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Report to the Governor and the General Assembly of Virginia

Economic Development Incentives 2020
Spending and Performance

COMMISSION DRAFT

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AND REVIEW COMMISSION

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WHAT WE FOUND

- Virginia spent $2.7 billion on 83 economic development incentive programs from FY10 to FY19. This amounts to 1.5 percent of total general fund spending during this time period. Total spending on incentives was $314 million in FY19. Incentive spending has increased since FY17 because of increased spending for the data center exemption and several other incentives.
- Sixty-seven percent of incentive spending was for tax incentives such as sales and use tax exemptions ($1.2 billion), tax credits ($472 million), and single sales apportionment for manufacturers and data centers ($115 million). The remaining 33 percent was spent on grants ($855 million) and other incentives such as loans and gap financing programs ($33 million).
- Economic benefits, such as increases in employment, gross domestic product, and personal income, vary widely by type of economic development incentive program.
- Although grant programs have substantially higher economic benefits—increases in employment, gross domestic product, and personal income—than tax incentives, historically Virginia has spent more on tax incentives than on grants.
- Grant programs have a higher economic benefit because they typically target projects in export-base industries that have high employment multipliers and that pay high wages.
- Loan and gap financing programs have a higher economic benefit because they have minimal costs to the state.
- Collectively, Virginia economic development incentive grant programs awarded $1.8 billion to 5,000 projects between FY10 and FY19. Grant awards increased substantially in FY19 primarily because of the $750 million custom grant award for Amazon HQ2.

WHY WE DID THIS STUDY

Through language in the Appropriation Act, the General Assembly directed the Joint Legislative Audit and Review Commission (JLARC) to review and evaluate economic development initiatives. Topics include spending on incentives and activity generated by businesses receiving incentives; the economic benefits of incentives; and the effectiveness of incentives.

JLARC releases two reports each year: a high-level summary report on overall spending and business activity and an in-depth report on the effectiveness of selected individual incentives. (See Appendix A: Study mandate.) JLARC contracted with the Weldon Cooper Center for Public Service to perform the analysis for both reports.

This report is the fourth in the series of overall spending and business activity and focuses on incentives that were provided between FY10 and FY19.

- Less than half of the $1.8 billion in grant awards was paid out or 'spent' between FY10 and FY19 because nearly $900 million in custom awards for Amazon HQ2 and three other companies are not scheduled to be paid out until after FY19. Spending on grants, and thus total incentives, will increase substantially as these custom grant awards are paid.
- Completed projects receiving grant funds created more than 78,000 jobs and nearly $18 billion in capital investment or other spending. The majority of these projects met their capital investment goals, but only one-quarter met their job creation goals.

Economic Development Incentives 2020

Virginia provides economic development incentives to encourage businesses to locate or expand their operations in the state as part of its economic development strategy. To better understand the effectiveness of these incentives in stimulating business activity, the General Assembly directed the Joint Legislative Audit and Review Commission (JLARC) to review spending on and performance of economic development incentives such as grants, tax preferences, and other assistance. (See Appendix A.) JLARC contracted with the University of Virginia's Weldon Cooper Center for Public Service to perform the evaluation.

This report is the fourth in a series of annual reports about Virginia's economic development incentives, trends in state spending on incentives, and performance of incentive programs. Every other year the reports in this series will include information about the economic benefits of total spending on economic development incentives. This report is the second in which information on economic benefits is included.

This report provides summary information on 83 economic development incentive programs, including grants, tax preferences, business loans, and gap financing. The incentive programs covered in this report are funded by the state, are actively providing incentives, and have a primary purpose of promoting economic activity through location or expansion of businesses. Businesses may also benefit from a variety of other grants, tax credits, and exemptions offered by the state for purposes other than economic development; these programs are not included in this report.

For purposes of this report, **incentives spending** refers to (1) actual expenditures by the state in the form of grant awards or other financing and (2) estimated tax expenditures, in the form of forgone revenue, through tax credits or sales and use tax exemptions.

For most grants, spending is allocated to the fiscal year in which awards were approved. For custom grants, spending is allocated to the fiscal year in which grant payments are made to the company.

For refundable tax credits, such as the film credit, spending may reflect actual expenditures rather than forgone revenue.

See Appendix B for more information on methods used to estimate spending for each program.

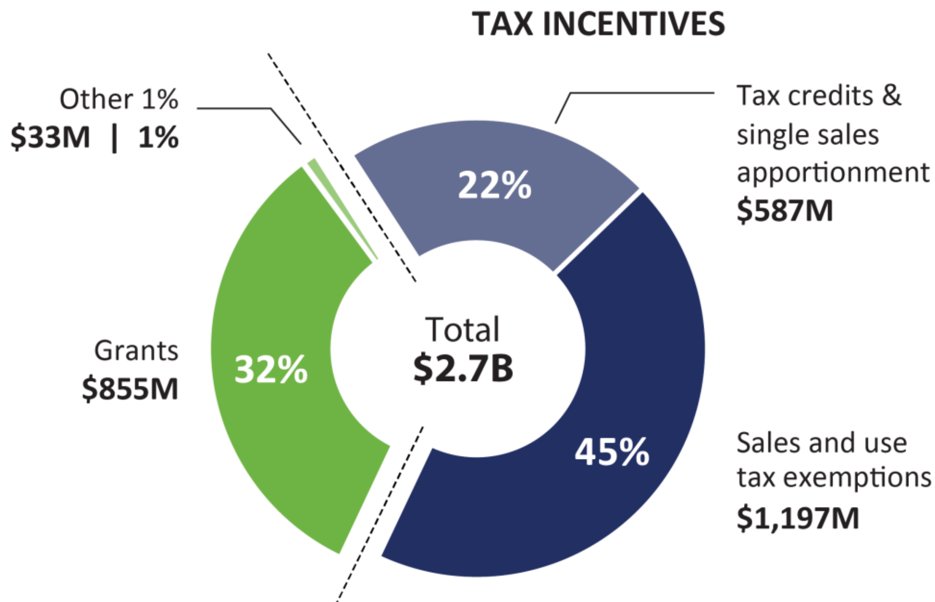
State spent $2.7 billion on incentives FY10–FY19

Virginia spent $2.7 billion on 83 economic development incentive programs over the past 10 fiscal years (Figure 1), for an average of $267 million per year. Nearly all incentives are funded by the state general fund, with the exception of incentives provided by the Tobacco Region Revitalization Commission and several transportation infrastructure incentives. Spending on incentives represented approximately 1.5 percent of total general fund spending between FY10 and FY19. In addition, the majority of spending on incentives was forgone revenue from tax incentives. Sales and use tax exemptions make up 46 percent of forgone revenue, and tax credits and single sales apportionment for manufacturers together make up 22 percent of forgone revenue. Almost all the remaining spending was for grants.

This report is the first in this series to use a **10-year time period** (FY10 to FY19). Prior reports included fewer years because some agencies did not maintain data prior to FY10.

Ten incentives accounted for over two-thirds of the spending on incentives between FY10 and FY19 (Table 1). Two of the top three—the Data Center Exemption and Railroad Common Carriers Exemption—provided $796 million in exemptions to businesses in capital-intensive sectors that make large purchases of equipment. Because of the incentives, purchases by these businesses are exempt from the retail sales and use tax. The second-largest incentive was the Coalfield Employment Enhancement Tax Credit, which provided $242 million for coal mining and coal bed methane production. Other top incentives include the Commonwealth's Opportunity Fund, the state's primary "deal closing" program, which awarded $142 million for 267 projects; the Tobacco Region Opportunity Fund Grant, which awarded $113 million to 301 projects; and the Tobacco Region Megasite Grant, which awarded 36 grants totaling $97 million for nine industrial parks in the Southern and Southwest regions.

FIGURE 1
Two-thirds of spending on incentives was for tax incentives (FY10–FY19)



SOURCE: Weldon Cooper Center analysis of economic development incentive programs.
NOTE: Estimates may not sum because of rounding. Adjusted for canceled projects, recaptures, and award reductions. Exemptions exclude the 1 percent sales tax for localities and the additional amounts collected in the Historic Triangle, Northern Virginia, and Hampton Roads. Prior reports included the full custom grant amount in the year in which the grant was approved, but, beginning with this report, actual custom payments are included and allocated to the fiscal year when they were paid. Estimate for single sales apportionment includes both manufacturer and data center estimates.

TABLE 1
Ten incentives are responsible for two-thirds of spending (FY10–FY19)

Incentive	Spending	% of spending
Data Center Exemption	$593M	23%
Coalfield Employment Enhancement Tax Credit	242	9
Railroad Common Carriers Exemption	203	8
Commonwealth's Opportunity Fund	142	5
Manufacturers single sales apportionment	115	4
Tobacco Region Opportunity Fund	113	4
Real Property Investment Grant	105	4
Airline Common Carriers Exemption	99	4
Tobacco Region Megasite Grants	97	4
Virginia Coal Production and Employment Incentive Tax Credit	90	3
Subtotal	**$1,797M**	**67%**
All others	875M	33%
TOTAL	**$2,672M**	**100%**

SOURCE: Weldon Cooper Center analysis of economic development incentives.
NOTE: Excludes several tax preferences for which data was not available. Prior reports included the full custom grant amount in the year in which the grant was approved, but, beginning with this report, actual custom payments are included and allocated to the fiscal year when they were paid. Adjusted for canceled projects, recaptures, and award reductions. Exemptions exclude the 1 percent sales tax for localities and, in most cases, the additional amounts collected in the Historic Triangle, Northern Virginia, and Hampton Roads. (See Appendix C for a description and Appendix D for spending for all incentives.)

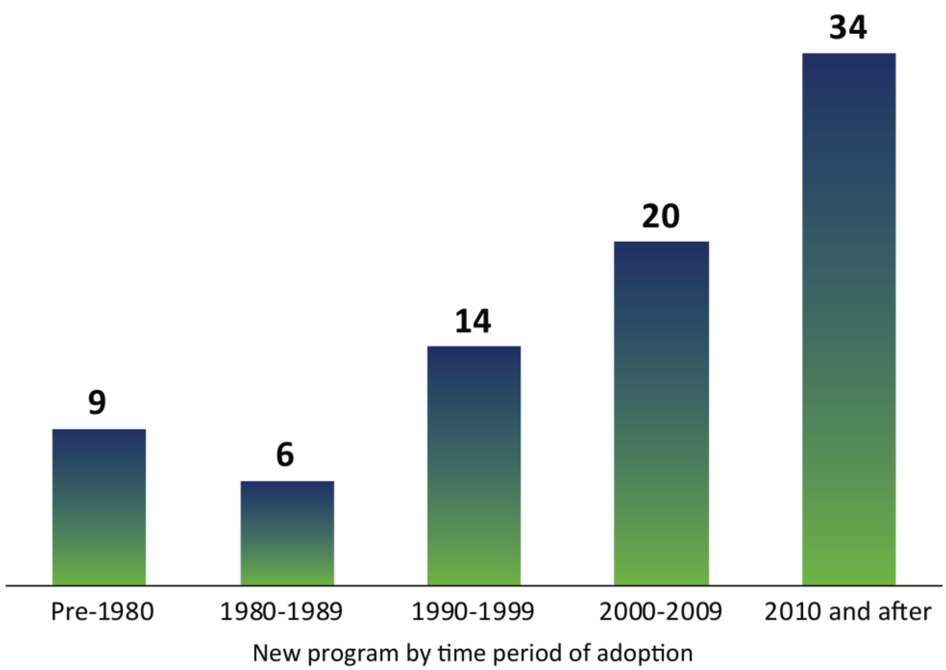
Incentives have increased in number and spending

The number of economic development incentive programs offered by the state has grown over time (Figure 2). The oldest is the Economic Development Access Program—a grant program designed to improve transportation access for industrial sites—which was adopted in 1956. The newest, and the largest, is the Major Headquarters Workforce Grant, a customized performance grant adopted in 2019 for Amazon to establish a second corporate headquarters (HQ2) in Arlington County. Half of the current incentives were adopted in 2006 or after.

Overall, the amount spent on economic development incentives increased by 99 percent between FY10 and FY19, though spending varies from year to year (Figure 3). This increase is more than twice the increase in the state general fund budget during that time period (45 percent) and nearly twice the increase in the total operating budget (57 percent).

Much of the overall increase in incentive spending occurred between FY10 and FY15 because of newly adopted programs, which have grown over time. The Data Center Exemption was first claimed in FY10 at an estimated $3 million in exemptions but is now estimated to total nearly $98 million in exemptions annually. Manufacturers could begin using single sales apportionment in FY15, and it reduced income tax revenue by an estimated $2 million that year and grew to an estimated $24 million in FY19. Spending for four incentives—the Data Center Exemption, manufacturers single sales apportionment, the Commonwealth's Opportunity Fund, and Transportation Partnership Opportunity Fund—have each increased by $10 million or more overall between FY10 and FY19, because they were new incentives during the time period or because of increasing incentive activity.

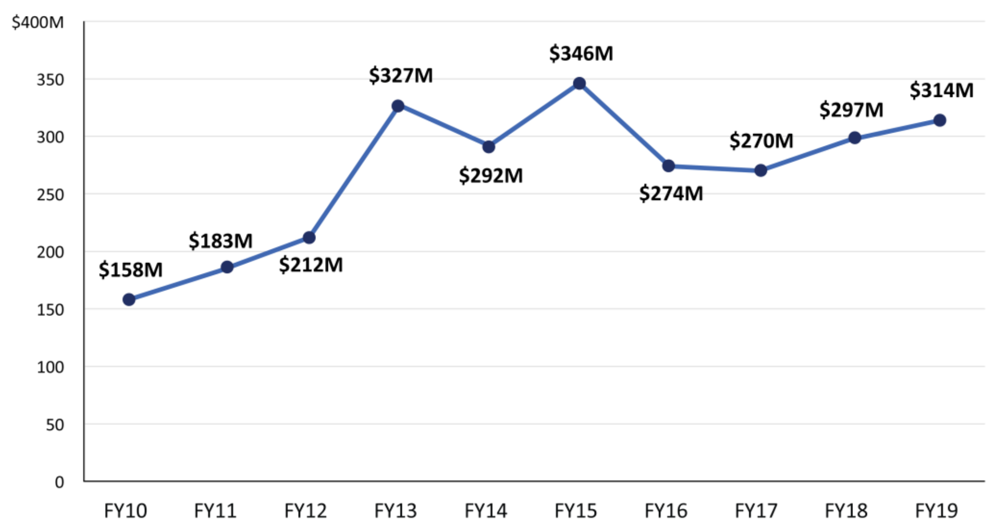
FIGURE 2
More than one-third of current incentive programs were adopted in 2010 or after



SOURCE: Weldon Cooper Center analysis of economic development incentive programs.
NOTE: Excludes incentive programs that expired prior to 2017 when this evaluation series began. See Appendix C for the year when each incentive was adopted.

Incentive spending often fluctuates from year to year because of program changes or large or atypical awards. For example, two programs contributed to the spike in incentives in FY13. Two-thirds ($59.5 million) of the total Virginia Coal Production and Employment Tax Credit awards between FY10 and FY19 were awarded in FY13 when a substantial amount of carryover credits were claimed on tax returns. The total amount of spending on the Data Center Exemption increased by $53 million between FY12 and FY13 after co-location data centers, which are operated by a landlord and may have multiple data centers as tenants, were allowed to use the exemption.

FIGURE 3
Spending on incentives fluctuates from year to year but has increased nearly 100 percent since FY10



SOURCE: Weldon Cooper Center analysis of economic development incentive programs.
NOTE: Adjusted for canceled projects, recaptures, and award reductions. Amounts differ from earlier Economic Development Incentives reports because of project cancelations, recaptures for nonperforming projects, and adjusted reporting on completed projects. Prior reports included the full custom grant amount in the year in which the grant was approved, but, beginning with this report, actual custom payments are included and allocated to the fiscal year when they were paid. Not adjusted for inflation. The trend is similar if adjusted for inflation.

Several programs have experienced sizable declines in spending since FY15, which resulted in a decline in spending in FY16 and FY17. The Tobacco Region Megasite grant program awarded $18 million annually for the development of industrial parks between FY11 and FY15. Since then, however, only $4.9 million in FY18 has been awarded. Estimated tax savings from the Coalfield Employment Enhancement Tax Credit also declined, from $28.4 million in FY15 to $16.1 million in FY19. These declines, however, were offset beginning in FY18 because of increased spending for the data center exemption, the Transportation Partnership Opportunity Fund, and the new Major Research and Development Investment Tax Credit.

More than 5,000 projects were awarded $1.8 billion in grants FY10–FY19

Even though sales and use tax incentives—particularly exemptions—have historically had a larger overall impact on the state budget, Virginia's grant programs are the most widely recognized economic development incentive. Custom grants in particular are provided to business location or expansion projects promising to make substantial job creation and capital investment and therefore receive considerable media attention. For example, Virginia's award of a $750 million custom grant for Amazon to locate its East Coast headquarters in Virginia received national attention in fall 2018 and early

Custom grants are periodically offered to attract specific large companies to the state. The state's typical package of incentives (grants, tax credits, exemptions, etc.) are relatively modest compared to a custom grant. For example, grant awards for non-custom projects were an average of $181,000 per project between FY10 and FY19 compared with custom grants, which were an average of $182M per project.

Economic development grants are financial incentives provided to businesses in return for locating in the state or expanding business activity. Some grants are discretionary, which means that the state can negotiate the terms of the grant with the business. Other grants are automatically awarded if the business meets the minimum requirements. Grants are not repaid as long as businesses meet program requirements.

Several programs that are not commonly identified as grant programs are included in this category because they provide financial assistance to businesses (or to a third party for their benefit).

2019. Grant payments are scheduled to begin in FY24 and end in FY43. To receive the full award, Amazon must create at least 37,850 jobs and make a capital investment of at least $2 billion.

Collectively, Virginia's economic development incentive grant programs—which are typically funded with general funds with some exceptions—awarded $1.8 billion to 5,023 projects between FY10 and FY19 (Table 2). Thirteen of the 26 grant programs each provided more than $30 million in awards during the time period. For most grant programs, awards were paid out between FY10 and FY19. However, less than half of the $1.8 billion in grant awards was paid out or 'spent' between FY10 and FY19 because nearly $900 million in custom awards for Amazon HQ2, Micron, Newport News Shipbuilding, and Amazon Web Services are not scheduled to be paid out until after FY19. Spending on grants, and thus total incentives, will increase substantially as these custom grant awards are paid.

Grant awards were targeted to corporate headquarters and manufacturing sectors and to urban localities

Nearly three-quarters of grant award amounts were directed to corporate headquarters or manufacturers between FY10 and FY19 (Figure 4). Forty-three percent of grant awards were directed to businesses in the corporate headquarters sector, reflecting the sizable custom grant award for Amazon HQ2. Another third was directed to businesses in the manufacturing sector. The manufacturing sector is commonly represented because grant programs generally target "basic," or export-base industry companies, which export at least half their goods or services outside the state. Targeting these businesses is desirable because they bring new revenue into the state. Corporate headquarters is also an export-base industry sector, but until FY19, the state generally provided fewer and smaller grants for headquarters locations or expansions.

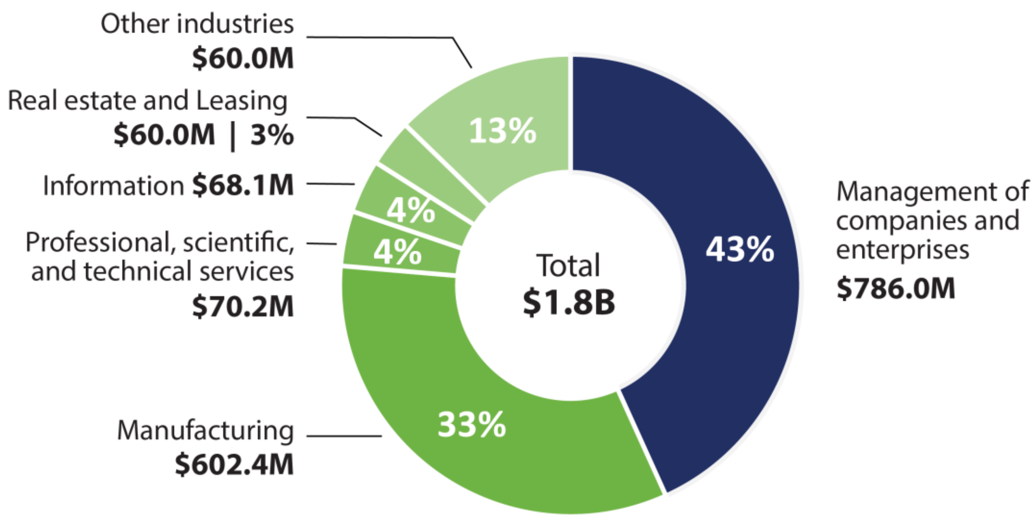
Geographically, the largest amount of grant awards went to highly populated urban localities, such as Arlington County ($790 million), Newport News ($114 million), and Fairfax County ($65 million). Several less populated counties—such as Henry and Greensville—also received large amounts ($44 million and $41 million respectively). Ten localities received approximately 70 percent of the total amount awarded for the period (Table 3).

TABLE 2
Grant programs made more than 5,000 awards totaling $1.8 billion (FY10–FY19)

Program	Total FY10–FY19 Award amount	Total FY10–FY19 # of awards	Annual average Award amount	Annual average # of awards
Major Headquarters Workforce Grant (Amazon HQ2) [a]	$750.0M	1	n.a.	n.a.
Tobacco Region Opportunity Fund	160.5	301	$16.0M	30
Commonwealth's Opportunity Fund	156.2	267	15.6	27
Tobacco Commission Megasite Grant	108.9	36	12.1	4
Virginia Jobs Investment Program	105.7	1,102	10.6	110
Real Property Investment Grant (Enterprise Zone)	104.5	1,603	10.5	160
Semiconductor Manufacturing Grant (Micron) [a]	70.0	1	n.a.	n.a.
Transportation Partnership Opportunity Fund	48.4	14	4.8	1
Advanced Shipbuilding Production Facility Grant (Newport News Shipbuilding) [a]	46.0	1	n.a.	n.a.
Virginia Investment Partnership Grant	45.9	62	4.6	6
Virginia Economic Development Incentive Grant	40.8	9	4.1	1
Advanced Shipbuilding Training Facility Grant (Newport News Shipbuilding) [a]	32.8	1	n.a.	n.a.
Governor's Motion Picture Opportunity Fund	32.5	52	3.2	5
Economic Development Access Program	26.2	46	2.6	5
Job Creation Grant (Enterprise Zone)	25.2	560	2.5	56
Rail Industrial Access Program	11.8	34	1.2	3
Commonwealth Research Commercialization Fund	11.6	202	1.4	25
Special Workforce Grant (Amazon Web Services) [a]	10.5	1	n.a.	n.a.
Small Business Jobs Grant Fund Program	7.4	138	0.7	14
Agriculture and Forestry Industries Development Grant	6.5	81	1.1	14
VALET Program	4.6	237	0.5	24
Port of Virginia Economic and Infrastructure Grant	3.6	13	0.6	2
GO Virginia	3.0	3	1.5	2
Small Business Investment Grant Fund	2.8	55	0.5	9
Trade Show Assistance Program	1.7	191	0.6	64
Virginia Business Ready Sites Program	1.5	12	0.7	6
All programs	**$1,818.5M**	**5,023**	**$95.5M**	**568**

SOURCE: Weldon Cooper Center analysis of economic development incentive grants.
NOTE: Includes all awards and amounts *prior* to recaptures, cancelations, or reductions. For this reason, amounts for the Tobacco Region Opportunity Fund, Commonwealth's Opportunity Fund, and Virginia Jobs Investment Program are higher than amounts shown in Table 1. Total award amounts for custom grants are shown. The Small Business Jobs Grant Fund Program was eliminated by the 2020 General Assembly.
[a] These grants provide custom one-time awards that are or will be paid out over several years based on performance. The $32.5 million Advanced Shipbuilding Training Facility Grant has been fully paid.

FIGURE 4
Three-quarters of grant awards were directed to corporate headquarters and manufacturers (FY10–FY19)



SOURCE: Weldon Cooper Center analysis of economic development incentive grants.
NOTE: The "other industries" category includes businesses in a variety of sectors such as agriculture and forestry, construction, utilities, finance and insurance, wholesale or retail trade, transportation and warehousing, and other service sectors. Estimates may not sum because of rounding.

TABLE 3
Businesses in 10 localities received over 70 percent of grant awards (FY10–FY19)

Locality	Amount awarded	% of total amount	# awards	% of total awards
Arlington County	$790M	43.5%	79	1.6
Newport News City	114	6.3	277	5.5
Manassas City	73	4.0	17	0.3
Fairfax County	65	3.6	317	6.3
Richmond City	57	3.1	434	8.6
Henry County	44	2.4	123	2.4
Greensville County	41	2.3	29	0.6
Accomack County	35	1.9	38	0.8
Brunswick County	34	1.9	11	0.2
Henrico County	26	1.4	196	3.9
Subtotal	**$1,279M**	**70.3%**	**1,521**	**30.3%**
All others	540	29.7	3,502	69.7
TOTAL	**$1,818M**	**100.0%**	**5,023**	**100.0%**

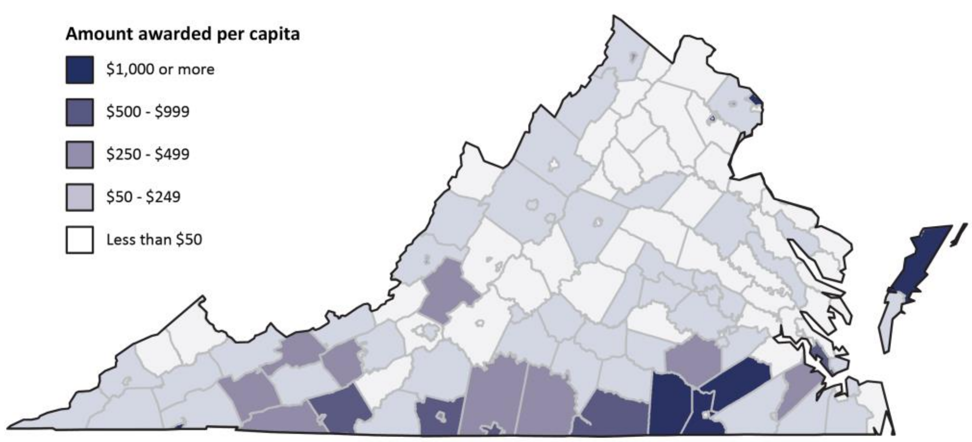
SOURCE: Weldon Cooper Center analysis of economic development incentive grants.
NOTE: Localities were not assigned to 14 Governor's Motion Picture Opportunity Fund projects because filming occurred in multiple locations.

Businesses in urban localities in Northern Virginia and rural localities in the southern part of the state received a large proportion of grant funding, relative to population size (Figure 5). Businesses in the Northern Virginia Regional Commission service area (the counties of Arlington, Fairfax, Loudoun, and Prince William and the cities of Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park) received approximately 52 percent of all economic development incentive grant awards. Businesses in Tobacco Region localities received approximately 19 percent of all economic development grant awards, largely due to the contributions of the Tobacco Commission's Tobacco Region Opportunity Fund and Megasite Grant programs. The highest per capita award amounts were in

- Greensville County ($3,632) for development of the Mid-Atlantic Advanced Manufacturing Center;
- Arlington County ($3,336) for the location of Amazon HQ2;
- Brunswick County ($2,090) for the location of a Dominion Power gas power plant that received $30 million in financial assistance;
- Manassas City ($1,773) for the Micron expansion; and
- Sussex County ($1,217) for development of a Tobacco Commission-funded megasite.

(See Appendix E for maps of the regional distribution of grant awards, overall and per capita.)

FIGURE 5
Awards per capita are concentrated in Arlington, Manassas City, and rural localities in Southern Virginia (FY10–FY19)



SOURCE: Weldon Cooper Center analysis of economic development incentive grants.

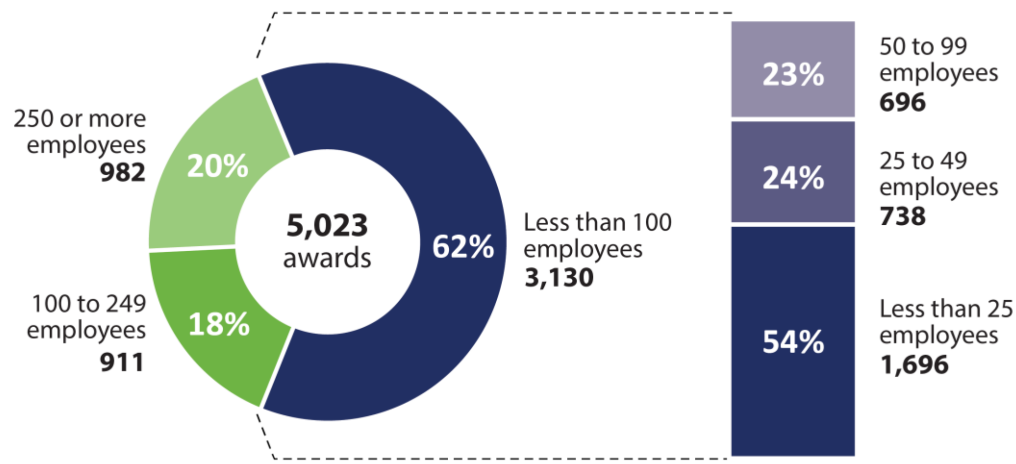
The awards amount per capita slightly align with the local unemployment rate, indicating that more funds are generally provided to businesses in localities that are economically distressed. The number of awards per capita is even more highly correlated with the local unemployment rate.

Majority of grant projects were for business locations that had fewer than 100 employees at the time of the award

Many businesses have operations in multiple **locations**. Grants and other incentives are often provided to projects that occur at a specific business location.

Sixty-two percent of the grant awards between FY10 and FY19 went to business locations that had fewer than 100 employees at the time the awards were made (Figure 6). Of this group, 54 percent were for business locations with fewer than 25 employees. These businesses received grant awards from programs, such as the Small Business Investment Grant or Commonwealth Research and Commercialization Fund, that typically make awards to start-up businesses with 10 or fewer employees, on average. In contrast, 20 percent of grant awards were for large businesses with 250 or more employees. Custom grants and four other grant programs—the Transportation Partnership Opportunity Fund, Virginia Investment Partnership Grant, Virginia Economic Development Incentive Grant, and Port of Virginia Economic and Infrastructure Grant—tend to make awards to business locations with 250 employees or more. (See Appendix F for the average employment size of grant recipients by program.)

FIGURE 6
Majority of grant recipients were for business locations with fewer than 100 employees (FY10–FY19)



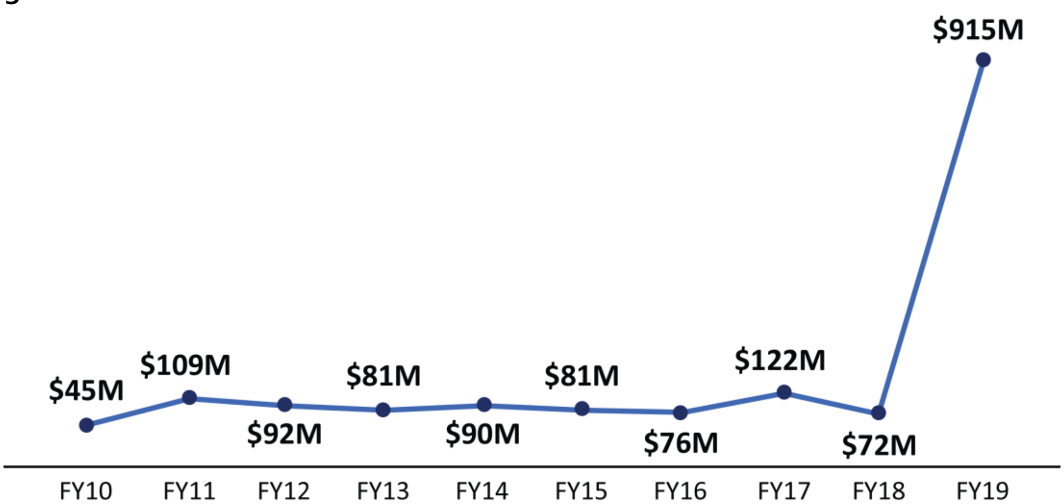
SOURCE: Weldon Cooper Center analysis of economic incentive grant awards.
NOTE: Employment records were matched with 3,066 of the 5,023 awards (61 percent) and $479 million of $1.8 billion in total awards. The numbers and percentages shown in the figure reflect a weighted distribution of awards and amounts using information from the matched records.

Grant awards increased substantially in FY19 because of large custom grant awards

Grant awards increased substantially in FY19 because of large custom grant awards for Amazon HQ2, Amazon Web Services, and Micron that totaled $830.5 million, which was 91 percent of total grant awards that year (Figure 7). Before FY19, annual grant awards fluctuated within a much narrower range and were generally on a declining trend. Awards in FY10 were at a low point because of the lingering effects of the

2008–09 recession on business activity, but more than tripled in FY11 when two large incentive programs were introduced: the Tobacco Commission Megasite Grant, which awarded $14 million in incentives per year on average, and the custom Advanced Shipbuilding Training Facility Grant, which made a one-time award of $32.8 million to Newport News Shipbuilding. After FY11, grant awards generally declined, with the exception of FY17 when Newport News Shipbuilding received another custom grant award of $46 million from the Advanced Shipbuilding Production Facility Grant. Much of the overall decrease in awards between FY11 and FY18 was a result of declining Tobacco Region Megasite and Tobacco Region Opportunity Fund grant awards over time. (See Appendix D for grant awards by program.)

FIGURE 7
Grant awards increased substantially in FY19 because of three large custom grant awards



SOURCE: Weldon Cooper Center analysis of economic incentive grant awards.
NOTE: Adjusted for canceled projects, recaptures, and award reductions. Amounts differ from earlier Economic Development Incentives reports because of project cancelations, recaptures for nonperforming projects, and adjusted reporting on completed projects. Sizable custom grants were awarded to Amazon HQ2 ($750 million), Micron ($70 million), and Amazon Web Services ($10.5 million) in FY19. Not adjusted for inflation. (The trend is the same if adjusted for inflation.)

Programs vary in amount awarded per job created and level of business investment

The size of grant awards ranged widely by program (Table 4). Awards ranged from an average high of $4.5 million to a low of $8,830 per project excluding the custom grant awards. Custom grant awards—which tend to be much larger—ranged from $10.5 million to $750 million.

The size of grant awards also varied when compared with the number of jobs created or investment made (Table 4). Grant programs require projects to meet certain minimum requirements to be eligible for grant funding. These minimum requirements vary based on program goals, but the most common are job creation and some form of business investment or spending in Virginia. The average grant award per expected job for Virginia projects was $6,393 between FY10 and FY19, but it ranged from a high of $63,291 per job (custom grant for Micron) to a low of less than $1,000 (Virginia Jobs Investment Program and Small Business Jobs Grant Fund). The average grant award for capital investment or additional spending was $40 per $1,000 spent and ranged from a high of $375 (custom grant for Amazon HQ2) to a low of $6 (Agriculture and Forestry Industries Development Grant). These amounts (the average grant award per expected job and per $1,000 of expected capital investment) are higher than amounts in prior reports in this series because of the custom grant awards in FY19.

TABLE 4
Average grant awards by program varied widely (FY10–FY19)

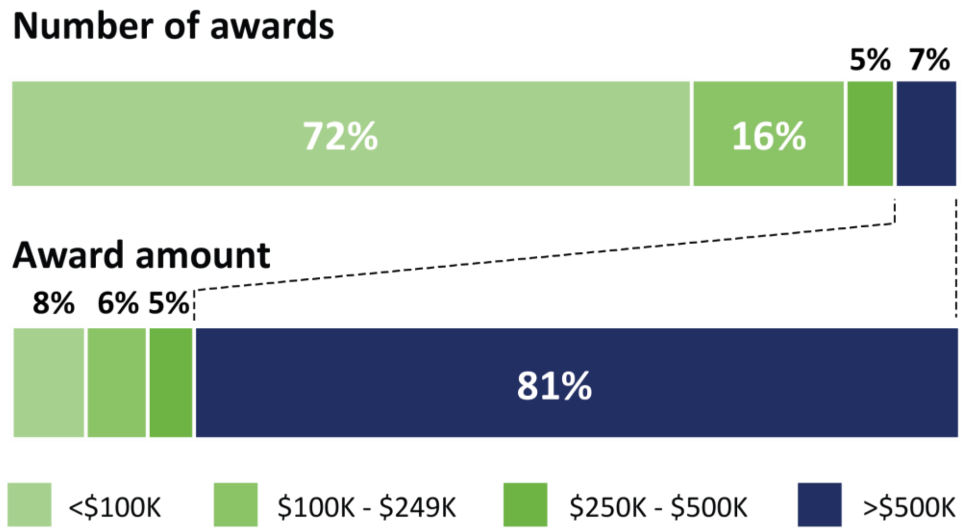
	Average award amount per		
Program	**Project**	**$1,000 in spending or investment in Virginia (expected)**	**Job created in Virginia (expected)**
Custom grants			
Semiconductor Manufacturing Grant (Micron II)	$70,000,000	$23	$63,291
Advanced Shipbuilding Production Facility Grant	46,000,000	61	46,000
Advanced Shipbuilding Training Facility Grant	32,777,745	109	32,778
Major Headquarters Workforce Grant (Amazon HQ2)	750,000,000	375	19,815
Special Workforce Grant (Amazon Web Services)	10,500,000	125	7,000
Average, all custom projects	**$181,855,549**	**$149**	**$21,417**
All other grants			
Transportation Partnership Opportunity Fund	$3,456,937	$106	$20,369
Rail Industrial Access Program	347,961	37	9,769
Virginia Investment Partnership Grant	740,323	13	8,251
Virginia Economic Development Incentive Grant	4,533,333	76	6,947
Tobacco Region Opportunity Fund	533,062	22	5,962
Small Business Investment Grant Fund	50,952	180	4,758
Commonwealth's Opportunity Fund	585,206	14	3,511
Agriculture and Forestry Industries Develop. Grant	80,091	6	2,723
Port of Virginia Economic and Infrastructure Grant	274,269	n.a.	2,097
Job Creation Grant (Enterprise Zone)	45,035	n.a.	1,608
GO Virginia	1,006,117	30	1,029

Program	Average award amount per Project	$1,000 in spending or investment in Virginia (expected)	Job created in Virginia (expected)
Virginia Jobs Investment Program	95,886	9	875
Small Business Jobs Grant Fund Program	53,815	25	850
Tobacco Commission Megasite Grant	3,023,838	**	n.a.
Governor's Motion Picture Opportunity Fund	624,594	**	n.a.
Economic Development Access Program	569,815	204	n.a.
Virginia Business Ready Sites Program	122,736	n.a.	n.a.
Real Property Investment Grant (Enterprise Zone)	65,207	40	n.a.
Commonwealth Research Commercialization Fund	57,334	247	n.a.
VALET Program	19,198	n.a.	n.a.
Trade Show Assistance Program	8,830	n.a.	n.a.
Average, all other projects	**$181,184**	**$23**	**$3,757**
Average, all projects (including custom)	**$362,027**	**$40**	**$6,393**

SOURCE: Weldon Cooper Center analysis of economic development incentive grants.
NOTE: Expected jobs and spending or investment were used for programs that awarded grants prior to when project performance began. *Actual* jobs and spending or investment were used for programs for which performance already occurred prior to projects receiving a grant award. The goal of the VALET program and Virginia Trade Show Assistance Program is to increase a company's international sales rather than to encourage job creation or capital investment; therefore, the average award amount per $1,000 in spending or investment or jobs created is not relevant for this program. As of FY19, most GO Virginia awards have not been for specific business projects. Average award amounts are calculated using total spending across programs divided by the total number of projects, amount of expected capital investment, and expected jobs across programs. The Small Business Jobs Grant Fund Program was eliminated by the 2020 General Assembly.
n.a. indicates that job creation or investment is not among the criteria considered for obtaining the grant.
** indicates that data was not provided for the program.

From FY10 to FY19, only 7 percent of awards were more than $500,000. However, these larger awards accounted for 81 percent of the grant funding (Figure 8). In fact, the five custom grant awards alone accounted for 50 percent of the grant funding.

FIGURE 8
Seven percent of grant awards accounted for over 80 percent of total grant funding (FY10–FY19)



SOURCE: Weldon Cooper Center analysis of economic development incentive grants.
NOTE: Number of grants awarded is 5,023. Total amount awarded is $1,818.4 million (not adjusted for cancelations, recaptures, and refunds).

The **78,000 jobs and $17.8 billion in capital investment or other spending** are unduplicated amounts because many projects receive more than one grant. For example, Navy Federal Credit Union received a Commonwealth's Opportunity Fund grant and Virginia Jobs Investment Program grant to create 1,400 jobs and $100 million in capital investment in Frederick County.

Completed projects created more than 78,000 jobs and nearly $18 billion in business investment and spending

Projects that received grant awards between FY10 and FY19 and completed their location or expansion project collectively created an estimated 78,000 jobs and $17.8 billion in capital investment or other spending (Table 5). Completed projects that received Virginia Jobs Investment Program grants accounted for the largest share of jobs (48,907) and capital investment and other spending ($7.9 billion). Projects funded through the Commonwealth's Opportunity Fund ranked second in job creation (20,526 jobs) and business spending ($7.3 billion).

TABLE 5
Completed projects created over 78,000 jobs and nearly $18 billion in business spending or investment (FY10–FY19)

Program	# of projects	Spending or investment ($M)	Jobs created
Virginia Jobs Investment Program	898	$7,875M	48,097
Commonwealth's Opportunity Fund	142	7,280	20,526
Job Creation Grant (Enterprise Zone)	560	n.a.	15,686
Tobacco Region Opportunity Fund	175	2,566	6,758
Small Business Jobs Grant Fund Program	128	**	3,050
Port of Virginia Economic and Infrastructure Grant	13	n.a.	1,700
Advanced Shipbuilding Training Facility Grant	1	358	1,520
Agriculture and Forestry Industries Devel. Grant	11	257	461
Tobacco Commission Megasite Grant	19	n.a.	450
Virginia Investment Partnership	15	281	284
Commonwealth Research Commercialization Fund	150	40	n.a.
Economic Development Access Program	24	35	n.a.
Governor's Motion Picture Opportunity Fund	47	296	n.a.
Rail Industrial Access Program	30	242	n.a.
Real Property Investment Grant (Enterprise Zone)	1,603	2,625	n.a.
Transportation Partnership Opportunity Fund	9	n.a.	n.a.
	Total (duplicated):	**$21,855M**	**98,532**
	Total (unduplicated):	**$17,861M**	**78,493**

SOURCE: Weldon Cooper Center analysis of economic development incentive grants.
NOTE: Completed projects represented about $469 million in total awards across programs. Some grant programs, such as the Major Eligible Employer and some custom grants, had no completed projects during this time period. Jobs are not counted for the Governor's Motion Picture Opportunity Fund program because they are part time or seasonal and not comparable to other programs' reporting of full-time jobs. Many projects receive grants from more than one program. No unique identifiers exist to easily identify projects that received grants from multiple programs so the unduplicated number of jobs and investment or spending is an estimate based on a review of projects with similar business names, locations, time periods, and other factors. The VALET program (218 completed projects) and Trade Show Assistance Programs (191 completed projects) are not included in the table because their goals are to increase a company's international sales, and job creation and capital investment are not reported by program participants. The Small Business Jobs Grant Fund Program was eliminated by the 2020 General Assembly.
n.a. indicates that job creation or investment is not one of the criteria for receiving the grant.
** indicates that data was not provided for program.

Majority of completed projects met capital investment goals, and only one-quarter met their job creation goals

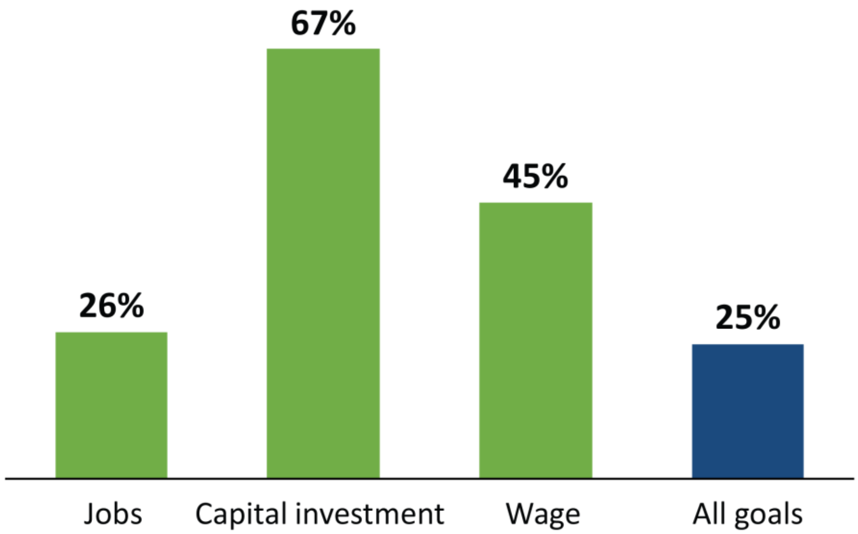
Ten grant programs establish an "upfront" award agreement with project-specific goals. The most common project-specific goals are job creation, capital investment, and average wages paid. Several programs use alternative goals that are more relevant to their program. For example, transportation-related programs, such as the Rail Industrial Access Program and Port of Virginia Economic and Infrastructure Grant, establish project-specific goals for rail car volume and Virginia port usage, respectively. (See Appendix G for goals across programs.)

Completed projects include those whose grant performance period ended during the time period analyzed, including projects that did not perform. Not all projects that received a grant award between FY10 and FY19 had completed their performance at the end of FY19. Completed projects represent 3,825 projects and $469 million in awards.

It is likely that the majority of the jobs and business investment or spending by completed projects would have occurred without incentives. Trying to determine the effect of incentives with precision is difficult because site selection decisions are based on a variety of factors. The success in swaying business decisions varies by program. Research on incentives nationally suggests that between 75 percent and 98 percent of projects would have occurred anyway without incentives (Bartik 2018).

Sixty-seven percent of completed projects met or exceeded their project-specific goals for capital investment or other spending (Figure 9). Forty-five percent met their average wage goals, and 26 percent met their job creation goals.

FIGURE 9
Majority of completed projects met their capital investment goals (FY10–FY19)



SOURCE: Weldon Cooper Center analysis of economic development incentive grants.
NOTE: N=1,587 duplicated projects. Only includes projects from programs that establish project-specific goals. Some programs allow projects to attain 90 percent of specific goal(s) before award reduction or recapture is made. For simplicity of making calculations across programs, projects that exceeded 90 percent (or other established percentage) for a specific goal but did not achieve 100 percent are not included in the figure.

Attainment rates for project-specific goals varied widely by program (Table 6). The Port of Virginia Economic and Infrastructure Development Grant Program is the only program with multiple projects where all projects attained project-specific goals. Goal achievement was especially low for some programs. Only 16 percent of the 175 completed Tobacco Region Opportunity Fund projects met all project-specific goals.

TABLE 6
Attainment of project-specific goals varied by program (FY10–FY19)

Program	# of projects	% of projects that achieved goal: Job creation	Capital investment	Average wage	All goals
Advanced Shipbuilding Training Facility Grant	1	100%	100%	n.a.	100%
Port of Virginia Economic and Infrastructure Devel. Grant	13	100	n.a.	n.a.	100
Commonwealth Research Commercialization Fund	150	n.a.	n.a.	n.a.	81
Rail Industrial Access Program	30	n.a.	67	n.a.	60
Commonwealth's Opportunity Fund	142	53	74	75	47
Virginia Jobs Investment Program-Retraining	205	n.a.	97	54	34
Agriculture and Forestry Industries Devel. Grant	11	45	45	**	27
Virginia Investment Partnership Grant	15	27	27	27	27
Economic Development Access Program	24	n.a.	25	n.a.	25
Tobacco Region Opportunity Fund	175	29	37	41	16
Virginia Jobs Investment Program – Job Creation	693	20	68	37	9
Small Business Jobs Grant Fund Program	128	12	**	50	8
Total	**1,587**	**26%**	**67%**	**45%**	**25%**

SOURCE: Weldon Cooper Center analysis of economic development incentive grants.
NOTE: Some programs have other goals, which are reflected in the "All goals" column. The Virginia Investment Partnership Grant does not require job creation (it requires that existing jobs be maintained), but some projects have job creation goals. The goal of the VALET program is to increase international sales, and 72 percent of the participants met or exceeded their goal for increased international sales. Some programs, such as the Commonwealth's Opportunity Fund, allow projects to attain 90 percent of specific goals before award reduction or recapture is made. Projects that exceeded 90 percent (or other established percentage) for a specific goal but did not achieve 100 percent are not shown in the percentage of projects that achieved goal. For the Commonwealth's Opportunity Fund, 63 percent of projects met at least 90 percent of their job creation goal, and 79 percent met at least 90 percent of their capital investment goal. The Virginia Jobs Investment Program and Small Business Jobs Grant Program do not establish project-specific goals, but they are included here because grant awards are committed based on an expected number of jobs and amount of capital, although reimbursement is established as a set amount per job actually created and paid post-performance. This may lead to over-commitment of funding to many projects that do not create the number of jobs expected. Some projects do not collect information on average wage levels upon completion of the project. The Small Business Jobs Grant Fund Program was eliminated by the 2020 General Assembly.
n.a. indicates that job creation or investment is not one of the criteria for receiving the grant.
** indicates that data was not provided for program.

Some grant *programs* were successful overall in achieving goals for job creation and capital investment, even though some of the *projects* did not achieve their project-specific goals. For example, only 53 percent of completed projects that received a Commonwealth's Opportunity Fund grant fully achieved their job creation goals (Table 6). However, because some projects far exceeded their job creation goals, collectively all projects created 105 percent of the total jobs that were expected (Table 7). The Commonwealth's Opportunity Fund also achieved its capital investment and average wage goals collectively. Most grant programs had overall success in achieving average wage goals even if they did not have overall success in achieving other goals.

TABLE 7
Projects for most grant programs collectively met their average wage goals (FY10–FY19)

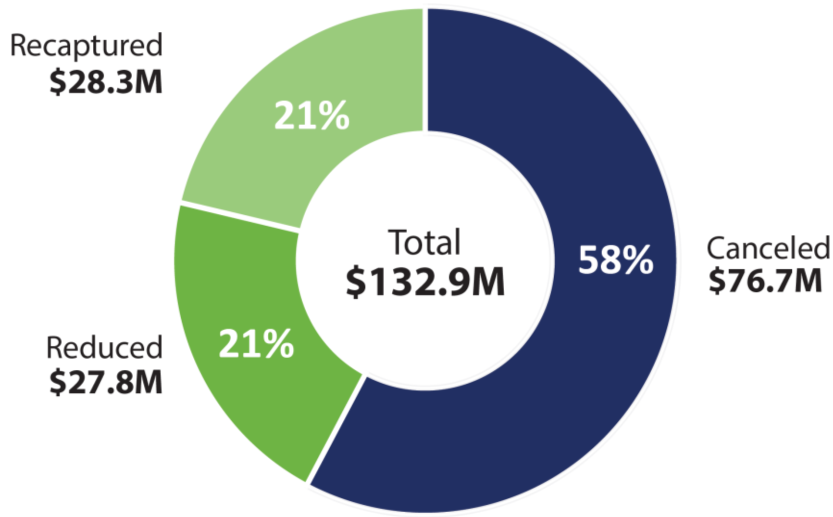
Program	% of collective goals met		
	Job creation goals	Spending or investment goals	Average wage goals
Advanced Shipbuilding Training Facility Grant	152%	119%	n.a.
Commonwealth's Opportunity Fund	105	148	117
Port of Virginia Economic and Infrastructure Grant	100	n.a.	n.a.
Virginia Jobs Investment Program	53	87	103
Agriculture and Forestry Industries Devel. Grant	49	57	**
Small Business Jobs Grant Fund Program	37	**	104
Tobacco Region Opportunity Fund	38	60	156
Virginia Investment Partnership Grant	22	45	111
Commonwealth Research Commercialization Fund	n.a.	107	n.a.
Economic Development Access Program	n.a.	53	n.a.
Rail Industrial Access Program	n.a.	93	n.a.

SOURCE: Weldon Cooper Center analysis of economic incentive grants.
NOTE: The Virginia Jobs Investment Program and Small Business Jobs Grant Program do not establish project-specific goals like other programs. However, they are included here because grant awards are committed based on an expected number of jobs and amount of capital, although reimbursement is established as a set amount per job actually created and paid post-performance. This leads to over commitment of funding to many projects that do not create the number of jobs expected. Not all projects collect average wage levels upon completion of the project to calculate the percentage of projects that attained wage goals. The Virginia Investment Partnership Grant does not require job creation (it requires that existing jobs be maintained), but some projects do have job creation goals. The VALET program is excluded from the table because its goal is to increase international sales. Collectively, program participants increased international sales by 126 percent over sales on program entry. The Small Business Jobs Grant Fund Program was eliminated by the 2020 General Assembly.
n.a. indicates that job creation or investment is not one of the criteria for receiving the grant.
** indicates that data was not provided for program.

Grant awards totaling $133 million were canceled, reduced, or recaptured because projects did not achieve goals

When projects do not go forward or do not meet their goals, the grant awards may be canceled, reduced, or recaptured. Grant awards totaling $133 million (or 16 percent of the total paid or committed between FY10 and FY19) were canceled, reduced, or recaptured because the projects did not go forward or meet their goals (Figure 10). Nearly 60 percent of the $133 million was never paid because projects did not go forward and were canceled. Another 21 percent was not paid to projects that did not meet their goals, and the award amount was reduced.

FIGURE 10
Grant awards totaling $133 million were canceled, reduced, or recaptured (FY10–FY19)



SOURCE: Weldon Cooper Center analysis of economic development incentive grant awards or award commitments and program information of recaptures, reductions, and cancelations. Numbers may not sum because of rounding.

Agencies administering grants reported **recapturing** $28 million in grant awards. In some cases, this may be less than the full amount that should have been recaptured according to grant guidelines. The upcoming in-depth reports on these incentives will provide more information about agency efforts to recapture funding when projects do not achieve their goals.

Approximately $28 million was recaptured between FY10 and FY19 from 100 projects that failed to meet their performance goals. Recaptures are a feature of grant programs that make up-front award payments. Each of these programs recaptured small percentages of the funds they awarded:

- Agriculture and Forestry Industries Development grant: 13 percent;
- Commonwealth's Opportunity Fund: 12 percent;
- Tobacco Region Opportunity Fund: 12 percent;
- Rail Industrial Access Program: 6 percent;
- Small Business Investment Grant: 1 percent
- Economic Development Access Program: 1 percent; and
- Commonwealth Research Commercialization Fund: 1 percent.

Through tax incentives, businesses saved $1.7 billion FY10–FY19

Virginia's economic development tax incentives, such as exemptions, credits, and single sales apportionment, resulted in $1.67 billion in tax savings to businesses between FY10 and FY19. Most ($1.2 billion or 72 percent) of this amount was from sales and use tax exemptions that provide savings to businesses on their purchases of equipment and supplies that qualify for the exemption. Nine of the 19 sales and use tax exemptions each provided more than $20 million in incentives to businesses between FY10

Exemptions to Virginia's **retail sales and use tax** can be claimed by businesses for qualifying purchases.

Virginia's retail sales and use tax is currently 7 percent of eligible purchases in the Historic Triangle (the city of Williamsburg and the counties of James City and York), 6 percent of eligible purchases in Northern Virginia and Hampton Roads, and 5.3 percent of eligible purchases in the rest of the state. One percent is retained by the locality where the purchase is made.

The **sales tax** applies to the sale of certain goods and services purchased in the state and is generally collected by the merchant at the point of sale.

The **use tax** is levied on out-of-state purchases that are used in Virginia and is self-assessed and remitted to the state by the consumer.

and FY19 (Table 8). Some of these exemptions are provided to capital-intensive industries, such as data centers and airlines, that make substantial equipment purchases to start or upgrade their operations.

TABLE 8
Sales and use tax exemptions provided an estimated $1 billion in tax savings to businesses (FY10–FY19)

Exemption	Total savings ($M)	Average savings per year ($M)
Data Center Exemption	$593.1M	$59.3M
Railroad Common Carriers Exemption	203.1	20.3
Airline Common Carriers Exemption	99.0	9.9
Ships and Vessels Exemption	72.1	7.2
Research and Development Exemption	43.3	4.3
Media Provider Equipment Exemption	43.1	4.3
Certain Printed Materials for Out-of-State Distribution Exemption	38.8	3.9
Pollution Control Equipment & Facilities Exemption	33.1	3.3
Railroad Rolling Stock Exemption	30.2	3.0
Film, Television, and Audio Production Inputs Exemption	11.4	1.1
Semiconductor Manufacturers Exemption	8.9	0.9
Uniform Rental and Laundry Businesses Exemption	8.0	0.8
Out-of-State Nuclear Facility Repair Exemption	5.2	0.5
Taxi Parts and Radios Exemption	3.1	0.3
Semiconductor Wafers Exemption	1.3	0.1
Virginia Spaceport Users Exemption	1.0	0.1
Contractor Temporary Storage Exemption	1.0	0.1
Aircraft Parts, Engines, and Supplies Exemption	0.9	0.9
Electrostatic Duplicators Exemption	0.1	<0.1
Total	**$1,196.7M**	**$125.6M**

SOURCE: Weldon Cooper Center analysis of economic development incentives.
NOTE: Exempted amounts are estimates and exclude the 1 percent sales tax for localities and, in most cases, the additional amounts collected in the Historic Triangle, Northern Virginia, and Hampton Roads. (See Appendix B for methodology used to estimate the sales and use tax exemptions.)

Tax credits allow businesses or their owners to reduce their income tax liability, dollar for dollar, according to the amount allowed under the credit.

Economic development tax credits provided $472 million in savings to businesses between FY10 and FY19 (Table 9), accounting for about 40 percent of spending on tax incentives. Two coal tax credits account for 70 percent of total economic development tax credits. The largest credit—the Coalfield Employment Enhancement Tax Credit—is available to coal mining companies to help slow the decline of coal mining activity in Virginia. It was repealed effective January 1, 2017 and was reinstated in 2018 with modifications to restrict eligibility to metallurgical coal mining and coalbed methane production. These modifications will reduce the amount of credit coal companies can claim. Four other credits awarded more than $20 million in credits during this period. While many of the older tax credits are designed to encourage businesses such as manufacturers to locate or expand in Virginia, the credits adopted more recently are designed to incentivize businesses in other industries (film, wineries, and transportation or distribution companies).

TABLE 9
Tax credits provided nearly $472 million in tax savings to businesses (FY10–FY19)

Tax credit	Total savings ($M)
Coalfield Employment Enhancement Tax Credit	$241.7M
Virginia Coal Production and Employment Incentive Tax Credit	89.6
Motion Picture Production Tax Credit	28.3
Research and Development Expenses Tax Credit	26.4
Major Business Facility Job Tax Credit	25.4
Qualified Equity and Subordinated Debt Investment Tax Credit	22.5
Recyclable Materials Processing Equipment Tax Credit	13.7
Major Research and Development Tax Credit	10.9
Virginia Port Volume Increase Tax Credit	8.0
International Trade Facility Tax Credit	2.3
Worker Retraining Tax Credit	1.6
Farm Wineries and Vineyards Tax Credit	1.1
Barge and Rail Usage Tax Credit	0.6
Telework Expenses Tax Credit	0.3
Green Job Creation Tax Credit	0.1
Biodiesel and Green Diesel Fuels Producers Tax Credit	<0.1
Total, all tax credits	**$472.4M**

SOURCE: Weldon Cooper Center analysis of tax credit information from the Department of Taxation.
NOTE: The average tax credit award per year is not reported for tax credits because several new programs were adopted during this time period and several other programs provided too few awards for disclosure purposes. The Telework Expenses Tax Credit expired January 1, 2019.

Information on **job creation, spending, and other business requirements** in return for receiving tax incentives is not readily available as it is for grants.

Performance of tax incentives will be included in upcoming reports detailing the findings of in-depth evaluations of individual incentives. As part of this effort, JLARC staff will collect performance data—which is either not currently collected or not readily available—on tax incentives.

Since 2014, Virginia has allowed manufacturers to use single sales apportionment—a method that could reduce their income tax liability—to help stem the decline of the industry in the state. Tax savings for manufacturers using single sales apportionment is estimated to be $115 million between FY14 and FY19, or about $20 million per year. Since 2017, Virginia has allowed data centers meeting certain eligibility requirements to also use single sales apportionment. Tax savings for data centers using single sales apportionment is estimated to be $0.1 million in FY19.

Apportionment formulas are used to ensure that states do not tax more than their fair share of income from multistate companies. Virginia's standard formula uses three factors (property, payroll, and sales) and double-weights the sales factor.

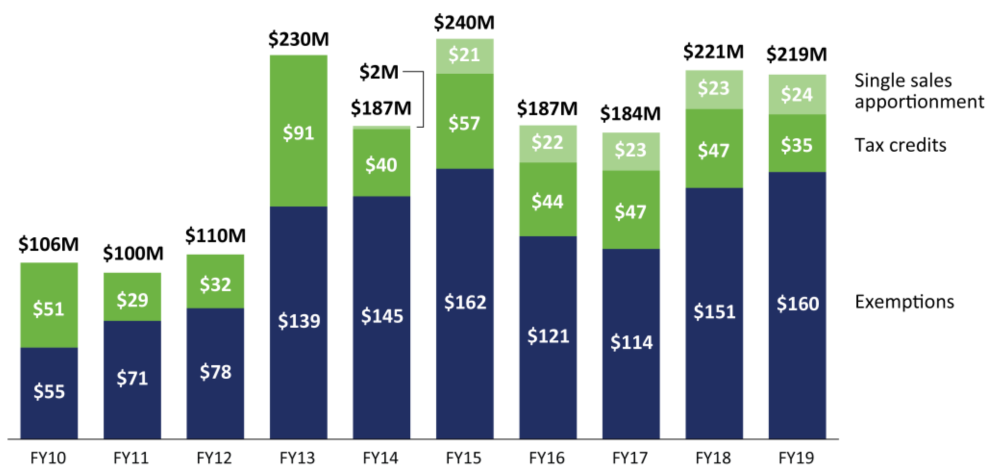
Manufacturers and data centers can use **single sales apportionment** to calculate their taxable income in Virginia based solely on their proportion of total sales that are in Virginia.

Business savings from tax incentives more than doubled FY10–FY19

Annual tax savings realized by businesses because of economic development tax exemptions and credits nearly doubled between FY10 and FY19 (Figure 11). This occurred for several reasons. The Data Center Exemption became effective after FY10; by FY19 its annual tax savings to businesses are estimated to be more than $98 million.

Manufacturers single sales apportionment became effective in FY15; by FY19 its annual tax savings to businesses are estimated to be $24 million. Gradual improvements in the economy since FY10 also led to a recovery in business spending and investment. Increased investment magnified the fiscal impact of sales and use tax exemptions that target capital intensive industries, such as rail, air, and water transportation companies. Tax credit savings were highest in FY13 because the Virginia Coal Production and Employment Incentive Tax Credit experienced a large amount of credit redemptions ($59.5 million). According to the Department of Taxation, a large number of carryover credits were claimed in FY13.

FIGURE 11
Business savings from tax incentives increased (FY10–FY19)



SOURCE: Weldon Cooper Center analysis of economic development incentives.
NOTE: Exempted amounts are estimates and exclude the 1 percent sales tax for localities and the additional amounts collected in the Historic Triangle, Northern Virginia and, Hampton Roads. Not adjusted for inflation. The trend is nearly identical if adjusted for inflation.

Businesses obtained $61 million in loans and gap funding through financing programs FY10–FY19

Virginia offers six incentive programs that are designed to assist firms in securing additional debt and equity financing. The Virginia Small Business Financing Authority (VSBFA) administers four programs that provide loan assistance to eligible businesses:

- Economic Development Loan Fund provides loan financing for eligible small businesses that create permanent full-time jobs;
- Loan Guaranty Program helps small businesses obtain loans by reducing bank credit risk;
- State Cash Collateral Program assists small businesses that lack the necessary collateral to obtain a loan, and

- SWaM Loan Fund provides small loans to small businesses to use for working capital, financing accounts receivable and inventory, and other short-term financing needs.

Virginia also offers several gap financing programs. The Center for Innovative Technology offers gap funding through its Growth Acceleration Program, which enables technology firms with high growth potential to obtain additional venture capital investment. The Virginia Tourism Corporation administers the Tourism Development Financing Program to large-scale tourism projects. This program was created in 2011 and allows eligible projects to keep a portion of state sales and use taxes that are generated by the project. Eight projects have begun receiving state funding.

Venture capital is financing that investors provide to startup companies and small businesses that are believed to have long-term growth potential.

These financing programs incentivize different types of business activity than the state's grant programs. Over 70 percent of VSBFA assistance was provided to small businesses in services and trade industries between FY10 and FY19. Eighty-seven percent of Growth Acceleration Program recipients were in professional, scientific, and technical services and information industries, which include businesses in high-tech fields such as biotechnology and software development. In contrast, 76 percent of grant funding was for corporate headquarters and manufacturers.

Financing programs have also tended to concentrate more awards in metropolitan areas of the state than grant programs until recently. Eighty-six percent of VSBFA awards went to projects in metropolitan areas between FY10 and FY19. Over three-fourths of Growth Acceleration Program assistance went to firms in Northern Virginia, with over 54 percent to Fairfax County companies alone. A large portion of the remaining award amounts were made to firms in localities that are home to the state's major research universities. In contrast, the percentage of grant funding that went to projects in metropolitan areas has historically been lower (63 to 65 percent in the prior three reports in this series) but it has increased (82 percent in this report) because three companies that received custom grants in FY19 are all located in Northern Virginia.

VSBFA programs helped businesses obtain more than $29 million in loans and loan enhancements

Small businesses aided by the four VSBFA programs obtained $29 million in loan and loan enhancement financing between FY10 and FY19 (Table 10). In most cases, state appropriations were not directly used to finance the loans or provide the obligation to secure the loans. While programs may have received appropriations in the past, they are revolving loan funds, which means they utilize interest and principal payments on old loans to issue new ones, or receive funding from other self-financing programs offered by VSBFA.

Loan enhancements include collateral or guaranty assistance provided to a commercial bank to help the business secure a loan.

The average loan or loan enhancement to secure the loan was $99,683, but the average varied among the four programs. The Economic Development Loan Fund provided the greatest amount of average loan assistance at $561,115 per project. The SWaM Loan Fund provided the least, at $20,278 per project.

TABLE 10
VSBFA programs helped businesses secure more than $29 million in loans or equity financing

Program	Amount awarded	# of projects	Average award	# of jobs	Loan/loan enhancement per job
Economic Development Loan Fund	$3,366,692	6	$561,115	299	$11,260
Loan Guaranty Program	19,699,400	87	226,430	592	33,276
State Cash Collateral Program	1,930,000	8	241,250	56	34,464
SWaM Loan Fund	3,812,213	188	20,278	532	7,166
Total	**$28,808,305**	**289**	**$99,683**	**1,479**	**$19,478**

SOURCE: Weldon Cooper Center analysis of economic development incentives.
NOTE: VSBFA programs use only a small portion of state funding to secure loan financing. Jobs reported are expected jobs.

The four programs collectively were expected to add 1,479 jobs. The average loan or loan enhancement assistance per job was $19,478, on average. This figure is not directly comparable to the average grant award per job ($6,393) because state funding for these programs represents only a small portion of the total loan and loan enhancement amount. For example, the VSBFA Loan Guaranty Program provides the financial guarantee to secure a loan provided by a private bank on behalf of an eligible business. The program would only be required to obligate funds if an eligible business were to default on its loan. The SWaM loan is a direct loan provided by VSBFA, but funding for the loan is derived from fees from other bond financing provided by VSBFA and not state appropriations.

Growth Acceleration Program provided businesses a total of $19 million in financing

Recipients of the Growth Acceleration Program financing received $18.7 million between FY10 and FY19 to attract venture capital investment. This program made awards to 270 projects, for an average award of $69,107. Program expenditures reached a peak of $3.5 million in total awards in FY14 but have not exceeded $2.2 million since then. Seventy-four of the 86 completed projects in the Growth Acceleration Program met their financing objectives for the period, according to the Center for Innovative Technology.

Grants have higher economic benefit than tax incentives

Economic impact analysis of incentive spending between FY10 and FY19 was conducted using economic modeling software developed by REMI, Inc.

(See Appendix H for the economic impact analysis used in this study.)

Virginia's economic development incentives are estimated to generate additional economic activity for the state. Economic impact analysis estimates that private sector employment increased by about 15,600 jobs per year, Virginia GDP increased by $2.9 billion per year, and statewide personal income increased by $1.4 billion per year, on average, because of all incentives (Table 11). For every $1 million in spending on all incentives between FY10 and FY19, it is estimated that an additional 78 jobs, $14 million in Virginia GDP, and $7 million in personal income per year, on average, are added to the Virginia economy. These estimates assume that only a portion of the economic activity can be attributed to incentives. Research on incentives nationally suggests that between 75 percent and 98 percent of projects would have occurred anyway without incentives (Bartik 2018). (See Appendix H for more information about the assumptions used by type of incentive.)

Net impact is the increase in economic activity induced by the incentives after adjusting for the opportunity cost of increasing taxes to pay for the incentives.

(See Appendix H for information on the total economic impact and the opportunity cost of increasing taxes.)

TABLE 11
Virginia's economic development incentives are estimated to generate additional economic activity for the state (FY10–FY19)

	Annual average FY10–FY19
Net impact to Virginia economy	
Private employment	15,571 jobs
Virginia GDP	$2,859.6M
Personal income	$1,478.3M
Impact to Virginia economy per $1 million of spending	
Private employment	78 jobs
Virginia GDP	$13.8M
Personal income	$7.4M
Impact to state revenue	
Total revenue	$99.0M
Cost of incentive	$223.7M
Net revenue	−$102.7M
Return in revenue per $1 spent	44¢

SOURCE: Weldon Cooper Center economic impact analysis of business activity induced by Virginia's economic development incentive programs between FY10 and FY19.
NOTE: Includes direct, indirect, and induced impacts of completed projects only. Assumes that only a portion of employment creation, capital investment, sales, or other activity is attributable to the programs. The gross impact on Virginia's economy is used to calculate the impact per $1 million per incentive awards and the impact to state revenue. This is consistent with how the economic development research literature typically calculates these impacts. Estimates of the grants' economic benefits are adjusted to account for projects that receive grants from more than one program as indicated in Table 5. Some additional duplication may still exist for projects that receive a grant and a tax credit, for example, but it is expected to be slight. (See Appendix H for more information about the economic impact estimates and the detailed results on total impact of the incentives, impact of raising income taxes by the amount of the incentives [opportunity cost], and revenue generated by source.)

The additional economic activity generated varies by incentive type. Sales and use tax exemptions are estimated to account for more than half of the net additional jobs, Virginia GDP, and personal income because of incentives (Table 12). The majority of this additional activity is because of the Data Center Exemption, which is by far Virginia's largest incentive. Tax credits, however, are estimated to generate a small portion of additional jobs and personal income and are estimated to generate a net loss in Virginia GDP. This loss occurs because the reduction in Virginia GDP that results from increasing taxes to pay for the credits, particularly the Coalfield Employment Enhancement Tax Credit, is greater than the total additional GDP generated.

The additional economic activity generated by **sales and use tax exemptions** is substantially higher than amounts reported in the 2018 edition of this report. This is because the analysis was able to more precisely account for the impact of the data center exemption from analysis performed for *Data Center and Manufacturing Incentives*, JLARC, 2019.

Grants have higher economic benefits than tax incentives when benefits are assessed per $1 million spent (Table 12). For every $1 million spent on grants between FY10 and FY19, it is estimated that an additional 132 jobs, $23 million in Virginia GDP, and $13 million in personal income are added to the Virginia economy. Manufacturers single sales apportionment is the tax incentive with the highest economic benefit per $1 million spent, but benefits (98 jobs, $18 million in Virginia GDP, and $7 million in personal income) are much less than the benefits generated by grants. Tax credits generate the lowest amounts of economic benefits, generating less than $1 million in Virginia GDP and approximately $1 million in personal income per every $1 million in spending.

TABLE 12
Grant programs have larger economic benefit than tax incentives (FY10–FY19)

	Annual average (FY10–FY19)				
	Grants	**Tax credits**	**Tax exemptions**	**Mfg. single sales apportionment**	**Loan/gap financing/other**
Net impact to Virginia economy					
Private employment	5,503 jobs	122 jobs	8,700 jobs	1,736 jobs	205 jobs
Virginia GDP	$962.3M	-$18.3M	$1,689.4M	$316.7M	$36.2M
Personal income	$542.3M	$7.6M	$837.4M	$118.1M	$20.1M
Impact to Virginia economy per $1 million of spending					
Private employment	132 jobs	11 jobs	81 jobs	98 jobs	391 jobs
Virginia GDP	$22.7M	$0.7M	$15.2M	$17.6M	$368.9M
Personal income	$13.0M	$1.0M	$7.8M	$6.9M	$38.5M
Impact to state revenue					
Total revenue	$37.4M	$2.3M	$51.8M	$10.3M	$1.4M
Cost of incentive	$44.8M	$47.2M	$119.7M	$19.1M	$0.5M
Revenue net of awards	−$7.4M	−$23.0M	−$67.9M	−$8.8M	−$0.8
Return in revenue for every $1 spent	84¢	5¢	43¢	54¢	$2.53

SOURCE: Weldon Cooper Center economic impact analysis of business activity induced by Virginia's economic development incentive programs between FY10 and FY19.
NOTE: Includes direct, indirect, and induced impacts of completed projects only. Assumes that only a portion of employment creation, capital investment, sales, or other activity is attributable to the programs. The gross impact on Virginia's economy is used to calculate the impact per $1 million per incentive awards and the impact to state revenue. This is consistent with how the economic development research literature typically calculates these impacts. Estimates of the grants' economic benefits are adjusted to account for projects that receive grants from more than one program as indicated in Table 5. Some additional duplication may still exist for projects that receive a grant and a tax credit, for example, but it is expected to be slight. Manufacturers single sales apportionment was not in effect until FY14, so estimates are for FY14 to FY19. (See Appendix H for more information about the economic impact estimates and the detailed results on total impact of the incentives, impact of raising income taxes by the amount of the incentives [opportunity cost], and revenue generated by source.)

The return in revenue to the state for every $1 spent on incentives also varies widely by type of incentive (Table 11), with grants generating higher returns in revenue than tax incentives. For every $1 spent on grants between FY10 and FY19, it is estimated that the state receives 84¢ in revenue in return. Manufacturers single sales factor apportionment has the highest revenue return for tax incentives, with tax credits again having the lowest return.

The "loan, gap financing, and other" incentives category has the highest economic benefits per $1 million spent and the highest return in state revenue per $1 spent. This is primarily because the loan assistance programs—which represent over half of the projects in this category—are revolving programs that require no spending by the state. State costs are only incurred when a participating business defaults on its loan.

Grant programs have higher economic benefits and returns in state revenue than tax incentives for several reasons. Economic benefits per $1 million spent and returns in revenue are higher when awards are made to projects in export-base industries that have high economic multipliers and pay above average employee compensation. One-third of grant funding was directed to businesses in manufacturing industries, which are export-base, generally have high economic multipliers, and pay higher wages. Manufacturers single sales apportionment, which has the highest economic benefits and returns in state revenue of the tax incentives, is exclusively used by manufacturers. In contrast, only 12 percent of sales and use tax expenditures, 15 percent of loan and gap financing, and 17 percent of tax credit expenditures are directed to manufacturing businesses.

Businesses that receive grants must also agree to create jobs and make capital investments, usually above minimum levels. Economic benefits and returns in revenue are higher for programs targeted to businesses that commit to creating jobs and making capital investments. In contrast to grants, other incentives often do not have similar job creation and capital investment requirements for business recipients. The Data Center Exemption is one exception.

Estimates of grant programs' economic benefits and returns in revenue are also more precise and less likely to be underestimated than other programs. More precise estimates of the economic benefit can be generated for grant programs because employment and capital expenditure performance data is readily available. Employment and capital expenditure impacts of businesses that received tax credits and most sales and use tax exemptions (with exception of the Data Center Exemption) must be inferred from model simulations and may be slightly underestimated. These simulations produce relatively conservative estimates of program employment and output impacts and could result in slightly more conservative estimates of the economic benefit of these programs.

Appendix A: Study mandate

2020–2022 Appropriation Act
Passed as Chapter 1289 of the Acts Assembly, May 21, 2020

§ 1-11 Item 31 F

F.1. The General Assembly hereby designates the Joint Legislative Audit and Review Commission (JLARC) to conduct, on a continuing basis, a review and evaluation of economic development initiatives and policies and to make such special studies and reports as may be requested by the General Assembly, the House Appropriations Committee, or the Senate Finance Committee.

2. The areas of review and evaluation to be conducted by the Commission shall include, but are not limited to, the following: (i) spending on and performance of individual economic development incentives, including grants, tax preferences, and other assistance; (ii) economic benefits to Virginia of total spending on economic development initiatives at least biennially; (iii) effectiveness, value to taxpayers, and economic benefits to Virginia of individual economic development initiatives on a cycle approved by the Commission; and (iv) design, oversight, and accountability of economic development entities, initiatives, and policies as needed.

3. For the purpose of carrying out its duties under this authority and notwithstanding any contrary provision of law, JLARC shall have the legal authority to access the facilities, employees, information, and records, including confidential information, and the public and executive session meetings and records of the board of VEDP, involved in economic development initiatives and policies for the purpose of carrying out such duties in accordance with the established standards, processes, and practices exercised by JLARC pursuant to its statutory authority. Access shall include the right to attend such meetings for the purpose of carrying out such duties. Any non-disclosure agreement that VEDP enters into on or after July 1, 2016, for the provision of confidential and proprietary information to VEDP by a third party shall require that JLARC also be allowed access to such information for the purposes of carrying out its duties.

4. Notwithstanding the provisions of subsection A or B of § 58.1-3 or any other provision of law, unless prohibited by federal law, an agreement with a federal entity, or a court decree, the Tax Commissioner is authorized to provide to JLARC such tax information as may be necessary to conduct oversight of economic development initiatives and policies.

5. The following records shall be excluded from the provisions of the Virginia Freedom of Information Act (§ 2.2-3700 et seq.), and shall not be disclosed by JLARC:

(a) records provided by a public body as defined in § 2.2-3701, Code of Virginia, to JLARC in connection with its oversight of economic development initiatives and policies, where the records would not be subject to disclosure by the public body providing the records. The public body providing the records to JLARC shall identify the specific portion of the records to be protected and the applicable provision of the Freedom of Information Act or other provision of law that excludes the record or portions thereof from mandatory disclosure.

(b) confidential proprietary records provided by private entities pursuant to a promise of confidentiality from JLARC, used by JLARC in connection with its oversight of economic development initiatives and policies where, if such records are made public, the financial interest of the private entity would be adversely affected.

6. By August 15 of each year, the Secretary of Commerce and Trade shall provide to JLARC all information collected pursuant to § 2.2-206.2, Code of Virginia, in a format and manner specified by JLARC to ensure that the final report to be submitted by the Secretary fulfills the intent of the General Assembly and provides the data and evaluation in a meaningful manner for decision-makers.

7. JLARC shall assist the agencies submitting information to the Secretary of Commerce and Trade pursuant to the provisions of § 2.2-206.2, Code of Virginia, to ensure that the agencies work together to effectively develop standard definitions and measures for the data required to be reported and facilitate the development of appropriate unique project identifiers to be used by the impacted agencies.

8. The Chairman of JLARC may appoint a permanent subcommittee to provide guidance and direction for ongoing review and evaluation activities, subject to the full Commission's supervision and such guidelines as the Commission itself may provide.

9. JLARC may employ on a consulting basis such professional or technical experts as may be reasonably necessary for the Commission to fulfill its responsibilities under this authority.

10. All agencies of the Commonwealth shall cooperate as requested by JLARC in the performance of its duties under this authority.

Appendix B: Research methods and activities

JLARC contracted with the University of Virginia's Weldon Cooper Center for Public Service (Weldon Cooper Center) for this review. Key research activities performed by Weldon Cooper Center for this study included

- data collection and analysis,
- estimation of sales and use tax exemptions,
- agency staff interviews, and
- review of documents and research.

Data collection and analysis

Weldon Cooper Center collected project data from 13 state agencies that administer Virginia economic development incentive programs. Data was provided for grant, tax credit, and loan or gap financing programs that have made awards. Among the data elements collected for the incentive programs were business identifiers, location, industry type, amount of grant approved and paid, and program performance metrics, such as number of jobs created, average wage levels, and capital investment (Table B-1). Some programs, namely the small business loan and tax incentive programs, do not collect performance data or maintain it electronically.

TABLE B-1
Data and information were collected from 13 state agencies on incentive awards

Agencies	Types of information
Center for Innovative Technology	Business identifiers (name, federal tax ID number)
Dept. of Housing and Community Development	Industry
Department of Rail and Public Transportation	Location (locality) of project
Tobacco Region Revitalization Commission	Amount of incentive approved and paid
Virginia Department of Agriculture and Consumer Services	Number of jobs promised and created and timing
Virginia Department of Taxation	Capital investment promised and delivered and timing
Virginia Department of Transportation	Average wages promised and delivered and timing
Virginia Department of Small Business and Supplier Diversity	Other performance metrics as specified
Virginia Economic Development Partnership	
Virginia Film Office	
Virginia Port Authority	
Virginia Small Business Financing Authority	
Virginia Tourism Corporation	

SOURCE: Weldon Cooper Center.

Analysis of grant programs

For discretionary and by-right grant programs, program spending by fiscal year was computed as the funds paid for completed projects and grant funds still committed toward active but unfinished projects. For most grant programs, spending was assigned to the same date/year when awards were approved. The approval date represents when a contract between the agency and the business is signed in either a memorandum of understanding or performance agreement. Many programs make award payments upon approval or soon after. Because custom grants are often large awards with long performance periods, spending is assigned to the fiscal year in which payments are made. Program expenditures by fiscal year were computed as the funds paid for completed projects and grant funds still committed toward active but unfinished projects.

For the grant award analysis, awards for all grant awards and amounts were assigned to the year in which the award was approved. Grant program awards and amounts were also categorized by location and industry using North American Industrial Classification System (NAICS) codes provided by the agency administering the grant or from information available from the Virginia Employment Commission (VEC) or other sources. Several agencies did not provide NAICS codes for each project.

For many grant projects, project awards were matched with VEC unit-level ES202 records obtained under a confidentiality agreement with VEC. These grant records were matched with VEC records using firm name, address, and when available, taxpayer identification numbers. In some instances, matches could not be found. In these cases, additional online research using Manta.com, other business directories, and company websites was conducted to characterize the primary industry of the establishment and/or firm primary. When information was not available, certain assumptions about the nature of the firm or prospective firm were made. For Enterprise Zone Real Property Investment Grant projects that could not be otherwise identified (generally Limited Liability Corporation beneficiaries set up for commercial real estate development purposes) a NAICS code of "531120" ("Real Estate and Rental and Leasing") was assigned. Governor's Motion Picture Opportunity Fund projects were characterized as NAICS 512110 ("Motion Picture and Video Production"). Speculative infrastructure projects funded by the Tobacco Commission Megasite Program, Virginia Business Ready Sites Program, and Economic Development Access Program were assumed to be NAICS 333000 ("Machinery Manufacturing").

Fourteen Governor's Motion Picture Opportunity Fund awards for a total award amount of $6.4 million were also not assigned to localities. The filming activities for these projects occurred in multiple locations throughout the state but principally in Central Virginia.

Grant project records do not systematically include the employment of businesses receiving awards across programs. Estimation of the employment size of the business that received the grant was conducted by matching grant records with VEC Quarterly Census of Employment and Wages (QCEW) payroll employment records that corresponded to the year of the award. Many companies have more than one location in Virginia, and only the employment levels for the specific location of the business that qualified for the grant were included in the analysis. Project records for FY10 through FY19 were matched by fiscal year of award with the corresponding VEC employment data by calendar year between 2009 and 2018 (i.e., FY19 project records were matched to calendar year 2018 VEC employment records). Using this process, 61 percent of the total number of awards and 26 percent of the award amounts were accounted for. Since larger establishments were less likely to be represented in the matching process, project awards were weighted to account for the underrepresentation of large awards (and correspondingly large establishments) relative to their occurrence in the grant files to improve the representation of large establishments in the tabulations.

Analysis of loan programs

For the four loan programs administered by the Virginia Small Business Financing Authority—the Economic Development Loan Fund, Loan Guaranty Program, State Cash Collateral Program, and SWaM Loan Fund—there were no state appropriations for the programs for the FY10–FY19 period. These programs are primarily revolving loan funds or secure funding outside the legislative appropriation process, but some have received state appropriations in the past. Since some programs have relied or continue to rely on federal funding, only those projects that could be attributed to previous state funding were included in this analysis. The costs of the programs were estimated to be the actual or projected defaults. The average default rate (2.1 percent) for these loans was also applied to awarded loans to estimate the "cost" of the loan portion of Tobacco Region Opportunity Fund (TROF) awards. In the last three years, the Tobacco Region Revitalization Commission has begun to issue a larger portion of its TROF awards in the form of revolving loans.

Analysis of tax credits

For quantifying the revenue impact of state economic development-related tax credits, Weldon Cooper Center used corporate and individual tax credit files obtained from the Virginia Department of Taxation. These files list tax credit redemptions by fiscal year of utilization based on when the return was processed. (See Virginia Department of Taxation annual report, Table 3.1: Fiscal Year Tax Credits.)

Incentives excluded from the analysis and report

Several programs did not make awards during the period of analysis (FY10–FY19) and are not included in this report. One custom grant program is not included in this report because a formal memorandum of understanding has not been filed:

- Pulp, Paper, and Fertilizer Advanced Manufacturing Grant Program.

Three grant programs have been active for over a decade but have not yet funded private business projects:

- Tobacco Commission Agribusiness Grant Program,
- Tobacco Commission Southside Economic Development Grant Program, and
- Tobacco Commission Southwest Economic Development Grant Program.

Four grant programs made awards that occurred earlier than FY10. These grants include:

- Aerospace Engine Manufacturing Performance Grant Program (Rolls-Royce),
- Semiconductor Grant Program (Micron),
- Semiconductor Grant Program (Qimonda), and
- SRI custom grant.

The award analysis does not include these four custom grants, but the spending analysis includes payments made to Rolls-Royce, Micron, and SRI.

Several tax incentives were also not included in this analysis. The Worker Training Tax Incentive became effective January 1, 2019 and was not claimed in FY19. For some tax incentives, information from the Department of Taxation based on individual and corporate tax forms could not be obtained and processed within the time frame for this report. These incentives include

- Venture Capital Account Subtraction,
- Qualified Business Long-Term Capital Gain Subtraction, and
- Zero G Zero Tax Act Subtractions (Parts I and II).

This report includes program expenditures for two economic development incentive programs that were not included in the 2019 report: the Aircraft Parts, Engines, and Supplies Exemption and Data Center Single Sales Apportionment. Both programs are new.

Estimation of business savings from sales and use tax exemptions

Sales and use exemptions provide relief from sales and use taxes on selected taxable goods and services for businesses in targeted industries. For most exemptions, eligible businesses obtain a sales and use exemption certificate from the Department of Taxation (available online) and present it to merchants at the point of sale to claim the exemption. Neither the merchant nor the purchaser is required to report the tax savings to the Department of Taxation outside of an audit process. Therefore, the size of these tax savings to businesses must be estimated by other means. For other exemptions, such as the data center and pollution control equipment exemptions, the department issues the exemption certificate after approving an application. The business may not have the certificate at the time of eligible purchases and can apply for a refund once the exemption certificate is obtained.

For quantifying forgone revenue because of sales and use tax exemptions, Weldon Cooper Center relied on Department of Taxation fiscal impact estimates and staff-generated estimates based on IMPLAN and other data sources (Table B-2). Department of Taxation estimates are based on a variety of approaches, including industry surveys, industry association tallies, and imputations made from secondary data sources such as federal statistical data. Some estimates rely on sales and use tax exemption estimates published as part of detailed tax expenditure studies conducted by the Department of Taxation in the early- and mid-1990s. More recent estimates are sometimes available when the Department of Taxation issues fiscal impact estimates to inform new General Assembly legislation. Weldon Cooper Center estimates were substituted for Department of Taxation estimates in three different situations:

- if the Department of Taxation estimates were based on much older estimates and credible estimates could be generated using more recent data and alternative methods;
- if Department of Taxation estimates were not available for a specific sales and use tax exemption; and
- if an alternative methodology had practical or conceptual advantages over the Department of Taxation estimates.

Weldon Cooper Center estimates for tax revenue rely primarily on IMPLAN data for Virginia. IMPLAN is a commercial economic impact model produced by MIG, Inc. It is based on input-output analysis, which requires estimates of the value of intermediate input purchase for each industry. The intermediate input purchase estimates for Virginia formed the basis of the relevant sales tax base for sales and use tax revenue impact calculations. Spending on durable and leased good inputs is estimated by multiplying industry output by gross absorption coefficients for relevant IMPLAN commodity sectors, using the most recent data for industries and commodities. These coefficients represent the input purchases for various commodities per dollar of output. For example, the construction machinery manufacturing industry spent $0.00170 per dollar of output on commodity railroad rolling stock. This absorption coefficient was multiplied by the output of the construction machinery equipment industry for 2015 ($122,220,940) to obtain the estimated expenditure on this input ($208,000).

Because the exemptions are sometimes more narrowly targeted than the individual IMPLAN sectors available, supplemental data from EMSI, Virginia Employment Commission, Bureau of Labor Statistics, and Bureau of Transportation Statistics was used to apportion the sector purchases to narrower industry subsets. For example, the airline common carrier exemption is available for air common carriers that provide scheduled service to Virginia airports at least once per week. Eligible purchases were imputed by apportioning IMPLAN input purchase estimates by the percentage of the air transportation industry (NAICS 481) providing scheduled service (NAICS 4811---Scheduled Air Transportation) and apportioning again based on the percentage of scheduled departures performed by airlines that provide service at least once per week based on Bureau of Transportation Statistics T-100 Air Carrier Traffic Segment data.

TABLE B-2
Estimates of business savings from sales and use tax exemptions were based on different methods and sources

Exemption	Sources used to derive estimate
Airline Common Carriers Exemption	IMPLAN, Bureau of Transportation Statistics (BTS), EMSI
Aircraft Parts, Engines, and Supplies Exemption	IMPLAN, Bureau of Transportation Statistics (BTS), EMSI
Certain Printed Materials for Out-of-State Distribution Exemption	TAX (Sales and use tax study 1991)
Contractor Temporary Storage Exemption	TAX (Sales and use tax study 1995)
Data Centers Exemption	Weldon Cooper Center based on VEDP MOU data
Electrostatic Duplicators Exemption	IMPLAN, EMSI
Film, Television, & Audio Production Inputs Exemption	IMPLAN, EMSI
Media Provider Equipment Exemption	TAX estimate (updated) for legislative proposal
Out-of-State Nuclear Facility Repair Exemption	IMPLAN, VEC, EMSI
Pollution Control Equipment & Facilities Exemption	Weldon Cooper Center survey of TAX ST-11A users
Railroad Common Carriers Exemption	IMPLAN
Railroad Rolling Stock Exemption	IMPLAN
Research & Development Exemption	TAX estimate, updated by Weldon Cooper Center
Semiconductor Manufacturers Exemption	IMPLAN, industry use estimate
Semiconductor Wafers Exemption	IMPLAN, industry use estimate
Ships and Vessels Exemption	IMPLAN
Taxi Parts & Radios Exemption	TAX fiscal impact, HB1488 (2004)
Uniform Rental & Laundry Businesses Exemption	IMPLAN, EMSI
Virginia Spaceport Users Exemption	TAX fiscal impact, HB1488 (2004)

SOURCE: Weldon Cooper Center.

The sectors targeted vary by sales and use tax exemption, as do the categories of purchases that are eligible for exemption. Generally speaking, tangible personal property purchases and leases are covered though the specific items sometimes differ. For instance, the railroad rolling stock exemption gives Virginia manufacturing firms an exemption on purchases of rolling stock. The tax base is determined by aggregating purchases of rolling stock across all Virginia manufacturing industries.

Other adjustments are needed to convert calendar years to fiscal years. IMPLAN purchases are expressed in terms of calendar years; thus fiscal year estimates were calculated by averaging two calendar years (e.g., FY12 is the average of CY11 and CY12). The last calendar year of data available from IMPLAN is 2018. Therefore, FY19 revenue estimates were calculated by inflating the FY18 estimates by the consumer price index (CPI).

Agency interviews

In 2017, Weldon Cooper Center and JLARC staff conducted structured interviews with state agency staff that administered and/or provided research support for economic development incentive programs. The interviewees included representatives of each of the 13 agencies that administer grants, loans, and gap financing and several staff from the Department of Taxation. Topics included the purpose of each program, criteria used in selecting award recipients and amounts, and data availability and quality for tracking program performance. Additional interviews are only performed as needed, such as when new incentive programs are adopted, programs are substantially changed, or programs are selected as part of an intensive review for that year.

Review of documents and research

Weldon Cooper Center reviewed several sources of information, including documents, reports, and published or unpublished research. The purpose of this literature review was to understand the purpose and goals of Virginia economic development incentive programs, determine the best approach to quantify the revenue impacts of sales and use tax exemptions, and develop an approach for performance evaluation that draws on best practices from other states. Sources consulted included

- Virginia agency documents that describe economic development incentive program purpose, application requirements, award criteria, and other features;
- Virginia Legislative Information System documents describing grant and sales and use exemption statutes and Department of Taxation fiscal impact estimates;
- State economic development performance evaluations published by state agencies or their consultants in Virginia and other states.

Appendix C: Incentive program descriptions

Eighty-three economic development incentive programs are subject to this review. These include 35 grant programs, 17 tax credits, 19 tax exemptions, and 12 other programs.

Grant programs

Ten state agencies administer 35 economic development incentive grant programs that are subject to this review. These programs reflect a variety of economic development goals and often target different activities, including development in disadvantaged regions (Tobacco Region Opportunity Fund and Enterprise Zone grants), transportation enhancements for business expansion and recruitment (Economic Development Access Program, Rail Industrial Access Program, and Transportation Partnership Opportunity Fund grants), and small business development (Small Business Investment Grant Fund and Small Business Jobs Grant Fund Program).

Programs also target particular industries such as agriculture and forestry (Agriculture and Forestry Industries Development Grant), corporate headquarters (Virginia Economic Development Incentive Grant), motion picture production (Governor's Motion Picture Opportunity Fund), and port-related industries (Port of Virginia Economic and Infrastructure Development Grant).

The state has also created customized grants for individual large industrial attraction and expansion projects, such as

- Amazon HQ II (Major Headquarters Workforce Grant),
- Micron (Semiconductor Manufacturing Grant),
- Newport News Shipbuilding (Advanced Shipbuilding Training Facility Grant Program and Advanced Shipbuilding Production Facility Grant Program), and
- Rolls-Royce Corporation (Aerospace Engine Manufacturing Performance Grant Program).

The Major Eligible Employer Grant program likewise targets large expansions; so far both Booz Allen Hamilton and Philip Morris have received awards for expanding their state footprints.

Seventy-three percent of total spending on economic incentive grants over the FY10 to FY19 period was administered by two state agencies, the Virginia Economic Development Partnership and Tobacco Region Revitalization Commission. The Department of Housing and Community Development and Department of Transportation also awarded large portions of total grant funding at 16 percent and 8 percent of the total, respectively.

TABLE C-1
Thirty-five incentive grant programs are administered by 10 state agencies

State agency/program *(year enacted)*	Purpose	Description
Center for Innovative Technology		
Commonwealth Research Commercialization Fund *(2011)*	Promote high technology economic development through commercialization of promising research and development.	Grants are made on the basis of scientific merit and economic development potential for technology at the proof-of-concept stage or earlier in targeted high-technology industries. Funds must be matched by recipient.
Department of Agriculture and Consumer Services		
Agriculture and Forestry Industries Development Grant *(2012)*	Attract new and expanding agriculture and forestry processing value-added facilities that use Virginia-grown products.	Eligible projects must produce value-added agricultural or forestry products that derive at least 30% of agricultural or forestry product inputs from Virginia. Incentive grant requests are made by the host political jurisdiction and must be locally matched.
Department of Small Business and Supplier Diversity – Virginia Small Business Financing Authority		
Small Business Investment Grant Fund *(2012)*	Assist small businesses obtain investment capital.	Grant for equity or subordinated debt investment in eligible small business. Grant amount equals 10% of qualified investments made in small businesses not to exceed $250,000 per investor.
Small Business Jobs Grant Fund Program *(2010)* *(eliminated 2020)*	Support small business job creation and investment.	Grants are made to small businesses in targeted sectors that create at least five full-time positions paying at least 1.35 times the federal minimum wage and making a capital investment of at least $100,000 within two years. Funding ($500–$2,000) per job is based on job characteristics.
Department of Housing and Community Development		
Job Creation Grant (Enterprise Zone) *(2005)*	Encourage job creation in distressed communities designated as enterprise zones.	Grants are awarded to qualified businesses that create at least four permanent full-time jobs in an enterprise zone. Qualifying jobs must pay at least 1.75 times the federal minimum wage (lowered to 1.5 times for high unemployment areas) and offer health benefits.
Real Property Investment Grant (Enterprise Zone) *(2005)*	Encourage private investment in distressed communities designated as enterprise zones.	Grants are awarded to investors making qualified investments in industrial, commercial, or mixed-use real property in an enterprise zone. The grant is computed as 20% of the investment amount minus a base investment with a project cap of $200,000.
GO Virginia (Virginia Growth and Opportunity Fund Grants) *(2017)*	Promote private-sector business and employment growth through regional cooperation.	The new grant includes funds allocated to regions on the basis of population and competitive grant funds. Performance parameters of grants are still being developed.

State agency/program *(year enacted)*	Purpose	Description
Department of Rail and Public Transportation		
Rail Industrial Access Program *(1987)*	Encourage construction, reconstruction, or improvement of railroad tracks serving new or expanding industrial sites and divert truck traffic to the freight rail network.	The grant is available to businesses that seek access to a common carrier railroad. Funding is limited to 15% of the business capital investment with a cap of $450,000. The program evaluates applicants using a project scoring system.
Department of Transportation		
Economic Development Access Program *(1956)*	Encourage construction, improvement, or maintenance of roads serving new or expanding industrial sites.	The grant is made in support of road enhanced access for basic employers that export at least half of output outside state. Award amount is based on value of capital investment by qualifying companies who locate at the economic development site.
Transportation Partnership Opportunity Fund *(2006)*	Improve transportation access for business development projects.	Grants of up to $5 million are available to companies that develop transportation facilities, such as on- and off-site road, rail, mass transit or other transportation access improvements. Projects must meet Commonwealth's Opportunity Fund or Virginia Investment Partnership Grant program criteria.
Tobacco Region Revitalization Commission		
Agribusiness Grant *(2002)*	Promote agricultural and agribusiness growth, development and diversification in the tobacco region to help the agricultural industry pursue market opportunities and reduce dependence on tobacco and tobacco-related business.	Awards are made to projects likely to generate new income and investment and align with targeted categories such as applied research and education, product processing, livestock and crop demonstration, local foods, multi-purpose agriculture centers, and wholesale/retail cooperatives.
Megasite Grant *(2010)*	Develop large, business-ready and publicly owned industrial sites across the tobacco region to attract major employer and investment projects.	Megasite funding is only available for the nine sites that have been developed to date with Tobacco Commission support. Megasite projects are defined as those that create at least 400 jobs and $250 million in private investment.
Southside Economic Development Grant *(1999)*	Promote economic development in the Southside localities of the Tobacco Region.	Funds are allocated by locality. Awards fall into strategic funding categories identified as important for economic development including infrastructure improvements, workforce training, regional tourism, building industry clusters, and entrepreneurial development.
Southwest Economic Development Grant *(1999)*	Promote economic development in the Southwest localities of the Tobacco Region.	Awards fall into strategic funding categories identified as important for economic development, including infrastructure improvements, workforce training, regional tourism, building industry clusters, and entrepreneurial development.

State agency/program *(year enacted)*	Purpose	Description
Tobacco Region Opportunity Fund *(1999)*	Attract new jobs and investments for the Tobacco Region through business attraction and expansion.	Grant requests are initiated by the host community. Grant criteria include a minimum private capital investment of $1 million and 10 jobs created within 36 months. Applications are evaluated using a ROI model with award amounts based on that analysis.
Virginia Economic Development Partnership		
Advanced Shipbuilding Training Facility Grant Program (Newport News) *(2011)*	Promote the expansion of advanced shipbuilding in Virginia. This customized performance-based grant is used to support the growth of Newport News Shipbuilding in Newport News City.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the state and the company. Performance measures include employment, capital investment, and training expenditures.
Advanced Shipbuilding Production Facility Grant Program (Newport News) *(2016)*	Promote the expansion of advanced shipbuilding in Virginia. This customized performance-based grant is used to support the expansion of Newport News Shipbuilding in Newport News City.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the state and the company. Performance measures include employment and capital investment.
Aerospace Engine Manufacturing Performance Grant Program (Rolls-Royce) *(2007)*	Attract an aerospace engine manufacturer to locate in Virginia. This customized performance-based grant is used to support the growth of the Rolls-Royce turbine plant in Prince George county and industry cluster firms.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the state and the company. Performance measures include employment, capital investment, and number of trainees.
Business Ready Sites Program *(2016)*	Encourage the development of sites and associated infrastructure for industrial and commercial uses as tools for business attraction, retention, and expansion.	Incentive grants consist of two types. Site characterization grants fund site needs assessment. Site development grants fund site development costs. Eligible sites must have at least 100 contiguous, developable acres and meet additional criteria.
Commonwealth's Opportunity Fund *(1996)*	Attract new businesses and support existing business expansion.	Grant program is discretionary deal closing fund for firms exporting at least half of output outside Virginia. Funds must be matched by host locality and are used for site acquisition and improvement, infrastructure, building construction, and employee training.
Major Eligible Employer Grant *(1999)*	Attract new or expanding large employers to the state.	The grant is targeted to major employers that make a capital investment of at least $100 million and create at least 1,000 jobs. This job threshold is reduced if high-paying jobs are created. The grant amount per job ranges from $500 to $800.
Major Headquarters Workforce Grant Fund (Amazon HQ II) *(2019)*	Attract a major corporate headquarters to locate in the state. This customized performance-based grant is used to support the establishment of the Amazon HQII headquarters in Arlington County.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the state and the company. Performance measures include employment, capital investment, and average annual wages.

State agency/program ***(year enacted)***	**Purpose**	**Description**
Pulp, Paper, and Fertilizer Advanced Manufacturing Performance Grant Program *(2016)*	Promote the expansion of pulp, paper, and fertilizer advanced manufacturing in Virginia. This customized performance-based grant was used to support the location and expansion of Shandong Tranlin, Inc. in Chesterfield County.	Incentive payments based on attainment of performance milestones specified in a performance agreement between the state and the company. Performance measures include employment and capital investment. Shandong Tranlin ultimately canceled its plans to build its Virginia plant.
Semiconductor Custom Grant (Micron)--Semiconductor Memory or Logic Wafer Manufacturing Performance Grant *(2004*)	Promote and expand semiconductor product manufacturing. This customized performance-based grant was used to support the expansion of Micron in Manassas.	Incentive payments were based on attainment of performance milestones specified in a performance agreement between the state and the company. Performance measures included employment and capital investment.
Semiconductor Custom Grant (Qimonda)--Semiconductor Memory or Logic Wafer Manufacturing Performance Grant *(2004)*	Promote and expand semiconductor product manufacturing. This customized performance-based grant was used to support the attraction of the now defunct Qimonda semiconductor plant in Henrico County.	Incentive payments were based on attainment of performance milestones specified in a performance agreement between the state and the company. Performance measures included employment and capital investment.
Semiconductor Manufacturing Grant (Micron II) *(2019)*	Promote and expand semiconductor product manufacturing and research. This customized performance-based grant was used to support the expansion of Micron in Manassas City.	Incentive payments were based on attainment of performance milestones specified in a performance agreement between the state and the company. Performance measures included employment and capital investment.
Special Workforce Grant (Amazon Web Services) *(2019)*	Attract an e-services company to locate operations in the state. This customized performance-based grant is used to establish Amazon Web Services in Fairfax County.	Incentive payments were based on attainment of performance milestones specified in a performance agreement between the state and the company. Performance measures included employment and capital investment.
SRI custom grant *(2006)*	Promote public-private R&D and commercialization activities to facilitate economic growth. This customized grant is used to support SRI Shenandoah Valley in the establishment of the Center for Advanced Drug Research in Rockingham County.	Incentive payments are based on attainment of performance milestones specified in a performance agreement between the state and the company. Performance measures include employment and capital investment.
Virginia Economic Development Incentive Grant *(2005)*	Encourage the location of significant headquarters, administrative, research and development, and basic service companies.	Grants are awarded to eligible companies based on ROI analysis, subject to the governor's approval. Companies must agree to create a minimum number of jobs (200–400) that pay 1.5 times the local prevailing average wage and make a capital investment of $6,500 per job or more.

State agency/program *(year enacted)*	Purpose	Description
Virginia Investment Partnership Grant *(1999)*	Encourage Virginia manufacturer retention and expansion though new capital investment and R&D.	Grant is targeted to manufacturers that have operated in the state for at least 3 years, will make a capital investment of at least $25 million, and face high risk of relocating elsewhere. New job creation is not required, but current employment levels must be maintained.
Virginia Jobs Investment Program *(1965)*	Support private business job creation and worker training and retraining.	Grants are awarded for creating new jobs or upgrading skills for existing workers. Job creation awardees must create at least 25 new jobs and make a capital investment of at least $1 million (or 5 new jobs and $100,000 capital investment if a small business.) Retraining awardees must retrain 10 full-time workers and make a capital investment of $500,000 (or 5 full-time workers and $100,000 capital investment if a small business.)
Virginia Leaders in Export Trade (VALET) Program *(2002)*	Help companies expand their markets and encourage the export of products and services to international markets.	The VALET program provides technical assistance, training, and reimbursement for approved expenses to help eligible businesses develop international export markets. Reimbursements of up to $30,000 per company for approved export-related expenses. Awardees must complete a two-year program.
Virginia Trade Show Assistance Program *(2016)*	Help companies expand their markets and encourage the export of products and services to international markets.	The grant reimburses company trade show attendees for up to $10,000 of the cost of trade exhibits.
Virginia Film Office		
Governor's Motion Picture Opportunity Fund *(1999)*	Support growth of the film and television industries in Virginia.	Grants are awarded to production companies that film in Virginia. Awards are made on a discretionary basis considering project expenditures in Virginia, employment, presence of any local commitment, geographic diversity, and industry or company growth potential in Virginia.
Virginia Port Authority		
Port of Virginia Economic and Infrastructure Development Grant *(2014)*	Encourage maritime companies to locate or expand to promote the growth of the Port of Virginia.	Grants are awarded to companies in maritime industries that create at least 25 permanent full-time jobs and are involved in maritime commerce or an import/export industry. The award per job is scaled to the number of jobs created.

Tax credits

Seventeen economic development tax credits, which are available to eligible applicants when filing income tax forms, were subject to this review. The state offers three types of credits: transferable, refundable, and non-refundable and non-transferable. Most economic development tax credits in this report are the latter two types. In most cases, non-refundable and non-transferable tax credits can be credited against a company's tax liability over a designated "carryover" period. For these programs, carryover periods vary from a low of three years to a high of 15 years. Three of the economic development tax credit programs offer refundable credits: Coalfield Employment Enhancement Tax Credit, Motion Picture Production Tax Credit, and Research and Development Expenses Tax Credit. A refundable tax credit allows taxpayers to be reimbursed by the difference between the credit amount and tax liability. The Virginia Port Volume Increase Tax Credit was changed from a non-refundable and non-transferable tax credit to a transferable one beginning in tax year 2019.

TABLE C-2
Sixteen economic development tax credits are available through the state corporate and individual income tax

Program *(year enacted)*	Purpose	Description
Barge and Rail Usage Tax Credit *(2011)*	Encourage use of rail and waterway transportation and decrease Virginia road congestion.	Tax credit for facilities engaged in port-related activities utilizing barge and rail rather than motor transportation. Credit is awarded on basis of amount of increased cargo shipped by barge and rail over previous tax year.
Biodiesel and Green Diesel Fuels Producers Tax Credit *(2008)*	Promote biodiesel and green diesel production.	Tax credit for biodiesel and green diesel fuel producers making up to 2 million gallons of fuel per year. The credit amount is $0.01 per gallon but cannot exceed $5,000 per year.
Coalfield Employment Enhancement Tax Credit *(1996)*	Encourage production of Virginia metallurgical coal and coalbed methane.	Tax credit for metallurgical coal and coalbed methane producers that is based on mining method and seam thickness.
Farm Wineries and Vineyards Tax Credit *(2011)*	Promote the growth of the Virginia wine industry.	Tax credit for eligible vineyards and winery qualified expenditures such as equipment and supplies used in winemaking. Credit is 25% of all qualified expenditures.
Green Job Creation Tax Credit *(2010)*	Promote creation of jobs in renewable and alternative energy industries.	Tax credit for creating green jobs during the taxable year. The credit amount is $500 per green full-time job created that pays at least $50,000 per year in wages.
International Trade Facility Tax Credit *(2011)*	Encourage port-related economic activity by increasing capital investment or new hiring connected to international trade facilities.	Tax credit for international trade facilities that show at least 5% increase in Virginia port shipments. Employee credit is equal to $3,500 per job. Capital investment credit is equal to 2 percent of capital investment.
Major Business Facility Job Tax Credit *(1995)*	Promote growth of company headquarters; manufacturing, agricultural, and transportation businesses; and export-oriented service industries such as legal and financial services. Retail industries are excluded.	Tax credit of $1,000 per job for creation of new, full-time jobs in excess of threshold of 50 jobs or 25 jobs for enterprise zone/economically distressed areas.

Program ***(year enacted)***	**Purpose**	**Description**
Major Research and Development Expenses Tax Credit *(2016)*	Promote research and development activities.	Tax credit for qualified R&D expenses greater than $5 million. Credit is based on difference between R&D expenses during taxable year and 50% of the average expenses incurred during previous 3 years.
Motion Picture Production Tax Credit *(2011)*	Encourage motion picture production and use of Virginia resident labor and merchants in production	Tax credit for qualifying expenses of eligible productions that complete a motion picture. Tax credit is equal to 15% of qualifying expenses, with bonus rates for Virginia resident payroll and production in economically distressed areas.
Qualified Equity and Subordinated Debt Investments Tax Credit *(1999)*	Encourage investment in high-tech small business ventures.	Tax credit for equity or subordinated debt investment in qualified small businesses engaged in technology-related fields. Credit amount is equal to 50% of qualified investments during the taxable year but may not exceed tax liability or $50,000.
Recyclable Materials Processing Equipment Tax Credit *(1991)*	Encourage recycling of waste and pollution control.	Tax credit for qualifying purchases of equipment to produce items from recyclable materials. Credit is equal to 20% of the purchase price of the recycling equipment. The allowable credit cannot exceed 40% of tax liability. Beginning January 1, 2020, the credit may also be claimed for machinery and equipment used in advanced recycling.
Research and Development Expenses Tax Credit *(2011)*	Promote research and development activities.	Tax credit for qualified R&D expenses. Credit is equal to 15% of first $300,000 of expenses or 20% if conducted with Virginia higher education. Alternatively, credit may be computed as 10% of difference of expenses and 50% of previous 3-year average.
Telework Expenses Tax Credit *(2012)* *(expired January 1, 2019)*	Encourage telework to ease road congestion.	Tax credit for eligible expenses incurred for permitting employees to telework. Credit was equal to up to $1,200 per teleworking employee or $20,000 for conducting a telework assessment. Maximum credit is $50,000 per employer per year. This credit expired January 1, 2019.
Virginia Coal Production and Employment Incentive Tax Credit *(2001)*	Encourage use of Virginia coal by Virginia power generators to increase Virginia coal production and employment.	Tax credit for Virginia coal that is both purchased and consumed by Virginia electricity generator. Credit is equal to $3-per-ton.
Virginia Port Volume Increase Tax Credit *(2011)*	Promote use of state port facilities.	Tax credit for qualified agricultural, manufacturing, or mining entities that use Virginia port facilities and increase cargo volume by at least 5%. Credit is $50 per 20-foot equivalent unit.
Worker Retraining Tax Credit *(1999)* *(expired January 1, 2019)*	Encourage worker retraining to improve productivity and employment retention.	Tax credit for training costs of providing eligible worker retraining for qualified employees. The retraining must occur with a pre-designated program such as a noncredit course or apprenticeship. Tax credit is up to 30% of qualified training costs. Modified in 2018 to allow manufacturers that conduct qualifying orientation, instruction, or other programs to claim a credit equal to 35% of the direct cost of the program not to exceed $2,000 for any year.

Program *(year enacted)*	**Purpose**	**Description**
Worker Training Tax Credit *(2019)*	Encourage worker training to improve productivity and employment retention.	Tax credit in an amount equal to 35 percent of the expenses incurred for eligible worker training up to $500 per qualified employee or $1,000 for training related to each non-highly compensated worker. Manufacturing businesses that currently qualify for the Worker Retraining Tax Credit for conducting orientation, instruction, and training in Virginia related to its manufacturing activities are also eligible. The annual aggregate credit cap is $1 million.

Sales and use tax exemptions

Nineteen sales and use tax exemptions reduce taxes for eligible firms that purchase or lease selected tangible personal property. Sales and use tax exemptions are generally realized at the point of sale when eligible items are purchased. Eligible firms must complete Department of Taxation forms (Commonwealth of Virginia Sales and Use Tax Certificate of Exemption) and present them to merchants at time of sale. Two exemptions require additional authorization before use. The data center exemption statutorily requires qualifying firms to meet minimum employment, capital investment, and wage requirements and enter into a memorandum of understanding with VEDP. The MOU requires data centers to provide annual reports to VEDP to demonstrate that the minimum requirements were met. Companies using the pollution control equipment and facilities exemption must first obtain certification from a state monitoring agency (i.e., Department of Environmental Quality, Department of Mines, Minerals, and Energy) before applying for the exemption. For these exemptions, the certificate may not have been issued at the time of eligible purchases, but the business can request a refund once the certificate is obtained.

TABLE C-3
Nineteen sales and use tax exemptions reduce taxes at point of sale

Exemption *(year enacted)*	**Purpose**	**Description**
Airline Common Carriers Exemption *(1966)*	Encourage commercial airline service to and from Virginia airports.	Tax exemption for tangible personal property sold or leased to an airline operating in intrastate, interstate, or foreign commerce as a common carrier. The airline must provide scheduled air service on a continuing basis to one or more Virginia airports at least one day per week.
Aircraft Parts, Engines, & Supplies Exemption (2018)	Encourage growth of aviation sector, including unscheduled common carriers, private planes, and unmanned aviation systems.	Tax exemption for parts, engines, and supplies used for maintaining, repairing, or reconditioning aircraft.
Certain Printed Materials for Out-of-State Distribution Exemption (1976)	Encourage out-of-state business purchases of printing materials from state firms.	Tax exemption for catalogs, letters, brochures, reports, and similar printed materials, and paper furnished to a printer for fabrication into such printed materials, when stored for 12 months or less in Virginia and distributed outside the state.

Exemption *(year enacted)*	**Purpose**	**Description**
Contractor Temporary Storage Exemption *(1989)*	Promote competitiveness of state construction material supply firms.	Tax exemption for personal property purchased by a contractor for use solely in another state or in a foreign country and temporarily stored in Virginia pending shipment, if such property could be similarly purchased free from sales tax in such other state or foreign country.
Data Center Exemption *(2010)*	Promote the establishment of large-scale data centers.	Tax exemption for Virginia data centers and tenants meeting certain minimal investment, employment, and wage-level criteria. Exemption is for processing, storage, retrieval, and communication equipment.
Electrostatic Duplicators Exemption *(1986)*	Promote small-scale printing businesses by providing exemption comparable to industrial printers.	Tax exemption for high-speed electrostatic duplicators or any other duplicators having a printing capacity of 4,000 impressions or more per hour purchased or leased by persons engaged primarily in the printing or photocopying of products for sale or resale.
Film, Television, & Audio Production Inputs Exemption *(1995)*	Promote motion picture production and sound recording industries.	Tax exemption for audiovisual works acquired for licensing, distributing, broadcasting, commercially exhibiting, or reproducing, or production services or fabrication connected with such production. The exemption applies to purchases and leasing of tangible personal property.
Media Provider Equipment Exemption *(1966)*	Promote radio and television broadcasting, cable television, and broadband media industries.	Tax exemption for broadcasting equipment, parts and accessories used by radio, television, cable, and broadband media companies. The exemption also applies to amplification, transmission, and distribution equipment used by cable television systems or other video systems.
Out-of-State Nuclear Facility Repair Exemption *(2000)*	Promote nuclear maintenance and repair industry by exempting purchases of supplies used for the purpose of providing services to out-of-state buyers.	Tax exemption for tangible personal property purchased for use or consumption in the performance of maintenance and repair services at Nuclear Regulatory Commission-licensed nuclear power plants located outside the state.
Pollution Control Equipment & Facilities Exemption *(1972)*	Encourage business adoption of pollution control equipment and technologies by reducing capital costs.	Tax exemption for pollution control equipment and facilities used for air and water pollution abatement certified by a state certifying authority.
Railroad Common Carriers Exemption *(1978)*	Promote maintenance and expansion of state railroads.	Tax exemption for tangible personal property sold or leased to a public service corporation that is a common carrier of property or passengers by railway.
Railroad Rolling Stock Exemption *(2007)*	Encourage capital investment in railroad rolling stock.	Tax exemption for railroad rolling stock when sold or leased by the manufacturer.

Exemption *(year enacted)*	Purpose	Description
Research & Development Exemption *(1966)*	Encourage research and development of new and improved products and processes.	Tax exemption for tangible personal property purchased for use or consumption directly and exclusively in basic research or research and development in the experimental or laboratory sense.
Semiconductor Manufacturers Exemption *(2006)*	Promote semiconductor manufacturing industry.	Tax exemption for semiconductor cleanrooms or equipment, fuel, and supplies used in the process of designing, developing, manufacturing, or testing semiconductor products or equipment.
Semiconductor Wafers Exemption *(2006)*	Promote semiconductor manufacturing industry.	Tax exemption for semiconductor wafers for use or consumption by a semiconductor manufacturer.
Ships & Vessels Exemption *(1966)*	Promote maritime shipping industries, including commercial ship building, repairing, supplying, and dredging.	Tax exemption for ships or vessels used or to be used exclusively or principally in interstate or foreign commerce. The tax exemption also applies to fuel and supplies for use or consumption aboard ships or vessels plying the high seas, either in intercoastal trade or in foreign commerce.
Taxi Parts & Radios Exemption *(1984)*	Encourage commercial taxi operations and prevent their further decline.	Tax exemption for parts, tires, meters, and dispatch radios sold or leased to taxicab operators for use in their services.
Uniform Rental & Laundry Businesses Exemption *(1980)*	Promote the commercial uniform rental industry by providing a tax exemption similar to other industrial manufacturers and processors.	Tax exemption for machinery and tools, supplies and materials used directly in maintaining and preparing textile products for renting or leasing by an industrial processor engaged in commercial leasing or renting of laundered textile products.
Virginia Spaceport Users Exemption *(1997)*	Promote spaceport operations at facilities owned, leased, or operated by the state and the commercial space industry.	Tax exemption for space facilities and hardware, including inputs, components and supplies such as special fuels, machinery and equipment, and other goods and services for activities undertaken at a Virginia Commercial Space Flight Authority facility.

Other incentive programs

Twelve other incentive programs included in this report fall into a "miscellaneous" category. These incentives include tax preferences such as corporate income tax apportionment methods and income tax subtractions as well as gap and loan financing programs that are difficult to classify elsewhere. The latter programs are administered by the Virginia Small Business Financing Authority and the Center for Innovative Technology and are designed to provide alternative funding sources for business startups and established small businesses that face financing constraints. Based on current estimates, the Manufacturing Single Sales Apportionment Factor is the largest of these miscellaneous incentives. The single sales formula allows manufacturers to calculate their taxable income in Virginia based solely on the proportion of total sales that are in Virginia rather than a weighted average of sales, property, and payroll. This creates tax savings for multistate firms that have sizeable operations within the state but ship substantial amounts of products outside the state.

TABLE C-4
Twelve other tax incentives, loan, and gap financing programs target economic development

Program *(year enacted)*	Purpose	Description
Income tax apportionment methods and subtractions		
Data Center Single Sales Factor Apportionment *(2017)*	Promote the establishment and growth of data centers.	This tax rule allows eligible multistate corporations that make a capital investment of at least $150 million in a data center to use the single sales factor method of apportionment to reduce tax liability. Companies that choose to use this apportionment method must enter into an MOU with VEDP.
Manufacturing Single Sales Factor Apportionment *(2009)*	Incentivize the state's manufacturing industry and slow the decline of manufacturing jobs.	This tax rule allows manufacturing companies to choose single sales factor apportionment to reduce tax liability. Companies must certify that full-time employee average wages are above the state industry average and that employment is at least 90 percent of base-year employment for three years.
Qualified Business Long-Term Capital Gain Subtraction *(2010)*	Promote high technology business investment.	Tax subtraction for income attributable to an investment in certain high technology businesses that is taxed as long-term capital gain. Qualified businesses must have gross revenues of less than $3 million and received less than $3 million in equity or debt investments.
Venture Capital Investment Subtraction *(2018)*	Promote investment in early-stage companies in Virginia.	Tax subtraction on certain income attributable to an investment in a Virginia venture capital account, which is an investment fund certified by TAX. The account must intend to invest at least 50% of its capital in qualified portfolio companies and employ at least 1 investor with at least 4 years of professional experience in venture capital investment or substantially equivalent experience. A qualified portfolio company has its principal place of business in Virginia; has a primary purpose of production, sale, research, or development of a product or service; and provide equity in the company to the account in exchange for capital investment.
Zero G Zero Tax Act (Part I) Subtraction *(2009)*	Encourage the location and expansion of companies at a Virginia airport or spaceport involved in flying or training humans in suborbital flight.	Tax deduction for gains realized from the sale of launch services to space flight participants or launch services intended to provide individuals the training or experience of a launch, without performing an actual launch.
Zero G Zero Tax Act (Part II) Subtraction *(2009)*	Encourage the location and expansion of companies at a Virginia spaceport involved in resupplying the space station.	Tax deduction for gains realized from resupply services contracts for delivering payload entered into with the Commercial Orbital Transportation Services division of the National Aeronautics and Space Administration or other space flight entity.
Loan and gap financing programs		
CIT Gap Funds *(2005)*	Promote expansion of early stage high-science and technology companies in targeted fields with rapid growth potential.	Seed-stage equity investments in Virginia-based technology, green technology, and life science companies with a high-growth potential. The Center for Innovative Technology holds an ownership position in the company while the company grows operations and value.

Program *(year enacted)*	**Purpose**	**Description**
Economic Development Loan Fund *(2007)*	Promote small business job creation and retention by providing gap financing.	Loans are targeted to small businesses in technology, tourism, manufacturing, and services that generate a majority of sales outside the state. Project must create permanent full-time jobs that pay a minimum of $10 per hour. Maximum loan available is 40% or $1 million, whichever is less.
Loan Guaranty Program *(1985)*	Promote small business capital investment.	This program helps small businesses obtain loans by reducing bank credit risk. The maximum guarantee is the lessor of $750,000 or 75% of the loan amount. The program does not have job creation requirements but considers job creation in financing decisions.
State Cash Collateral Program *(2013)*	Promote small business capital investment.	This program assists small businesses obtain loans by reducing bank credit risk. The maximum guarantee is the lessor of $500,000 or 40% of the loan amount. The program does not have job creation requirements but considers job creation in financing decisions.
SWaM Business Microloan Fund *(2012)*	Promote small, women-owned, and minority-owned business capital investment and expansion.	This fund provides a maximum of $10,000 to eligible businesses, or $25,000 if business received counseling from a Small Business Development center. Loans are allocated on a credit score basis. Loans may be used for working capital, financing accounts receivable and inventory, and other purposes.
Tourism Development Financing Program *(2012)*	Promote tourism and economic development in Virginia.	The program provides gap financing for tourism development projects otherwise unable to access capital. The locality must make application, demonstrate a tourism deficiency, and provide tax incentives or regulatory flexibility for a designated tourism zone where the project occurs.

Appendix D: Spending or tax expenditure by incentive

TABLE D-1
State spending on incentive grant payments ($ millions)

Incentive	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	Total
Advanced Shipbuilding Training Facility Grant Program (Newport News)	--	$0.0	$0.0	$5.0	$5.0	$8.0	$7.6	$7.2	--	--	$32.8M
Advanced Shipbuilding Production Facility Grant Program (Newport News)	--	--	--	--	--	--	--	0.0	0.0	6.0	6.0
Aerospace Engine Manufacturing Performance Grant Program (Rolls Royce)	0.8	0.2	0.4	0.4	0.3	3.1	0.0	0.0	0.8	0.0	6.0
Tobacco Commission Agribusiness Grant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Agriculture and Forestry Industries Development Grant	--	--	--	--	0.9	0.4	1.0	1.6	0.9	0.9	5.8
Virginia Business Ready Sites Program	--	--	--	--	--	--	--	1.2	0.0	0.3	1.5
Commonwealth's Opportunity Fund	6.3	7.0	11.9	5.8	7.1	24.8	23.1	24.0	10.9	20.9	141.8
Commonwealth Research Commercialization Fund	--	--	1.9	2.5	0.9	1.0	1.5	1.3	0.8	1.3	11.3
Economic Development Access Program	0.6	2.0	3.4	1.1	2.1	0.7	1.0	4.3	2.5	2.3	19.8
GO Virginia	--	--	--	--	--	--	--	0.0	0.2	2.8	3.0
Governor's Motion Picture Opportunity Fund	0.3	2.1	2.4	0.6	1.7	2.9	12.1	0.8	5.8	2.5	31.2
Job Creation Grant (Enterprise Zone)	1.3	2.7	3.0	2.9	2.9	3.1	2.7	1.8	2.2	2.7	25.2
Major Eligible Employer Grant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Major Headquarters Workforce Grant (Amazon HQII)	--	--	--	--	--	--	--	--	--	0.0	0.0
Tobacco Commission Megasite Grant	--	25.0	27.2	21.0	12.8	6.2	0.0	0.0	4.9	0.0	97.0
Port of Virginia Economic and Infrastructure Development Grant	--	--	--	--	0.5	0.0	0.3	2.2	0.5	0.1	3.6
Pulp, Paper, and Fertilizer Advanced Manufacturing Performance Grant Program	--	--	--	--	--	--	--	--	--	--	0.0

Incentive	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	Total
Rail Industrial Access Program	0.9	1.5	1.2	0.5	2.1	0.3	0.9	0.0	1.3	0.7	9.5
Real Property Investment Grant (Enterprise Zone)	10.6	9.5	11.2	11.2	11.3	9.1	9.3	10.9	10.7	10.8	104.5
Semiconductor Custom Grant (Micron)	1.6	5.4	5.4	5.4	5.4	3.8	--	--	--	--	27.0
Semiconductor Custom Grant (Qimonda)	--	--	--	--	--	--	--	--	--	--	0.0
Semiconductor Manufacturing Grant (Micron II)	--	--	--	--	--	--	--	--	--	0.0	0.0
Small Business Investment Grant Fund	--	--	--	--	0.0	0.1	0.2	1.0	0.6	0.8	2.7
Small Business Jobs Grant Fund Program	0.0	0.2	0.4	0.8	1.2	0.3	0.0	0.4	0.0	0.0	3.4
Southside Economic Development Grants	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Southwest Economic Development Grants	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Special Workforce Grant (Amazon Web Services)	--	--	--	--	--	--	--	--	--	0.0	0.0
SRI custom grant	4.0	1.0	1.0	1.0	--	--	--	--	--	--	7.0
Tobacco Region Opportunity Fund	8.8	12.2	7.9	14.9	27.3	6.0	9.7	4.0	11.2	10.5	112.6
Transportation Partnership Opportunity Fund	0.0	3.3	10.0	10.2	0.7	6.0	0.0	0.0	2.0	11.3	43.5
Virginia Economic Development Incentive Grant	10.0	0.0	5.0	0.0	5.0	6.0	0.0	9.3	4.0	1.5	40.8
Virginia Investment Partnership Grant	0.0	2.4	0.9	3.9	6.2	9.6	6.9	1.6	3.6	5.1	40.1
Virginia Jobs Investment Program	6.4	8.0	5.1	5.7	7.4	4.5	7.3	10.8	9.0	9.2	73.3
VALET Program	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.6	0.8	0.6	4.0
Virginia Trade Show Assistance Program	--	--	--	--	--	--	--	0.6	0.5	0.6	1.7

SOURCE: Weldon Cooper Center analysis of economic development incentives.
NOTE: Adjusted for canceled projects, recaptures, and award reductions. Not adjusted for inflation. Numbers may not add because of rounding.
-- indicates program had not been adopted or was no longer in effect.

TABLE D-2
Tax savings to businesses because of tax credits ($ millions)

Incentive	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	Total
Barge and Rail Usage Tax Credit	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.6	$0.0	$0.0	$0.0	$0.6M
Biodiesel and Green Diesel Fuels Producers Tax Credit	--	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coalfield Employment Enhancement Tax Credit	44.1	27.3	25.0	21.8	21.5	28.4	23.4	18.9	15.2	16.1	241.7
Farm Wineries and Vineyards Tax Credit	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.1	0.1	0.2	1.1
Green Job Creation Tax Credit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
International Trade Facility Tax Credit	0.0	0.0	0.0	0.2	0.2	0.1	0.3	0.3	0.3	0.9	2.3
Major Business Facility Job Tax Credit	3.2	-0.9	4.3	2.8	1.3	4.1	0.8	6.8	1.8	1.3	25.4
Major Research and Development Tax Credit	--	--	--	--	--	--	--	--	6.1	4.8	10.9
Motion Picture Production Tax Credit	0.0	0.0	0.0	0.0	3.0	7.2	5.5	6.6	6.1	0.0	28.3
Qualified Equity and Subordinated Debt Investment Tax Credit	1.9	1.6	2.1	1.9	2.4	2.1	2.4	2.2	2.8	3.2	22.5
Recyclable Materials Processing Equipment Tax Credit	1.2	0.6	0.7	2.7	1.2	0.6	2.1	1.7	1.4	1.5	13.7
Research and Development Expenses Tax Credit	0.0	0.0	0.0	1.5	3.4	4.2	4.7	4.2	4.2	4.1	26.4
Telework Expenses Tax Credit	--	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.3
Virginia Coal Production and Employment Incentive Tax Credit	0.4	0.0	0.0	59.4	6.7	8.9	3.1	3.7	6.8	0.5	89.6
Virginia Port Volume Increase Tax Credit	0.0	0.0	0.0	0.1	0.4	0.7	0.9	2.2	1.8	1.8	8.0
Worker Retraining Tax Credit	0.0	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.3	0.0	1.6

SOURCE: Weldon Cooper Center analysis of the Department of Taxation's Annual Reports for Fiscal Years 2010–2019.
NOTE: Credits were claimed for the Biodiesel and Green Diesel Fuels Producers Tax Credit, but amounts were very minimal. Not adjusted for inflation. Numbers may not add because of rounding.
-- indicates no credits were claimed in that year because they had not been adopted yet.

TABLE D-3
Estimated tax savings to businesses on sales and use tax exemptions ($ millions)

Incentive	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	Total
Airline Common Carriers Exemption	$12.0	$7.1	$6.7	$7.8	$8.6	$10.7	$11.6	$11.2	$11.6	$11.8	$99.0M
Aircraft Parts, Engines, and Supplies Exemption	--	--	--	--	--	--	--	--	--	0.9	0.9
Certain Printed Materials for Out-of-State Distribution Exemption	3.4	3.5	3.6	3.7	4.0	4.0	4.0	4.1	4.2	4.3	38.8
Contractor Temporary Storage Exemption	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.0
Data Center Exemption	3.0	23.1	26.9	80.8	77.8	89.2	50.5	53.2	90.7	97.9	593.1
Electrostatic Duplicators Exemption	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Film, Television, & Audio Production Inputs Exemption	0.9	1.1	1.1	0.8	0.7	0.8	0.9	0.9	2.1	2.1	11.4
Media Provider Equipment Exemption	3.7	3.9	4.0	4.1	4.4	4.5	4.5	4.6	4.7	4.8	43.1
Out-of-state Nuclear Facility Repair Exemption	0.4	0.4	0.3	0.4	0.5	0.6	0.6	0.6	0.7	0.7	5.2
Pollution Control Equipment & Facilities Exemption	4.0	3.1	2.6	3.1	2.3	4.2	4.1	3.2	3.2	3.3	33.1
Railroad Common Carriers Exemption	15.9	17.4	21.0	21.3	24.6	25.7	24.2	17.7	17.5	17.8	203.1
Railroad Rolling Stock Exemption	1.3	1.8	2.0	1.9	3.0	5.3	6.1	4.3	2.2	2.3	30.2
Research & Development Exemption	3.8	3.9	4.0	4.1	4.5	4.5	4.5	4.6	4.7	4.8	43.3
Semiconductor Manufacturers Exemption	0.8	1.1	1.3	1.3	1.2	0.8	0.6	0.6	0.5	0.6	8.9
Semiconductor Wafers Exemption	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	1.3
Ships and Vessels Exemption	4.4	3.6	3.6	8.8	12.1	10.1	8.3	7.3	6.9	7.0	72.1
Taxi Parts & Radios Exemption	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	3.1
Uniform Rental & Laundry Businesses Exemption	0.5	0.5	0.5	0.7	0.8	0.9	1.0	1.0	1.0	1.0	8.0
Virginia Spaceport Users Exemption	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.0

SOURCE: Weldon Cooper Center analysis of economic development incentives.
NOTE: Exempted amounts exclude the 1 percent sales tax for localities and, in most cases, the additional amounts collected in Northern Virginia and Hampton Roads. Not adjusted for inflation. Numbers may not add because of rounding.
-- indicates exemption had not been adopted yet.

TABLE D-4
State spending on other incentives ($ millions)

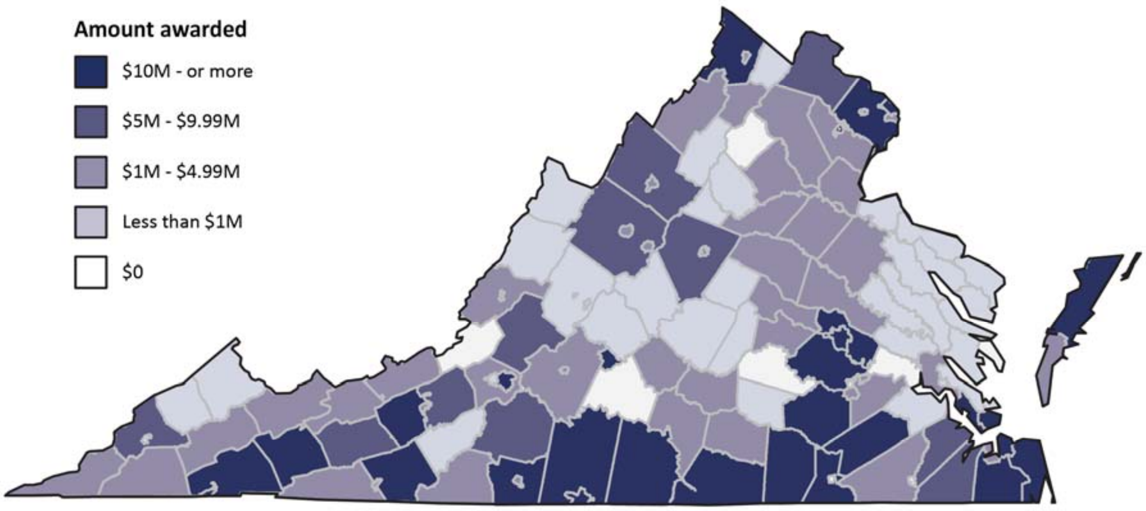
Incentive	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	Total
Income tax apportionment methods and subtractions											
Data Center single sales factor apportionment	--	--	--	--	--	--	--	--	--	0.1	$0.1M
Manufacturing single sales factor apportionment	--	--	--	--	1.9	20.9	22.3	22.7	23.3	23.7	114.8
Qualified Business Long-Term Capital Gain Subtraction	No data collected; estimates will be calculated during in-depth review.										
Venture Capital Account Subtraction	No data collected; estimates will be calculated during in-depth review.										
Zero G Zero Tax Act (Part I) Subtraction	No data collected; estimates will be calculated during in-depth review.										
Zero G Zero Tax Act (Part II) Subtraction	No data collected; estimates will be calculated during in-depth review.										
Loan and gap financing programs											
CIT Gap Fund	0.3	0.4	2.1	2.3	3.5	1.6	1.6	2.0	2.1	2.7	18.7
Economic Development Loan Fund	--	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Loan Guaranty Program	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
State Cash Collateral Program	--	--	--	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SWaM Loan Fund	--	--	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.2
Tobacco Region Opportunity Fund (loan portion)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2
Tourism Development Financing Program	0.0	0.0	0.3	1.3	0.0	8.4	0.0	0.9	0.6	1.8	13.4

SOURCE: Weldon Cooper Center analysis of economic development incentives.
NOTE: Not adjusted for inflation. Virginia Small Business Financing Authority loan program amounts listed are legislative appropriations since these revolving loan program costs are not equal to the loan award amount.
-- indicates incentive had not been adopted yet.

Appendix E: Regional distribution of grant awards

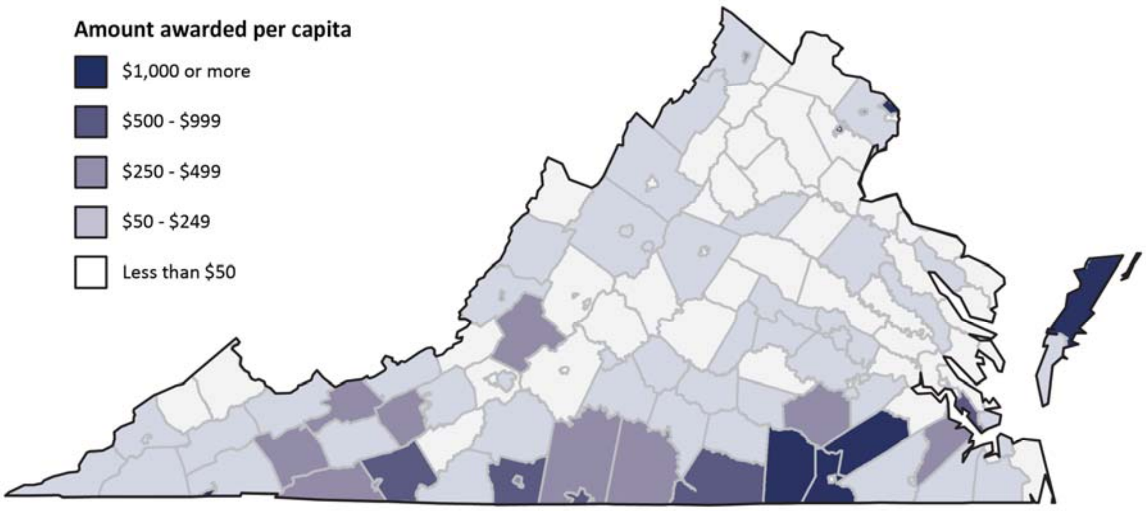
The largest amount of grant awards went to businesses in highly populated localities such as Arlington County, Newport News City, Fairfax County, and Richmond City and to rural localities in the tobacco region and on the Eastern Shore (Figure E-1). Adjusted for population size, awards are concentrated in urbanized localities in Northern Virginia and in southern, rural localities (Figure E-2).

FIGURE E-1
Awards are concentrated in several highly populated areas and the southern region (FY10–FY19)



SOURCE: Weldon Cooper Center analysis of economic development incentives.
NOTE: Localities were not assigned to 14 Governor's Motion Picture Opportunity Fund projects because filming occurred in multiple localities.

FIGURE E-2
Awards are concentrated in urban areas in Northern Virginia and in rural southern localities, adjusted for population size (FY10–FY19)



SOURCE: Weldon Cooper Center analysis of economic development incentives.
NOTE: Localities were not assigned to 14 Governor's Motion Picture Opportunity Fund projects because filming occurred in multiple localities.

Appendix F: Average employment size of grant recipients by program

The average establishment size of a grant recipient was 152 employees across all programs. However, the average size varied widely by program (Figure F-1). The largest average sizes were for the Transportation Partnership Opportunity Fund (1,172 employees), the Virginia Investment Partnership Grant (475), and the Virginia Economic Development Incentive Grant (440). The smallest average employee sizes were for finance programs for startups—the Commonwealth Research Commercialization Fund (four employees) and the Small Business Investment Grant Fund (10).

Figure F-1
Average employment size of business location at time of award varies widely by program (FY10–FY19)

SOURCE: Weldon Cooper Center analysis of economic development incentive grants and VEC data.
NOTE: Employment records were matched with 3,066 of the 5,023 awards (61%) and $479M of $1.8B in total awards.

Appendix G: Project-specific goals used by grant programs

Some programs award grants or make award commitments before projects begin. These programs require projects to achieve specific goals to obtain or keep the full award promised. Job creation, capital investment, and average wages paid are the most common goals, but several programs establish other goals that are more aligned with the purpose of the program.

TABLE G-1
Job creation, average wages, and capital investment are most common performance measures

Grant program	Job creation	Wages	Capital expenditures	Other
Advanced Shipbuilding Production Facility Grant Program (Newport News)	X		X	
Advanced Shipbuilding Training Facility Grant Program (Newport News)	X	X	X	Number of apprentices, training expenses
Aerospace Engine Manufacturing Performance Grant Program (Rolls-Royce)	X	X	X	
Agriculture and Forestry Industries Development Grant	X	X	X	Value of Virginia agricultural products
Commonwealth Research Commercialization Fund				Capital attracted from other sources
Commonwealth's Opportunity Fund	X	X	X	
Economic Development Access Program			X	
Governor's Motion Picture Opportunity Fund	X			Total Virginia spending, value of advertising
GO Virginia	X		X	
Growth Acceleration Program				Capital attracted from other sources
Major Eligible Employer Grant	X	X	X	
Major Headquarters Workforce Grant (Amazon HQII)	X	X	X	
Port of Virginia Economic & Infrastructure Development Grant	X			Port user
Pulp, Paper, and Fertilizer Advanced Manufacturing Performance Grant Program	X		X	
Rail Industrial Access Program			X	Carloads
Semiconductor Custom Grant (Micron)	X		X	
Semiconductor Custom Grant (Qimonda)	X	X	X	
Semiconductor Manufacturing Grant (Micron II)	X	X	X	Establishment of R&D facility
Small Business Investment Grant Fund	X			Private equity investment
Small Business Jobs Grant Fund Program	X	X	X	
Special Workforce Grant Fund (Amazon Web Services)	X	X	X	
SRI custom grant	X	X		
Tobacco Commission Megasite Grant				
Tobacco Region Opportunity Fund	X	X	X	

Grant program	Job creation	Wages	Capital expenditures	Other
Transportation Partnership Opportunity Fund	X		X	
VALET Program				International sales
Virginia Business Ready Sites Program				
Virginia Economic Development Incentive Grant	X	X	X	
Virginia Investment Partnership Grant	X	X	X	
Virginia Jobs Investment Program	X	X	X	Job retraining
Virginia Trade Show Assistance Program				International sales

SOURCE: Weldon Cooper Center analysis of agency documents.

Appendix H: Economic and revenue impact analysis

The economic impact analysis for incentives involved modeling (1) the additional economic activity that occurred because of the incentive and (2) the simultaneous increase in taxes that was used to "pay" for the incentive. Increasing taxes has the general effect of decreasing employment and other economic activity. Thus, increasing taxes to pay for the incentive reduced the total effect of the incentive on the economy.

Economic impact modeling

Weldon Cooper Center staff conducted economic impact analyses of Virginia economic incentives using REMI PI+ (Policy Insight Plus) software. REMI PI+ is a dynamic, multi-sector regional economic simulation model used for economic forecasting and measuring the impact of public policy changes on local economies. The model combines different contemporary regional economic modeling methods such as input-output analysis, econometric forecasting, and computable general equilibrium to characterize the mechanics and path of a regional economy. The model has been extensively peer-reviewed and is widely used by state agencies elsewhere in the nation to model economic and tax revenue impacts of economic development incentive programs, including economic development incentives. The model used for this analysis was customized for the state of Virginia and includes 70 industry sectors. Outcome variables examined include total employment, state GDP, and personal income. In addition, a state tax revenue impact analysis was conducted based on a methodology described further below.

The modeling of each program was conducted differently depending on the type of economic stimulus provided by the program and available information on program outcomes (Table H-1). The most comprehensive information on establishment-level performance outcomes was available for grant programs, which typically track employment, capital investment, and other performance metrics related to the specific economic aims of the programs. Information on employment benchmarks was also available for four Small Business Financing Authority loan programs, which a previous JLARC study corroborated are in aggregate indicative of ultimate employment creation. (See *Workforce and Small Business Incentives*, JLARC 2018.) Similar information was available for the Data Center Exemption because users are required to enter into a Memorandum of Understanding with VEDP and report employment and capital investment goal attainment. However, it was not available for other sales and use tax exemptions and tax credits. Thus, those programs were generally modeled as decreasing either firm capital or production costs. Programs were modeled as decreasing firms' costs of capital if the incentive reduced the costs of purchasing tangible personal property. They were modeled as decreasing firm production costs if the costs of labor as well as equipment and supplies were reduced by the incentive.

Table H-1
REMI policy variables

Name of incentive	REMI policy variables	Modeling description
Agriculture and Forestry Industries Development Grant Advanced Shipbuilding Production Facility Grant Program (Newport News) Commonwealth's Opportunity Fund Governor's Motion Picture Opportunity Fund* Job Creation Grant Major Eligible Employer Grant Port of Virginia Economic and Infrastructure Grant Small Business Investment Grant Fund Small Business Jobs Grant Fund Program Tobacco Region Opportunity Fund Virginia Economic Development Incentive Grant Virginia Investment Partnership Grant Virginia Jobs Investment Program--Job Creation Economic Development Loan Fund Loan Guaranty Program State Cash Collateral Program SWaM Loan Fund	Labor and Capital Demand>-Employment>-Firm >-Industry	Model economic impact estimate based on 10% "but for" assumption for programs except Governor's Motion Picture Opportunity Fund (95%) and loan programs (31%) based on documented or projected employment increase. Assign REMI industry based on grant or loan project industry identifiers.
Economic Development Access Program Rail Industrial Access Program Real Property Investment Grant Megasite Grants (Tobacco Commission) Transportation Partnership Opportunity Fund	Output and Demand>-Investment Spending>-Nonresidential	Model economic impact estimate based on 10% "but for" factor based on documented investment. Assign REMI industry based on grant project industry identifiers.
Farm Wineries and Vineyards Tax Credit Recyclable Materials Processing Equipment Tax Credit Airline Common Carriers Exemption Aircraft Parts, Engines, and Supplies Exemption Certain Printed Materials for Out-of-State Distribution Exemption Data Centers Single Sales Factor Apportionment Electrostatic Duplicators Exemption Film, Television, & Audio Production Inputs Exemption	Compensation and Prices->Production Costs->Capital Costs	Model economic impact based on reduced capital cost equal to tax credit or estimated exemption tax revenue effect. Assign REMI industry based on industry(ies) affected based on program descriptions

Name of incentive	REMI policy variables	Modeling description
Media Provider Equipment Exemption Pollution Control Equipment & Facilities Exemption Railroad Common Carriers Exemption Railroad Rolling Stock Exemption Research & Development Exemption Semiconductor Manufacturers Exemption Semiconductor Wafers Exemption Ships and Vessels Exemption Taxi Parts & Radios Exemption Uniform Rental & Laundry Businesses Exemption Virginia Spaceport Users Exemption		
Barge and Rail Usage Tax Credit Biodiesel and Green Diesel Fuels Producers Tax Credit Green Job Creation Tax Credit International Trade Facility Tax Credit Major Business Facility Job Tax Credit Major Research and Development Tax Credit Motion Picture Production Tax Credit Research and Development Expenses Tax Credit Telework Expenses Tax Credit Virginia Coal Production and Employment Incentive Tax Credit Virginia Port Volume Increase Tax Credit Worker Retraining Tax Credit	Compensation and Prices->Production Costs->Production Costs	Model economic impact estimate based on reduced production cost. Assign REMI industry based on industry(ies) affected based on program descriptions and corporate tax credit records matched with VEC employment records.
Data Center Exemption	(1) Labor and Capital Demand>-Employment>-Firm >-Industry (Exogenous Production, Nullify Investment); (2) Output and Demand>-Industry Sales (Exogenous Production)>-Power and Communication Structures; (3) Output and Demand>-Industry Sales (Exogenous Production)>-Wholesale Trade	Model economic impact estimate based on 90% “but for" assumption.” Employment assigned to industry. Tangible personal property capital investment assigned to wholesale trade using margin of 28.7%.
Virginia Jobs Investment Program (VJIP)--Training	(1) Output and Demand>-Investment Spending>-Equipment, (2) Output and Demand>-Real Disposable Income>-Compensation (Adjust compensation by amount of training related wage increase). (3) Output and Demand>-Output (Adjust by ratio of value-added to training related wage increase)	Model economic impact estimate based on 1.5% wage and salary increase with associated output increase. Also, capital investment based on 10% "but for" factor. Assign to industries based on grant project records.

Name of incentive	REMI policy variables	Modeling description
Manufacturers Single Sales Factor Apportionment	(1) Labor and Capital Demand>-Employment>-Firm >-Industry (Competes locally)	Model economic impact estimate based on 15% "but for" assumption.
Virginia Trade Show Assistance Program Contractor Temporary Storage Exemption Out-of-state Nuclear Facility Repair Exemption	Output and Demand>-Industry Sales (Exogenous Production)>	Model economic impact as increased sales of (a) advertising, public relations and related services, (b) warehousing and storage, and (c) construction.
Virginia Leaders in Export Trade Program	Output and Demand>-Industry Sales (International Exports)>	Model economic impact as increased sales for industry based on grant project records.

Source: Weldon Cooper Center.

When employment, capital investment, and other documented performance metrics were modeled (grant and loan programs), only a small portion of the program documented outcomes were attributed to the effect of the incentive. In no instance are estimated program employment levels equal to program reported metric attainment. Even though the success of incentives in swaying business decisions varies by program (and by project), general assumptions are made by program type. For grants, the assumption was made that 10 percent of grant employment creation is attributable to the programs, with one exception (the Governor's Motion Picture Opportunity Fund). The 10 percent effect for grant programs is derived from the 10 to 15 percent consensus value range commonly recommended for use in economic incentive evaluations (Bartik 2018; Peters and Fisher 2004) and is the same estimate used in a previous analysis of state economic incentive economic impacts. (See *Review of Economic Development Incentive Grants*, JLARC 2012.) For the Governor's Motion Picture Opportunity Fund, 95 percent of film activity (job creation and Virginia spending) is attributed to the grant program based on a previous film industry evaluation study. (See *Evaluation: Film Incentives*, JLARC 2017). Film project employment was also converted to motion picture and sound recording industries full-time-equivalents because of the preponderance of part-time and seasonal employees in grant-supported film and television productions. For loan programs, 31 percent of loan program employment benchmarks were established as the program effects of the loan programs based on a previous analysis of loan program effects. (See *Workforce and Small Business Incentives*, JLARC 2018).

Some REMI policy variables require industry level data aggregated into 70 REMI industry categories. Since NAICS codes were obtained or assigned and then cross-walked to REMI industry categories. NAICS-level industry information was obtained for grant projects as described in Appendix B. Tax credit projects were assigned NAICS codes based on available corporate tax filer industry characteristics when corporate users made up a large portion of filers or other information was not available. Thus industries of corporate filers are assumed to be similar to other pass-through entities that file through the individual income tax system. Most sales and use tax exemptions are fairly narrowly targeted to individual industries, and industry assignment was relatively straightforward. In some instances, secondary data was used. For the Pollution Control Equipment exemption, utilization was assigned to industries using industry information from the U.S. Census Bureau's Pollution Abatement Costs and Expenditures: 2005 survey (issued in 2008) on pollution abatement capital expenditures for the state of Virginia (Table 8 of the survey report). For the Research and Development Exemption, industry information was drawn from the National Science Foundation Business Research and Innovation: 2013 on corporate R&D expenditures by industry (Table 30 of that report).

Table H-2
REMI industry assignments for modeling impacts of tax credits and sales and use tax exemptions

Programs	Industries
Tax credit programs	
Barge and Rail Usage Tax Credit	Warehousing and storage
Biodiesel and Green Diesel Fuels Producers Tax Credit	Oil and gas extraction
Coal Employment Enhancement Tax Credit	Mining
Farm Wineries and Vineyards Tax Credit	Beverage and tobacco product manufacturing
Green Job Creation Tax Credit	Construction
International Trade Facility Tax Credit	Warehousing and storage
Major Business Facility Job Tax Credit	Varies, based on corporate tax credit utilization files from Department of Taxation
Motion Picture Production Tax Credit	Motion picture and sound recording industries
Qualified Equity and Subordinated Debt Investment Tax Credit	No industry assignment used
Recyclable Materials Processing Equipment Tax Credit	Varies, based on corporate tax credit utilization files from Department of Taxation
Research and Development Expenses Tax Credit	Varies, based on corporate tax credit utilization files from Department of Taxation
Telework Expenses Tax Credit	Professional, scientific, and technical services
Virginia Coal Production and Employment Incentive Tax Credit	Utilities and paper manufacturing based on tax credit use
Virginia Port Volume Increase Tax Credit	Warehousing and storage
Worker Retraining Tax Credit	Varies, based on corporate tax credit utilization files from Department of Taxation
Sales and use tax exemptions	
Airline Common Carriers Exemption	Air transportation
Aircraft Parts, Engines, and Supplies Exemption	Air transportation
Certain Printed Materials for Out-of-State Distribution Exemption	Printing and related support activities
Contractor Temporary Storage Exemption	Warehousing and storage
Data Centers Exemption	Data processing, hosting, and related services (50%); Other information services and Telecommunications (50%)
Electrostatic Duplicators Exemption	Administrative and support services
Film, Television, & Audio Production Inputs Exemption	Motion picture and sound recording industries
Media Provider Equipment Exemption	Broadcasting except internet
Out-of-state Nuclear Facility Repair Exemption	Construction
Pollution Control Equipment & Facilities Exemption	U.S. Census Bureau PACE Survey

Programs	Industries
Railroad Common Carriers Exemption	Rail transportation
Railroad Rolling Stock Exemption	Machinery manufacturing (99.3%) and other transportation equipment manufacturing (0.7%)
Research & Development Exemption	National Science Foundation Business Research and Innovation
Semiconductor Manufacturers Exemption	Computer and electronic product manufacturing
Semiconductor Wafers Exemption	Computer and electronic product manufacturing
Ships and Vessels Exemption	Water transportation
Taxi Parts & Radios Exemption	Transit and ground transportation
Uniform Rental & Laundry Businesses Exemption	Personal and laundry services
Virginia Spaceport Users Exemption	Air transportation
Other incentives	
Data Center Single Sales Factor Apportionment	Data processing, hosting, and related services
Manufacturers Single Sales Factor Apportionment	REMI industries for 2013 cohort: nonmetallic mineral product manufacturing, fabricated metal product manufacturing, machinery manufacturing, miscellaneous manufacturing, food manufacturing, and plastics and rubber product manufacturing

SOURCE: Weldon Cooper Center.

For the purposes of the economic impact analysis, only completed grant and other incentive projects (i.e., loans, gap funding) were counted. Outcomes and expenditures were grouped for analysis purposes based on the date/year when awards were completed.

When modeling firm employment increases, the REMI firm employment option is used. This option assumes that firm sales associated with incentivized job creation may displace to various degrees the sales of other Virginia-based firms in the same industry based on industry market-area characteristics.

In order to generate input data to capture the effect of firm retraining for the Virginia Jobs Investment Program, data for wages and salaries and value-added by industry were obtained from the Virginia REMI PI+ model. Ratios of value-added per wages were formed for each REMI industry. These ratios were then multiplied by estimated wage increases (1.5 percent) that resulted from firm retraining for the firms that were assumed to have been incentivized by the VJIP retraining grant. The results by year were assigned to the REMI policy variables "Industry Sales/Exogenous Production" by REMI industry. Estimated wage increases were assigned to the compensation policy variable. This method is the same as used in an intensive review of the VJIP program. (See *Workforce and Small Business Incentives*, JLARC 2018.)

Two sales and use tax exemptions affect the Virginia economy through reducing the costs of goods sold to out-of-state buyers rather than Virginia-based firms. Thus, the sales tax exemption was modeled as an increase in sales for the Virginia warehousing and storage industry (Contractor Temporary Storage Exemption) and construction industry (Out-of-state Nuclear Facility Repair Exemption) caused by the de-facto price reduction. Industry demand for the production inputs was assumed to be relatively inelastic (.5).

The Data Center Exemption was modeled using employment and capital investment information from VEDP MOUs. Based on analysis included in an in-depth review (*Data Centers and Manufacturing Incentives*, JLARC 2019), approximately 90 percent of data center economic activity was attributed to the existence of the sales and use exemption. Data center employment was modeled as equally split between the telecommunications sector and internet publishing and broadcasting; ISPs search portals and data processing; and other information services. In addition to the employment and capital investment figures estimated using information from VEDP MOU data, it was assumed that 22.3 percent of capital investment costs were building and equipment and 77.7 percent sales and use tax exemption eligible equipment based on the expenditure pattern of a standard data center. These expenditures are represented as sales to the construction and wholesale trade sectors (wholesale margins only for the latter). Full-build out of data center employment and investment occurs over a three-year period. Allowance is made for an equipment refresh cycle of every five years, which is modeled as generating sales for the wholesale trade sector (again, only wholesale margin spending occurs in the state).

The economic and tax revenue impact estimates for single sales apportionment (manufacturers and data centers) were based on analysis from in-depth reviews (*Data Center and Manufacturing Incentives*, JLARC 2019). The estimate for manufacturers single sales apportionment is an extrapolation of the cohort of manufacturers that elected to use single sales apportionment in 2013 scaled to tax revenue impact estimates (2014-2016) and projections (2017-2019). The data center single sales apportionment methodology depends on several data sources and assumptions. (See Appendix B of the *Data Center and Manufacturing Incentives* report for more detail on the methodology.)

For each economic impact analysis, the opportunity cost of state funds was accounted for by raising personal income taxes. Personal income taxes are the largest source of tax revenue for the general fund, and thus seemed appropriate as a source for offsetting the cost of the incentive programs.

REMI PI+ discontinued tax revenue estimation as part of its base package beginning with the 2.0 version and moved improved revenue modeling capabilities into its new REMI Tax PI model. In order to conduct tax revenue analysis, this study scaled revenues to economic outputs using the procedure described in Regional Economic Models, Inc. (2012). State tax revenues were derived from the Census of Government's State and Local Government Finance and Annual Survey of State Tax Collections. Revenue estimates are calculated by multiplying state revenue rates by the corresponding base quantity, which included state-level demand for selected industries (general sales tax, selective sales tax, license taxes), state-level personal income less transfer payments (individual income tax), corporate income tax (gross domestic product), and personal income (other taxes). The tax revenue impact analysis does not include the effect of economic development incentives on other revenues, including non-general revenues. Nor does it estimate the effect on local tax revenues. Lastly, it does not estimate the effect of economic development incentives on government expenditures at the state or local level.

Economic impact estimates

Tables H-3 through H-14 provide estimates of the total economic activity induced by each group of incentives (i.e., grants, sales and use tax exemptions, tax credits, and other incentives), and the net impact (total activity adjusted for the reduction). Economic activity reported in the tables is defined as follows:

- Total employment – private and public employment,
- Private employment – private non-farm employment,

- Virginia GDP – Gross domestic product for Virginia (the market value of goods and services produced by labor and property in Virginia), and
- Personal income – received by persons from all sources.

Appendix I: Agency responses

As part of an extensive validation process, the state agencies and other entities that are subject to a JLARC assessment are given the opportunity to comment on an exposure draft of the report. JLARC staff sent an exposure draft of this report to the Virginia Economic Development Partnership, Department of Taxation, secretary of commerce and trade, and secretary of finance.

Appropriate corrections resulting from technical and substantive comments are incorporated in this version of the report. This appendix includes response letters from the Virginia Economic Development Partnership and Department of Taxation.

VEDP | Virginia Economic Development Partnership

December 4, 2020

Mr. Hal E. Greer, Director
Joint Legislative Audit & Review Commission
919 East Main Street, Suite 2101
Richmond, VA 23219

Re: VEDP response to the draft JLARC report, *Economic Development Incentives 2020: Spending and Performance*

Dear Mr. Greer:

Thank you for providing an opportunity for us to comment on the Joint Legislative Audit & Review Commission's (JLARC's) draft report, *Economic Development Incentives 2020: Spending and Performance.*

The report provides a helpful overview of economic development incentive spending and performance in the Commonwealth. Among other things, we appreciate your analysis showing that projects that received grant awards between FY10 and FY19 and completed their location or expansion project collectively created an estimated 78,000 jobs and $17.8 billion in capital investment or other spending in Virginia.

Your report demonstrates the impact of some of VEDP's most important economic development incentive programs. Notably, completed projects that received Virginia Jobs Investment Program (VJIP) grants accounted for the largest share of jobs (48,907) and capital investment and other spending ($7.9 billion) associated with Virginia's economic development grant programs during this time period. Similarly, projects funded through the Commonwealth's Opportunity Fund (COF) ranked second in job creation (20,526 jobs) and business spending ($7.3 billion).

Furthermore, Table 7 on page 18 shows that several economic development grant programs collectively outperformed their aggregate performance goals for job creation, spending/investment, and/or the average wage. In particular, the COF program outperformed on all three measures, exceeding its collective total goals on job creation (105% of goal), spending/investment (148%), and average wage (117%). The footnote of that same table indicates that the Virginia Leaders in Export Trade (VALET) program helped participating Virginia companies increase their international sales by 126 percent of their collective goal.

The report also demonstrates that grant award amounts per capita tend to align with the local unemployment rate, indicating more funds are generally provided to localities that are economically distressed. Moreover, the reported noted that, "The number of awards per capita is even more highly correlated with the local unemployment rate."

The side bar on page 16 characterizes the effectiveness (or lack thereof) of economic development incentive programs in sweeping terms. In practice, the effectiveness of economic development grant programs in influencing a company location decision varies by program design and amount of incentives offered relative to job creation and investment, among other factors. Some programs are more effective than others. In this context, the reference to the 2012 JLARC report's estimate ("approximately 10 percent of location and expansion decisions, on average, are swayed by typical economic development incentives") suggests considerably more analytical precision than actually exists.

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We understand that finding common definitions among different types of incentives for comparison purposes is challenging. However, we think that the definition of VJIP funds spent in Appendix D, Table D-1 (p. 50-51) would be better represented by the actual funds paid/disbursed during each fiscal year, versus a blend of funds paid and projected award amounts reported in the years the funds were awarded. In no fiscal year has VJIP disbursed more funds than were available in its allocated VJIP Fund budget and roll-over fund.

As usual, we appreciated the professionalism of JLARC staff during the project, as well as compliment your team on its insightful analysis and reporting.

Sincerely,

Stephen Moret
President & CEO

COMMONWEALTH of VIRGINIA

Department of Taxation

December 2, 2020

Mr. Hal E. Greer, Director
Joint Legislative Audit and Review Commission
919 East Main Street, Suite 2101
Richmond, Virginia 23219

Hal

Dear Mr. Greer:

Thank you for the opportunity to review and comment on the exposure draft report: *Economic Development Incentives 2020.* We believe the report is very well done and will be useful to the members of the General Assembly going forward. We also appreciate you incorporating our comments and suggestions into the final report draft.

Thank you again for the opportunity to review the draft report. Should you have any additional questions, please feel free to contact me.

Sincerely,

Craig M. Burns
Tax Commissioner

c: The Honorable Aubrey L. Layne, Jr., Secretary of Finance

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