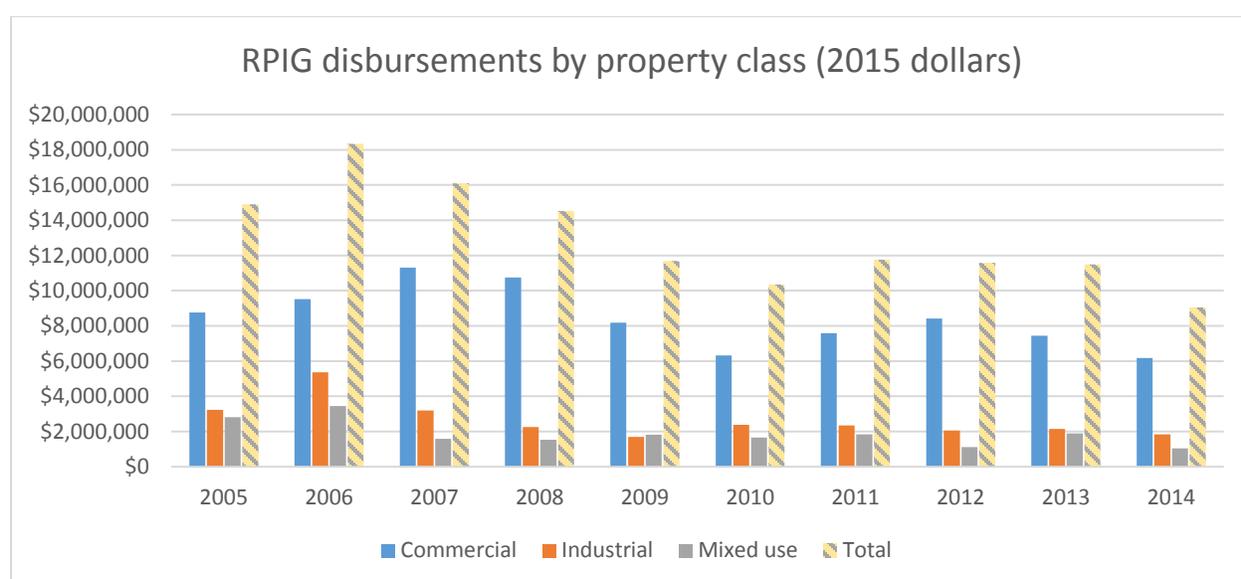
Source: Virginia Department of Housing and Community Development

RPIG disbursements also cover different classes of property: commercial, industrial, and mixed-use. Commercial property is the most frequently improved class to receive state grants. The class has grown as a proportion of all RPIG spending from a low of 52 percent in 2006 to a high of 73 percent in 2012 (see

Figure 7). However, actual disbursements have declined from a high of \$11.3 million in 2007 to a low of \$6.2 million in 2014.

Industrial and mixed-use property improvements have declined as a proportion of RPIG disbursements and in dollars spent (see Figure 7). Industrial property spending reached a peak of \$5.4 million—29 percent of disbursements—in 2006. Industrial disbursements fell to \$1.7 million in 2009 and hovered between \$2.3 million and \$1.8 million from 2010 to 2014. Mixed use disbursements peaked as a proportion of all disbursements in 2005 at 19 percent and in dollars disbursed in 2006 with \$3.4 million dollars. Mixed use improvements constituted the second largest proportion of disbursements in 2009 but has otherwise been the smallest property class in terms of RPIG dollars. RPIG disbursements for mixed-use properties reached a low of \$1 million in 2014.

Figure 7: Real Property Improvement Grant disbursements by property class, 2005 to 2014



Source: Virginia Department of Housing and Community Development

Virginia job and business growth between 2000 and 2015

Job and business growth in the Commonwealth may be calculated through analysis of Quarterly Census of Employment and Wages (QCEW) data. This data has been aggregated at different geographic levels to provide an estimate of the total jobs and businesses in an area (state, county, or Enterprise Zone) as well as the number of businesses and jobs within each industry (as defined by the North American Industry Classification System, or NAICS). For additional discussion of statewide job and business trends and a snapshot of each industry, please see Appendix B.

A sample of five years of QCEW indicates that the total number of jobs in Virginia grew by 30 percent between 2000 and 2015 (see Figure 8, p. 22). The Public Administration sector (92) demonstrated the strongest growth, adding 189,000 jobs¹¹; however a significant portion of this growth is a function of data

¹¹ Due to the spatial nature of both the Enterprise Zone program and this study, establishments for which spatial coordinates could not be determined were excluded from analysis. A very small proportion of entities within sector 92 (Public Administration) carried associated spatial information in 2000 and 2002 QCEW data. A far greater

availability and should not be considered reflective of actual trends in the Public Administration sector (see footnote 11 for details). The Health Care and Social Assistance (62) and Educational Services (61) sectors demonstrated growth of over 60 percent (see Table 1).

The Information sector (51) experienced the weakest job growth, with a loss of 40,463 jobs. Manufacturing (31-33), Wholesale Trade (42), and Real Estate and Rental and Leasing (53) also experienced losses between 2000 and 2015 (see Table 2). A full table of industry job performance over time is available in Appendix-A.

Table 1: Highest job growth industries in Virginia, 2000 to 2015

NAICS SECTOR	DESCRIPTION	NUMBER CHANGE	PERCENT CHANGE
62	Health Care and Social Assistance	170,954	64%
61	Educational Services	141,524	68%
54	Professional, Scientific, and Technical Services	103,965	40%
72	Accommodation and Food Services	84,057	35%
44-45	Retail Trade	44,587	12%

Source: Quarterly Census of Employment and Wages, 2000-2015

Table 2: Lowest job growth industries in Virginia, 2000 to 2015

NAICS SECTOR	DESCRIPTION	NUMBER CHANGE	PERCENT CHANGE
51	Information	-40,463	-37%
31-33	Manufacturing	-38,313	-14%
42	Wholesale Trade	-1,606	-2%
53	Real Estate and Rental and Leasing	-816	-2%
55	Management of Companies and Enterprises	2,657	4%

Source: Quarterly Census of Employment and Wages, 2000-2015

The strongest period of growth statewide occurred between 2002 and 2006 (see Figure 8, p. 22), where jobs increased by 27 percent¹². The number of jobs in Virginia contracted by three percent in the subsequent period between 2006 and 2011. This time period includes the global economic recession beginning in late 2007 and ending in 2010.

All but a few industries experienced declines in jobs between 2006 and 2011. The industries with the greatest losses include Construction (23), Manufacturing (31-33), and Finance and Insurance (52) (see Table 3).

proportion of sector 92 entities included addresses and coordinates in the 2006, 2011, and 2015 QCEW datasets. The increase in data specificity between the 2002 and 2006 datasets artificially inflated the apparent growth rate of the sector, and as such it has been excluded from sector-based analyses that span those years.

¹² QCEW data indicates jobs grew by 27 percent from 2002 to 2006, or 721,000 positions. Although those years coincide with strong job growth nationally, more than one-third of that growth is concentrated in sectors 61 and 92. These sectors encompass much of the public sector, including education and government institutions. Sector 92 establishments demonstrated significant changes in how they reported data or how data was collected between 2002 and 2006, which may account for the magnitude of this increase.

Table 3: Lowest job growth industries in Virginia, 2006 to 2011

NAICS SECTOR	DESCRIPTION	NUMBER CHANGE	PERCENT CHANGE
23	Construction	-79,599	-32%
31-33	Manufacturing	-54,678	-18%
52	Finance and Insurance	-16,515	-12%
44-45	Retail Trade	-15,702	-4%
56	Administrative and Support and Waste Management and Remediation Services	-15,125	-8%

Source: Quarterly Census of Employment and Wages, 2006-2011

Several industries experienced moderate job growth during the same period, including Health Care and Social Assistance (62), Professional, Scientific, and Technical Services (54), and Transportation and Warehousing (48-49) (see Table 4).

Table 4: Highest job growth industries in Virginia, 2006 to 2011

NAICS SECTOR	DESCRIPTION	NUMBER CHANGE	PERCENT CHANGE
62	Health Care and Social Assistance	37,913	10%
54	Professional, Scientific, and Technical Services	25,693	8%
48-49	Transportation and Warehousing	12,926	13%
92	Public Administration	11,938	7%
61	Educational Services	10,172	3%

Source: Quarterly Census of Employment and Wages, 2006-2011

The number of Virginia businesses grew at a rate similar to that of jobs, with a 31 percent increase between 2000 and 2015, from 141,000 to 184,000. The patterns of growth and contraction among Virginia businesses mirrors that of jobs (see Figure 8, p. 22). Most business growth occurred between 2002 and 2006 (18 percent growth), followed by contraction between 2006 and 2011 (1 percent) and modest growth between 2011 and 2015 (3 percent).

The Professional, Scientific, and Technical Services sector (54) exhibited the strongest business growth, adding 10,870 establishments between 2000 and 2015. Other industries that contributed to a statewide increase in establishments include Health Care and Social Assistance (62), Accommodation and Food Services (72), Construction (23), and Administrative and Support and Waste Management and Remediation Services (56) (see Table 5). Public Administration (92) also demonstrated strong growth but was excluded from comparison for data validity issues between years.

Table 5: Highest business growth industries in Virginia, 2000 to 2015

NAICS SECTOR	DESCRIPTION	NUMBER CHANGE	PERCENT CHANGE
54	Professional, Scientific, and Technical Services	10,870	56%
62	Health Care and Social Assistance	7,637	63%
72	Accommodation and Food Services	4,425	41%
23	Construction	2,688	17%
56	Administrative and Support and Waste Management and Remediation Services	2,613	34%

Source: Quarterly Census of Employment and Wages, 2000-2015

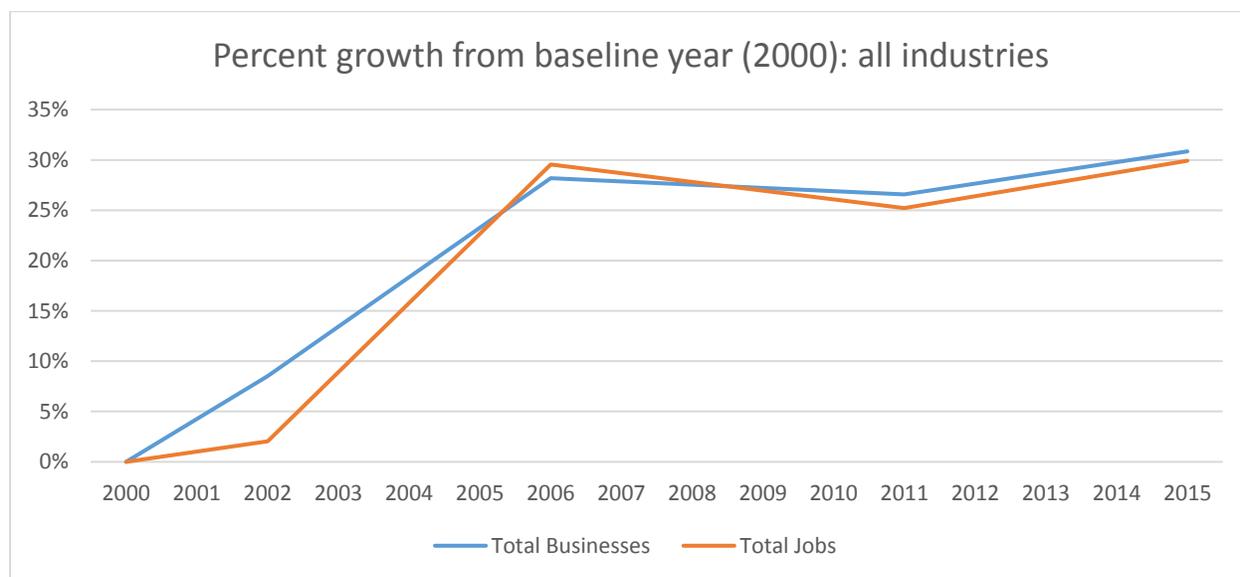
Slow growth in businesses generally echoed job trends across industries; however, no industry experienced significant contraction in businesses from 2000 to 2015. The slowest business growth occurred in Wholesale Trade, which saw a slight drop in the number of businesses (see Table 6). Several small industries showed low growth in number of establishments (Utilities and Mining, Quarrying, and Oil and Gas Extraction), but remain among the fastest growing by percent growth.

Table 6: Lowest business growth industries in Virginia, 2000 to 2015

NAICS SECTOR	DESCRIPTION	NUMBER CHANGE	PERCENT CHANGE
42	Wholesale Trade	-20	0%
31-33	Manufacturing	16	0%
51	Information	63	2%
21	Mining, Quarrying, and Oil and Gas Extraction	183	194%
22	Utilities	285	159%

Source: Quarterly Census of Employment and Wages, 2000-2015

Figure 8: Total job and business growth trends



Source: Quarterly Census of Employment and Wages, 2000-2015

Enterprise Zone job and business growth between 2000 and 2015

Job and business growth represent a general, but imperfect measure of economic performance. The trends of job or business gains or losses in an area reflects that area's economic conditions, but in order to explain those conditions, a number of other factors must be considered, including macroeconomic trends, household characteristics, and locational characteristics. The following descriptive analysis compares job and business growth within Enterprise Zones in aggregate to job and business growth in Enterprise Zone-containing localities and Virginia in aggregate (excluding Enterprise Zones).

Enterprise Zones are by definition economically repressed areas. Comparing growth inside and outside of Enterprise Zones provides an understanding of relative economic changes in these areas, but differences

in economic performance must be understood within the context of the economic disadvantage inherent in the Enterprise Zone designation. Enterprise Zones are likely to show slower growth. Despite differences, job growth trends within the zones have been comparable with the rest of localities.

Statewide totals include data from Virginia's localities within the Washington-Arlington-Alexandria, DC-VA-MD-WV MSA—a distinct economic region within both the state and the nation that is driven by federal spending. This region experienced job growth at twice the rate of the state between 2000 and 2015¹³, and it was home to 37 percent of all Virginia jobs in 2015¹⁴. The region contains a single Enterprise Zone (Warren County). State job and business changes reflect the economic influence of Northern Virginia.

A comparison of total jobs in Enterprise Zones with total jobs in the containing localities and the state overall¹⁵ between 2000 and 2015 indicates that areas outside of Enterprise Zones experienced stronger job growth than those inside of Enterprise Zones (see Table 7). Jobs within Enterprise Zones increased by 11 percent, compared to 21 percent in localities with Enterprise Zones and 33 percent in Virginia (see Figure 9).

Enterprise Zones outperformed other areas between 2002 and 2006 with job growth of 32 percent, outpacing localities by 15 points and Virginia by 6 points. However, this is the only period in which Enterprise Zones experienced job growth rather than contraction. Enterprise Zone jobs declined by 6 percent between 2000 and 2002 (a period during which the U.S. experienced a brief economic recession). Jobs in containing localities and the state grew by 3 percent. Jobs across all three geographies declined between 2006 and 2011 (a period during which the U.S. experienced a significant economic recession). Enterprise Zone jobs declined at a rate of 7 percent, and locality and Virginia jobs declined by 4 and 3 percent. Jobs in localities and Virginia reversed declines between 2011 and 2015, growing 5 percent each. Enterprise Zone job losses slowed in this period but did not reverse, declining 2 percent.

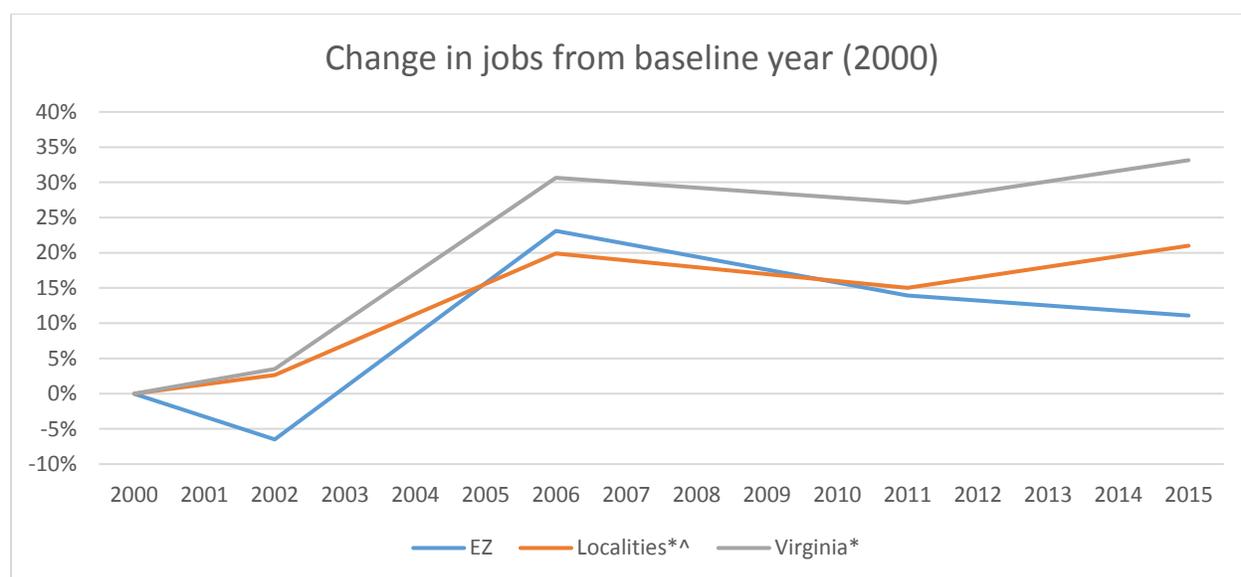
The overall trend of jobs in Enterprise Zones between 2000 and 2015 has been upward. Localities and Virginia have erased any losses experienced between 2006 and 2011. Enterprise Zone job numbers in 2015 are almost 10 percent lower than 2006 numbers but remain around 11 percent higher than 2000 numbers.

¹³ U.S. Bureau of Economic Analysis, *CA4 Personal Income and Employment by Major Component*. November 17, 2016.

¹⁴ Ibid.

¹⁵ Numbers for containing localities and Virginia exclude Enterprise Zones.

Figure 9: Job trends in Enterprise Zones, containing localities, and Virginia (percent)



Source: Quarterly Census of Employment and Wages, 2000-2015; Virginia Department of Housing and Community Development

Table 7: Job growth within Enterprise Zones, containing localities, and Virginia, period over period

	2000	2002		2006		2011		2015	
EZ	390,767	365,385	-6%	481,059	32%	445,234	-7%	434,131	-2%
LOCALITIES*	839,824	862,169	3%	1,006,992	17%	965,783	-4%	1,016,195	5%
VIRGINIA*	2,281,027	2,360,519	3%	2,980,285	26%	2,900,108	-3%	3,037,052	5%

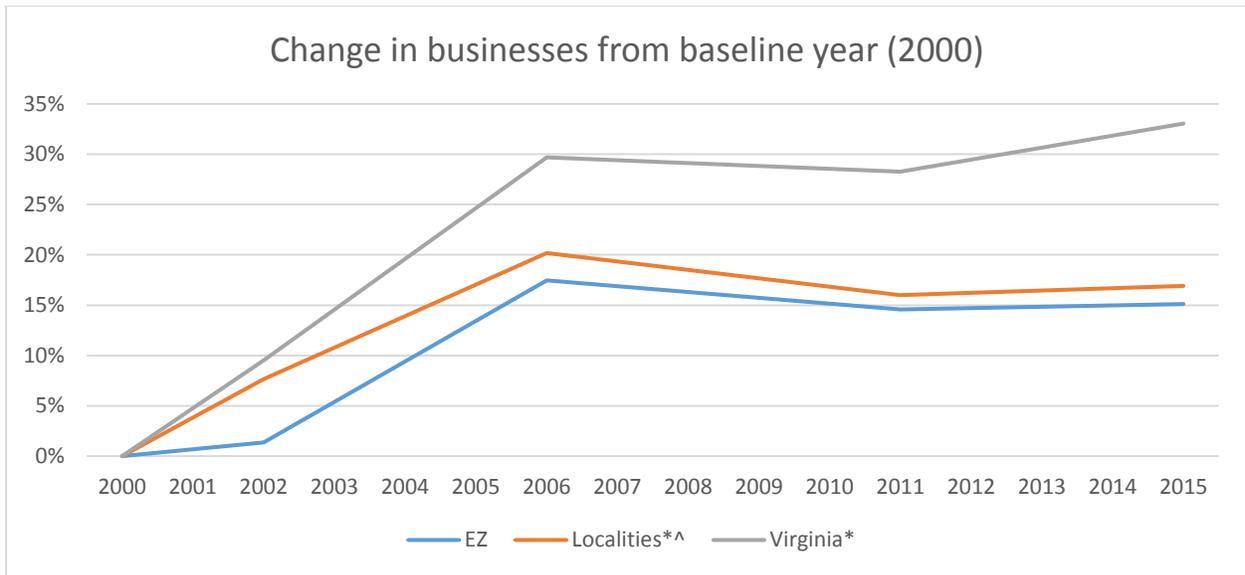
*Excluding Enterprise Zones

Source: Quarterly Census of Employment and Wages, 2000-2015; Virginia Department of Housing and Community Development

Business trends in Enterprise Zones have been more positive, growing by 15 percent between 2000 and 2015 (see Figure 10). Enterprise Zone containing localities have performed similarly, with a 17 percent increase in the number of businesses. Virginia has exhibited strong businesses growth of 33 percent.

All three geographies experienced strong business growth between 2002 and 2006 and declines between 2006 and 2011 (see Table 8). However, the 16 percent growth in Enterprise Zones outpaced containing localities, and the 2 percent decline in Enterprise Zones did not reach the same level of contraction as containing localities.

Figure 10: Business trends in Enterprise Zones, containing localities, and Virginia (percent)



Source: Quarterly Census of Employment and Wages, 2000-2015; Virginia Department of Housing and Community Development

Table 8: Business growth within Enterprise Zones, containing localities, and Virginia, period over period

	2000	2002		2006		2011		2015	
EZ	17,256	17,488	1%	20,269	16%	19,770	-2%	19,866	0%
LOCALITIES*	43,597	46,932	8%	52,394	12%	50,573	-3%	50,967	1%
VIRGINIA*	123,734	135,507	10%	160,474	18%	158,711	-1%	164,618	4%

*Excluding Enterprise Zones

Source: Quarterly Census of Employment and Wages, 2000-2015; Virginia Department of Housing and Community Development

Industry structure within Enterprise Zones

The growth of jobs and businesses within Enterprise Zones offers a sense of the economic conditions within these areas. To better understand where gains and losses of jobs and businesses are happening within Enterprise Zones, this analysis investigates these trends by industry, as defined in the NAICS. Specifically, this analysis seeks to understand which industries are performing well inside and outside of Enterprise Zones and whether that performance differs between Enterprise Zones, the localities that contain Enterprise Zones, and Virginia overall. Enterprise Zone jobs and businesses are excluded from calculations of localities and Virginia.

Industries are distributed unevenly between Enterprise Zones, containing localities, and Virginia. Each industry constitutes a different proportion of all jobs within each area. Economic conditions that disproportionately impact specific industries, for better or worse, will also disproportionately affect the places in which those industries are concentrated. Job or business growth in an industry will have greater impact on overall job growth in areas where that industry represents a larger share of jobs. But job or business losses in such an industry will also have a greater impact on those areas.

Some sectors are also ineligible for Enterprise Zone Job Creation Grants. The grants are limited to jobs created outside of the retail, personal service, and food and beverage fields as well as any unit of government. This is likely to limit the direct impacts of JCGs in the Retail Trade (44-45), Educational Services (61), Accommodation and Food Services (72), Other Services (81), and Public Administration (92) sectors, and at least portions of the Utilities (22) and Health Care and Social Assistance (62) sectors.

In 2015, the Manufacturing sector (31-33) represented the largest share of jobs in Enterprise Zones, with 14.8 percent (see Table 9). Manufacturing jobs constituted just 7.9 percent of jobs in containing localities and 5.8 percent of jobs in Virginia. As noted in Table 2 on page 20, Manufacturing jobs declined statewide by 14 percent between 2000 and 2015. Enterprise Zones also have a disproportionately large number of jobs in the Management of Companies and Enterprises (55) and Wholesale Trade (42) sectors when compared to Enterprise Zone containing localities and Virginia.

Conversely, a number of industries represent a notably low share of jobs in Enterprise Zones when compared with other areas. Educational Services (61) constituted 4.6 percent of jobs in Enterprise Zones in 2015. Outside of Enterprise Zones, Education Services represented 11.7 percent of jobs in localities and 10.8 percent of jobs in Virginia. Educational Services exhibited strong job growth of 68 percent statewide between 2000 and 2015 (see Table 1, page 20). Enterprise Zones also have a disproportionately small number of jobs in the Health Care and Social Assistance (62), Finance and Insurance (52), and Arts, Entertainment, and Recreation (71) sectors.

Table 9: Industries as a proportion of all jobs in Enterprise Zones, localities, and Virginia, 2015

NAICS SECTOR	DESCRIPTION	ENTERPRISE ZONES	LOCALITIES	VIRGINIA
11	Agriculture, Forestry, Fishing and Hunting	0.1%	0.4%	0.4%
21	Mining, Quarrying, and Oil and Gas Extraction	0.2%	0.2%	0.2%
22	Utilities	0.5%	0.5%	0.5%
23	Construction	5.5%	3.9%	5.2%
31-33	Manufacturing	14.8%	7.9%	5.8%
42	Wholesale Trade	4.0%	2.3%	2.5%
44-45	Retail Trade	11.2%	11.4%	11.9%
48-49	Transportation and Warehousing	4.9%	3.6%	3.3%
51	Information	1.4%	1.3%	2.1%
52	Finance and Insurance	3.3%	4.5%	3.7%
53	Real Estate and Rental and Leasing	1.3%	1.4%	1.5%
54	Professional, Scientific, and Technical Services	5.6%	6.3%	11.2%
55	Management of Companies and Enterprises	3.7%	1.6%	1.8%
56	Administrative and Support and Waste Management and Remediation Services	7.0%	5.4%	5.8%
61	Educational Services	4.7%	11.7%	10.8%
62	Health Care and Social Assistance	11.8%	16.2%	12.8%
71	Arts, Entertainment, and Recreation	1.1%	2.2%	2.2%
72	Accommodation and Food Services	8.9%	8.5%	9.4%
81	Other Services (except Public Administration)	3.2%	3.6%	3.5%
92	Public Administration	7.0%	7.2%	5.5%
99	Unclassified	0.0%	0.0%	0.0%

Source: Quarterly Census of Employment and Wages, 2000-2015; Virginia Department of Housing and Community Development

The patterns for industry establishments as a proportion of all industries differ slightly from jobs. Although the Retail Trade sector (44-45) represented 11.2 percent of jobs in Enterprise Zones in 2015, it represented 17.3 percent of businesses in the same year (see Table 10), making it the largest industry as a share of all establishments. Other large industries as a share of establishments include the Accommodation and Food Services (72), Professional, Scientific, and Technical Services (54), and Health Care and Social Assistance (62) sectors.

Sectors overrepresented as share of establishments compared to localities and Virginia include the Retail Trade (44-45), Public Administration (92), Manufacturing (31-33), and Accommodation and Food Services (72) sectors.

Table 10: Industries as a proportion of all establishments in Enterprise Zones, localities, and Virginia, 2015

NAICS SECTOR	DESCRIPTION	ENTERPRISE ZONES	LOCALITIES	VIRGINIA
11	Agriculture, Forestry, Fishing and Hunting	0.2%	1.1%	0.9%
21	Mining, Quarrying, and Oil and Gas Extraction	0.1%	0.2%	0.2%
22	Utilities	0.3%	0.3%	0.2%
23	Construction	6.0%	9.6%	10.3%
31-33	Manufacturing	5.4%	2.5%	2.5%
42	Wholesale Trade	5.1%	4.2%	4.0%
44-45	Retail Trade	17.3%	14.1%	12.6%
48-49	Transportation and Warehousing	2.9%	3.4%	2.9%
51	Information	1.4%	1.4%	1.6%
52	Finance and Insurance	6.3%	5.9%	5.4%
53	Real Estate and Rental and Leasing	4.1%	4.7%	4.5%
54	Professional, Scientific, and Technical Services	10.1%	12.8%	17.1%
55	Management of Companies and Enterprises	1.2%	0.9%	0.8%
56	Administrative and Support and Waste Management and Remediation Services	4.2%	5.4%	5.8%
61	Educational Services	1.0%	1.4%	1.6%
62	Health Care and Social Assistance	9.3%	12.4%	10.9%
71	Arts, Entertainment, and Recreation	1.0%	1.7%	1.5%
72	Accommodation and Food Services	10.5%	8.0%	8.0%
81	Other Services (except Public Administration)	8.1%	7.8%	7.5%
92	Public Administration	5.2%	2.0%	1.3%
99	Unclassified	0.2%	0.3%	0.3%

Source: Quarterly Census of Employment and Wages, 2000-2015; Virginia Department of Housing and Community Development

Industry growth within Enterprise Zones

This descriptive portion of the overall analysis seeks to describe the economic conditions and trends within the areas in question. The causes of differing economic performance inside and outside of Enterprise Zones—in individual sectors and in aggregate—may be a function (or functions) of any number of factors outside the scope of this analysis. With that in mind, trends are described in terms of activity inside Enterprise Zones, inside Enterprise Zone-containing localities (excluding Enterprise Zones), and inside Virginia (excluding Enterprise Zones).

Enterprise Zone jobs grew by 11 percent between 2000 and 2015 (see Figure 9), slower than increases in containing localities (21 percent) and Virginia (33 percent). However, many Enterprise Zone industries experienced significant job gains during that period (see Table 11). The Mining, Quarrying, and Oil and Gas Extraction sector (21) experienced an 11,621 percent increase in jobs, from 6 to 699. Enterprise Zone containing localities and Virginia also experienced strong growth in the industry, but at rates exponentially smaller than Enterprise Zones.

Health Care and Social Assistance sector (62) jobs represented the largest numeric increase in Enterprise Zone jobs with a gain of 23,751. The Management of Companies and Enterprises sector (55) jobs grew by 50 percent in Enterprise Zones while declining by 40 percent in localities and 5 percent in Virginia. Likewise, positive job trends in the Real Estate and Rental and Leasing sector (53) inside Enterprise Zones—a 3 percent increase—contrast downward trends in localities and Virginia.

The Manufacturing sector experienced the greatest decline in jobs in Enterprise Zones, falling by 29 percent. Manufacturing's disproportionate share of jobs within Enterprise Zones—the sector accounted for 14.8 percent of all jobs in 2015 (see Table 9, page 27)—has depressed overall job growth within Enterprise Zones. Manufacturing job losses in Enterprise Zones between 2000 and 2015 total 25,838—more than the total decline in manufacturing jobs outside Enterprise Zones combined (23,311).

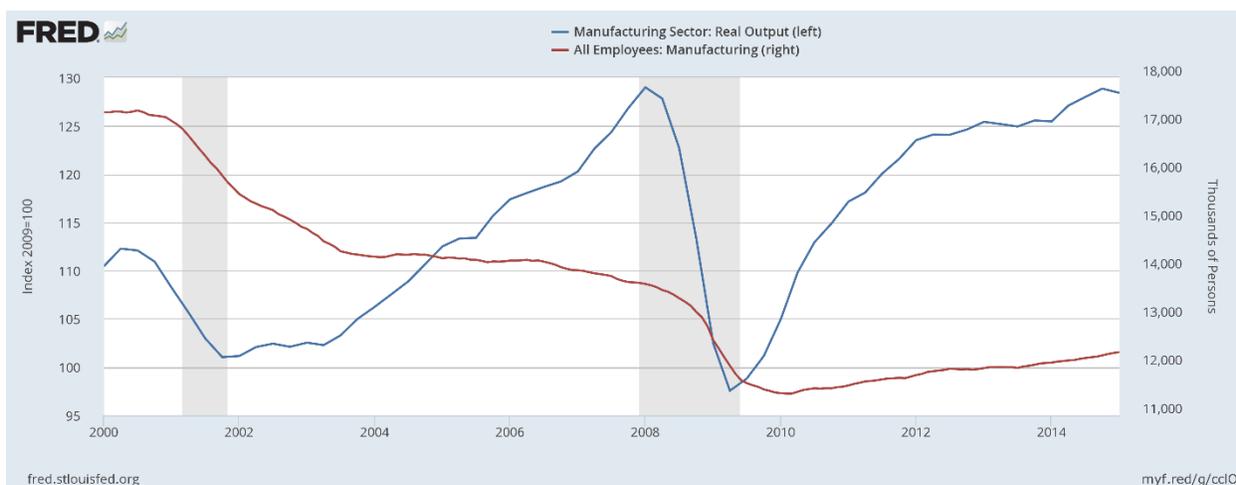
The Manufacturing sector (31-33) experienced the greatest decline in jobs in Enterprise Zones, falling by 29 percent. This matches national manufacturing employment trends in which employment shrank 29 percent from 17.3 million in 2000 to 12.3 million in 2015¹⁶. Although national manufacturing employment levels began a steep numeric decline in 2000, manufacturing employment as a share of all employment has contracted steadily over the last 50 years (Baily and Bosworth 2014). Measures of manufacturing real output, on the other hand, have trended upwards, despite contraction through recessionary periods (see Figure 11). Real output as a share of real GDP has remained flat since 1960 (Baily and Bosworth 2014). That stability stems largely from strong performance in the computers and electronics subsector—the real output of manufacturing outside that subsector as a share of real GDP has fallen (Baily and Bosworth 2014).

Manufacturing's disproportionate share of jobs within Enterprise Zones—the sector accounted for 14.8 percent of all jobs in 2015 (see Table 9, page 27)—make Enterprise Zones particularly susceptible to the larger economic trends impacting that sector. Declining manufacturing employment levels have resulted in lower overall job growth within Enterprise Zones. Manufacturing job losses in Enterprise Zones between 2000 and 2015 total 25,838—more than the total decline in manufacturing jobs outside Enterprise Zones combined (23,311). Although an analysis of manufacturing subsectors is beyond the scope of this study,

¹⁶ U.S. Bureau of Labor Statistics, All Employees: Manufacturing [MANEMP], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/MANEMP>, December 21, 2016.

manufacturing in Enterprise Zones may be more heavily oriented towards subsectors outside of computers and electronics. Conversely, manufacturing outside of Enterprise Zones—in places like the DC metropolitan area—may have greater concentrations of computers and electronics manufacturing establishments.

Figure 11: U.S. Manufacturing Employment and Real Output, 2000 to 2015



Source: U.S. Bureau of Labor Statistics; Federal Reserve Bank of St. Louis

Educational Services sector (61) jobs declined in Enterprise Zones by 8 percent between 2000 and 2015. The same sector grew outside Enterprise Zones by 51 percent in localities, where the sector represented 11.7 percent of all jobs. Educational Services jobs increased by 77 percent in Virginia, where the sector constitutes 10.8 percent of all jobs.

The Transportation and Warehousing sector (48-49) represents another sector with negative job trends inside Enterprise Zones and positive job trends outside. Enterprise Zone jobs declined by 1 percent while increasing by 47 percent in containing localities and 65 percent in Virginia.

Heavy job contraction in Manufacturing inside Enterprise Zones and significant job gains in the Educational Services and Transportation and Warehousing sectors outside Enterprise Zones contributed significantly to differences in overall job growth inside and outside of Enterprise Zones.

Table 11: Job growth by NAICS sector, 2000 to 2015

NAICS SECTOR ¹⁷	ENTERPRISE ZONES		LOCALITIES		VIRGINIA	
	Number change	Percent change	Number change	Percent change	Number change	Percent change
(62) HEALTH CARE AND SOCIAL ASSISTANCE	23,751	87%	53,219	48%	147,203	61%
(72) ACCOMMODATION AND FOOD SERVICES	8,170	27%	12,914	18%	75,887	36%
(55) MANAGEMENT OF COMPANIES AND ENTERPRISES	5,403	50%	-10,756	-40%	-2,747	-5%
(54) PROFESSIONAL, SCIENTIFIC, AND TECHNICAL SERVICES	5,044	26%	11,654	22%	98,920	41%
(71) ARTS, ENTERTAINMENT, AND RECREATION	1,825	65%	7,155	48%	24,863	61%
(21) MINING, QUARRYING, AND OIL AND GAS EXTRACTION	693	11,621% ¹⁸	1,092	100%	3,839	177%
(22) UTILITIES	545	35%	2,491	97%	8,881	128%
(11) AGRICULTURE, FORESTRY, FISHING AND HUNTING	312	151%	1,780	65%	4,224	58%
(52) FINANCE AND INSURANCE	303	2%	-3,474	-7%	3,285	3%
(81) OTHER SERVICES (EXCEPT PUBLIC ADMINISTRATION)	232	2%	2,199	6%	19,350	22%
(53) REAL ESTATE AND RENTAL AND LEASING	180	3%	-2,897	-17%	-996	-2%
(23) CONSTRUCTION	57	0%	-633	-2%	12,525	9%
(56) ADMINISTRATIVE AND SUPPORT AND WASTE MANAGEMENT AND REMEDIATION SERVICES	0	0%	5,046	10%	22,962	15%
(48-49) TRANSPORTATION AND WAREHOUSING	-278	-1%	11,745	47%	39,146	65%
(44-45) RETAIL TRADE	-458	-1%	-2,497	-2%	45,045	14%
(51) INFORMATION	-500	-7%	-7,463	-37%	-39,963	-39%
(61) EDUCATIONAL SERVICES	-1,698	-8%	40,335	51%	143,222	77%
(42) WHOLESALE TRADE	-2,692	-13%	-3,692	-14%	1,086	1%
(31-33) MANUFACTURING	-25,838	-29%	-10,836	-12%	-12,475	-7%

Source: Quarterly Census of Employment and Wages, 2000-2015; Virginia Department of Housing and Community Development

Industry growth within rural and urban Enterprise Zones

Enterprise Zones in rural and urban regions differ in characteristics that influence the mix of industries and the rates at which those industries change. Although Enterprise Zones as a whole experienced an

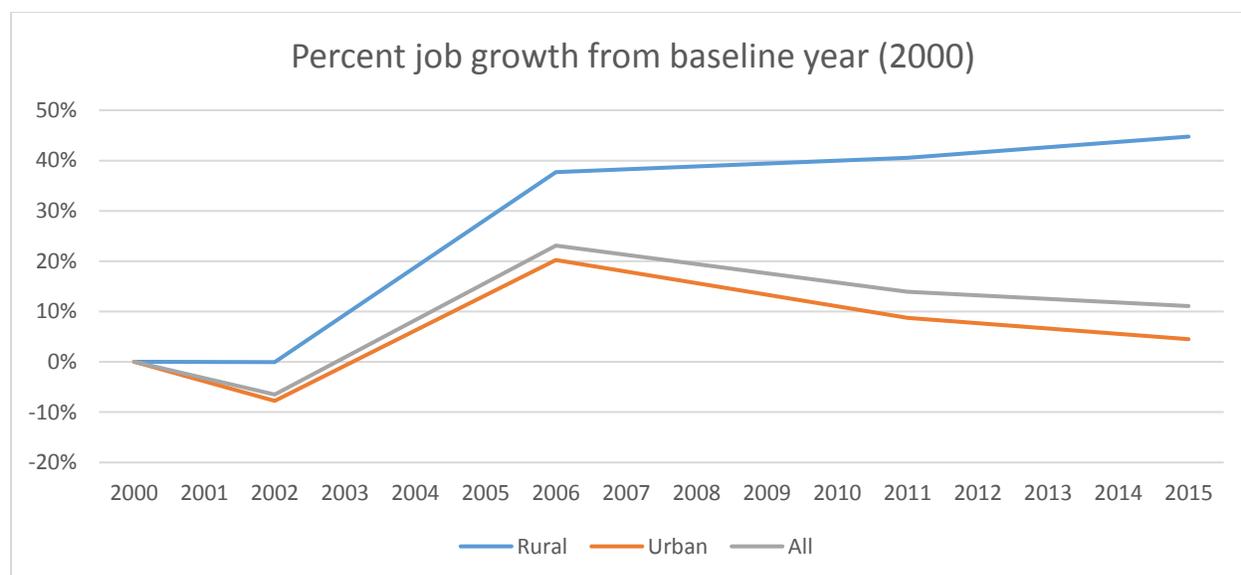
¹⁷ Growth in sector 92 (Public Administration) is artificially inflated across the timeframe and is therefore not included in this comparative table. See discussion of Sector 92 data issues (footnote 11 on p. 15).

¹⁸ The relatively small initial size of sector 21 makes the number change appear much larger when normalized as a percent change.

increase in jobs of 11 percent between 2000 and 2015, rural Enterprise Zones performed significantly better. Jobs grew in rural zones by 45 percent, compared to just 5 percent in urban zones (see Figure 12).

Rural zones experienced flat job growth between 2000 and 2002, while urban zones saw jobs decline 8 percent. Both rural and urban zones enjoyed strong job growth between 2002 and 2006, with a rural job gain of 38 percent and an urban job gain of 30 percent. Rural zones weathered the 2006 to 2011 period with a 2 percent job gain, while urban zones experienced a 10 percent decline. Jobs declined another 4 percent between 2011 and 2015 in urban zones.

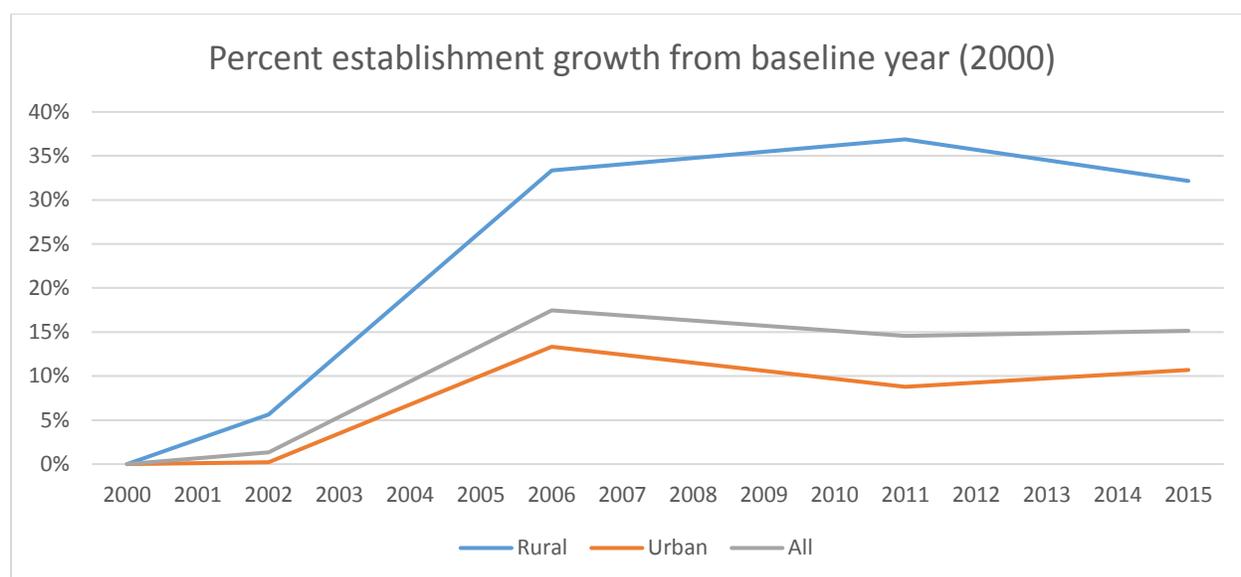
Figure 12: Job trends in rural and urban Enterprise Zones



Source: Quarterly Census of Employment and Wages, 2000-2015; Virginia Department of Housing and Community Development

Establishment growth in rural Enterprise Zones also outpaced urban zones between 2000 and 2015 (see Figure 13). Rural zones experienced a 32 percent increase in businesses—more than twice the 15 percent growth rate of urban zones. As with jobs, rural Enterprise Zones performed well through the economically turbulent 2006 to 2011 period with 3 percent growth compared to 4 percent decline in urban zones. However, urban zones reversed the downward trend between 2011 and 2015 with growth of 2 percent. Rural zone businesses contracted by 3 percent between 2011 and 2015.

Figure 13: Establishment trends in rural and urban Enterprise Zones



Source: Quarterly Census of Employment and Wages, 2000-2015; Virginia Department of Housing and Community Development

Rural and urban Enterprise Zones feature a different mix of industries. Manufacturing (sector 31-33) jobs constituted 21.7 percent of all jobs in rural Enterprise Zones in 2015 (Table 12), compared to 12.9 percent in urban zones (Table 13). However, manufacturing remains the largest sector in both rural and urban zones.

Table 12: Largest rural Enterprise Zone industries

NAICS SECTOR	DESCRIPTION	SHARE OF JOBS
31-33	Manufacturing	21.7%
44-45	Retail Trade	16.3%
62	Health Care and Social Assistance	10.8%
72	Accommodation and Food Services	10.0%
61	Educational Services	9.3%
56	Administrative and Support and Waste Management and Remediation Services	6.9%
92	Public Administration	3.8%
48-49	Transportation and Warehousing	3.5%
54	Professional, Scientific, and Technical Services	3.0%
42	Wholesale Trade	2.5%

Source: Quarterly Census of Employment and Wages, 2000-2015; Virginia Department of Housing and Community Development

The Manufacturing (31-33), Retail Trade (44-45), and Educational Services (61) sectors all constitute a proportion of jobs in rural Enterprise Zones notably higher than in urban zones. The Construction (23), Public Administration (92), Management of Companies and Enterprises (55), and Professional, Scientific, and Technical Services (54) sectors represent notably higher proportions in urban Enterprise Zones.

Table 13: Largest urban Enterprise Zone industries

NAICS SECTOR	DESCRIPTION	SHARE OF JOBS
31-33	Manufacturing	12.9%
62	Health Care and Social Assistance	12.0%
44-45	Retail Trade	9.8%
72	Accommodation and Food Services	8.6%
92	Public Administration	7.9%
56	Administrative and Support and Waste Management and Remediation Services	7.0%
23	Construction	6.4%
54	Professional, Scientific, and Technical Services	6.3%
48-49	Transportation and Warehousing	5.3%
55	Management of Companies and Enterprises	4.5%

Source: Quarterly Census of Employment and Wages, 2000-2015; Virginia Department of Housing and Community Development

The net job growth in rural Enterprise Zones between 2000 and 2015 is widespread among industries, with only the Manufacturing sector (31-33) experiencing a decline (see Table 14). The strongest rural Enterprise Zone job growth industries by the number of jobs added include the Retail Trade (44-45), Administrative and Support and Waste Management and Remediation Services (56), Health Care and Social Assistance (62), Educational Services (61), and Accommodation and Food Services (72) sectors. As noted, most jobs in the Retail Trade (44-45) and Accommodation and Food Services (72) sectors are ineligible to qualify for Job Creation Grants, and many jobs in the Health Care and Social Assistance (62) and Educational Services (61) sectors are likely ineligible.

The Mining, Quarrying, and Oil and Gas Extraction (21), Agriculture, Forestry, Fishing, and Hunting (11), Arts, Entertainment, and Recreation (71), and Utilities (22) sectors all demonstrated strong percent growth, but the total jobs added remained comparatively small.

Urban Enterprise Zones experienced a mix of growth and contraction across industries. The strongest job growth occurred in the Health Care and Social Assistance (62), Management of Companies and Enterprises (55), Accommodation and Food Services (72), and Professional, Scientific, and Technical Services (54) sectors.

The Manufacturing (31-33), Educational Services (61), and Agriculture, Forestry, Fishing and Hunting (11) sectors experienced job declines of over 30 percent. Manufacturing job losses in urban zones outpaced losses in rural zones, shrinking 36 percent compared to 3 percent in rural zones.

The only industries in urban zones to outperform rural zones in percentage growth were the Health Care and Social Assistance (62) and Management of Companies and Enterprises (55) sectors.

Table 14: Job growth by industry in rural and urban Enterprise Zones, 2000 to 2015

NAICS SECTOR	DESCRIPTION	RURAL		URBAN	
		Number	Percent	Number	Percent
11	Agriculture, Forestry, Fishing and Hunting	357	564%	-44	-31%
21	Mining, Quarrying, and Oil and Gas Extraction ¹⁹	651	13,649%	42	3,505%
22	Utilities	204	108%	342	25%
23	Construction	130	7%	-73	0%
31-33	Manufacturing	-676	-3%	-25,162	-36%
42	Wholesale Trade	611	36%	-3,304	-18%
44-45	Retail Trade	5,299	54%	-5,757	-15%
48-49	Transportation and Warehousing	519	19%	-797	-4%
51	Information	32	3%	-531	-9%
52	Finance and Insurance	174	8%	129	1%
53	Real Estate and Rental and Leasing	93	17%	88	2%
54	Professional, Scientific, and Technical Services	1,328	89%	3,717	21%
55	Management of Companies and Enterprises	36	5%	5,367	53%
56	Administrative and Support and Waste Management and Remediation Services	4,597	256%	-4,597	-16%
61	Educational Services	3,878	82%	-5,576	-32%
62	Health Care and Social Assistance	4,164	72%	19,587	91%
71	Arts, Entertainment, and Recreation	707	423%	1,118	42%
72	Accommodation and Food Services	3,003	48%	5,167	21%
81	Other Services (except Public Administration)	210	11%	22	0%
92	Public Administration ²⁰	-	-	-	-

Source: Quarterly Census of Employment and Wages, 2000-2015; Virginia Department of Housing and Community Development

Business and employment growth of Enterprise Zone groups and localities

Individual Enterprise Zones may perform differently based on controllable and uncontrollable factors, including local incentives and administration, local capacity, and the quality of the available workforce. The top performing Enterprise Zones by the number of jobs gained between 2000 and 2015 include those within the cities of Richmond, Portsmouth, Galax, and Lynchburg and Henry County (see Table 15). Top performing Enterprise Zones by percent increase in jobs between 2000 and 2015 are the counties of Charlotte, Dickenson, Northumberland, and Lancaster, and Emporia city. A full table is available in Appendix A.

Differing job and business growth rates in Enterprise Zones and their containing localities are likely to stem from a variety of factors. This portion of the analysis is descriptive and cannot infer a causal relationship between Enterprise Zones and growth rates. However, where some of the factors influencing differing economic performance inside and outside of Enterprise Zones may be readily identified, this report has attempted to do so. Job and business growth in less populated geographies—both Enterprise

¹⁹ The low initial number of jobs in this industry results in large percent changes with even modest number changes.

²⁰ Due to data issues, growth in this sector prior to 2006 may not be accurately calculated. See footnote 11, p. 16.

Zones and localities—may exhibit large percent increases or decreases due to low initial starting points (see Galax city and Emporia city in Table 15)

Richmond city’s Enterprise Zones²¹ gained over 30,000 jobs between 2000 and 2015. The 63 percent increase in jobs outpaces Richmond’s job growth outside of Enterprise Zones, with a net change of -10 jobs (0 percent change). Portsmouth’s Enterprise Zone areas gained almost 4,000 jobs, but the 31 percent increase is outpaced by Portsmouth’s non-Enterprise Zone areas.

Galax city’s Enterprise Zone areas gained 3,703 jobs between 2000 and 2015—an increase of 420 percent. Outside of Enterprise Zone areas, Galax jobs declined by 66 percent. Some of this disparity may be due to relocation, as the share of Galax city jobs inside of the Galax Enterprise Zone grew from 33 percent to 66 percent.

Table 15: Highest job growth Enterprise Zones and containing localities, 2000 to 2015

LOCALITY	ENTERPRISE ZONE GROUP	ENTERPRISE ZONE NUMBER CHANGE	ENTERPRISE ZONE PERCENT CHANGE	LOCALITY PERCENT CHANGE
RICHMOND CITY	19_28A_29old	30,293	63%	0%
PORTSMOUTH CITY	20_4_60B	3,843	31%	84%
GALAX CITY	27C_13	3,703	420%	-66%
LYNCHBURG CITY	2_46	3,282	24%	0%
HENRY COUNTY	36A_54A	2,618	70%	-9%
EMPORIA CITY	43B	2,539	450%	-72%
PRINCE GEORGE COUNTY	16	2,534	326%	254%
NORTHAMPTON COUNTY	26B	2,511	334%	0%
WISE COUNTY	52	2,260	203%	38%
PATRICK COUNTY	22A_22B	1,781	202%	52%

Source: Quarterly Census of Employment and Wages, 2000-2015; Virginia Department of Housing and Community Development

Enterprise Zones in the cities of Norfolk and Hampton cities experienced the greatest decline in job numbers, with each falling more than 7,000 between 2000 and 2015. Winchester city, Isle of Wight County²², Washington County, Staunton City, Radford city, and Waynesboro city saw declines of more than 1,000 jobs each (see Table 16). With the exception of Waynesboro and Bristol cities, jobs outside of those Enterprise Zones increased. As noted earlier, a number of factors may influence these differences, including: comparatively less commercial activity outside Enterprise Zones and broader industrial trends by sector (e.g., manufacturing employment losses nationwide outside of advanced manufacturing).

²¹ In order to accommodate certain data limitations, Enterprise Zones—current and expired—were spatially merged if they met two conditions: (1) the distance between them was less than one mile, and (2) the zones were contained within the same city or county. Those zones are labeled with each of the original zone labels separated by an underscore character ('_').

²² Much of the job loss in the Isle of Wight Enterprise Zone occurred between 2006 and 2011, coinciding with the 2010 closure of the International Paper mill located in the county. The mill employed 1,100 people.

Table 16: Lowest job growth Enterprise Zones and containing localities, 2000 to 2015

LOCALITY	ENTERPRISE GROUP	ZONE	ENTERPRISE ZONE NUMBER CHANGE	ENTERPRISE ZONE PERCENT CHANGE	LOCALITY PERCENT CHANGE
BRISTOL CITY	29		-832	-25%	-5%
NEWPORT NEWS CITY	3_31_30old		-867	-2%	7%
WAYNESBORO CITY	14		-1,019	-35%	-1%
RADFORD CITY	25B		-1,025	-27%	47%
STAUNTON CITY	17		-1,305	-28%	33%
WASHINGTON COUNTY	51B		-1,822	-52%	16%
ISLE OF WIGHT COUNTY	18		-2,335	-96%	75%
WINCHESTER CITY	21		-3,662	-45%	12%
HAMPTON CITY	35_8		-7,146	-16%	53%
NORFOLK CITY	7_60A		-9,993	-23%	31%

Source: Quarterly Census of Employment and Wages, 2000-2015; Virginia Department of Housing and Community Development

Richmond city's combined Enterprise Zones also experienced the strongest growth in businesses between 2000 and 2015, followed by Portsmouth city, Northampton County, Lancaster County, and Emporia city (see Table 17). Each of these zone groups gained businesses at a rate higher than its containing locality.

Table 17: Highest business growth Enterprise Zones and containing localities, 2000 to 2015

LOCALITY	ENTERPRISE ZONE GROUP	ENTERPRISE ZONE NUMBER CHANGE	ENTERPRISE ZONE PERCENT CHANGE	LOCALITY PERCENT CHANGE
RICHMOND CITY	19_28A_29old	1,617	73%	-30%
PORTSMOUTH CITY	20_4_60B	148	31%	-4%
NORTHAMPTON COUNTY	26B	141	204%	137%
LANCASTER COUNTY	50B_50A	138	828%	-1%
EMPORIA CITY	43B	119	666%	-71%
CHESTERFIELD COUNTY	33_21old	99	18%	20%
GALAX CITY	27C_13	96	87%	-50%
PAGE COUNTY	30	96	211%	-15%
DICKENSON COUNTY	49A_49B_49C	64	1,800%	7,907%
ALEXANDRIA CITY	20old	62	28%	5%

Source: Quarterly Census of Employment and Wages, 2000-2015; Virginia Department of Housing and Community Development

Dickenson County businesses inside and outside of the Enterprise Zone grew at extremely high rates. This is a function of relatively low starting number of businesses within the county.

City-based Enterprise Zones experienced the most significant business declines, with the cities of Winchester, Norfolk, Hampton, Petersburg, and Martinsville all experiencing losses at rates greater than their containing localities (see Table 18). That most cities have significant commercial activity outside of their Enterprise Zones—as opposed to many rural Enterprise Zones which encompass most of the commercial activity within their localities—may play a factor in this disparity. Urban Enterprise Zones encompass the most economically distressed commercial areas within cities, and different rates of business and job growth inside and outside of Enterprise Zones is not unexpected.

Table 18: Lowest business growth Enterprise Zones and containing localities, 2000 to 2015

LOCALITY	ENTERPRISE ZONE GROUP	ENTERPRISE ZONE NUMBER CHANGE	ENTERPRISE ZONE PERCENT CHANGE	LOCALITY PERCENT CHANGE
BRISTOL CITY	29	-27	-20%	-4%
DANVILLE CITY	1_57B	-28	-13%	-21%
STAUNTON CITY	17	-36	-12%	10%
WAYNESBORO CITY	14	-37	-19%	30%
ROANOKE CITY	42_5	-41	-4%	-11%
MARTINSVILLE CITY	36B_54B	-43	-14%	23%
PETERSBURG CITY	10	-60	-22%	-6%
HAMPTON CITY	35_8	-79	-5%	46%
NORFOLK CITY	7_60A	-200	-15%	9%
WINCHESTER CITY	21	-202	-40%	24%

Source: Quarterly Census of Employment and Wages, 2000-2015; Virginia Department of Housing and Community Development

Ripple effect of Enterprise Zones on job and business growth

Enterprise Zones in aggregate appear to have increased jobs and businesses at rates lower yet comparable to their containing counties and Virginia (see Figure 9 and Figure 10, p. 25). Enterprise Zone performance does not preclude a positive or mitigating impact on already-economically distressed areas or the areas immediately surrounding Enterprise Zones. There may be a potential ripple effect—a measurable increase in job and business performance in areas immediately surrounding Enterprise Zones. This analysis measures the potential ripple effect by analyzing job and business growth within one mile of all Enterprise Zones in one-quarter mile increments. If a ripple effect existed, one would expect to see greater job and business increases in areas immediately adjacent to Enterprise Zones and smaller increases in areas further away.

The findings below suggest no such ripple effect exists. However, the analysis does not account for the economically distressed nature of Enterprise Zones and cannot demonstrate how growth patterns would appear in the absence of Enterprise Zone incentives. A more rigorous analysis utilizing statistically chosen control groups may be found on p. 12.

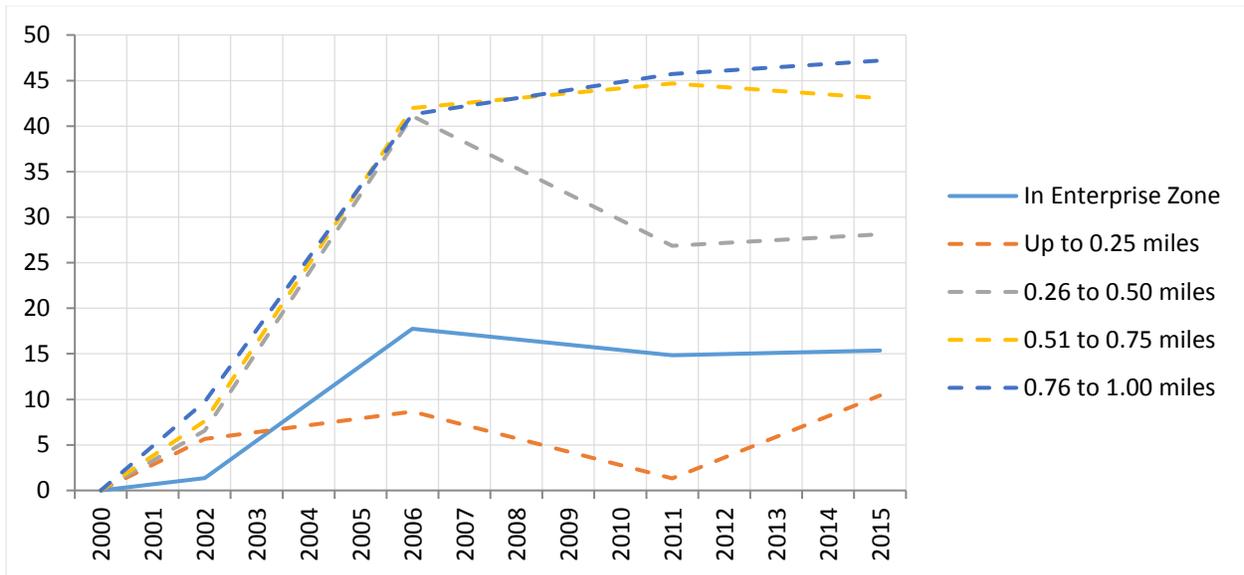
Measurements suggest Enterprise Zones do not provide a measurable ripple effect for business growth. Areas between 0.51 and 1.00 miles away from Enterprise Zones experienced business growth of around 45 percent between 2000 and 2015 (see Figure 14). Areas closer to Enterprise Zones experienced slower growth—28 percent for areas within 0.26 to 0.50 miles and 10 percent for areas within 0.25 miles (see Table 19).

Table 19: Percent change in businesses from base year 2000 by distance from Enterprise Zone

DISTANCE	% CHANGE 2000-02	% CHANGE 2000-06	% CHANGE 2000-11	% CHANGE 2000-15
IN ENTERPRISE ZONE	1.4	17.8	14.8	15.3
UP TO 0.25 MILES	5.7	8.7	1.3	10.4
0.26 TO 0.50 MILES	6.6	41.1	26.8	28.1
0.51 TO 0.75 MILES	7.6	42.0	44.7	43.1
0.76 TO 1.00 MILES	9.7	41.3	45.7	47.2

Source: Virginia Department of Housing and Community Development; cities of Hampton, Norfolk, Richmond, and Roanoke

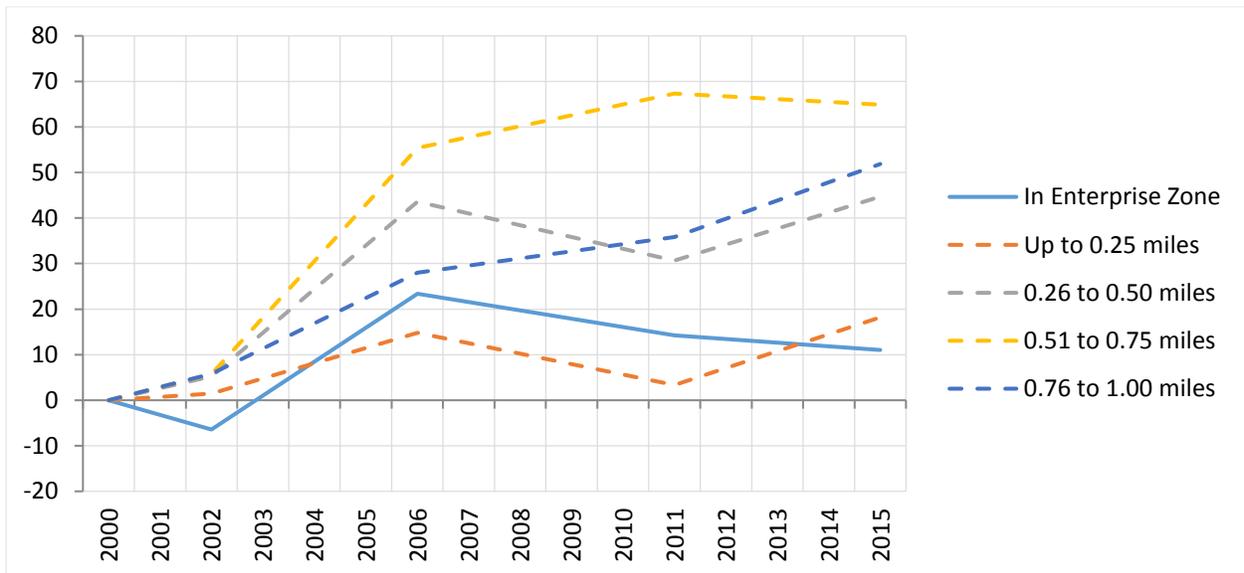
Figure 14: Percent change in businesses by distance from Enterprise Zone from base year 2000



Source: Virginia Department of Housing and Community Development; Quarterly Census of Employment and Wages, 2000-2015

Analysis also failed to demonstrate a ripple effect for Enterprise Zone job growth (see Figure 15). The areas within 0.50 miles of an Enterprise Zone exhibited slower job growth than those between 0.51 and 1.00 miles. Enterprise Zones experienced job growth of 11 percent between 2000 and 2015, compared to growth ranging from 45 percent to 65 percent in areas between 0.26 and 1.00 miles outside the zones (see Table 20).

Figure 15: Percent change in jobs by distance from Enterprise Zone from base year 2000



Source: Virginia Department of Housing and Community Development; Quarterly Census of Employment and Wages, 2000-2015

Table 20: Percent change in jobs from base year 2000 by distance from Enterprise Zone

DISTANCE	% CHANGE 2000-02	% CHANGE 2000-06	% CHANGE 2000-11	% CHANGE 2000-15
IN ENTERPRISE ZONE	-6.4	23.4	14.2	11.0
UP TO 0.25 MILES	1.4	14.8	3.3	18.2
0.26 TO 0.50 MILES	5.2	43.6	30.7	44.7
0.51 TO 0.75 MILES	5.7	55.4	67.3	64.9
0.76 TO 1.00 MILES	5.8	28.0	35.8	51.9

Source: Virginia Department of Housing and Community Development; Quarterly Census of Employment and Wages, 2000-2015

Performance evaluation: Enterprise Zone versus Control Zone

Group Characteristics

A total of 68 Enterprise Zone composites are used for the aggregate statistical analysis. These zones are classified into two clusters based on the state and local incentives they received and also based on their demographic and socio-economic characteristics such as median household income, percent of unemployed population, average household size, average travel time to work, educational achievement, and racial mix of the population residing within the zone boundaries. Out of 68 Enterprise Zone composites, 48 fall in EZ Group-1 and 19 in EZ Group-2, whereas one Enterprise Zone (Zone-9, Hopewell) does not make into any of the groups. Some of the group characteristics that have been used in creating the clusters are discussed below.

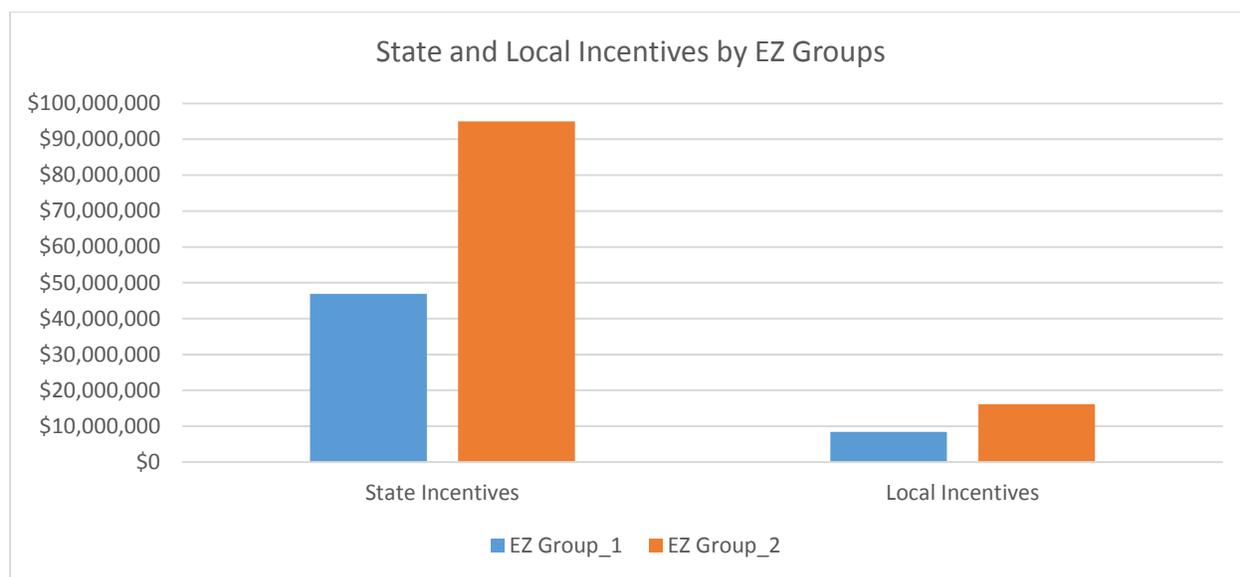
Each group of Enterprise Zones has a comparable control zone. The control zones are the composite of block groups that are located near the Enterprise Zones, and are comparable with the Enterprise Zones in every other demographic and socio-economic characteristic²³.

State and Local Incentives

The amount of state and local incentives disbursed into an Enterprise Zone considerably affects its ability to attract new businesses, retain existing ones, and to encourage job growth. Figure 16 presents the distribution of State and local incentives by groups of Enterprise Zones. Forty-eight Enterprise Zones in Group-1 received a combined amount of \$47 million of State incentives and about \$8.4 million of local incentives between years 2005 and 2015.

²³ For more details on cluster development please refer to the *Quantitative Methods* section on page 89 of this document.

Figure 16: Distribution of state and local incentives between groups of Enterprise Zones



Source: Virginia Department of Housing and Community Development; U.S. Census Bureau, 2010-2015 ACS 5-year Estimates

Similarly, 19 Enterprise Zones in Group-2 received approximately \$95 million in State incentives and \$16 million in local incentives during the same period. Enterprise Zones in Group-2 have received twice the state incentives and about 50 percent more local incentives than the zones in Group-1. Based on this distribution alone, it would be fair to expect higher business and job growth in Group-2 in comparison with the Group-1 Enterprise Zones.

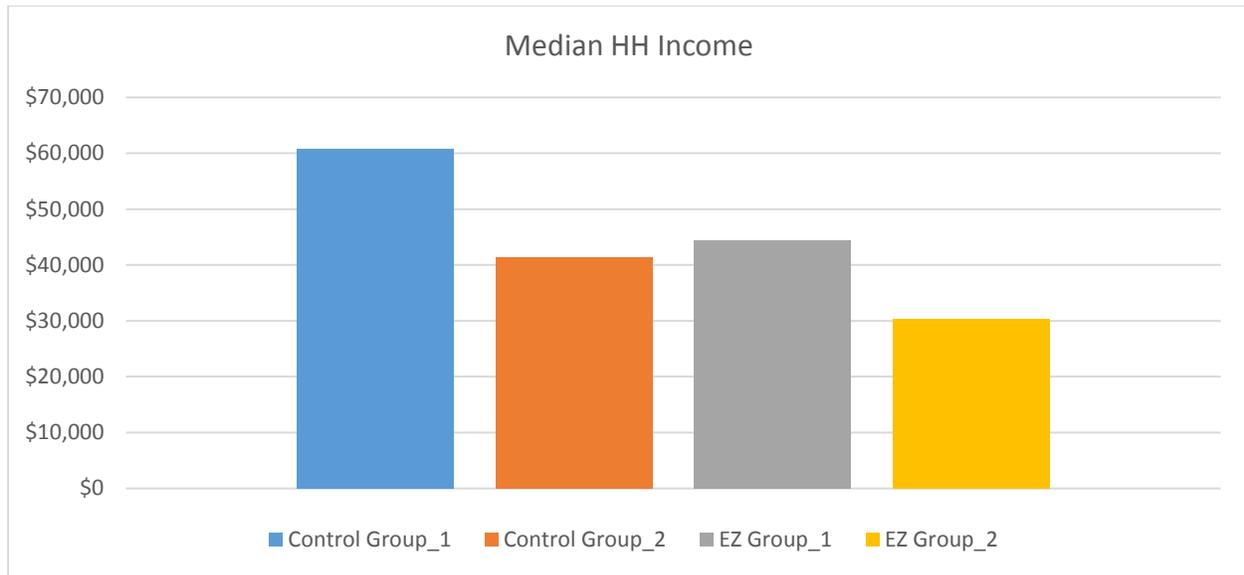
Urban or Rural

Of the total of 48 Enterprise Zone composites in Group-1, 15 (31 percent) are identified as having urban characteristics, whereas 13 out of 19 (68 percent) of EZs in Group-2 are located in urban areas. In this regard, Group-1 is a conglomerate of majority-rural zones, and Group-2 represents majority-urban zones.

Median Household Income

Median household income is one of the locality-wide distress factors that is considered as qualification criteria for Enterprise Zone designation. Median household income measured at the block group level and aggregated for each of the Enterprise Zone and control zone geographies show a sharp difference between the groups. Figure 17 shows a comparison between the clusters of Enterprise Zones and the control zones. In aggregate, the median household income in the Enterprise Zones is \$37,332 and that in the area designated as control zone is \$51,176. Of the two clusters created for the analysis, household income in Enterprise Zone Group-1 and the Control Group-1 are 46 percent higher than that of the Enterprise Zones and control zones in the second group.

Figure 17: Median household income comparison between Enterprise Zone and Control Zone clusters

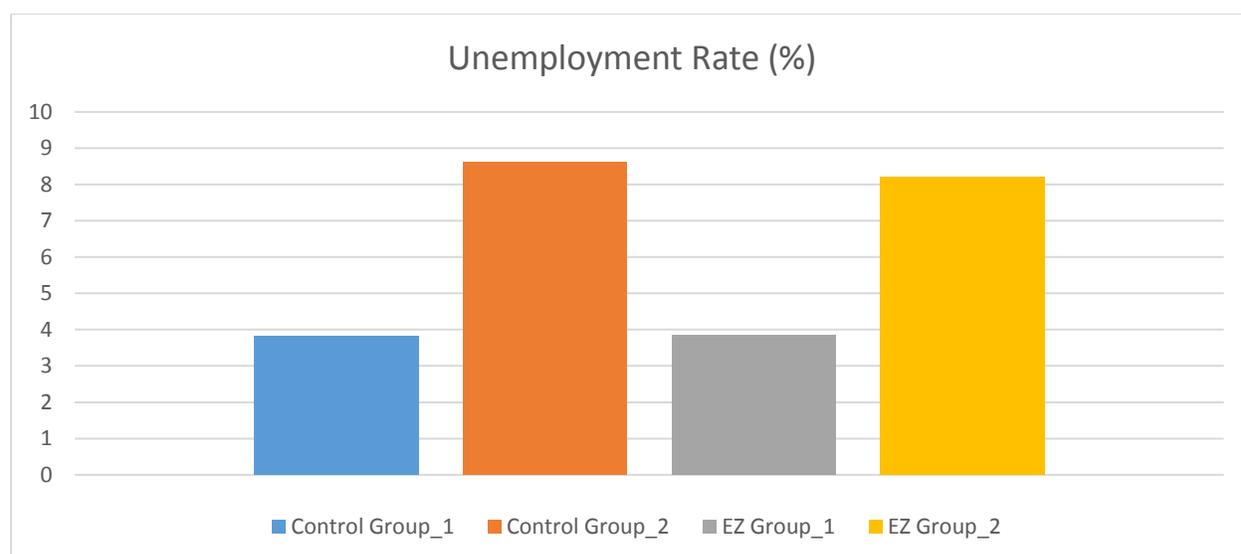


Source: Virginia Department of Housing and Community Development; U.S. Census Bureau, 2010-2015 ACS 5-year Estimates

Unemployment Rate

The unemployment rate is another distress factor that is instrumental in getting a locality to qualify for Enterprise Zone designation. It measures the health of the local economy. In general, higher employment rate (or lower unemployment rate) suggests a growing economy where new businesses are being established and more jobs are being created. However, a higher rate of unemployment within the Enterprise Zone boundaries do not necessarily suggest underperformance of the zones. They might be drawing their workforce from surrounding areas outside the zone boundaries. Figure 18 shows unemployment rates for Enterprise Zone and control zone clusters. Enterprise Zone Group-1 and Control Zone Group-1 have considerably lower (3.8 percent) unemployment rates compared to their counterparts (8.4 percent on average) in Group-2.

Figure 18: Comparison of unemployment rate between Enterprise Zone and Control Zone clusters



Source: Virginia Department of Housing and Community Development; U.S. Census Bureau, 2010-2015 ACS 5-year Estimates

Racial Characteristics

By itself, race does not play an important role on the performance of the Enterprise Zones. However, statistics show a correlation between higher percentage of minority population and lower income levels, lower level of infrastructure, inefficient local governments, and a lower quality of life²⁴. As a result, such localities may find it difficult to attract skilled labor force and are less appealing to wandering businesses.

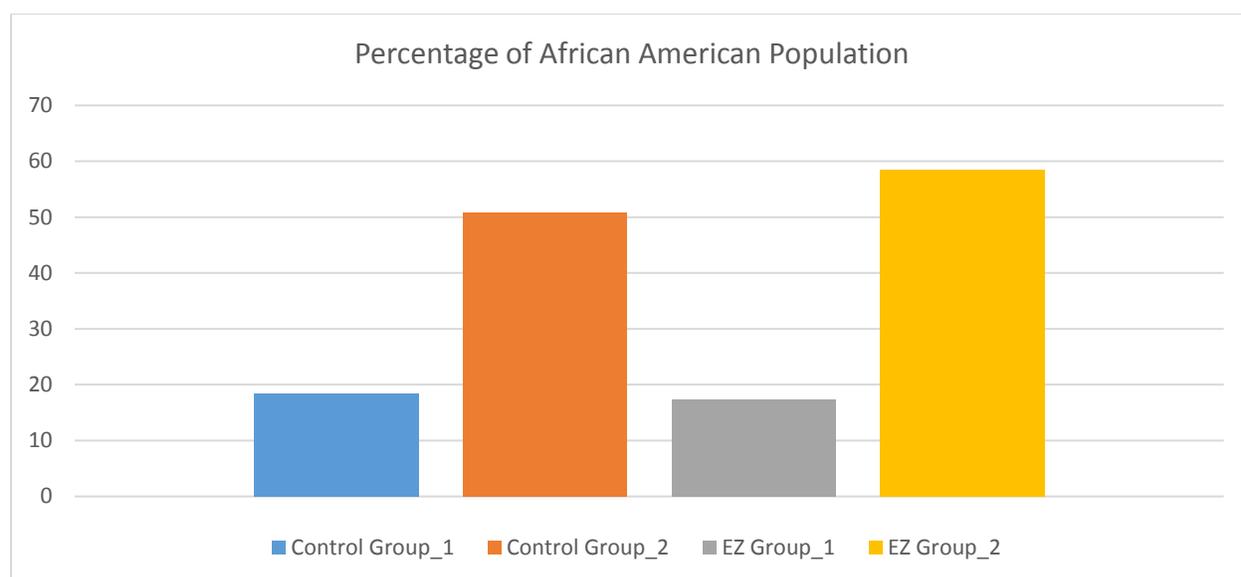
Figure 19 represents the racial composition of the Enterprise Zone and Control Zone clusters used in the study. African Americans make up about 58 percent of the population in Group-2 Enterprise Zones and 50 percent in Group-2 Control Zones. In Group-1 Enterprise Zones and Control zones, the average percentage of African Americans is less than 20 percent. This distribution is consistent with urban/rural distribution. Statistics show that highly urbanized areas or central cities have a higher percentage of African American population than suburban areas.

²⁴ Burns, Nancy. 1994. *The Formation of American Local Governments: Private Values in Public Institutions*. Book. New York: Oxford University Press.

Downs, Anthony. 1994. *New Visions for Metropolitan America*. Book. Washington, D.C. Cambridge, Mass.: Brookings Institution ; Lincoln Institute of Land Policy.

Nivola, Pietro S. 1999. *Laws of the Landscape: How Policies Shape Cities in Europe and America*. Book. Brookings Metro Series. Washington, D.C.: Brookings Institution.

Figure 19: Racial composition of Enterprise Zone and Control Zone clusters



Source: Virginia Department of Housing and Community Development; U.S. Census Bureau, 2010-2015 ACS 5-year Estimates

Summary of Group Characteristics

Table 21 presents a summary of the group characteristics.

Table 21: Summary of Enterprise Zone and Control Zone characteristics

CHARACTERISTICS	EZ-1	EZ-2	CG-1	CG-2
STATE INCENTIVES (% OF TOTAL)	33.00	66.00	--	--
LOCAL INCENTIVES (% OF TOTAL)	34.20	65.80	--	--
URBAN (%)	31.00	68.00	--	--
MEDIAN HOUSEHOLD INCOME (\$)	44,414.47	30,250.73	60,893.36	41,459.12
UNEMPLOYMENT RATE (%)	3.84	8.21	3.81	8.61
AFRICAN AMERICAN POPULATION (%)	17.30	58.40	18.50	50.80

Source: Virginia Department of Housing and Community Development; U.S. Census Bureau, 2010-2015 ACS 5-year Estimates

Based on the information presented in the table above, it is fair to pair up Enterprise Zone Group-1 with Control Zone Group-1 and EZ Group-2 with CG-Group-2, henceforth called as Pair-1 and Pair-2 respectively. Pair-1 has predominantly rural characteristics, has higher median household income, relatively lower unemployment rate and a lower percentage of African American population. Pair-2 is urban, has lower median household income, has a higher unemployment rate, and a higher percentage of African American population. Also, 27 percent of Enterprise Zones in Pair-2 received a higher share of state and local incentives compared to 70 percent of EZs in Pair-1.

Performance evaluation on business recruitment and job growth

Business Growth

Enterprise Zone performance is best measured in terms of the number of businesses they have been able to recruit and the number of additional jobs that were created over a period of time. We have counted the number of businesses and the number of jobs within the Enterprise Zone boundaries and compared that with businesses and jobs in our Control Zones over a period of 15 years from 2000 to 2015. Table 22 presents the total number of jobs located in the Enterprise Zone groups and control groups during the period.

Enterprise Zones, generally experienced positive growth in number of businesses between the years 2000 and 2015 compared to the control zone. Enterprise Zones registered an overall growth of 15.3 percent compared to 11.3 percent growth in the number of businesses in the Control Zone. Of the two pair we selected for our study, Pair-1 which includes EZ-1 and CZ-1 experienced comparable growths at 17.8 percent and 18.3 percent respectively. However, the Enterprise Zones in the second pair registered a positive growth of 14.1 percent, whereas their counterpart control zone saw about a 4.5 percent reduction in the number of businesses.

Table 22: Number of businesses in Enterprise Zone groups and Control Zone groups (2000 to 2015)

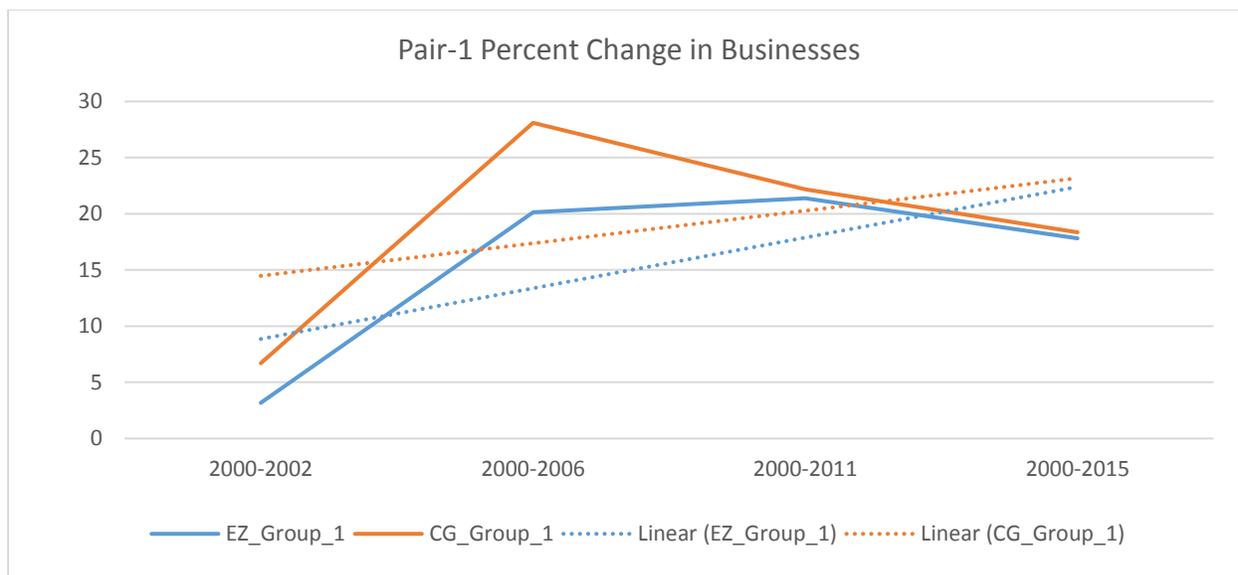
GEOGRAPHY	FY2000	FY2002	FY2006	FY2011	FY2015	% CHANGE (2000-2015)
EZ_GROUP_1	5,575	5,752	6,698	6,767	6,568	17.8%
EZ_GROUP_2	11,495	11,549	13,402	12,834	13,122	14.1%
CZ_GROUP_1	7,133	7,611	9,137	8,714	8,441	18.3%
CZ_GROUP_2	3,763	3,827	3,922	3,687	3,601	-4.3%

Source: Virginia Department of Housing and Community Development; U.S. Census Bureau, 2010-2015 ACS 5-year Estimates

Figure 20 and Figure 21 show the business growth trends between both pairs of Enterprise Zone Groups and the Control Zones.

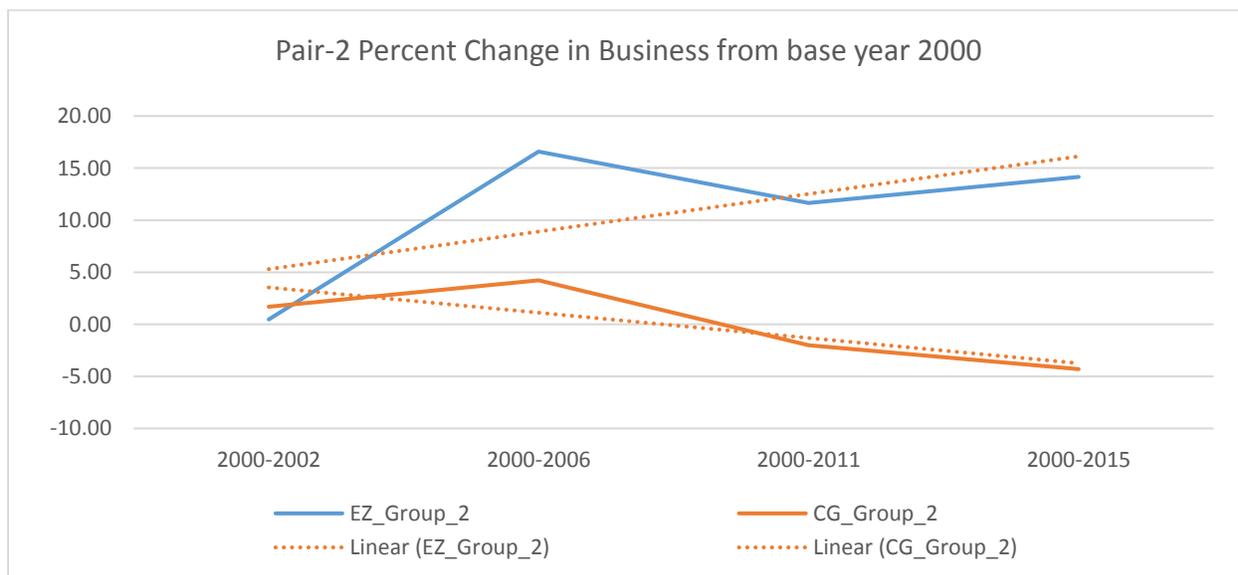
Enterprise Zones and control zones in Pair-1 show substantial positive growth in the number of business establishments between years 2000 and 2006. During this period the businesses in the Enterprise Zones grew by 20 percent and the nearby commercial areas in the control zone saw almost 30 percent increase in the number of businesses. Between the years 2006 and 2011, when the entire country was experiencing an economic decline, Enterprise Zones in the study Group-1 continued to grow by 2 percentage points whereas the control zone lost more than 6 percent of businesses. The dotted lines in the diagram show linear growth trends for both Enterprise Zones and control zones. Even though both trends are comparable, the blue dotted line representing Enterprise Zones has slightly higher positive slope than that of the control zone.

Figure 20: Percent change in businesses in Pair 1 (EZ-1 and CZ-1) from base year 2000



Source: Virginia Department of Housing and Community Development; U.S. Census Bureau, 2010-2015 ACS 5-year Estimates; Quarterly Census of Employment and Wages, 2000-2015

Figure 21: Percent change in businesses in Pair-2 (EZ-2 and CZ-2) from base year 2000



Source: Virginia Department of Housing and Community Development; U.S. Census Bureau, 2010-2015 ACS 5-year Estimates; Quarterly Census of Employment and Wages, 2000-2015

In our second study pair, the Enterprise Zones performed significantly better in terms of business growth compared to the nearby commercial areas in the control zones. Businesses in the Enterprise Zones grew by about 16 percentage points between 2000 and 2006. Business numbers dropped by 4 percentage points in 2011 and gained about 2 points by the year 2015. On average, there has been a 12.5 percent increase in businesses in the Enterprise Zones since the year 2000.

However, the trend of businesses in the control zones shows a consistent decline in the number of businesses between 2000 and 2015. Business grew by 2.5 percent between 2000 and 2006, but this growth is small when compared with the 15 percent growth in the Enterprise Zones during the same period. It declined to negative 2 percent in 2011 and ended up with a negative 4 percent decline by 2015. The dotted trend lines for the Enterprise Zones show substantial positive slope whereas the overall business growth trend in the control zones has been negative.

Enterprise Zones in both the study pairs show positive growth in the number of businesses during the study period. Group-1 zones showed a marginally better growth trend compared to the nearby commercial areas whereas Group-2 zones registered substantially better business growth. It should be noted that the Enterprise Zones are supposed to be economically depressed in comparison with the nearby commercial areas. The fact that these zones show business growth trends comparable to, and, in some instances, better than their surrounding areas suggests that the Enterprise Zones have been successful in their mission. However, since the Enterprise Zone incentives are targeted to specific industry sectors, it is worthwhile to examine which sectors are performing better than others.

Business Growth by Industry Sectors

Following are the top 6 private industry sectors that saw most businesses move into the Group-1 Enterprise Zones:

- Accommodation and Food Services
- Health Care and Social Assistance
- Professional, Scientific, and Technical Services
- Administrative and Support and Waste Management and Remediation Services
- Transportation and Warehousing
- Manufacturing

These six sectors together contributed 97 percent (810 of 834) of all the new private sector businesses recruited in Group-1 Enterprise Zones between 2000 and 2015²⁵. Other sectors such as Mining, Quarrying, and Oil and Gas Extraction; Utilities; and Agriculture, Forestry, Fishing and Hunting register highest growth percentages during the period, but the actual numbers of businesses recruited in these sectors are relatively low. Among the six sectors listed above, selected businesses classified under Accommodation and Food services and Administrative services do not qualify for the state Job Creation Grant. This group of Enterprise Zones saw business decline in sectors such as Other Services (except public administration); Information; and Wholesale Trade.

Group-1 Control Zone also experienced the highest growth in the following sectors²⁶:

²⁵ Please refer to Appendix A, pp. 17-18 for business growth by industry sector in Group-1 Enterprise Zones.

²⁶ Please refer to Appendix A, pp. 17-18 for business growth by industry sector in Group-1 Control Zones.

- Professional, Scientific, and Technical Services
- Health Care and Social Assistance
- Accommodation and Food Services
- Other Services (except Public Administration)
- Administrative and Support and Waste Management and Remediation Services
- Retail Trade

These five sectors contributed to 78 percent of all business growth in Control Zone-1. Retail businesses, personal services, food and beverages, administrative services, etc. listed above would not have qualified for the state Job Creation Grant, whereas most of them with an exception of Administrative Services would have qualified for the Real Property Improvement Grant had they been inside the Enterprise Zones. This control zone experienced a business decline in Construction; Information; Finance and Insurance; and Manufacturing Sectors.

The Manufacturing sector is most suited to enjoy the benefits of the state JCG. The relative growth of manufacturing related businesses in the Enterprise Zone and corresponding loss in the control zone might be attributed to the presence of JCG. This effect will be explored later in this chapter.

Similarly, the top six private sectors²⁷ that recruited the most businesses in Group-2 Enterprise Zones are:

- Professional, Scientific, and Technical Services
- Health Care and Social Assistance
- Accommodation and Food Services
- Administrative and Support and Waste Management and Remediation Services
- Management of Companies and Enterprises
- Educational Services

These sectors contributed to 93 percent of all businesses recruited within the zones. The industry sectors that lost businesses in this group were Manufacturing; Retail Trade; Wholesale Trade; Other Services (Except Public Administration); Finance and Insurance; and Transportation and Warehousing. Most of the top growth sectors in this group of Enterprise Zones are similar to that of Group-1 with the exception of the Manufacturing sector, which did not make to the list. The sectors that added or lost businesses in the control zone are also comparable with that of the Enterprise Zone in this group.

The control zone in Group-2 added new businesses mostly in the following sectors²⁸:

- Health Care and Social Assistance
- Professional, Scientific, and Technical Services
- Accommodation and Food Services
- Educational Services
- Utilities
- Administrative and Support and Waste Management and Remediation Services

²⁷ Please refer to Appendix A, pp. 17-18 for business growth by industry sector in Group-2 Enterprise Zones.

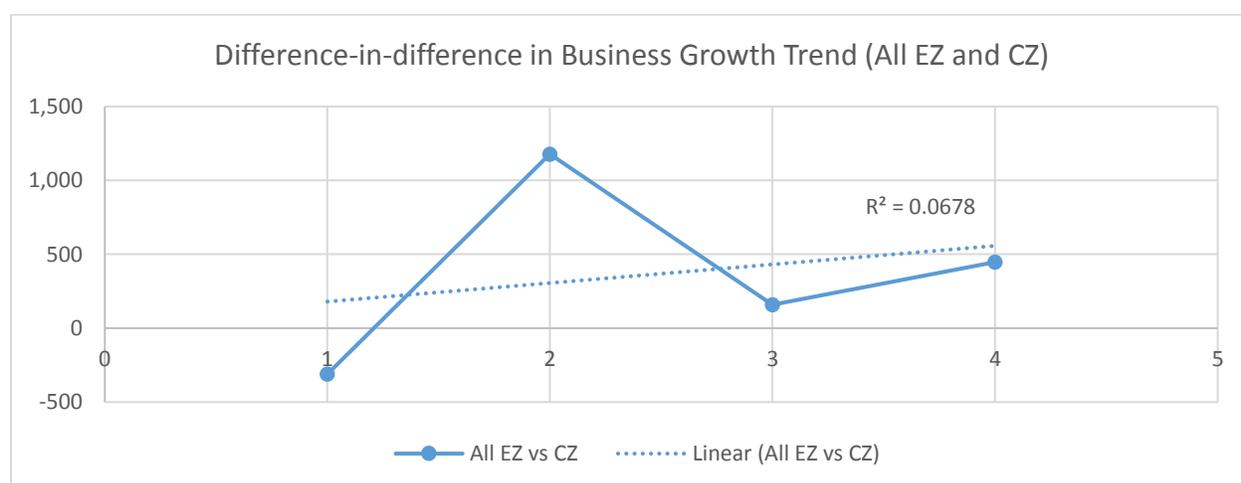
²⁸ Please refer to Appendix A, pp. 17-18 for business growth by industry sector in Group-2 Control Zones.

These six sectors contributed to almost 99 percent of all job growth in the selected zone. However, business declined in all the remaining sectors with Construction; Services; Retail Trade; Finance and Insurance; and Manufacturing taking most of the brunt. In all the industry sectors that reported business growth in Group-2, the Enterprise Zones experienced substantially higher percentage growth compared to the respective control zone.

Difference-in-Difference Analysis Business Growth

Next, we use a difference-in-difference approach to examine if there is statistically significant difference in business growth between the pairs of Enterprise Zone group and the control group. This method works under the assumption that both Enterprise Zone and control zone in each pair have been impacted with the same external economic forces during the period. First, we calculate the change in the number of businesses separately in the Enterprise Zones and the Control Zones by subtracting numbers from the preceding data year. Then we subtract the resulting numbers between each Enterprise Zone group and control zone group to see if the changes between them are significant. The D-D analysis is first run between all Enterprise Zones and all control zones. The results for difference in business growth are presented in Figure 22.

Figure 22: Difference-in-difference in business growth between All EZ and All CZ



The purpose of the D-D analysis is to examine if the business growth trend in the Enterprise Zones are significantly higher (or lower) than the control zones. The difference in the number of businesses in the successive time periods within the Enterprise Zones and control zones is represented in Figure 22. Except for the 2002-2006 period, where the Enterprise Zones registered significantly higher business growth compared to the control zone, during all other time periods growth within the Enterprise Zones have been moderately higher to the growth in the control zone. The slightly positive slope of the business growth trend differences tells us that the Enterprise Zones in general have been able to add relatively more businesses than the control zones during this period.

Next, we study the differences in business and job growth rate between the pairs of Enterprise Zones and control zones. Figure 23 and Figure 24 represent the D-D findings in business growth rate for both pairs of Enterprise Zone group and the control group.

Figure 23: Difference-in-difference in business growth between EZ-1 and CZ-1

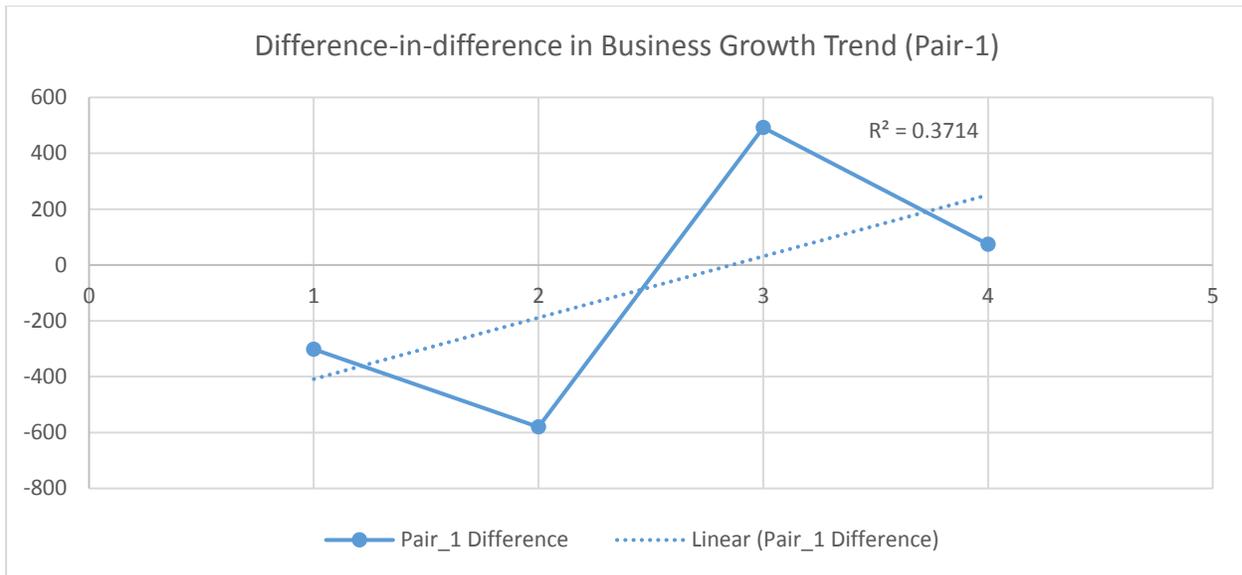
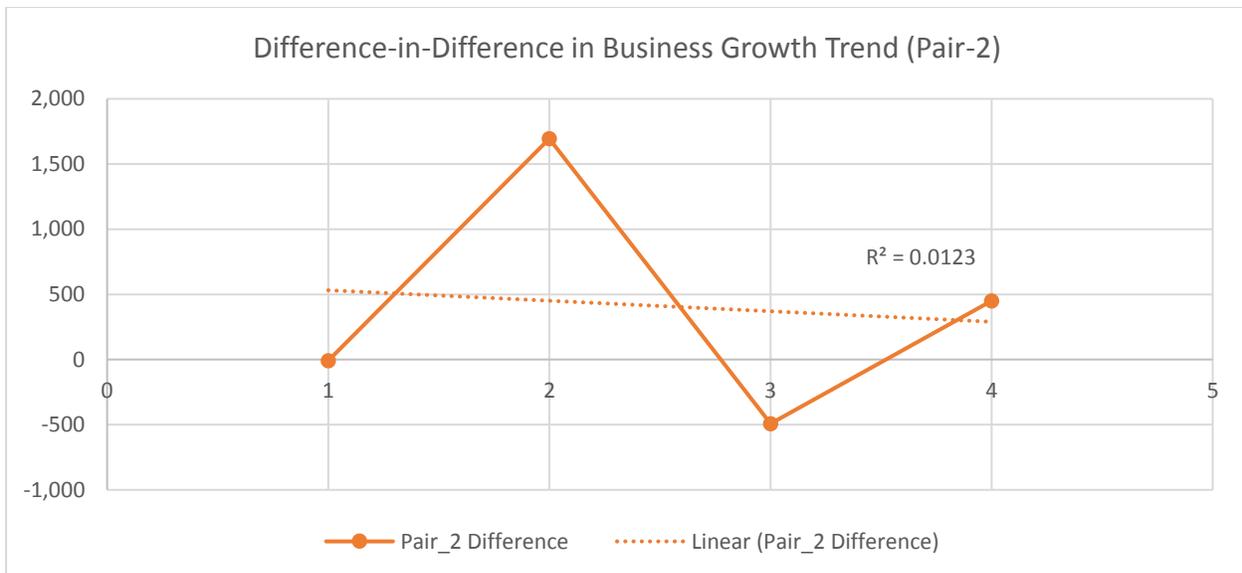


Figure 24: Difference-in-difference in business growth between EZ-2 and CZ-2



The positive slope of the trend line in Figure 23 suggests that the Enterprise Zones in Group-1 have recruited more businesses compared to the control zones during the study period. However, the flat trend line in Figure 24 signifies that the Enterprise Zones in Group-2 recruited businesses at almost the same rate as did the control zones. This method does not test if either of the study areas did better or worse, but examines the relative difference in growth trends.

Job Growth

The performance of Enterprise Zones is not only measured in terms of the number of businesses they are able to recruit. Job growth through the creation of new positions and hiring of additional labor are also

signs of a growing local economy. The QCEW data published by the Bureau of Labor Statistics also provides estimates for the number of jobs at each business location. We have aggregated the data for Enterprise Zones and Control Zones from the year 2000 to 2015. Table 23 presents the total number of jobs in both Enterprise Zone groups and control zone groups measured for the study period.

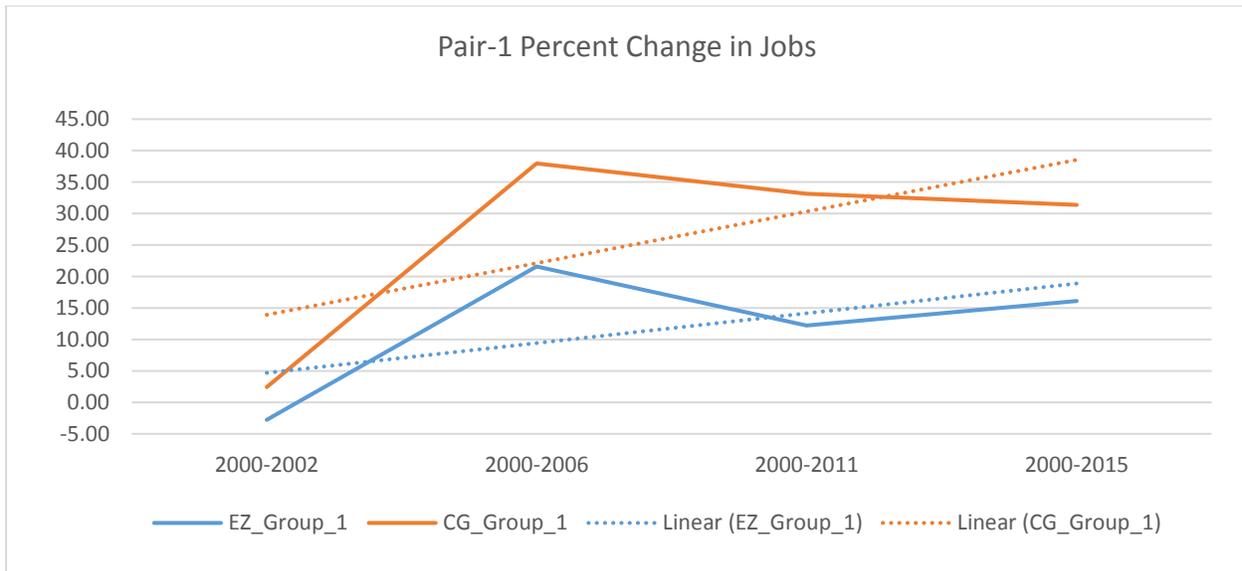
Table 23: Number of jobs in Enterprise Zone groups and Control Zone groups (2000 to 2015)

GEOGRAPHY	FY2000	FY2002	FY2006	FY2011	FY2015	%CHANGE (2000-2015)
EZ_GROUP_1	116,110	112,891	141,178	130,299	134,836	16.1%
EZ_GROUP_2	270,021	248,426	335,222	310,853	293,861	8.8%
CZ_GROUP_1	126,880	129,958	175,045	168,910	166,710	31.3%
CZ_GROUP_2	70,842	73,275	70,230	67,987	65,998	-6.8%

Virginia Enterprise Zones added 11 percent more jobs between 2000 and 2015, which is substantially lower than the 17.6 percent growth in the control zones. During the period, Enterprise Zones in Group-1 experienced job growth of 16.1 percent which is much lower than the 31.3 percent increase in Control Zone-1. On the other hand, Enterprise Zones in Group-2 saw 8.8 percent job growth, whereas jobs in the Control Zone-2 declined by 6.8 percent. Enterprise Zones in both the groups added jobs during the study period; however, zones in Group -2 added comparatively more jobs than those in Group-1.

Figure 25 compares percentage change in jobs between Group-1 Enterprise Zones and control zones from 2000 through 2015.

Figure 25: Percent change in jobs in Pair-1 (EZ-1 and CZ-1) from base year 2000

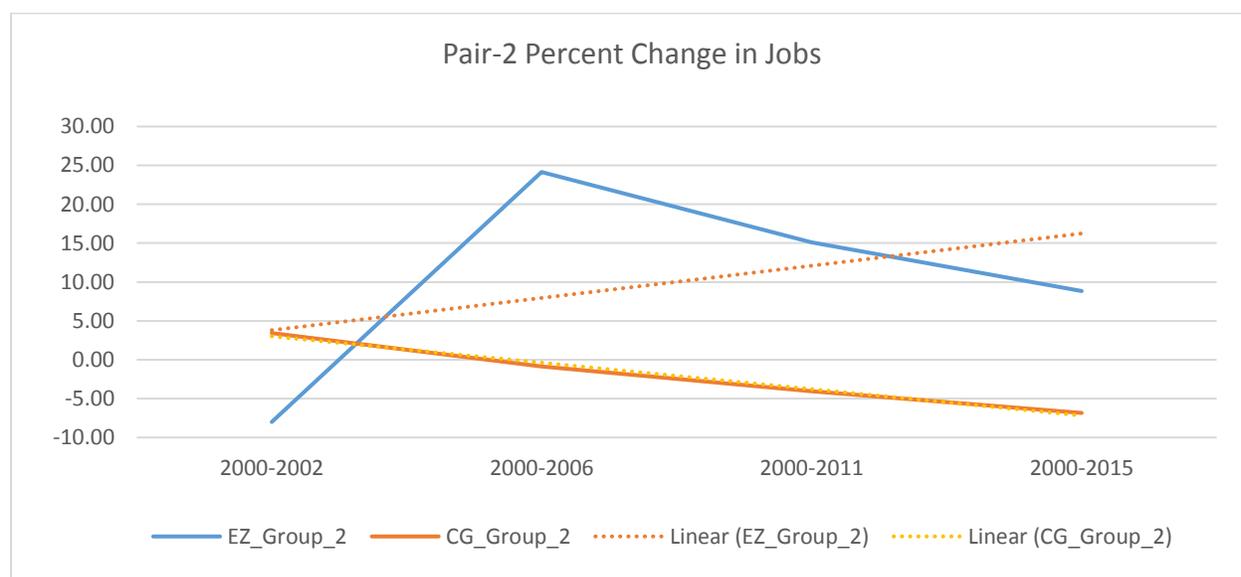


Source: Virginia Department of Housing and Community Development; U.S. Census Bureau, 2010-2015 ACS 5-year Estimates; Quarterly Census of Employment and Wages, 2000-2015

Enterprise Zones in Group-1 saw a 24 percent increase in jobs between 2000 and 2006 compared to the control zones in Group-1, which saw 35.5 percent growth. By 2011 jobs in the Enterprise Zones dropped by 9.4 percentage points whereas the control zones only experienced a decline by about 5 percentage points. Jobs in the Group-1 control zones continued to decline by 2 percent from 2011 to 2015 while Group-1 Enterprise Zones added about 4 percent of jobs during that period. The trend lines in Figure 25 suggest that job growth in Control Zone-1 was marginally better than that in Enterprise Zone-1 between 2000 and 2015.

Figure 26 shows a similar comparison of job growth trend between Enterprise Zones and control zones in Group-2. Enterprise Zones in this group added about 32 percent jobs between 2000 and 2006 and subsequently lost about 15 percent between 2006 and 2015, thus experiencing about 17 percent growth during the entire study period. Group-2 control zones, however, consistently lost jobs by about 7 percent during the same period.

Figure 26: Percent change in jobs in Pair-2 (EZ-2 and CZ-2) from base year 2000



Source: Virginia Department of Housing and Community Development; U.S. Census Bureau, 2010-2015 ACS 5-year Estimates; Quarterly Census of Employment and Wages, 2000-2015

Job Growth by Industry Sector

The following private industry sectors added most jobs within Group-1 Enterprise Zones:

- Health Care and Social Assistance
- Administrative and Support and Waste Management and Remediation Services
- Accommodation and Food Services
- Retail Trade
- Transportation and Warehousing
- Construction

Together these sectors contributed to 80 percent of total job growth within Group-1 Enterprise Zones. Even though Mining and Quarrying, Agriculture, Arts and Entertainment, and Utilities sectors have reported higher percentage growth, the number of jobs added in those sectors are substantially lower.

Some of the sectors that registered highest job growth such as Administrative Services, Food and Beverage providers, and Retail Trade do not qualify for the state JCG, but except Administrative Services, all top sectors qualify for the state RPIG. It is also worthwhile to note that while the Manufacturing sector is among the top six sectors that added new businesses in this zone, it did not register comparable job growth. The possible reasons for such a discrepancy are discussed in the analysis section.

This group of Enterprise Zones lost most jobs in the following sectors:

- Educational Services
- Information
- Manufacturing
- Real Estate and Rental and Leasing
- Wholesale Trade

Similarly, Group-1 control zones added the most jobs in the following sectors:

- Health Care and Social Assistance
- Transportation and Warehousing
- Accommodation and Food Services
- Administrative and Support and Waste Management and Remediation Services
- Management of Companies and Enterprises
- Educational Services
- Professional, Scientific, and Technical Services
- Arts, Entertainment, and Recreation

These eight sectors contributed to 88 percent of all job growth. Almost half of this growth occurred in Health Care and Social Assistance sector. Businesses providing food and personal services could not have qualified for the state JCG even if the businesses were located inside the Enterprise Zones. The jobs that were lost in the non-EZ areas were in the Finance and Insurance, Information, and Real Estate and Rental and Leasing sectors.

Looking into our second Enterprise Zone-Control Zone pair, we see similar trends in Health Care, Accommodation and Food, and Management sectors. Most of the jobs within the Enterprise Zones are created in the following private sectors:

- Health Care and Social Assistance
- Management of Companies and Enterprises
- Accommodation and Food Services
- Professional, Scientific, and Technical Services
- Arts, Entertainment, and Recreation
- Educational Services

These six sectors collectively contributed to 97 percent of job growth within the Enterprise Zones, out of which the Health Care and Social Assistance sector alone contributed 52 percent of jobs. Jobs in the Health Care sector grew by 97 percent from the year 2000. Other sectors registering high percentage growth are Management of Companies and Enterprises (60 percent); Arts, Entertainment, and Recreation (42

percent); Accommodation and Food Services (27 percent); and Professional, Scientific, and Technical Services (27 percent).

The control zones in the second group, however, experienced growth in slightly different sectors. Most of the growth occurred in:

- Educational Services
- Professional, Scientific, and Technical Services
- Transportation and Warehousing

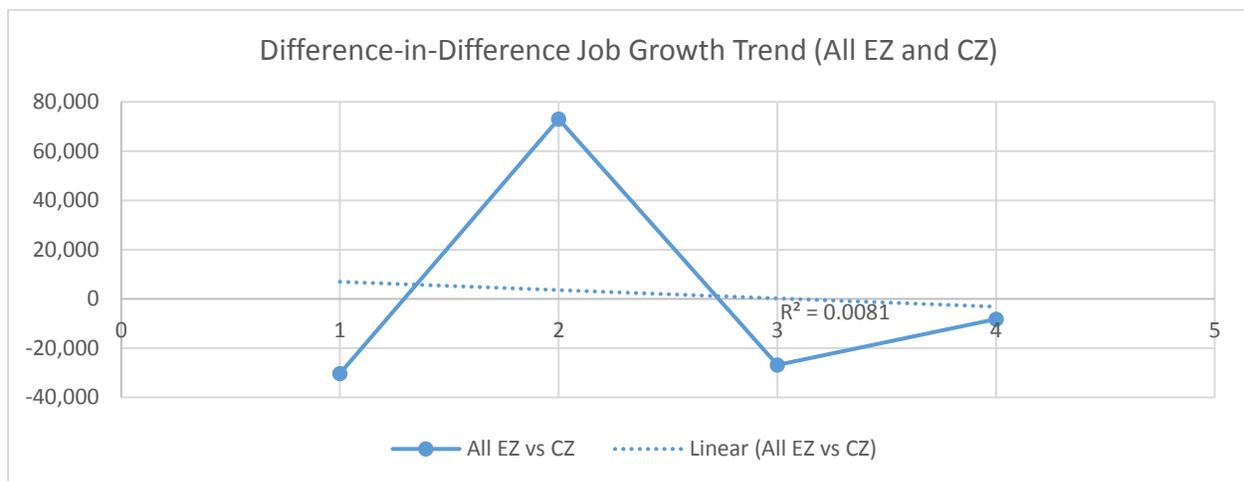
These three sectors make up about 97 percent of total job growth in this group between 2000 and 2015. Most other sectors experienced a decline in job numbers. Following are the industry sectors reporting the highest decline:

- Information (-57 percent)
- Management of Companies and Enterprises (-45 percent)
- Finance and Insurance (-39 percent)
- Manufacturing (-34 percent)
- Real Estate and Rental and Leasing (-26 percent)
- Wholesale Trade (-23 percent)

Difference-in-Difference Analysis: Job Growth

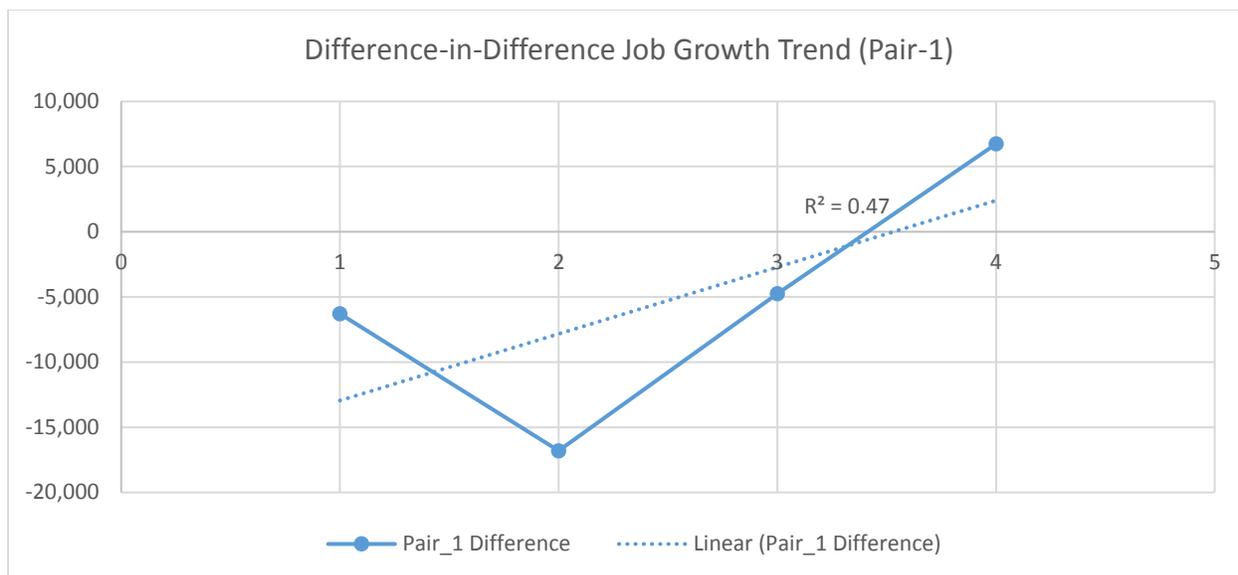
Job growth trend comparison between the Enterprise Zones and the control zones shows a slightly different outcome than that of business growth. Figure 27 represents the difference in job growth rates between all Enterprise Zones and the control zones. The relatively flat trend line for the difference in job growth signifies that the Enterprise Zones overall added jobs at almost the same rate as the control zones.

Figure 27: Difference-in-difference in job growth between all EZ and all CZ



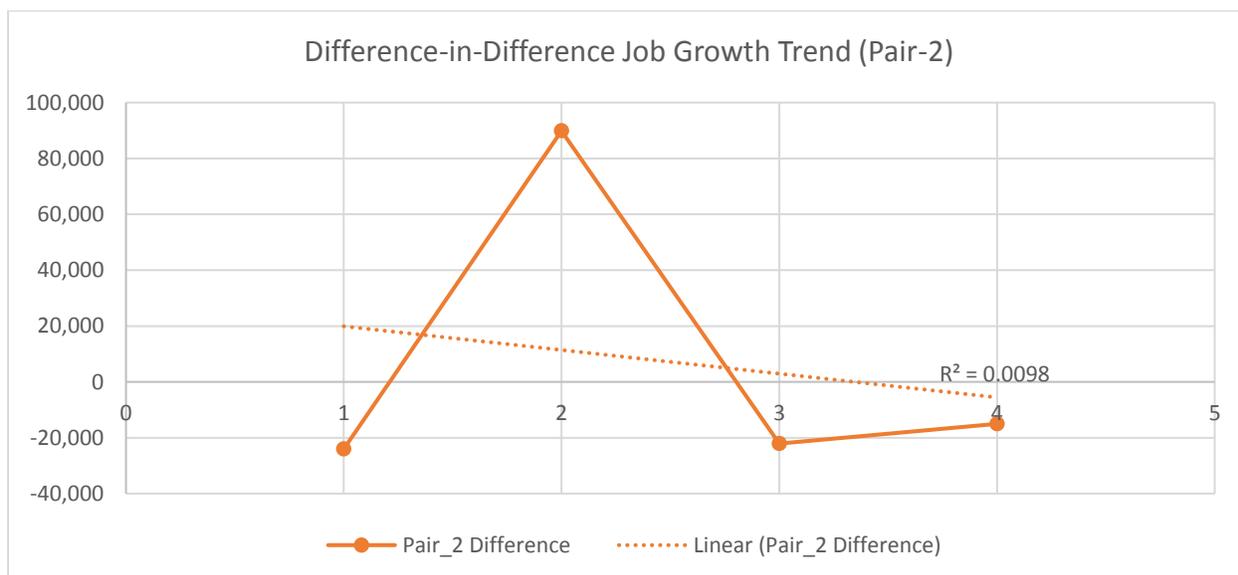
To further explore the differences in job growth trends, we follow up with group analysis. Figure 28 presents the result of Difference-in-Difference in job growth between Group-1 Enterprise Zones and their respective control zones. Enterprise Zones in this group show significantly higher job growth rate compared to the control zones. The positive slope of the trend line signifies that Enterprise Zones consistently added more jobs in each data period than the control zones.

Figure 28: Difference-in-difference in job growth between EZ-1 and CZ-1



However, similar analysis done for the Enterprise Zones and the Control Zone in the second group tells a very different story. The results of the D-D analysis for Group-2 Enterprise Zones and Control Zone is presented in Figure 29. This group does not show the real difference in the rate of job growth between the two zones except between the years 2002 and 2006 (second time period, $t=2$). The trend line with marginally downward slope signifies that on an average the control zones added slightly more jobs between the selected time periods than the Enterprise Zones.

Figure 29: Difference-in-difference in job growth between EZ-2 and CZ-2



These findings suggest that over the period of fifteen years between 2000 and 2015 most Enterprise Zones in Group-1—characterized as being located in pockets that have relatively better economic conditions and

in mostly rural areas—have demonstrated better performance in recruiting businesses and creating jobs than the corresponding areas outside the Enterprise Zones. Most of those jobs were created in Health Care, Accommodation and Food, Administrative, Retail, and Transportation sectors. It should be noted that some of these growing sectors such as retail trade, food and beverages services, and some administrative services do not qualify for the state Job Creation Grant; however they are eligible to receive the Real Property Improvement Grant if they make qualifying property investments. This group of Enterprise Zones did recruit some Manufacturing sector industries as shown in the descriptive statistics above. However, manufacturing jobs are not among the top job growth sectors in this group.

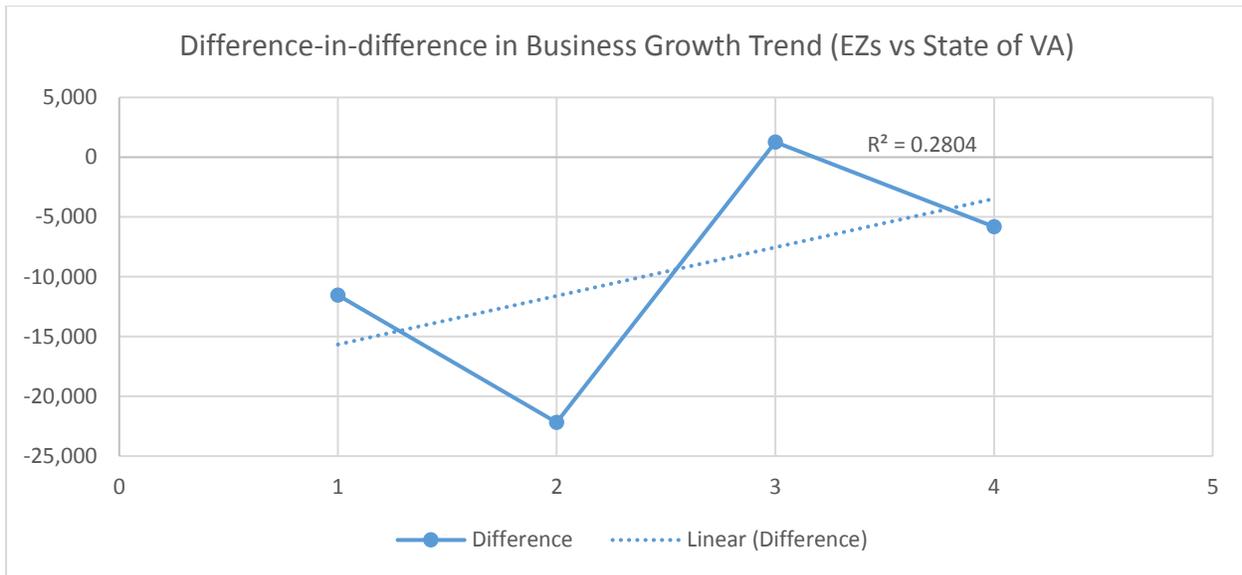
The D-D analysis on the second Enterprise Zone–control zone group tells us that the Enterprise Zones designated in economically distressed urban areas have had relatively lower performance in terms of business recruitment and job growth compared to the nearby commercial areas. This, however, does not suggest that the zones are not making progress at all. It simply indicates that Enterprise Zones are not growing businesses and jobs as fast as the control zones. This is expected in terms of Group-2 Enterprise Zones, which are predominantly located in the most economically depressed pockets of urban neighborhoods. The very fact that they are located in urban neighborhoods suggests that sizeable commercial areas outside the zones may compete for jobs. However, business recruitment rates between the Enterprise Zones and the control zones in urban areas has been comparable. Business growth has mostly occurred in the Professional, Scientific, and Technical, Health Care, Accommodation and Food, Administrative, and Management sectors.

In summary, compared to the neighboring commercial areas, Group-1 Enterprise Zones added more jobs and Group-2 Enterprise Zones added more businesses over the 15-year study period. Among others, the Manufacturing sector added jobs in mostly rural Enterprise Zones, whereas urban Enterprise Zones experienced a loss in manufacturing jobs. Additionally, a sizable number of businesses and jobs added inside the Enterprise Zones are in sectors that do not qualify for the state Job Creation Grant, only for the state Real Property Improvement Grant. The following section will identify the industry sectors that reported business and job changes that closely correspond with the amount of incentives disbursed within the zones using multivariate regression models.

Difference-in-Difference Analysis: Enterprise Zones and the State

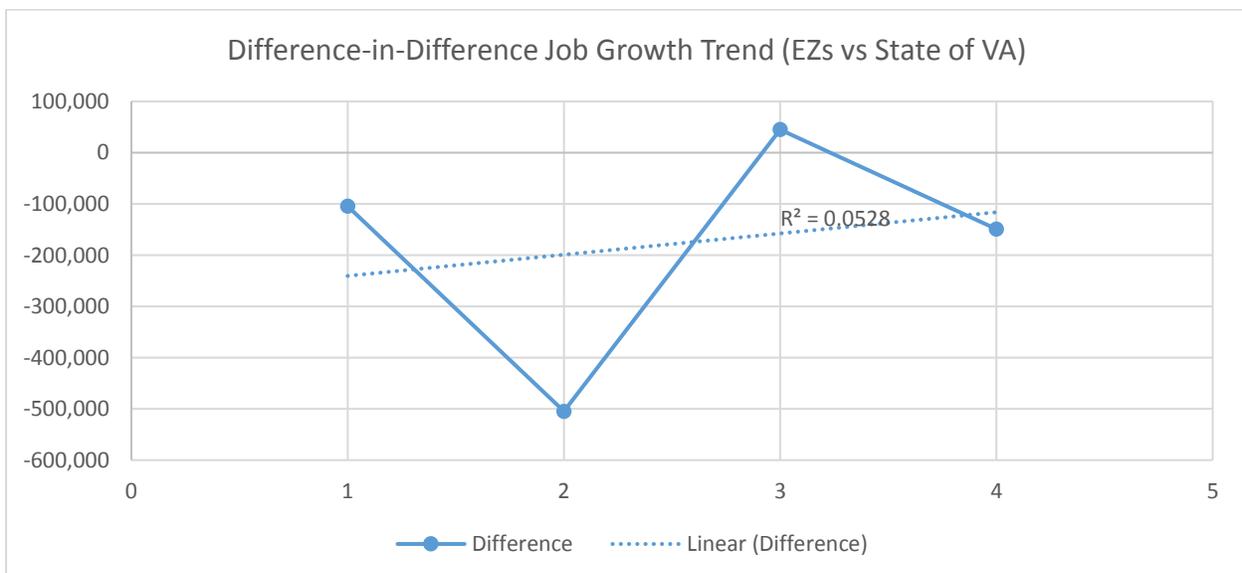
It is rather tempting to assume that the business and job trends in the Enterprise Zones and the control zones are a subset of an overall statewide trend. We further conduct a difference-in-difference analysis in business and job trends between Enterprise Zones and the state of Virginia over the same study period to see if those trends are similar to the ones we just saw. Figure 30 and Figure 31 represent the findings of the analysis.

Figure 30: Difference-in-difference in business growth between Enterprise Zones and the State of Virginia



The D-D analysis between the Enterprise Zones and the state overall suggest that the both the business growth rate and the job growth rate in Enterprise Zones have been slightly better than that of the state as a whole. This is not to say that the Enterprise Zones are growing economically and the state is not, but it suggests that the Enterprise Zones are adding businesses and jobs at a slightly faster rate—or losing them at a comparatively slower rate—than the rest of the state. This finding is different from the earlier finding where Enterprise Zones did not show any different business growth trends compared to the control zones. This analysis helps us to make sure that local economic trends do not represent a microcosm of statewide trends.

Figure 31: Difference-in-difference in job growth between Enterprise Zones and the State of Virginia



Performance of Incentives in Attracting Businesses and Creating Jobs

Performance of Aggregate State and Local Incentives

The Enterprise Zone program went through a major transformation in the year 2005 when the tax credit-based program was converted into a grant-based program. To maintain consistency in how we are measuring the program incentives, we use incentive data from 2005 through 2015, which is the most current year available. The incentive dollars disbursed during that period have been corrected for inflation and are converted to constant 2015 dollars for the analysis. The two major aspects of the grant program – Job Creation Grant and Real Property Improvement Grant – have been analyzed in aggregate as well as separately.

Although local incentives are not a state-administered part of the Enterprise Zone program, they are still very closely tied to it. We have received copies of local incentive reports which allowed us to glean grant information for the years 2011 through 2014. All dollar amounts have been converted to constant 2015 values.

The dependent (or response) variables are the difference in businesses and jobs between the years 2002²⁹ and 2015. The changes are calculated in aggregate as well as by industry sectors. The differences are standardized to prevent any one sector with very high job growth from influencing the changes in other sectors. Not all industry sectors create jobs equally. A single manufacturing, mining, or agricultural establishment can register job growth larger than various non-labor intensive sectors combined. Standardization allows us to do a better comparison between industry sectors.

Besides the predictor and response variables, there are several control variables used in the modeling process, including population, the size of the workforce, proximity to highways, and location in an urban or rural area. Any relationship not accounted for in the models is represented by the error term or the intercept. Table 24 presents the results of regressing aggregate state and local incentives on business and job growth.

The model with *Change in Businesses* as the dependent variable reports a high fit statistics or coefficient of determination (*r-squared*) of .64 and *adjusted r-squared* of .56. The numerical value of *r-squared* suggests that the predictor and control variables in the model are able to explain about 64 percent of variations in the dependent variable. Sometimes *r-squared* tends to get inflated due to the presence of a large number of redundant variables in the model. Adjusted *r-squared* controls for such redundancy and calculates model-fit statistics only for those variables that are statistically significant in the model. The number of asterisks adjacent to the standardized coefficients in the table represents the level of statistical significance of the coefficient. Three asterisks signify that the changes in the predictor variables are very highly associated with the changes in the response variable. Two asterisks suggest the relationship is moderately significant and one asterisk suggests low significance. Numbers without an asterisk are presented for reference only and should be considered as having no significance in the analysis.

The standardized coefficients and their significances in the table suggest that both state and local incentives have been instrumental in attracting new businesses and creating new jobs within the Enterprise Zones. The standardized coefficient is explained in terms of percentage change in the response variable caused by a unit percent change in the predictor variable. When the state incentives increase by

²⁹ 2002 is the most recent data year before the program converted into a grant based incentive program.

one percentage point, there is a corresponding increase of 0.57 points in the number of businesses added and a 0.67 point increase in the number of jobs created within the Enterprise Zones.

The variable representing local incentives also reports statistically significant coefficients against business and job growth. A 100 percent increase in the local incentives correlates with growth in businesses by 73 percent and growth in jobs by 66 percent, controlling for concurrent effects of the population in the Enterprise Zones, workforce residing within the radius of 20 miles from the zones, economic characteristics of the zones, proximity to the interstate highways, and its location in an urban or a rural area.

Table 24: Results of Aggregate State and Local Incentives Regressed on Business and Job Growth within Virginia Enterprise Zones from 2002 to 2015

PARAMETERS	STANDARDIZED COEFFICIENTS (B)	
	Δ Businesses (DV1) ³⁰	Δ Jobs (DV2) ³¹
PREDICTOR VARIABLES		
TOTAL STATE INCENTIVES DISBURSED BETWEEN 2005 AND 2015 (CONSTANT 2015 DOLLARS)	.57**	.67***
TOTAL LOCAL INCENTIVES FROM 2011 TO 2015 (CONSTANT 2015 DOLLARS)	.73***	.66***
CONTROL VARIABLES		
WORKFORCE LOCATED AT 20 MILES RADIUS FROM THE ENTERPRISE ZONES	-.25	-.41**
TOTAL POPULATION RESIDING IN THE ENTERPRISE ZONES (2014)	.04	.04
PROXIMITY TO THE INTERSTATE HIGHWAY	0	-.01
MEDIAN HOUSEHOLD INCOME	-.12	-.22
ENTERPRISE ZONES LOCATED IN AN URBAN AREA	-.65	-.42
MODEL STATISTICS		
R-SQUARED	.64	.68
ADJUSTED R-SQUARED	.56	.61
INTERCEPT	.22	.18

Notes: $p(\text{significance}) = \text{***}.001 (99\% \text{ CI}) ; \text{**}.05 (95\% \text{ CI}) ; \text{*}.1 (90\% \text{ CI}) ; N = 68$

Performance by Types of State and Local Incentives

This section further examines which of the state and local incentives have maximum impact on business and job growth. The two components of the state incentives – Job Creation Grant (JCG) and Real Property Improvement Grant (RPIG) – are separately regressed on business and job growth. Table 25 presents the result of two different state incentives regressed on business and job growth.

Both the models attain fit statistics in the neighborhood of 60 percent. Out of the two state incentives, RPIG produces coefficients with statistical significance at 99 percent confidence interval, whereas the coefficients for JCG have statistical significance at 90 percent. RPIG has a positive correlation with business and job growth within the Enterprise Zones where an increase in the grant by one percentage point

³⁰ Dependent Variable 1, Δ Businesses, is the difference in number of businesses inside the Enterprise Zones measured between the years 2002 and 2015

³¹ Dependent Variable 2, Δ Jobs, is the difference in the number of jobs inside Virginia Enterprise Zones measured between the years 2002 and 2015

corresponds to a 1.21 point increase in the number of businesses and a 1.28 point increase in the number of jobs.

Table 25: Results of categories of state incentives regressed on business and job growth within Virginia Enterprise Zones from 2002 to 2015

PARAMETERS	STANDARDIZED COEFFICIENTS (B)	
	Δ Businesses (DV1)	Δ Jobs (DV2)
PREDICTOR VARIABLES		
TOTAL JOB CREATION GRANT (JCG) DISBURSED FROM 2005 TO 2015 (CONSTANT 2015 DOLLARS)	-.45*	-.48*
TOTAL REAL PROPERTY IMPROVEMENT GRANT (RPIG) DISBURSED FROM 2005 TO 2015 (CONSTANT 2015 DOLLARS)	1.21***	1.28***
CONTROL VARIABLES		
WORKFORCE LOCATED AT 20 MILES RADIUS FROM THE ENTERPRISE ZONES	-.21	-.33
TOTAL POPULATION RESIDING IN THE ENTERPRISE ZONES (2014)	-.04	-.04
PROXIMITY TO THE INTERSTATE HIGHWAY	.05	.00
MEDIAN HOUSEHOLD INCOME	-.05	-.13
ENTERPRISE ZONES LOCATED IN AN URBAN AREA	-.41	-.32
MODEL STATISTICS		
R-SQUARED	.58	.67
ADJUSTED R-SQUARED	.48	.59
INTERCEPT	-.06	-.04

Notes: $p(\text{significance}) = \text{***}.001$ (99% CI) ; $\text{**}.05$ (95% CI) ; $\text{*}.1$ (90% CI) Total N = 68; Valid N = 39

Job Creation Grant shows a negative correlation with business and job growth; however, this relationship has low statistical significance.

A majority of businesses that receive state incentives also receive some form of local incentives. The analysis is incomplete without including the impact of local incentives on business and job growth. For the purpose of this study local incentives disbursed under various titles are categorized into two broad classes—the Business Retention and Operations Grant, and the Local Property Improvement Grant. Table 26 presents the results of regression model where the two classes of local incentives are also included along with the state incentives.

Table 26: Results of categories of state and local incentives regressed on business and job growth within Virginia Enterprise Zones from 2002 to 2015

PARAMETERS	STANDARDIZED COEFFICIENTS (B)	
	Δ Businesses (DV1)	Δ Jobs (DV2)
PREDICTOR VARIABLES		
TOTAL JOB CREATION GRANT (JCG) DISBURSED FROM 2005 TO 2015 (CONSTANT 2015 DOLLARS)	-0.45	-0.42
TOTAL REAL PROPERTY IMPROVEMENT GRANT (RPIG) DISBURSED FROM 2005 TO 2015 (CONSTANT 2015 DOLLARS)	.68*	.78**
TOTAL LOCAL BUSINESS RETENTION AND OPERATION GRANTS ³² DISBURSED FROM 2011 TO 2015 (CONSTANT 2015 DOLLARS)	1.00**	.87***
TOTAL LOCAL PROPERTY IMPROVEMENT GRANTS ³³ DISBURSED FROM 2011 TO 2015 (CONSTANT 2015 DOLLARS)	-0.07	-0.17
CONTROL VARIABLES		
WORKFORCE LOCATED AT 20 MILES RADIUS FROM THE ENTERPRISE ZONES	-0.12	-0.19
TOTAL POPULATION RESIDING IN THE ENTERPRISE ZONES (2014)	0.07	-0.05
PROXIMITY TO THE INTERSTATE HIGHWAY	0.16	0.12
MEDIAN HOUSEHOLD INCOME	-0.31	-0.43
ENTERPRISE ZONES LOCATED IN AN URBAN AREA	-0.44	-0.28
MODEL STATISTICS		
R-SQUARED	0.88	0.91
ADJUSTED R-SQUARED	0.72	0.8
INTERCEPT	-0.14	-0.05

Notes: $p(\text{significance}) = \text{***}.001 (99\% \text{ CI}) ; \text{**}.05 (95\% \text{ CI}) ; \text{*}.1 (90\% \text{ CI})$ Total N = 68; Valid N = 18

The fit statistics of this model are much better compared to the previous one. The predictor variables explain more than 70 percent of the variations in the response variables. After including local incentives in the model, the state JCG completely loses its statistical significance whereas the state RPIG remains fairly significant. This suggests that most of the program-related job creation is resulting from the local job creation incentives. One percentage point increase in local business retention and operation incentives correspond to a 1.0 percentage point increase in businesses and a 0.87 percentage point increase in jobs. The relationships are significant at 95 percent and 99 percent confidence interval respectively.

On the other hand, the state-administered RPIG has a more significant effect on business and job growth compared to the local property related incentives. The relationship is positive, where a 1.0 percent increase in RPIG corresponds to a 0.68 percent increase in businesses and 0.78 percent increase in jobs.

³² Business Retention and Operations Grants includes Business Start-Up Grant, Access to Public Land, Local Job Creation Grant, Professional License Fee and Tax Waiver, Property Tax Abatement, Utility Rebate, Tools and Machinery Rebate, Business Expansion and Relocation Incentive, Off Balance Sheet Financing, Brownfields Rebate, Loan Fee Rebate, and Minority Business Incentive.

³³ Local Property Improvement Grants include Waived Building Permit Fee, Waived Planning and Zoning Fee, Facade and Physical Improvement Grant, Retail Revitalization Incentive, Land Development Services, Landscaping and Parking Grant, and Real Estate Development Grant

Performance of State and Local Incentives by Industry Sectors

We further examine the role of specific state or local incentives in promoting business and job growth by industry sectors. We break up the response variables—business and job growth—by NAICS sectors and regress each state and local incentive on them. The results are presented in Table 27, Table 28, Table 29, and Table 30.

State Job Creation Grant (JCG)

According to the summary presented in Table 27 and Table 28, the State Job Creation Grant shows very high positive correlation with business growth in the following sectors:

- Agriculture, Forestry, Fishing and Hunting (0.69***)
- Health Care and Social Assistance (1.03**)
- Educational Services (0.92**)
- Mining, Quarrying, and Oil and Gas Extraction (0.17*)

The numbers in the parentheses represent predicted percentage point change in the respective sectors when state Job Creation Grant increases by 1.0 point. Health Care and Educational Services sectors experienced the highest business growth that can be accounted for the State Job Creation Grant. On the other hand, JCG reports strong negative correlation with business growth in the following sectors:

- Accommodation and Food Services (-0.85**)
- Construction (-0.72**)
- Arts, Entertainment, and Recreation (-0.70**)
- Retail Trade (-0.92*)

Table 29 and Table 30 present the coefficients for job growth in each of the industry categories. JCG registers very strong positive correlations with job growth in the following sectors:

- Administrative and Support and Waste Management and Remediation Services (1.5***)
- Utilities (1.13***)
- Real Estate, Rental, and Leasing (1.19**)

As JCG increase by 1.0 percentage points, the number of jobs in Administrative sector increases by 1.50 points, jobs in the Real Estate sectors increase by 1.19 points and the Utilities jobs increase by 1.13 points.

Table 27: Results of state and local incentives regressed on growth in businesses within Virginia Enterprise Zones from 2002 to 2015 by industry sectors

PARAMETERS	STANDARDIZED COEFFICIENTS (B)									
	Agriculture, Forestry, Fishing and Hunting	Mining, Quarrying, and Oil and Gas Extraction	Utilities	Construction	Manufacturing	Wholesale Trade	Retail Trade	Transportation and Warehousing	Information	Finance and Insurance
PREDICTOR VARIABLES										
JCG	.69***	.17*	-.19	-.72**	.05	-.35	-.92*	-.09	-.61	.20
RPIG	-.52***	.03	.44	.82**	-.21	-.30	.25	-.17	.69	-.18
L_BROG ³⁴	-.10	.02	.76**	.23	.10	-.58**	1.15***	.53**	.85**	.97**
L_RPIG ³⁵	-.14	-.04	.30	.39	.20	.07	-.56	.33	-.11	-.04
CONTROL VARIABLES										
WORKFORCE	.39**	-.02	-.01	-1.34***	-.57	-.07	.26	-.29	-.87	-.11
POPULATION	.02	.02	.20	.41	-.07	.37	-.08	.31	.12	.09
PROXIMITY	.40**	.07	.16	.08	-.09	.21	.21	.08	-.09	.32
MEDIAN HH INCOME	-.14	-.10	.07	-.15	.49	-.21	-.69*	.14	-.5	-.15
URBAN	.56	.23	-.62	.36	-.45	.47	-.38	.01	-.39	.52
MODEL STATISTICS										
R-SQUARED	.87	.86	.88	.85	.62	.87	.85	.58	.81	.60
ADJUSTED R-SQUARED	.72	.69	.73	.65	.14	.70	.67	.05	.56	.10
INTERCEPT	-.31	-.28**	.05	-.64	.44	-.39	-.35	.12	-.26	-.56

Notes: *p*(significance) = ***.001 (99% CI) ; **.05(95% CI) ; *.1 (90% CI) Total N = 68; Valid N = 18

³⁴ Local Business Retention and Operations Grant

³⁵ Local Real Property Improvement Grant

Table 28: Results of state and local incentives regressed on growth in businesses within Virginia Enterprise Zones from 2002 to 2015 by industry sectors (cont.)

PARAMETERS	STANDARDIZED COEFFICIENTS (B)										
	Real Estate, Rental and Leasing	Professional, Scientific, and Technical Services	Management of Companies and Enterprises	Administrative Support and Waste Management	Educational Services	Health Care and Social Assistance	Arts Entertainment and Recreation	Accommodation and Food Services	Other Services (Except Public Administration)	Public Administration	Unclassified
PREDICTOR VARIABLES											
JCG	-.62	-.22	-.16	.01	.92**	1.03**	-.70**	-.85**	-.30	-.51	-.18
RPIG	.87*	.69*	.62**	.97***	.01	-.09	.67**	.94**	.02	.81**	.64**
L_BROG	.68*	.92**	.58**	.07	.64**	.50	.65***	.85**	.97**	.93**	.63***
L_RPIG	-.12	.09	-.11	.95***	-.69**	-.38	-.29	-.16	-.64	.10	-.02
CONTROL VARIABLES											
WORKFORCE	-.88*	-.16	.68**	-1.38***	.30	.71	.13	.04	.38	-.12	-.54**
POPULATION	.12	.18	-.16	.75**	-.30	-.44	-.14	.05	-.52	.14	.22
PROXIMITY	.27	.13	-.08	-.18	.35	.45	.09	.06	.36	.02	.14
MEDIAN HH INCOME	-.63	-.20	.02	.01	-.67*	-.05	-.52**	-.28	-.49	-.17	-.61**
URBAN	.67	-.51	-.89*	.30	.49	.02	-.29	-.72	-.10	-.69	.06
MODEL STATISTICS											
R-SQUARED	.86	.89	.95	.90	.89	.85	.92	.91	.69	.89	.95
ADJUSTED R-SQUARED	.69	.75	.90	.78	.76	.66	.83	.80	.29	.76	.89
INTERCEPT	-.88	-.08	.38	-.39	-.12	.04	-.13	-.09	.02	.05	-.57

Notes: $p(\text{significance}) = \text{***}.001 (99\% \text{ CI}) ; \text{**}.05 (95\% \text{ CI}) ; \text{*}.1 (90\% \text{ CI})$ Total N = 68; Valid N = 18

Table 29: Results of state and local incentives regressed on job growth within Virginia Enterprise Zones from 2002 to 2015 by industry sectors

PARAMETERS	STANDARDIZED COEFFICIENTS (B)							
	Agriculture, Forestry, Fishing and Hunting	Utilities	Construction	Wholesale Trade	Transportation and Warehousing	Information	Finance and Insurance	Real Estate, Rental and Leasing
PREDICTOR VARIABLES								
JCG	.29	1.13***	-.62**	.17	-.98***	-1.39***	-.04	1.19**
RPIG	-.32*	-.18	.77***	.29	.41*	.74**	.87	-.45
L_BROG	-.39**	.48**	-.42**	-.75**	.24	-.17	.69	.98**
L_RPIG	.00	-.04	-.41*	.62*	.46**	-.21	.69	-.61
CONTROL VARIABLES								
WORKFORCE	.12	.16	.05	-1.13**	-.8**	-1.35***	-1.37**	-.19
POPULATION	-.02	-.12	-.39*	.58*	.56**	.05	.41	-.25
PROXIMITY	.16	.45	.24	-.03	-.47*	-.05	.05	.52
MEDIAN HH INCOME	.11	-.52**	-.08	.00	.17	-.77**	.23	-.68
URBAN	.21	.9	.55	.65	-.4	.63	.14	1.21
MODEL STATISTICS								
R-SQUARED	.87	.92	.80	.81	.85	.92	.72	.79
ADJUSTED R-SQUARED	.70	.82	.55	.57	.66	.83	.38	.52
INTERCEPT	-.07	-.3	-.41	-.51	.20	-.83	-.29	-.49

Notes: $p(\text{significance}) = \text{***}.001 (99\% \text{ CI}) ; \text{**}.05 (95\% \text{ CI}) ; \text{*}.1 (90\% \text{ CI})$ Total N = 68; Valid N = 18

Table 30: Results of state and local incentives regressed on job growth within Virginia Enterprise Zones from 2002 to 2015 by industry sectors (cont.)

PARAMETERS	STANDARDIZED COEFFICIENTS (B)									
	Professional, Scientific, and Technical Services	Management of Companies and Enterprises	Administrative Support and Waste Management	Educational Services	Health Care and Social Assistance	Arts Entertainment and Recreation	Accommodation and Food Services	Other Services (Except Public Administration)	Public Administration	Unclassified
PREDICTOR VARIABLES										
JCG	-.64	-.37	1.50***	.72	-.09	.17	-.76**	-.85**	-.37	.15
RPIG	.79**	.67**	-.15	-.58	.67***	.03	.94**	.73**	.77**	-.27
L_BROG	.82**	.84**	.02	.41	.17	-.46	.82**	.71**	.79**	-.69*
L_RPIG	-.62	-.35	.67	-1.05**	.35*	.47	-.21	-.60*	.24	-.49
CONTROL VARIABLES										
WORKFORCE	.35	.41	-1.51**	.54	.45*	.90*	.00	-.17	.12	.47
POPULATION	-.34	-.19	-.02	-.46	.06	.42	-.01	.08	.23	-.14
PROXIMITY	.20	.10	-.17	.18	.05	-.31	.10	.31	-.01	.20
MEDIAN HH INCOME	-.67*	-.31	.34	-1.27**	.15	.43	-.41	-1.22***	.01	-.48
URBAN	-.43	-.55	.15	-.59	-.7	-.91	-.43	.63	-.90	.89
MODEL STATISTICS										
R-SQUARED	.89	.90	.78	.62	.97	.79	.92	.90	.92	.59
ADJUSTED R-SQUARED	.76	.78	.50	.13	.94	.53	.81	.78	.82	.07
INTERCEPT	-.07	.09	.58	.25	.19	.61	-.19	-.84	.18	-.52

Notes: $p(\text{significance}) = \text{***}.001 (99\% \text{ CI}) ; \text{**}.05 (95\% \text{ CI}) ; \text{*}.1 (90\% \text{ CI})$ Total N = 68; Valid N = 18

The sectors listed below show a significant reduction in job growth that is associated with the Job Creation Grant.

- Information (-1.39***)
- Transportation and Warehousing (-0.98***)
- Accommodation and Food Services (-0.76**)
- Construction (-0.62**)
- Other Services (except Public Administration) (-0.85**)

The JCG eligibility criteria precludes certain industry sectors such as Food Services, Educational Services, Public Administration, Other Services, and Retail Trade, etc. from participating in the grant program. The Manufacturing sector is the primary beneficiary of the state JCG program. However, business and job growth in the Manufacturing sector do not correlate with an increase in state job creation grants. The descriptive statistics shows an increase in number of manufacturing related businesses in the Enterprise Zones over the 15-year study period; however, the growth rate is not found to be correlated with the rate of change in JCG grant.

Despite being eligible for the state JCG, the Information sector is found to be negatively correlated with the program. There could be a variety of reasons for this relationship, including that the Information sector does not employ as many people as the Manufacturing sector and may not be attracted to the incentives, and also that it requires a highly skilled workforce that might not be easily attainable near the most economically depressed areas where most of the Enterprise Zones are located. Further discussion on this topic can be found in the analysis section.

State Real Property Improvement Grant

The results presented in Table 27 and Table 28 show that the state RPIG has a very significant positive impact on recruiting businesses within the Enterprise Zones in the following private industry sectors:

- Accommodation and Food Services (0.94**)
- Real Estate, Rental and Leasing (0.87**)
- Construction (0.82**)
- Arts, Entertainment and Recreation (0.67**)
- Management of Companies and Enterprises (0.62**)
- Professional, Scientific, and Technical Services (0.69*)

Real Estate, Accommodation and Food, Administrative, and Construction sectors are the sectors most strongly impacted by the Real Property grant. A 1.0 percentage point increase in RPIG corresponds to a 0.97 point increase in the number of Administrative businesses, a 0.94 point increase in businesses related to Accommodation and Food, a 0.87 point increase in Real Estate, and a 0.82 point increase in the number of Construction-related businesses.

However, RPIG is found to negatively correlate with the growth of businesses in Agriculture, Forestry, Fishing and Hunting industries where a 1.0 percentage point increase in RPIG grants corresponds with a 0.52 point reduction in the number of business establishments related to these industries. Such negative correlation is expected with those sectors as most activities related to them are not known to qualify for the real property grant.

Table 29 and Table 30 present regression coefficients for job growth in each industry sector. RPIG accounts for statistically significant job growth in the following private industry sectors:

- Construction (0.77***)
- Health Care and Social Assistance (0.67***)
- Accommodation and Food Services (0.94**)
- Professional, Scientific, and Technical Services (0.79**)
- Information (0.74**)
- Other Services (except Public Administration) (0.73**)
- Management of Companies and Enterprises (0.67**)
- Transportation and Warehousing (0.41*)

One percent increase in Real Property Grant corresponds with about the same percentage point growth in the number of jobs in Accommodation and Food, and Other Services industries. Similarly, an increase in RPIG accounts for more than 90 percent job growth in Information and Professional, Scientific, and Technical services sectors. Construction, Management, and Health Care sectors also experience between 60 percent to 80 percent increase in the number of jobs correlated with an increase in RPIG. Transportation and Warehousing sector is moderately impacted by an increase in the Real Property Grant.

The impact of state RPIG on the construction sector is a fairly direct relationship. Hospitality and health care industries also make use of the RPIG incentives. The professional services sector is indirectly related to the construction sector, as is transportation and warehousing, and other services.

Local Business Retention and Operation Grant

Local incentives that directly help in business relocation and provide support on operating expenses such as start-up grants, access to public land, local job creation grants, professional license waivers, property tax abatements, utility rebates, tools and machinery rebates, business expansion and relocation incentives, off balance sheet financing, brownfields rebates, loan fee rebates, and minority business incentives are aggregated under this category.

Local grants that support business retention and operation show strong positive correlation with the increase in number of business establishments in the following private industry sectors:

- Retail Trade (1.15***)
- Finance and Insurance (0.97**)
- Other Services (except Public Administration) (0.97**)
- Professional, Scientific, and Technical Services (0.92**)
- Accommodation and Food Services (0.85**)
- Information (0.85**)
- Utilities (0.76**)
- Real Estate Rental and Leasing (0.68**)
- Arts, Entertainment, and Recreation (0.65***)
- Educational Services (0.64**)
- Transportation and Warehousing (0.53**)
- Management of Companies and Enterprises (0.58**)

The values in the parentheses represent percentage increase in the number of jobs in each sector when Local Business Retention and Operations Grant increases by one percent, controlling for the effects of all state grants, local property improvement grants, and variations in Enterprise Zone characteristics in terms of population, availability of workforce, proximity to interstate highways, and their location in an urban or a rural area. In this regard, Retail Trade, Finance and Insurance, the service industry, professional services, Information, and the Utilities sectors are the most impacted by local business operations grant.

This group of local grants shows strong negative correlation with the Wholesale Trade sector, where a 1.0 percentage point increase in local business retention and operation grants is associated with about 0.58 point reduction in business growth rate in this sector.

Besides helping to recruit and retain businesses, this category of local grants is also responsible for creating new jobs in the following private industry sectors:

- Real Estate, Rental and Leasing (0.98**)
- Management of Companies and Enterprises (0.84**)
- Accommodation and Food Services (0.82**)
- Professional, Scientific, and Technical Services (0.82**)
- Utilities (0.48**)

As local business retention and operation grants increase by 1.0 percentage point, there is a corresponding increase in the number of jobs in the Real Estate sector by 0.98 points and in the Management sector by 0.84 points.

Local Real Property Improvement Grant

Local real property improvement grant is a variable created for this study by aggregating various grants disbursed by localities under various property improvement titles. This includes waived building permit fees, waived planning and zoning fees, facade and physical improvement grants, retail revitalization incentives, land development services, landscaping and parking grants, and real estate development grants. This variable displayed a strong correlation with two industry sectors: Administrative and Support and Waste Management Services; and Educational Services. The variable has a positive correlation with business growth in the administrative sector but a strong negative correlation with the number of businesses in the Educational Services sector. Business growth in the remaining industry sectors fails to produce statistically significant coefficients while regressed with the local property improvement grant.

When regressed with job growth between 2002 and 2015, the local property improvement grant reported moderately significant positive correlation with the Wholesale Trade, and Transportation and Warehousing sectors. A 1.0 percentage point increase in local property grant increases jobs in Transportation and Warehousing sectors by 0.46 points, and in Wholesale Trade sector by 0.62 points. The relationship is more statistically significant in the Transportation and Warehousing sector.

Local property improvement grants reported negative correlation with Construction, Educational Services, and Other Services sectors.

Enterprise Zone impacts on property values

The Enterprise Zone program seeks to spur economic growth through two state-managed grant programs and, if localities wish to provide them, any local incentives available. One state incentive is the Real Property Investment Grant (RPIG) program. RPIG encourages economic growth through incentives for private investment in new construction, existing facility expansion, or existing building rehabilitation.

Property values may serve as an indicator of Enterprise Zone performance. Effective attraction of private investment to an area should increase the values of properties within an Enterprise Zone. Due to the arbitrary nature of Enterprise Zone boundaries, that effect may extend to property values outside of a zone.

The analysis seeks to identify whether Enterprise Zones have a ripple effect on property values—evidence of growth extending beyond Enterprise Zones but decaying with distance—by measuring the percentage change in property values at different distances from the zone.³⁶

Enterprise Zones may have a significant impact on the values of properties in and immediately around their boundaries—with the caveat that the data utilized was limited to urban zones and cities. Properties within Enterprise Zones were valued at \$11.26 per square foot in 2006 and \$13.67 per square foot in 2015: a 21 percent increase in value (see Table 31).

Table 31: Average property value by distance from Enterprise Zone

DISTANCE FROM ENTERPRISE ZONE	2006 VALUE [^]	2015 VALUE	PERCENT CHANGE
WITHIN ENTERPRISE ZONE	11.26	13.67	21%
0.25 MILES	13.23	13.70	4%
0.26 TO 0.50 MILES	13.42	13.05	-3%
0.51 TO 0.75 MILES	14.49	11.73	-19%
0.76 TO 1.00 MILES	12.78	11.92	-7%
MORE THAN ONE MILE	11.68	11.03	-6%

[^]Inflated to 2015 dollars

Source: Quarterly Census of Employment and Wages, 2000-2015; Virginia Department of Housing and Community Development

The average parcel value within one-quarter mile of an Enterprise Zone increased by 4 percent, suggesting slower but positive growth. At distances beyond one-quarter mile, property values begin to fall (see Figure 26). Property value losses peak in the one-half to three-quarter mile range, falling 19 percent.

³⁶ This analysis utilizes parcel assessment data from four different cities (Hampton, Norfolk, Richmond, and Roanoke) in two different years (2006 and 2015). Each parcel is coded by its distance from an Enterprise Zone:

- 0 = Within the Enterprise Zone
- 1 = 0.1 to 0.25 miles
- 2 = 0.26 to 0.50 miles
- 3 = 0.51 to 0.75 miles
- 4 = 0.76 to 1.00 miles
- 5 = More than 1.00 miles

Parcels are then grouped by each code. This allows for a calculation of total square feet and total property value³⁶ within each group across the four cities. Dividing those totals provides the average property value for each distance group in dollars per square feet. By looking at the change in property values from 2006 to 2015 at different distances from the Enterprise Zone, we may investigate the possible ripple effect of Enterprise Zones on property values.

Figure 26: Ripple effect of Enterprise Zones on property values



Source: Quarterly Census of Employment and Wages, 2000-2015; Virginia Department of Housing and Community Development

4. Qualitative Analysis

Survey results: Enterprise Zone businesses

Characteristics of Survey Respondents

The survey of businesses was completed by 184 respondents from 37 counties, cities, and towns. As shown in Table 32, 80 percent of respondents came from urban communities and 20 percent from rural communities.

Table 32: Rural and urban status of business communities

TYPE OF COMMUNITY	RESPONDENTS	PERCENTAGE
RURAL	37	20%
URBAN	147	80%
TOTAL	184	100%

Companies located to or started their business at Enterprise Zone sites in years ranging from 1875 to 2015. The average year of relocation/formation was 2000. Almost three-quarters of companies relocated or formed since 2000 (see Table 33).

Table 33: Year of business location/formation at Enterprise Zone site

YEAR STARTED AT CURRENT SITE	NUMBER	PERCENTAGE
BEFORE 1980	19	10%
1980 TO 1989	11	6%
1990 TO 1999	19	10%
2000 TO 2009	73	40%
2010 OR LATER	62	34%
TOTAL	184	100%

The survey sought businesses views on the importance of state and local grants associated with Enterprise Zones. Although all respondents have had access to state Job Creation Grants and Real Property Improvement Grants, local grants vary from community to community. As such the ranking of local grants may reflect businesses opinions on such a grant if such grants exist in those communities.

Businesses ranked the state Real Property Improvement Grant highly, with 71 percent describing it as very important or extremely important (see Table 34). The local real estate tax grant was rated similarly, with 63 percent of respondents ranking it very important or higher.

Businesses appear less satisfied with the state Job Creation Grant, and 65 percent of respondents rated the grant as slightly important or not important.

More than 65 percent of businesses rated tax-exempt bonds, low or no interest loans, and free or discounted land as not important. This may reflect the historically low interest rates available following the 2008 recession.

Table 34: Business opinions of Enterprise Zone state and local incentives

INCENTIVE TYPE	NOT IMPORTANT	SLIGHTLY IMPORTANT	MODERATELY IMPORTANT	VERY IMPORTANT	EXTREMELY IMPORTANT	TOTAL PERCENT	TOTAL NUMBER
STATE JOB CREATION GRANT	48%	17%	11%	16%	8%	100%	184
STATE REAL PROPERTY IMPROVEMENT GRANT	11%	4%	14%	23%	48%	100%	184
MACHINERY, TOOLS, FURNITURE, FIXTURE, AND EQUIPMENT TAX GRANT	52%	11%	13%	14%	10%	100%	184
REAL ESTATE TAX GRANT	21%	4%	12%	24%	39%	100%	184
BUSINESS, PROFESSIONAL, & OCCUPATIONAL LICENSE TAX GRANT	56%	8%	15%	12%	10%	100%	184
UTILITY FEES & TAX REBATE OR REFUND	52%	8%	12%	15%	13%	100%	184
BUSINESS & PERSONAL PROPERTY TAX GRANT	47%	6%	14%	15%	18%	100%	184
TAX-EXEMPT INDUSTRIAL REVENUE BONDS; LOW OR NO INTEREST LOANS	69%	10%	8%	7%	6%	100%	184
OTHER LOCAL TAX CREDITS	57%	12%	11%	11%	9%	100%	184
LOCAL GOVERNMENT SERVICES AND FEE WAIVERS	48%	9%	13%	16%	15%	100%	184
FREE OR DISCOUNTED LAND	67%	6%	5%	9%	13%	100%	184

Opinions on the relative importance of state grants differed among rural and urban businesses. Approximately 38 percent of rural businesses ranked state Job Creation Grants as very or extremely important, compared to 20 percent of urban businesses (see Table 35). Rural businesses ranked state Real Property Improvement Grants as very or extremely important more frequently, with 84 percent compared to 68 percent of urban businesses.

Table 35: Rural and urban business opinions of state grants

GRANT	COMMUNITY TYPE	NOT IMPORTANT	SLIGHTLY IMPORTANT	MODERATELY IMPORTANT	VERY IMPORTANT	EXTREMELY IMPORTANT	TOTAL
STATE JOB CREATION GRANT	Rural	46%	14%	3%	22%	16%	100%
STATE JOB CREATION GRANT	Urban	49%	18%	13%	15%	5%	100%
STATE REAL PROPERTY IMPROVEMENT GRANT	Rural	8%	0%	8%	24%	59%	100%
STATE REAL PROPERTY IMPROVEMENT GRANT	Urban	12%	5%	15%	23%	45%	100%

Most respondents had few or no employees prior to locating in an Enterprise Zone: 25 percent reported having no staff and 27 percent reported between 1 and 6 staff (see Table 36). Another 25 percent of businesses reported staffing between 7 and 33 persons prior to locating in an Enterprise Zone. Around 10 percent reported staffing over 88.

Table 36: Staffing levels of businesses prior to locating in Enterprise Zone

STAFFING LEVEL	NUMBER	PERCENT
NO STAFF	46	25%
1 TO 6	49	27%
7 TO 33	46	25%
34 TO 60	14	8%
61 TO 87	8	4%
88 AND OVER	18	10%
NO RESPONSE	3	2%
TOTAL	184	100%

Most respondents reported small to modest staffing increases after locating in an Enterprise Zone, with 54 percent adding 1 to 33 jobs (see Table 37). Another 19 percent reported significant staffing increases of 74 or more. Sixteen percent of businesses reported no staffing change.

Table 37: Staffing increases after locating in Enterprise Zone

EMPLOYEES HIRED	NUMBER	PERCENT
NONE	30	16%
1 TO 13	67	36%
14 TO 33	33	18%
34 TO 53	12	7%
54 TO 73	6	3%
74 AND OVER	35	19%
NO RESPONSE	1	1%
TOTAL	184	100%

Most businesses—68 percent—experienced increases in sales after locating in an Enterprise Zone (see Table 38). Of those businesses, 34 percent reported an increase between 14 and 61 percent, and 28 percent reported an increase between 62 and 109 percent (see Table 39).

Of the 7 percent of businesses experiencing a decrease in sales after locating in an Enterprise Zone, 46 percent reported a decrease of 1 to 20 percent (see Table 40). Another 23 percent reported a decrease of 21 to 40 percent. One business reported a decrease of more than 80 percent.

Table 38: Sales changes after locating in Enterprise Zone

SALES TREND	NUMBER	PERCENT
INCREASED	126	68%
REMAINED THE SAME	44	24%
DECREASED	13	7%

Table 39: Percent increase among businesses reporting increased sales

INCREASE (PERCENT)	1 TO 13	14 TO 61	62 TO 109	110 TO 157	158 AND GREATER	NO RESPONSE	TOTAL
NUMBER	16	43	35	4	24	4	126
PERCENT	13%	34%	28%	3%	19%	3%	100%

Table 40: Percent decrease among businesses reporting decreased sales

DECREASE (PERCENT)	1 TO 20	21 TO 40	41 TO 60	61 TO 80	OVER 80	NO RESPONSE	TOTAL
NUMBER	6	3	1	2	1	0	13
PERCENT	46%	23%	8%	15%	8%	0%	100%

Business opinions towards the administration of Enterprise Zones suggest general satisfaction. Satisfaction with incentive amounts skews higher with 55 percent of businesses very or extremely satisfied (see Table 41). Businesses reported less satisfaction with paperwork—36 percent described themselves as not satisfied or slightly satisfied. Business opinions on turnaround time from application to receipt of funding suggests fewer strong feelings, with 88 percent slightly, moderately, or very satisfied.

Table 41: Business satisfaction with administration of Enterprise Zones

ENTERPRISE ZONE ADMINISTRATION	NOT SATISFIED	SLIGHTLY SATISFIED	MODERATELY SATISFIED	VERY SATISFIED	EXTREMELY SATISFIED	TOTAL PERCENT	TOTAL NUMBER
AMOUNT OF INCENTIVES	7%	8%	30%	44%	11%	100%	184
AMOUNT OF PAPERWORK	15%	21%	38%	23%	3%	100%	184
TURNAROUND TIME	9%	15%	34%	38%	4%	100%	184

Respondents opinions of market conditions and influences suggest Enterprise Zones generally provide adequate access to supplies and markets, with 92 percent ranking those metrics average or higher (see Table 42). Labor supply and local government services also received generally adequate rankings. More respondents gave low rankings to quality of labor force and locality crime rate than other categories—19 percent ranked quality of labor force below average or poor, and 17 percent ranked locality crime rate below average or poor.

Table 42: Business opinions of market conditions

MARKET CONDITIONS	POOR	BELOW AVERAGE	AVERAGE	GOOD	EXCELLENT	TOTAL PERCENT	TOTAL NUMBER
ACCESS TO SUPPLIES	3%	5%	25%	44%	23%	100%	184
ACCESS TO MARKETS / CLIENTS	3%	6%	26%	37%	29%	100%	184
SUPPLY OF LABOR FORCE	4%	8%	43%	29%	15%	100%	184
QUALITY OF LABOR FORCE	5%	14%	40%	28%	13%	100%	184
LOCALITY CRIME RATE	4%	13%	41%	28%	15%	100%	184
LOCAL GOVERNMENT SERVICES	4%	7%	42%	33%	13%	100%	184

Rural businesses and urban businesses differed in their ratings of certain market conditions. Approximately 48 percent of urban businesses ranked their supply of labor as good or excellent, compared to 27 percent of rural businesses (see Table 43). Opinions on the quality of labor force differed as well, with 43 percent of urban businesses ranking it good or excellent, compared to 32 percent of rural businesses.

Table 43: Rural and urban business perceptions of market conditions

MARKET CONDITION	COMMUNITY TYPE	POOR	BELOW AVERAGE	AVERAGE	GOOD	EXCELLENT	TOTAL
SUPPLY OF LABOR FORCE	Rural	3%	14%	57%	22%	5%	100%
SUPPLY OF LABOR FORCE	Urban	5%	7%	40%	31%	17%	100%
QUALITY OF LABOR FORCE	Rural	5%	19%	43%	22%	11%	100%
QUALITY OF LABOR FORCE	Urban	5%	13%	39%	29%	14%	100%

Cross tabulations indicated businesses that ranked the supply of labor force as poor or below average also ranked state Job Creation Grants less positively. Approximately 61 percent of businesses dissatisfied with the labor supply ranked the Job Creation Grant as not important, compared to 47 percent of businesses that rated labor supply as average or above (see Table 44).

Table 44: Business ratings of labor supply and job creation grants

		STATE JOB CREATION GRANT					Total percent	Total number
		Not important	Slightly important	Moderately important	Very important	Extremely important		
SUPPLY OF LABOR FORCE	Poor or below average	61%	26%	4%	4%	4%	100%	23
	Average or better	47%	16%	12%	18%	8%	100%	161

Most businesses do not appear to have immediate plans to relocate. A large majority—73 percent—indicate they plan to remain within an Enterprise Zone for more than 15 years (see Table 45). Just one

percent of respondents indicated they plan to relocate if and when they lose access to Enterprise Zone incentives.

Table 45: Time businesses plan to remain in Enterprise Zone

HOW LONG DO BUSINESSES PLAN TO STAY WITHIN EZ?	NUMBER	PERCENT
ONLY AS LONG AS THE INCENTIVES LAST	2	1%
0 - 5 YEARS	10	5%
5 - 10 YEARS	21	11%
10 - 15 YEARS	17	9%
MORE THAN 15 YEARS	134	73%
TOTAL	184	100%

In making potential location decisions in the future, 52 percent of respondents ranked the loss of subsidies as a somewhat important factor or the least important factor (Table 46). Businesses generally ranked unfavorable market conditions, additional taxes, and increasing crime rates as factors that might spur them to move. Fewer businesses described public infrastructure and services as an extremely important factor, but more ranked it as moderately or very important.

Table 46: Importance of factors in relocation decisions

FACTORS IN DECISION TO REMAIN OR RELOCATE	LEAST IMPORTANT	SOMEWHAT IMPORTANT	MODERATELY IMPORTANT	VERY IMPORTANT	EXTREMELY IMPORTANT	TOTAL NUMBER
UNFAVORABLE MARKET CONDITIONS	11%	11%	19%	31%	27%	184
PUBLIC INFRASTRUCTURE AND SERVICES	6%	15%	34%	35%	10%	184
ADDITIONAL TAXES	5%	10%	25%	34%	26%	184
INCREASING CRIME RATE	4%	9%	31%	36%	20%	184
SUBSIDIES ENDING	38%	14%	28%	15%	5%	184

Rural and urban businesses differed in their ranking of the importance of public infrastructure, with 22 percent of rural businesses ranking it extremely important, compared to 7 percent of urban businesses (see Table 47). Rural businesses also noted greater concern with unfavorable market conditions. Approximately 41 percent of rural businesses rated market conditions as extremely important, compared to 24 percent in urban communities.

Table 47: Rural and urban business opinions of potential relocation factors

RELOCATION FACTORS	COMMUNITY TYPE	NOT IMPORTANT	SLIGHTLY IMPORTANT	MODERATELY IMPORTANT	VERY IMPORTANT	EXTREMELY IMPORTANT	TOTAL
PUBLIC INFRASTRUCTURE	Rural	5%	14%	24%	35%	22%	100%
PUBLIC INFRASTRUCTURE	Urban	6%	15%	36%	35%	7%	100%
UNFAVORABLE MARKET CONDITIONS	Rural	11%	11%	11%	27%	41%	100%
UNFAVORABLE MARKET CONDITIONS	Urban	12%	12%	21%	32%	24%	100%

Survey results: Enterprise Zone Stakeholders

Stakeholder surveys revealed broad satisfaction with the Enterprise Zone program. Approximately 87 percent of respondents described the importance of Enterprise Zones in accomplishing their economic development goals as very or extremely important (see Table 48).

Table 48: Stakeholder opinions of Enterprise Zone importance

IMPORTANCE OF EZ IN ECONOMIC DEVELOPMENT GOALS	NUMBER	PERCENT
NOT IMPORTANT	1	1%
SLIGHTLY IMPORTANT	3	3%
MODERATELY IMPORTANT	10	10%
VERY IMPORTANT	38	38%
EXTREMELY IMPORTANT	49	49%
TOTAL	101	100%

The majority of stakeholders rated Enterprise Zones' success in achieving its goals and attracting jobs and businesses very successful or extremely successful. Stakeholders expressed less confidence in how effectively their Enterprise Zones attracted other investments, either inside or outside of the Enterprise Zone. Approximately 30 percent of respondents described their Enterprise Zone as unsuccessful or slightly successful in attracting other investments within the Enterprise Zone (see Table 49), and 39 percent expressed the same opinion about attracting investments outside the Enterprise Zone.

Table 49: Stakeholder opinions on effectiveness of Enterprise Zones in achieving goals

SUCCESS IN...	UNSUCCESSFUL	SLIGHTLY SUCCESSFUL	MODERATELY SUCCESSFUL	VERY SUCCESSFUL	EXTREMELY SUCCESSFUL	TOTAL NUMBER
ACHIEVING GOALS	0%	12%	29%	34%	26%	101
ATTRACTING JOBS AND BUSINESSES	3%	13%	27%	37%	21%	101
ATTRACTING OTHER INVESTMENTS	16%	14%	30%	23%	18%	101
INFLUENCING JOB AND BUSINESS GROWTH OUTSIDE EZ	6%	22%	30%	34%	9%	101
ATTRACTING OTHER INVESTMENTS OUTSIDE EZ	12%	27%	28%	21%	11%	101

Stakeholders are generally confident in the role Enterprise Zones play in the economic vitality of those areas, with 72 percent of respondents describing the role as very or extremely significant. Just one respondent felt the Enterprise Zone had no role.

Table 50: Stakeholder opinions on role of EZs in economic vitality

ENTERPRISE ZONE ROLE IN ZONE'S ECONOMIC VITALITY	NUMBER	PERCENT
HAVE NO ROLE	1	1%
SLIGHTLY SIGNIFICANT	11	11%
MODERATELY SIGNIFICANT	16	16%
VERY SIGNIFICANT	39	39%
EXTREMELY SIGNIFICANT	33	33%
NO RESPONSE	1	1%
TOTAL	101	100%

A majority of stakeholders—60 percent—felt positively about Enterprise Zones' success in creating synergies with other economic development strategies (see Table 51). Only 3 percent of respondents described Enterprise Zones as unsuccessful in developing those synergies.

Table 51: Stakeholder opinions on EZ synergies

SUCCESS IN CREATING SYNERGIES WITH OTHER ECONOMIC DEVELOPMENT STRATEGIES	NUMBER	PERCENT
UNSUCCESSFUL	3	3%
SLIGHTLY SUCCESSFUL	13	13%
MODERATELY SUCCESSFUL	25	25%
VERY SUCCESSFUL	39	39%
EXTREMELY SUCCESSFUL	21	21%
TOTAL	101	100%

Stakeholders described community opinion of Enterprise Zones as positive. Approximately 85 percent of respondents rated community opinion of continuing the program as very or extremely strong (see Table 52). A smaller majority, 71 percent, described community opinion on the initiation of a new place-based economic development program as very or extremely strong.

Table 52: Stakeholder rankings of community support for economic development strategies

COMMUNITY OPINIONS ON...	NO DESIRE	SLIGHTLY STRONG	MODERATELY STRONG	VERY STRONG	EXTREMELY STRONG	TOTAL PERCENT	TOTAL NUMBER
CONTINUATION OF EZ PROGRAM	3%	3%	9%	27%	58%	100%	101
INITIATION OF NEW PLACE-BASED ECONOMIC DEVELOPMENT PROGRAM	2%	4%	22%	35%	36%	100%	101

Stakeholder satisfaction with Enterprise Zones as a concept is broad, with about 66 percent of respondents very or extremely satisfied (see Table 53). Stakeholders expressed the broadest satisfaction with the concept, local incentives, state incentive administration, and local incentive administration. State job creation incentives received somewhat less support, but a majority of respondents (57 percent) ranked their satisfaction as very or extremely satisfied. State real property incentives are ranked less well, with only 48 percent very or extremely satisfied.

The lower ranking of state real property incentives contrasts with business survey results showing more support among businesses for the Real Property Improvement Grant than any other aspect of Enterprise Zones.

Table 53: Stakeholder satisfaction with Enterprise Zone components

STAKEHOLDER SATISFACTION WITH	NOT SATISFIED	SLIGHTLY SATISFIED	MODERATELY SATISFIED	VERY SATISFIED	EXTREMELY SATISFIED	TOTAL PERCENT	TOTAL NUMBER
CONCEPT OF VIRGINIA ENTERPRISE ZONES	5%	5%	25%	38%	28%	100%	101
STATE JOB CREATION INCENTIVES	5%	11%	28%	37%	20%	100%	101
STATE REAL PROPERTY INCENTIVES	1%	15%	36%	31%	17%	100%	101
LOCAL INCENTIVES	4%	9%	22%	37%	29%	100%	101
STATE INCENTIVE ADMINISTRATION	5%	7%	25%	47%	16%	100%	101
LOCAL INCENTIVE ADMINISTRATION	2%	6%	24%	47%	21%	100%	101

Focus Groups

CURA conducted focus groups with Enterprise Zone businesses and stakeholders in four different locations in Virginia. The locations—Hampton city, Halifax County, Richmond city, and Wythe County—were chosen to reflect a mix of both urban and rural Enterprise Zones. Business representatives and stakeholders attended separate sessions in each place.

Enterprise Zone businesses

Business representatives who participated in focus groups came from the following industries:

- Manufacturing
- Real Estate and Rental and Leasing
- Health Care and Social Assistance
- Educational Services
- Accommodation and Food Services

Any comments described below represent opinions (often paraphrased) of anonymous focus group participants and do not reflect suggestions on the part of this report. A comment marked with a multiplier (e.g., “x3”) indicates that multiple participants expressed the comment or a variation of the comment.

Manufacturing representatives had utilized Job Creation Grants but not Real Property Investment Grants. Representatives from all other sectors had utilized Real Property Investment Grants but not Job Creation Grants.

Business representatives expressed generally favorable views of the Enterprise Zone program. Participants at both urban and rural sessions described Enterprise Zone incentives as helpful, and one participant described state grants as a unique feature compared to tax credit programs in other states. One rural participant expressed reliance upon the combination of state and local incentives that included Enterprise Zone-specific incentives. However, most participants said that Enterprise Zone grants did not constitute a level of support that would fundamentally change the feasibility of their operations. Comments about the general Enterprise Zone program include:

- Good incentive, but not a deal breaker (x5).
- Incentive is a lubricant to speed development (x1).
- Helpful to get reimbursement for employment levels (x2).
- Unique product relative to other states (monetized rather than tax credit).

Businesses broadly described the Enterprise Zone program as one element of a larger package of incentives as a strength. They expressed that the program worked in combination with other place-based economic development strategies, such as the Virginia Tobacco Region Revitalization Commission in rural areas, the Virginia Main Street program, Historic Tax Credits, and Community Development Block Grants. Comments about perceived Enterprise Zone program strengths include:

- Works as part of an incentive package with local incentives and other state incentives (x5).
- Synergy with other place-based efforts (historic tax credits, main street, IDA, etc.) (x1).
- Performance-based program (x1).
- Improves cash flow for small entities (x1).
- Administration limitations ensure program spending is not out of control.

- Job Creation Grant works well for large employers (x2).

Business representatives described Enterprise Zone reporting requirements—administrative burdens—as a weakness in the program. Nearly all businesses utilized a third party to handle reporting requirements. However, many already utilize a third party for certain accounting needs. Businesses also described the proration of Real Property Improvement Grants as a weakness, saying it may increase uncertainty during development. However, businesses also said they were happy with the funding they received. Comments about perceived Enterprise Zone program weaknesses include:

- JCG doesn't work well for small business (x1).
- Have to hire third party for accounting (x5).
- Administration/paperwork complicated (x3).
- Proration of RPIG increases uncertainty (x5).
- Program is underfunded (x2).
- Incentive caps are constraining (x1).

Businesses described the costs offset by Enterprise Zone grants as not significant within the larger picture. However, they also expressed satisfaction with the funding they received. Comments about the perceived direct impacts of the Enterprise Zone program include:

- Very little impact. "We apply every year because it exists."
- Not enough to influence hiring decisions. (x1)
- "Nice like a cherry on top of a cake, but it's not the frosting by any means."
- "Not significant [offset] percentagewise in the whole project, but believe me, I had that number written down every time I crunched numbers. That's a lot of money to me."

Most businesses receiving Enterprise Zone incentives also participated in other incentive programs. Rural businesses cited the Tobacco Region Revitalization Commission as being very important to their operations. Urban businesses cited local incentives such as machinery and equipment rebates and façade improvement grants. Businesses that received Real Property Improvement Grants also utilized the Historic Tax Credit program, which was described as more complicated than Enterprise Zone application and reporting. Participants described the following programs as having synergy with state Enterprise Zone incentives:

- Tobacco Region Revitalization Commission grants (x3) (Rural).
- Historic Tax Credits
- Main Street Program
- CDBG
- Local Enterprise Zone incentives
 - Machinery and equipment rebate (Urban)
 - Development fee rebate (Urban)
 - Operational loans (Rural)
 - Land grant (Rural)
- Façade improvement grants (Urban)

Participants did not report any large-scale projects being made possible by Enterprise Zone grants. However, they did report the ability to expand the scope of planned projects through Enterprise Zone grants. Some projects that participants reported as being made possible by RPIG include:

- Roof replacement of existing facility through RPIG.
- Addition of commercial retail in mixed-use development. (Urban)

Most participants said a streamlined application and reporting process would improve the Enterprise Zone program. Several said that they felt existing grants targeting larger businesses could be scaled to target smaller to medium sized operations. Rural area manufacturing businesses expressed a desire for more focus on job and business retention rather than attraction. Those businesses also noted a need for more skilled labor in rural areas. Comments on changes they would make to the program include:

- Streamline administrative processes (x5).
- More state incentives geared towards smaller business (x2).
- Additional focus on attracting labor to limit competition for skilled labor in rural areas (x2).
- Include incentives for business retention (x1).
- Let Enterprise Zone program pay for application process (x1).
- Market Enterprise Zone program more (x1).
- Make zones easier to obtain for rural areas (x1).

No business participants reported the hypothetical loss of Enterprise Zone grants would encourage them to relocate. All business representatives expressed an interest in remaining at their current sites. Most businesses said they would have to rely more heavily on other economic development incentives. Comments on possible actions in the event that Enterprise Zone incentives are unavailable include:

- No plan to leave in the event of loss of Enterprise Zone incentives (x6).
- Plan to rely more heavily on other incentives (x4).

Most business participants said that their site location decisions were influenced more strongly by other factors that do not include Enterprise Zone designation. Several businesses existed at their current sites prior to Enterprise Zone designation. Comments on the factors at play in location decisions include:

- Public transportation (x2) (Urban)
- Surrounding businesses and residence (x2) (Urban)
- Public safety (low crime) (x1) (Urban)
- Availability of skilled labor (x2) (Rural)
- Already existed in current location prior to Enterprise Zone designation (x2) (Rural – manufacturing)
- Nearby industries (colocation) (x1) (Rural)

Rural businesses also made several comments about desired improvements in workforce development:

- Greatest needs are in workforce development, skilled labor. (x3)
- “You have to grow your own here, because you’re not recruiting someone to [this area].”
- “Manufacturing employers have a hard time [here].”

Enterprise Zone stakeholders

Focus groups for stakeholders primarily included program administrators and local economic development officials. Any comments described below represent opinions (often paraphrased) of anonymous focus group participants and do not reflect suggestions on the part of this report.

Participants described the Enterprise Zone program positively, calling it an effective tool. Several specifically noted that Enterprise Zone incentives help enhance creative financing packages but do not serve as an ultimate catalyst in attracting businesses and jobs. Comments regarding general perceptions of the Enterprise Zone program include:

- Effective tool (x8)
- Good partnership between state and localities, with burdens and incentives shared.
- One [good] piece of a larger creative financing package. (x3)
 - “It’s icing. It greases the skids. It’s not the decision maker or breaker.”
- Spatial targeting helps redevelop older commercial and industrial areas.

Stakeholders broadly felt the Enterprise Zone program held value by virtue of its name and reputation. They described it as an established and recognizable program that is easy to market. Stakeholders also valued the place-based nature of the program, differentiating target areas from other areas of Virginia. Several participants felt the spatial requirement forced them to think about how to guide growth in their communities and described it as positive feature. Comments about perceived Enterprise Zone program strengths include:

- Easy to market (x5)
 - Program is established and recognizable. Name is already a marketing tool.
- Place-based (not everywhere in state) (x2)
- Ensures targeted growth/spatially guides economic development (x2)

Participants offered significant input on perceived Enterprise Zone weaknesses, suggesting that certain elements related to the administration of Enterprise Zone incentives deserve attention. Stakeholders unanimously believe proration of Real Property Improvement Grants makes their efforts to attract businesses and jobs more difficult. Several disliked pitching Enterprise Zone incentives to businesses based on grant amounts that don’t have a full funding commitment from the state. They said businesses generally counted on the full grant amount despite being informed that the grant is based upon availability of funds. Comments about perceived Enterprise Zone program weaknesses include:

- Acreage limitations are constraining (rural and urban) (x3).
- RPIG
 - Proration of RPIG (x7).
 - Thresholds difficult to meet for smaller businesses (x2).
 - Concern state does not have same funding commitment as localities. State incentives may be prorated but local incentives must be fully funded (x2) (Urban).
- JCG
 - Thresholds difficult to meet for small employers (x2).
 - Do not cover service industry jobs (x2).
 - Do not target sustainability- or knowledge-based industries (x1).
- Difficult to change or amend local incentives (x4).
- Difficult to change or amend Enterprise Zone boundaries (x2).
- Annual reporting is cumbersome (x2).
- Turnover rate of state administrators has been high in the past (x1).
- Place-based nature (spatial constraints) difficult for large rural counties courting forestry/agribusiness.
- Incentives aren't large enough to move the needle for local economies on their own.

Despite stakeholders' opinions about weaknesses in the Enterprise Zone program, none felt the program had failed to achieve its economic development objectives. When asked if their Enterprise Zones had achieved their objectives, all participants answered affirmatively.

As noted previously, stakeholders felt state Enterprise Zone incentives worked well in concert with local Enterprise Zone incentives. State incentives are believed to target large industry but not small- to medium-sized employers. Local officials said they developed local incentives to fill in gaps that state incentives did not cover. One respondent noted that state incentives are positive tools for large business attraction, while local incentives are a useful tool for business retention. Another participant felt state and local incentives working in concert demonstrated buy-in from the state and the locality—a positive signal to businesses.

Stakeholders identified the following local incentives and other economic development programs as having synergy with state Enterprise Zone incentives:

- Local incentives
 - Food tax
 - Lodging tax
 - Tourism tax rebate
 - Wastewater use rebate
 - Loan buy down program (more useful when interest rates were higher)
 - Supplementary jobs grant (urban)
 - Real estate tax abatement (urban)
 - Machinery/Tools rebate (urban)
- Tobacco Regional Revitalization Commission funds (x3) (rural)
- Local program that expands Enterprise Zone boundaries for non-state incentives (rural)
- Workforce development training

Stakeholders offered many suggestions on strategic changes they felt could be made to the program. The most common suggestions focused on administrative issues. Perceived improvements include:

- Simplify amendment process for changing local incentive language (x7).
- Simplify amendment process for changing boundaries/eliminating portions of EZ (x3).
- Eliminate adjacency/contiguity requirements for larger rural areas (x4).
- Expand acreage limitations/use tiers of acreage for communities of different sizes (x3).
- Lengthen duration of Enterprise Zone designation (or allow for additional renewals).
- Reduce number of Enterprise Zones.
- Restructure Enterprise Zone application process as strategic planning process and monitor progress.
- JCG
 - Lower jobs threshold (currently 5).
 - Use a tiered jobs creation threshold (percent increase).
 - Simplify application.
 - Increase incentive per job created.
- RPIG
 - Eliminate proration (x1).
 - Convert to first-come, first-served system (x2).
 - Offer tax credit for the balance of the prorated amount.
 - Offer tax credit instead of grant.
 - Eliminate JCG and roll it into RPIG.
- Make incentives more robust and immediate. Offer cash grant or tax credit option.
- Simplify application for incentives.
- Provide localities flexibility in targeting state incentives to industries (x3).
- Eliminate term “fiscal distress” from EZ language, as it deters potential businesses.
- Overlay Technology Zones and Enterprise Zones.
- Improve state marketing.

Stakeholders suggested their Enterprise Zones were drawn strategically based on their economic development strategies. Rural Enterprise Zones focused on highway access and infrastructure such as water, natural gas, and broadband. Urban areas focused on revitalizing older commercial and industrial areas.

Stakeholders suggested their strategies after the expiration of Enterprise Zones would maintain spatially targeted local incentives. Rural communities indicated they would try to fill the void with additional funding. Urban communities indicated they may narrow their focus to more specific areas. One urban community indicated the loss of Enterprise Zone status would be a significant hurdle. Comments on strategies after the potential loss of Enterprise Zone designations include:

- Continue/increase funding for local place-based incentives (x6) (primarily rural).
- Narrow areas of focus (urban).
- “We would be in trouble” (urban).

Other comments of note:

- JCG thresholds make sense for the kinds of industries Enterprise Zones are targeting (rural).
- RPIG more valuable than JCG.
- Program well-administered.
- Incentives used more for existing business (retention) than new business (attraction) inside EZ (rural).
- Priority for business is assets, existing buildings, labor force. Enterprise Zone incentives can enhance those priorities but can't create them.
- Recent project locality discovered it was shortlisted for because of its Enterprise Zone site.

5. Analysis and Discussion

Enterprise Zones, Locality, and State Performance

The Enterprise Zone program is intended to stimulate economic growth in distressed localities that have developmental potential. Its purpose is to jump start the economic engine and help the local economy through a period of 10 to 20 years, at which point the market should sustain itself without incentives. This implies that Enterprise Zones have weaker economic environments relative to their surrounding localities or the state. However, the trend analyses presented in Figure 2 and Figure 3 suggest that the job growth trend in the Enterprise Zones are comparable to that of their parent localities, and—to a lesser degree—with the state overall.

The immediate effects of adopting the 2005 Enterprise Zone Grant Act can be seen in sharp job growth during the 2002 to 2005 period. Enterprise Zones surpassed average job growth in the rest of the localities during this period. The rapid growth was followed by a shallow decline between 2006 and 2011. This was the period of the global economic downturn, and the localities and the Commonwealth experienced a comparable slump. Localities and Virginia started to recover after 2011, but Enterprise Zones found it difficult to keep pace. Most businesses within the zones stayed during the recession, but they adjusted to changing economic conditions by hiring fewer employees.

The hosting locality is a more appropriate economic unit to compare with the Enterprise Zone, as they experience a common regional economic environment. The fact that the zones' performance is comparable with their host localities in terms of business retention and job growth is an indication of their success. Enterprise Zones added more jobs in the following sectors compared to their host localities:

- Health Care and Social Assistance
- Management of Companies and Enterprises
- Accommodation and Food Services
- Professional, Scientific, and Technical Services
- Arts, Entertainment, and Recreation
- Mining, Quarrying, and Oil and Gas Extraction
- Agriculture, Forestry, Fishing and Hunting
- Finance and Insurance
- Real Estate and Rental and Leasing

In sectors such as Health Care and Social Assistance, and Accommodation and Food Services, Enterprise Zones also surpassed the average growth rate of the state. Most of this growth occurred in rural Enterprise Zones. However, some of the sectors that experienced growth in businesses and jobs within the Enterprise Zones do not qualify for the state Job Creation Grant. They, however, do qualify for the Real Property Improvement Grant, and other various local grants.

Rural vs Urban EZ Performance

Rural Enterprise Zones consistently show better percentage growth than their urban counterparts. Rural zones excel in job growth in the following sectors:

- Agriculture, Forestry, Fishing and Hunting
- Mining, Quarrying, and Oil and gas Extraction
- Utilities
- Construction
- Manufacturing
- Wholesale Trade
- Retail Trade
- Transportation and Warehousing
- Information
- Finance and Insurance
- Administrative and Support and Waste Management and Remediation Services
- Educational Services

Urban EZs also added jobs between 2000 and 2015 in the following sectors:

- Professional, Scientific, and Technical Services
- Management of Companies and Enterprises
- Health Care and Social Assistance
- Arts, Entertainment and Recreation

We suggest using caution before inferring any conclusions, as the rural localities have the benefit of utilizing their higher acreage limit to restructure zone boundaries³⁷ and extend the incentives to selected high-potential areas. Urban economic regions are much larger and the acreage limits much smaller.

One should also be careful comparing percentages and numbers, as some areas report very high percentage growth with moderate numerical growth in jobs and businesses compared to others. For example, when the jobs in a sector increase from 1 to 5, it is considered to have increased by 400 percent, whereas an increase from 250 to 300 jobs in another sector amounts to only 20 percent growth.

It should also be noted that the rural areas register statistically more percentage growth compared to their urban counterparts because they have a smaller sample of businesses and jobs to begin with. A small numerical change can skew the percentage calculations.

³⁷ Theoretically, the Enterprise Zone is intended to be an area development tool to encourage economic growth in distressed areas. However, existing zone designation method requires the localities to qualify in terms of certain distress factors, but it does not regulate the zone's boundaries within the locality.

Enterprise Zones Vs Control Zone

Grouping analysis of Virginia Enterprise Zones resulted into two characteristically different groups. A majority of Enterprise Zones in Group-1 are rural, have higher median household incomes, and lower unemployment rates. Group-2 zones, on the other hand, are primarily urban, have lower household incomes, and higher unemployment rates.

Enterprise Zones in general experienced a higher business growth rate compared to the control zone. In terms of job growth, the control zone seems to have performed marginally better than the Enterprise Zones.

When the Enterprise Zones and the control zones are analyzed in separate pairs, the Enterprise Zones in the rural areas—with relatively higher incomes and lower distressed characteristics—added more businesses as well as jobs than their control zones. A majority of the zones located in highly distressed urban areas show growth rates that are comparable or marginally lower than that of the surrounding commercial areas.

Enterprise Zones are, by definition, located in the most distressed areas that are lagging behind in economic growth compared to nearby areas. The fact that some of these zones show higher business and job growth rates than their surrounding commercial areas and others show comparable growth trends speaks volumes of the success of the program. By design, we do not expect the zones to outperform nearby active commercial areas: Enterprise Zones would not have been designated as such in the first place if they were economically competitive. However, over the years, the Enterprise Zone program has helped these distressed areas to grow at almost the same rates as more viable nearby economic areas.

The findings show substantial growth in businesses and jobs in selected industry sectors. Some of the growing sectors do not qualify for the state Job Creation Grant but are eligible to receive the state Real Property Improvement Grant and certain locally administered grants. The Enterprise Zones in both groups saw the highest growth in businesses related to Health Care, Professional, Accommodation, and Administrative sectors. Rural zones also saw growth in Manufacturing and Transportation sectors, whereas urban zones recruited more businesses in Educational Services and Management sectors. Both the groups of Enterprise Zones also experienced job growth in Retail Trade, Construction, and Arts and Entertainment sectors.

Performance of State and Local Grants

Quantitative Analysis

The Job Creation Grant is an important incentive of the Virginia Enterprise Zone program targeted mostly to large employers such as those in Manufacturing sectors and large scale information processing sectors. To qualify for the incentives, the companies need to create at least four new full-time jobs with health benefits compensated at an hourly rate of 150 percent or 175 percent of the federal minimum wage. Businesses may receive the grants for up to 300 jobs beyond the 4 job threshold. Medium to large companies hiring a large number of employees at a given location may benefit more from the program than small or medium sized businesses. Manufacturing plants, hospitals, big box retail giants, hotels, etc. perfectly fit this bill. However, businesses in the retail, personal services, and food and beverages³⁸ sectors

³⁸ Food and beverage service industry is restricted but food and beverages manufacturing industry can qualify.

are precluded from qualifying for JCG. However, they qualify for the RPIG and a host of other local grants. This is one of the reasons that Health Care, Transportation, Retail and Accommodation sectors consistently top the charts in the Enterprise Zones along with the Manufacturing sectors.

Most of these businesses simultaneously use incentives from other economic development stimulus programs at the state and the regional levels as well. It is, therefore, difficult to examine the causal link between the Enterprise Zone incentives and job or business growth. Appropriate modeling techniques allow us to identify correlations between various incentives and job or business growth in different sectors.

The results from the regression analysis tell us that both state and local incentives are instrumental in recruiting businesses and creating jobs within Enterprise Zones. The Real Property Improvement Grant has a stronger association with business and job growth compared to the Job Creation Grant. Add local grants into the model, and the state-administered JCG completely loses its significance. Instead, a locally administered group of grants that are focused towards helping in business retention and operations gain significance.

It is very likely that jobs are created in one sector and lost in another, thus bringing the averages down. A probe into the correlations of state and local incentives on individual industry sectors allows us to see which industries are affected and which are not. The state Job Creation Grant shows some association with increase in businesses in the Manufacturing sector, but it does not register similar association with job growth in that sector. This suggests that even though Manufacturing businesses are attracted to the Enterprise Zones, they have not been able to create enough jobs to move the needle. This also points to increasing modernization and automation of the Manufacturing sector where new establishments simply do not translate into more jobs.

JCG also shows significant association with job growth in Agriculture, Mining, Educational Services sectors, and much stronger association with the Health Care sector. However, select categories of businesses within these sectors do not qualify to receive the grant. Hence, the effects must be coming from some other incentive programs as well.

The negative association of JCG with the business growth in Retail, and Food sectors are understandable since these sectors do not qualify for and are not the recipients of the grant. But the businesses in the construction and entertainment sector do not seem to be making use of this grant either. JCG is also found to be correlated with the jobs in utilities, real estate sectors, and administrative sectors even though most of these sectors do not qualify for the grant.

The Real Property Improvement Grant positively affects business recruitment and job creation in more industry sectors than JCG, ranging from health care, accommodation and food, construction, and transportation to information, education, management, and professional services. The data shows that demand for RPIG grants far exceeds demand for JCG grants for all years. Compared to a quarter mile buffer outside the Enterprise Zones, the value of properties within the Enterprise Zones has increased more than five times between 2005 and 2015. Properties beyond three-quarter miles from the Enterprise Zone boundaries have consistently declined in assessed value during the period.

A majority of businesses in the hospitality and food industries, health care and social services, retail, and arts and entertainment sectors have shown positive association with the RPIG. As a secondary beneficiary

of the grant, sectors such as real estate, construction, and professional services also register higher business and job growth associated with this grant.

Similarly, local incentives that are designed to help bring down operational costs correlate with business growth in utilities, retail, transportation, information, finance and insurance, real estate, professional services, management services, accommodation and food, arts and recreation, and educational services. These incentives positively impact job growth in these sectors as well.

In summary, state Real Property Improvement Grants and local grants that help on business operation costs affect job and business growth in more industry sectors than Job Creation Grants. State Job Creation Grants have a narrow impact on the Manufacturing sector mostly in rural areas. The Job Creation Grant program appears to be facing a mismatch between its expectation and the on-the-ground realities. JCG has been designed to be attractive to medium-to-large employers, but most Enterprise Zones are attracting more small-to-medium sized businesses. This mismatch becomes even clearer from the analysis of the survey data.

Surveys

A survey of Enterprise Zone participants shows that more than 75 percent of respondents started their businesses after the year 2000. Eighty percent of the respondents are from urban Enterprise Zones and the rest from the rural zones. Sixty percent categorized themselves as a small-to-medium business, and about the same percent of businesses reported that they hired between 1 and 33 employees after relocating or starting their business in an Enterprise Zone. About 20 percent claimed that they hired more than 75 employees during this period.

More than three-quarters of the respondents think that state Job Creation Grants are not important or only slightly to moderately important. On the other hand, 85 percent of the respondents think the Real Property Improvement Grant is moderate to extremely important. The survey did not capture which grant programs respondents utilized. There appears to be a stark difference in grant preference among Enterprise Zone participants. Since 80 percent of the respondents were from the urban Enterprise Zones, it would be fair to assume that most participants from the urban zones represented a small-to-medium business category and considered RPIG to be more important than JCG.

Factors that draw businesses more towards RPIG instead of JCG could be related to the performance requirements of the JCG grant, the difficulty or expenses while doing the paperwork, or their inability to qualify for JCG in the first place. Unlike JCG, the RPIG has no sustained performance requirements, except that businesses need to spend more than \$100,000 in rehabilitation or \$500,000 in new construction. This simplicity of RPIG's implementation is one of the reasons for its popularity.

Among the various locality-administered grants, more than 60 percent of respondents believed that the Real Estate Tax Grant is either very important or extremely important. These respondents did not put much importance on any other local grants.

Eighty-five percent of respondents were moderately satisfied, very satisfied, or extremely satisfied with the amount of incentives they received; 75 percent showed dissatisfaction towards the amount of paperwork needed to qualify for and to receive the grants. A majority of businesses say that the local market characteristics such as access to supplies, access to markets, supply of labor force, quality of labor

force, local crime rate, and local government services are also important to them. Businesses that are not happy with the availability of labor force tended to rate the Job Creation Grant as being not as important.

A majority of businesses plan to stay in the Enterprise Zones for more than 15 years, and the loss of subsidies rank among the least important reasons if they ever decided to leave. Rather, they put more emphasis on public infrastructure, taxes, crime rates, and unfavorable market conditions as the probable reasons for a hypothetical exit.

The story is slightly different from the Enterprise Zone stakeholders' perspectives. They almost unanimously believe that the Enterprise Zone program is important in achieving localities' economic development goals. They believe that the program and its incentives have been instrumental in achieving those goals by attracting jobs and businesses and encouraging investment within the zones. About half of the stakeholders believe that the Enterprise Zones have been successful in encouraging business and job growth in the surrounding areas as well. Similarly, about half of them believe that the Enterprise Zone program has been successful in creating synergies with other economic development strategies.

Focus Group Analysis

A total of eight focus group discussions were conducted in four different locations with business participants and area stakeholders of the Enterprise Zone program. The locations were selected in a way so that the rural and the urban locations are equally represented. Overall, there was enthusiastic response in favor of the Enterprise Zone incentive programs, especially the RPIG. Following are some of the highlights of the focus group outcomes.

JCG Thresholds difficult for small businesses, incentives insignificant for large ones

A majority believed that the Job Creation Grant was designed to attract large enterprises into the rural areas. They believed that the rules of the incentive program did not favor small businesses. On the other hand, the incentives per qualifying position are considered insignificant in terms of offsetting their costs. For the smaller businesses, the incentives are valuable yet inaccessible or unachievable, whereas for the larger businesses the incentives are easier to get but of little value. Hence, JCG struggles for appropriate patronage by design. Businesses participating in the Enterprise Zones described the availability of the state and the local job creation incentives as a nice perk but not significant enough to influence their locational decision. Most of the participants said they would have selected the site for their business regardless of the availability of the incentive.

Real property Improvement Grant: Uncertainty due to proration

Businesses applying for the RPIG grant felt uncertainty due to proration on the requested grant. They would normally consider the full amount during their financial planning stage despite being fully aware that they might not get fully funded. The uncertainty of receiving the grant keeps it from becoming important criteria influencing their spending decision. However, businesses were happy to receive whatever grant they could at the end of the day.

Synergies exist to some degree

The majority of focus group participants believed that synergies exist between the Enterprise Zone program and other economic development incentives such as the Historic Tax Credits, CDBG grant, Tobacco Region Revitalization Commission, etc. that are available in their areas. The synergies exist to the extent that a participant can qualify for various incentives at the same time, and some of the incentives

target business sectors left out by the others. Local zone administrators or economic development program coordinators educate users about all the various incentives for which they may qualify. All programs, however, run independent of each other, and no linkages exist at the broader policy or implementation levels.

Need to supplement with workforce development program

Participants felt that the local area characteristics are more important to them than access to state Enterprise Zone grants. Manufacturers in the rural Enterprise Zones find it difficult to fill their vacancies with the required numbers of skilled workers. They suggested extending the Enterprise Zone program into the realm of workforce development as well.

Program administration could be simplified

Representatives from the businesses believed that the grant application and attestation process is unnecessarily complicated. This prevents small businesses from applying for the grants without having a professional on their payroll. This is not an issue for large enterprises as they would already have such professional for payroll management or human resources. They suggested that the process be simplified to such an extent that it does not require the help of a professional.

Zone visibility

A majority of businesses and stakeholders agree that the Enterprise Zone program enhances the visibility of their locality to prospective businesses. Where other local characteristics such as availability of workforce, crime rates, economic conditions, local government services, etc. are comparable businesses prefer to choose localities that have been designated as Enterprise Zones. The value of branding as an Enterprise Zone is higher than the incentives available as a result of that designation. Regardless of the amount of incentives, most localities would still prefer to have an Enterprise Zone for the simple fact that the businesses give priority to the zones while making their relocation/establishment decisions.

6. Conclusion and Recommendations

The Virginia Enterprise Zone program is a targeted local area economic development tool intended to be used in distressed localities that have some potential for growth. The program defines distressed localities as those having a higher average unemployment rate, a higher percentage of public school students receiving free or reduced price lunches, and a lower average median adjusted gross income. Ideally, the most economically depressed pockets within the qualifying localities are supposed to be designated as the Enterprise Zones. However, in practice, localities are free to put the zones in any locations they believe to have potential for growth.

From the equity perspective, the program intends to help the areas that are more economically depressed than others. However, very highly depressed areas might have difficulty attracting businesses regardless of monetary incentives because they lack the physical amenities, labor force, and supporting businesses desired by relocating enterprises. In this regard, an ideologically selected zone might not become as successful in recruiting businesses and creating jobs compared to a zone designated on practical grounds. Local stakeholders know the potential of their areas better than others, and it would seem practical to let them decide where they would want to put the zones. However, it is very likely that the zones will try to encompass as many existing businesses as possible, especially in the rural zones where there are fairly limited number of businesses. Rural localities may be focused more on retaining existing businesses than on trying to recruit new ones. It is natural on the part of the localities to try to appease the businesses that they believe are important for the local economy. Whether this model meets the textbook definition of Enterprise Zones or follows the philosophical tenets of the program is a topic of discussion for another day. This study is designed to analyze the program outputs and not the implementation process. The following section summarizes important issues related to the program and recommends changes that might help achieve better outcomes in the future.

To what extent has the Enterprise Zone program increased businesses, employment, and real estate values inside the zones?

1. In general businesses and jobs have grown in a slightly higher rate within the Enterprise Zones compared to the trend in the Commonwealth of Virginia between 2000 and 2015. The Enterprise Zones have a slightly higher business growth rate but almost the same job growth rate when compared to the nearby commercial areas. The Enterprise Zones in rural areas have the highest business growth rate compared to their control areas, whereas the zones in urban areas have almost the same business growth rate as their neighboring areas. Some rural localities have almost all of their commercial areas within the Enterprise Zones, and in other rural localities the zone boundaries encompass mostly the high growth areas. Enterprise Zones in mostly urban areas have business and job growth rates slightly lower than the neighboring commercial areas. This finding does not necessarily carry a negative connotation. Enterprise Zones are supposed to be the most economically depressed areas to begin with. The fact that these areas show business and job growth trends comparable to nearby commercial areas and also to the Virginia trend is

sufficient evidence of the success of the program. The economic growth trend in these pockets may have been worse in the absence of the incentive programs.

2. The Job Creation Grant (JCG) is primarily focused on the Manufacturing sector and medium to large export-based businesses, whereas the Real Property Improvement Grant (RPIG) is available to businesses in any sector that are willing to make the required investment in qualifying real property improvement. The findings from this analysis show that the zones have been able to recruit manufacturing businesses, but that has not been translated into corresponding increase in jobs in those sectors. Modern manufacturing increasingly uses automation technology at its core, and increases in production do not necessarily correlate with the addition of new full time jobs.
3. The information technology sector could make use of the JCG, but our findings suggest that the IT sector is not harnessing the full benefits of the incentive program. The JCG program requirements make it attractive to large enterprises that hire hundreds of employees. Besides a handful of large scale information technology enterprises that prefer to stay in the Silicon Valley or in large metro areas, most IT companies are either smaller start-ups or have an employee size that can be categorized as a small-to-medium sized business. The benefits that small or medium sized businesses can get from the JCG program are lower than the transaction cost of applying for and maintaining the periodic requirements of the incentive.
4. Most of the success of the Enterprise Zone program comes from the RPIG. Requests for RPIG have been increasing since 2010, and so has the amount of funds disbursed. However, proration of RPIG has resulted in less grant money per applicant than anticipated. There is a gap between the promises made in marketing brochures and the prorated grant that the investors are able to receive at the end of the year. There is a need to either educate recipients about proration by providing them as much information about the historic trends as possible or to modify the incentive program so that the RPIG amount for each project can be accurately estimated beforehand.
5. The value of the real estate has been found to increase significantly within the Enterprise Zones compared to the surrounding areas. The real estate analysis was carried out in four major urban areas within the state, where there is an active commercial area outside the Enterprise Zone as well. Real estate investments translate into tangible outcomes and they normally keep their value for a considerable length of time. RPIG has spurred a number of both new construction and redevelopment projects in Enterprise Zones. About 70 percent are commercial properties, and the remaining 30 percent are almost equally split between industrial and mixed-use properties.
6. RPIG is not primarily intended to spur job creation. But the nature of the incentive program does increase opportunities in the construction, real estate, and professional and technical services industries. RPIG is also associated indirectly with jobs created within the Enterprise Zones in various sectors that do not qualify for the JCG. A number of hospitals, hotels, restaurants, retail outlets, and commercial service enterprises utilize RPIG. The new office buildings, hotels, training centers, hospital units, etc. are used to house new activities that bring new employment into the Enterprise Zone. These projects help spur growth in the tertiary sectors such as food and beverages, retail, and personal services. In this sense, RPIG does more than just improve the local property value. It helps grow the local service economy and improve the quality of the place.

What are the features of the Virginia Enterprise Zone program that work well in various contexts?

1. Real Property Improvement Grants have been found to correlate with businesses and job growth in construction, real estate, professional and scientific services, arts and entertainment, and accommodation and food sectors. Any business sector within an Enterprise Zone can benefit from the RPIG program if they plan to make an investment above a certain threshold in qualifying property improvement projects. RPIG also has simpler qualification criteria and evaluation metrics compared to the Job Creation Grant program.
2. Though the JCG program has been found to be the less popular of the two state incentives, the grant has been a favorite of manufacturing establishments. The subsidies available through JCG work best in the context of qualifying businesses with a medium to large employee population.
3. The local incentives, which are an integral part of the Enterprise Zone program, work well to fill any gaps not covered by state incentives and also to create a business-friendly environment within Enterprise Zones. State job creation grant money becomes available to businesses post-hoc, whereas local grants are available prior to the creation of jobs—helping to create the jobs, reduce business establishment costs, reduce relocation expenses, assist in purchasing new tools and machinery, and provide technical and financial services.

Has the Enterprise Zone program been instrumental in helping to achieve the community goals and strategies?

1. Economic growth is at the centerpiece of a community's developmental goals. More than 90 percent of the stakeholders surveyed for the study believe that the Enterprise Zone program has been instrumental in achieving community development goals. However, direct incentives to attract businesses and create jobs can only be successful when the other aspects of a community's economy are already in place. Businesses also need a viable pool of skilled workers, better public safety, modern infrastructure, transportation networks, and access to other ancillary businesses. On the other hand, retention of a skilled workforce not only requires competitive wages, but also nice housing, better schools, responsive public safety, hospitals, and a variety of social and cultural amenities. Providing direct grants to businesses reduces their operating costs, and helping to improve the real property might improve the physical quality of the place. However, other important aspects of the local economy such as workforce training, affordable housing, public safety, quality of schools, and public infrastructure also need some help to achieve well-rounded economic development. The Enterprise Zone program alone cannot be expected to do everything that is necessary to revitalize economically depressed areas. At its present state, the program has been moderately successful in helping to achieve community goals and strategies by attracting businesses, creating jobs, and helping to improve real estate values within the zones. Through some simple modifications, the program may be able to produce even better results.

What are the wider impacts of the Enterprise Zone program strategies on their communities?

1. The most important impact of the Enterprise Zone program on their communities is the designation of the Enterprise Zones themselves. It works like a brand value to the community. Communities with Enterprise Zones get the attention of businesses looking to expand into the Commonwealth. If two communities are comparable in most of the other aspects, the one with an Enterprise Zone is likely to be approached by more prospective businesses than the one that doesn't have a zone.
2. With the Enterprise Zones attracting qualifying businesses within their boundaries, new secondary and tertiary businesses also relocate nearby to benefit from the agglomeration economy. Retail, food and beverages, and personal service related businesses follow the trend. These ripple effects in the economy are not confined to the boundaries of the zones. The study shows that a similar trend in job growth could be seen up to a quarter mile outside the Enterprise Zone boundaries.
3. Similarly, the influx of a new workforce in an area spurs construction/redevelopment of affordable housing in nearby areas. The ripple effect analysis of the property value shows that the positive growth in property value can be seen up to a quarter mile from the Enterprise Zones.

How can the Commonwealth improve program outcomes?

The revised Virginia Enterprise Zone program has been in place for more than a decade. This study finds many positive impacts of the program. Most positive impacts are related to encouraging economic growth in distressed areas and helping localities to gain a competitive advantage over their economically stronger counterparts. The following recommendations are made within the context of the new economic reality of automation in advanced manufacturing industries, the advent of information processing industries, and the increased role of the service industry in enhancing the quality of place. Recommendations are also based on our interactions with the stakeholders and the participants of the Enterprise Zone program. We recommend that the following issues be addressed to improve the program outcomes in the future.

1. Improving the Job Creation Grant
 - a. *Increase grant amount per qualifying position*

The JCG pays up to \$500 per qualifying position per year with an hourly wage equivalent to 175 percent of the federal minimum wage (or up to \$800 per position per year with an hourly wage at 200 percent of federal minimum wage). This amount is roughly equivalent to about one week's full time wage. We would recommend increasing the per-employee amount to make the program more attractive to prospective large employers. For example, a 100 percent increase in the incentive from \$500 to \$1000 (or \$800 to \$1600) and a reduction in the cap from 350 jobs to 200 jobs will improve the attractiveness of the program while impacting the total program budget by about 14 percent.

b. Make it equally attractive to small and medium sized businesses

A majority of the study participants believed that the JCG program was designed in a way that is more attractive to big businesses that hire large numbers of employees at a time. The grant is more feasible to big businesses, both in terms of the incentive amounts they can receive on behalf of a large segment of their employees and also in terms of being able to navigate through the administrative requirements and red tape associated with the administration of the program. It is very likely that these companies already have financial and administrative employees who can take care of the documentation and attestation procedures. Even though the administrative requirements are less rigorous for small businesses, navigating through the JCG qualification and attestation process is more expensive in terms of cost and effort than the total benefits they might receive for their smaller group of employees.

Increasing the grant per position per year, as suggested in the article 1.a. above, should make the program attractive to smaller businesses. But as a second alternative, we propose using variable rates for the program. For example, \$1000 for the first 100 jobs, \$750 for 100-200 jobs and \$500 for 200-350 jobs. This will attract small and medium sized businesses by helping them overcome the transaction cost per qualifying position.

c. Focusing on workforce development

Workforce availability is not really an issue with the JCG grant, but if a business cannot get the quality workforce it needs, it will be less inclined to apply for and enter into the grant contract. This is particularly true for businesses in the rural Enterprise Zones. Businesses that have specific skills requirements spend a large sum in training employees every year. A number of business representatives that participated in the focus group discussions said that they have had difficulty finding skilled workers. Workforce training is a cost that businesses will need to bear unless they relocate to a labor-rich locality. In addition to the standard Enterprise Zone incentives, having a workforce-training program as a part of the Enterprise Zone program (or any other state or local program that can be synergistically linked to the JCG incentives) will reduce training costs for the businesses and make the zones more attractive. It would serve as a perennial subsidy for their operating costs.

d. Simplifying the administrative process

Simplifying the grant application process and the requirements for the periodic evaluation of businesses may also reduce their transaction costs. A user-friendly online portal that simplifies the process to the extent that it does not require the hiring of professional help should attract small and medium sized businesses to the incentive program.

e. *Making JCG accessible to all sectors*

Currently JCG program rules preclude certain businesses from reaping the benefits of the grant. In general, the Manufacturing sector and other export-based sectors qualify for the grants, whereas some personal service industries, food and beverages, and retail sectors—are precluded from receiving the grant. The current philosophy behind the grant is to attract large businesses to the area that bring new investment and create new jobs. Once jobs are created, the service industry will automatically grow to cater to the needs of the new (and growing) population.

At this juncture, we would like to step back and revisit the philosophy behind the Enterprise Zone program. Is the primary focus of the program to help economically distressed areas recover? Or is the focus to encourage export based industries in economically distressed localities? The answers to these questions also depends upon our presumed image of a fully recovered distressed area (or locality). We have to make sure that we are not building our expectations for the Enterprise Zones too high to achieve. Enterprise Zones can aim for a variety of roles depending upon the realities on the ground. Zones can either compete with nearby successful commercial areas for manufacturing-based industries, or they can grow into a professional and service center for a nearby commercial area, or they can even serve as a retail hub to serve the residents from around the region. The end result of economic recovery needs to be prioritized over the process through which the recovery takes place.

Manufacturing and other export-based industries are important for the local and regional economy; however, not all localities are equally capable of competing for those industries. It would be wise to open up the incentive program for all types of industries and let the fittest thrive. All types of arts and entertainment businesses, food and beverages, personal services, and retail businesses help to enhance local quality of place. During the first few experimental years, these businesses can be incentivized at a reduced rate, and incremental adjustments may be made depending upon the outcome.

2. Improving the Real Property Improvement Grant

a. Address the proration issue

Although program participants highly value the RPIG program, survey respondents and focus groups repeatedly pointed to grant proration as a significant weakness. Proration creates uncertainty for investors, as they cannot know what portion of the requested grant amount they will ultimately receive. This uncertainty may be addressed in one of three ways:

- Fully funding the grant upfront;
- Paying a portion of the grant upfront and paying the remainder based on how effective the property investment has been in improving the property value; or
- Paying any remainder of a prorated grant through a tax credit.

Any one of these changes would provide investors with greater certainty regarding the grant amount they will receive in exchange for a longer payment period.

Currently, RPIG payments are disbursed after all JCG grants are paid in full. Both grants pull from the same pool of funds, and if RPIG applications total beyond the available remainder of funds after JCG payments, those RPIG payments are prorated. The number of applicants and the amount applied for in both programs is different each year, meaning there is no way for an investor and RPIG applicant to know how much money they will receive after proration.

The Commonwealth may not have the capacity to pay out 20 percent of qualifying expenses for all real property improvements taking place within Enterprise Zones in a given year. The fundamental idea behind the RPIG program is not to subsidize any or every property improvement but to help those that invest in distressed properties and improve the local property values.

It would be more appropriate to link RPIG disbursements to the improvement in property value than to the investment made on the property. Rather than reimbursing up to 20 percent of qualifying investments, the program could reimburse 10 percent of qualifying expenses immediately and link the remaining 10 percent to the improvement in property value over a one year period. The remaining balance (the second 10 percent of qualifying expenses) could be prorated based on the change in the property value relative to the locality average.

Alternatively, the Commonwealth could maintain the existing structure of proration, pay the prorated amount in the first year, and convert the unpaid remainder into a tax credit to be redeemed over a five-year period. This method does not require the participant to reapply for grant on the same project for multiple years and may reduce administrative burdens compared to other alternatives.