

Regional Entrepreneurial Assessment Profiles

Region 3: Southside

August 27, 2018

Today's Agenda

- Review purpose/intent of engagement
- Review preliminary regional data profile and trends analysis
 - Discuss any refinements needed
 - Discuss implications moving forward
- Discuss benchmark selections
- Identify ongoing entrepreneurial development underway in the region
 - Discuss key leaders/stakeholders who should be interviewed



Purpose/Intent of Engagement

GO Virginia Project: Addressing Challenge of Entrepreneurial Development across Regions

GO Virginia recognizes that Virginia lags in the development of innovative small- and medium-sized companies

But raising the state requires each region to address their specific needs:

- Recognize entrepreneurial development is a very localized phenomenon
- Enable regions to have access to key tools, but tailor to needs of specific regions and allow local stakeholders to have key role in governance and oversight

GO Virginia's effort will be leveraging the ongoing work of VRIC in its implementation planning to expand the analysis of entrepreneurial ecosystems across all GO Virginia Regions

Will leverage and expand upon:

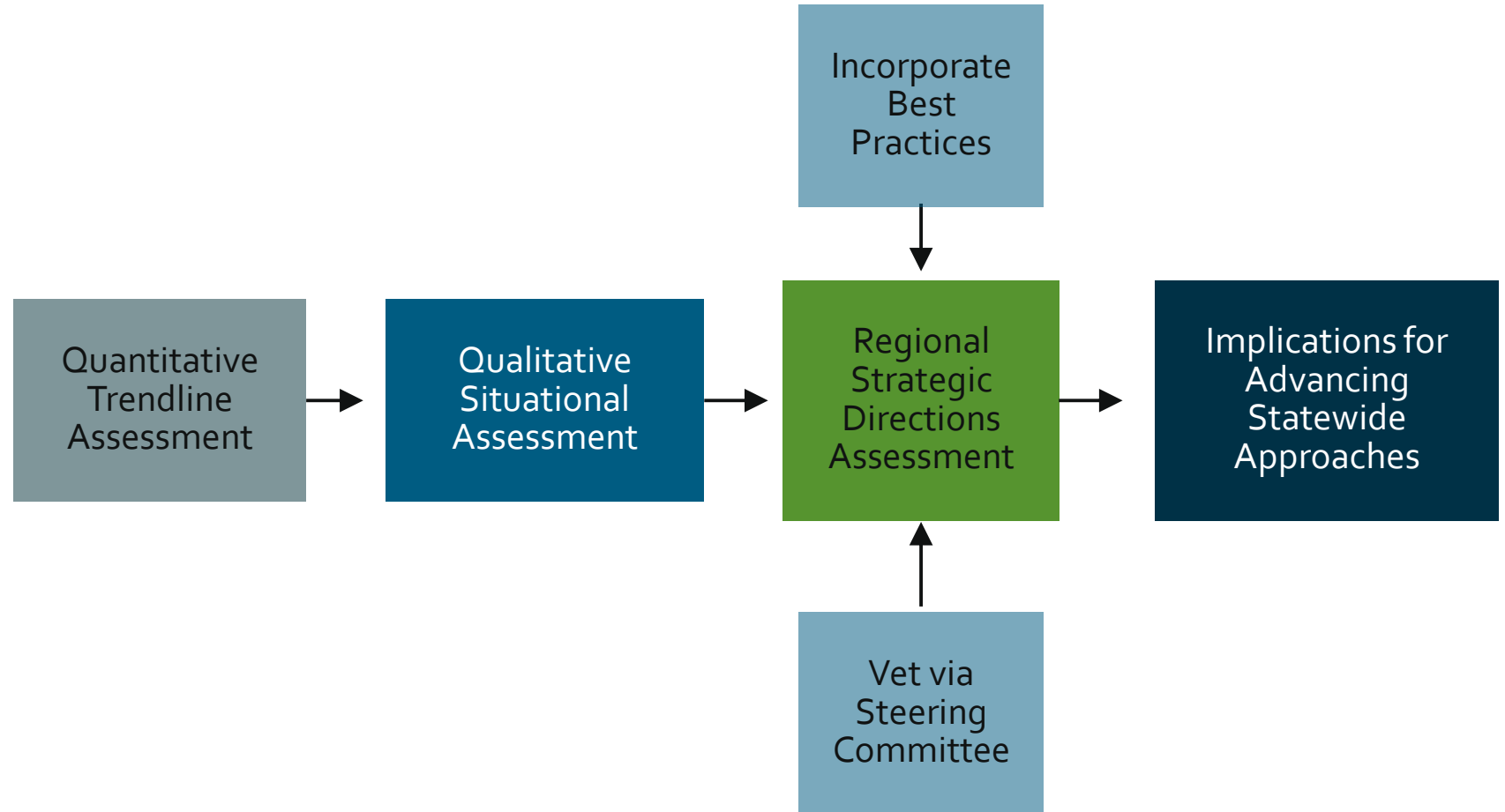
- the inventory being developed
- the stakeholder interviews
- the data analysis
- the best practices being identified
- the need for statewide approaches to supporting regional entrepreneurial ecosystems

Key Deliverables for GO Virginia Efforts to Catalyze the Development of Entrepreneurial Ecosystems in the GO Virginia Regions

GO Virginia's project will result in the following deliverables:

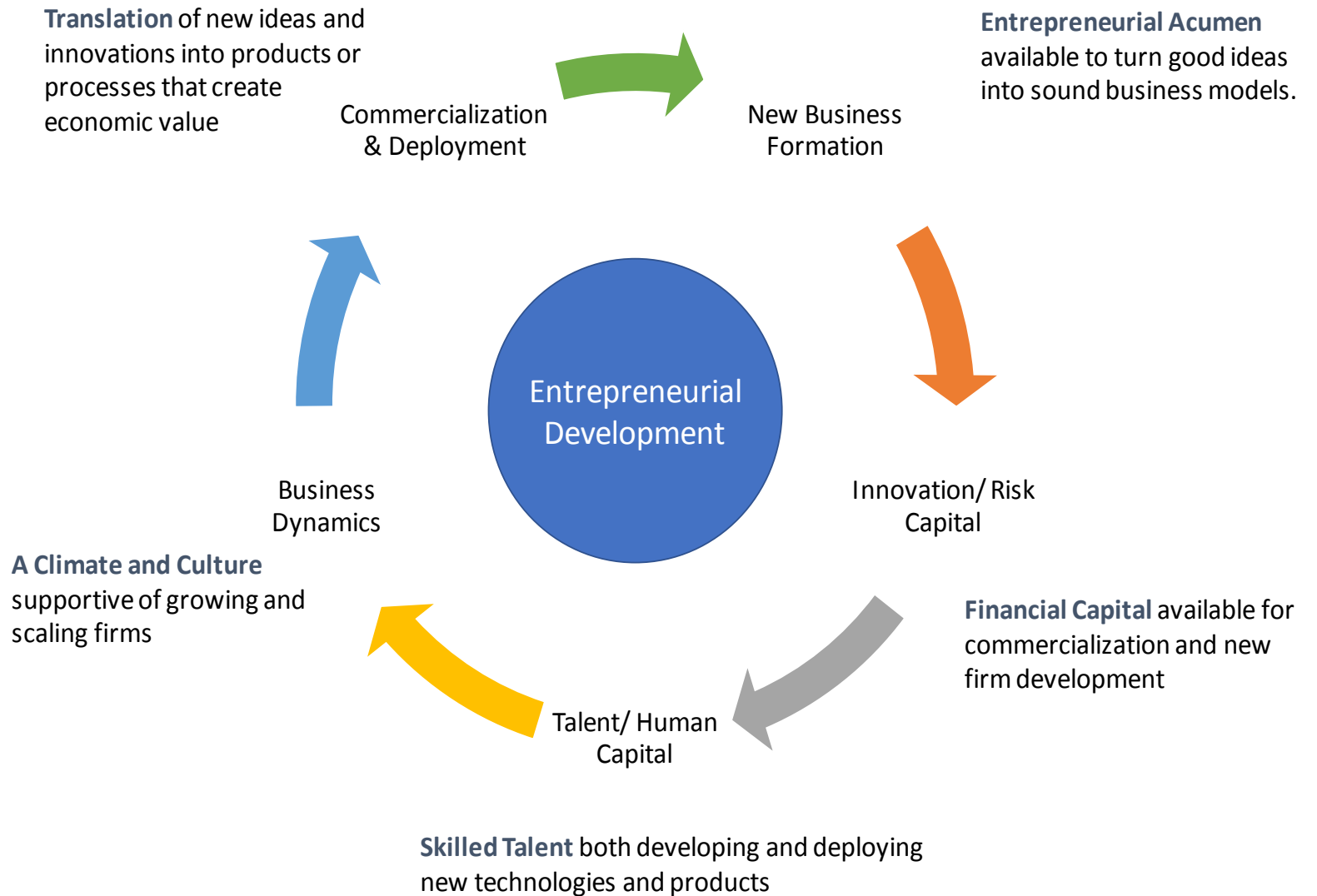
- Develop a common template of data, inventory and stakeholder perspectives to help GO Virginia regions develop their own strategic directions
- Offer best practice lessons and benchmarking to national peers
- Have each GO Virginia region prioritize key investments/activities to catalyze the development of a robust innovation ecosystem
- Consider statewide approaches to address common needs and gaps

Project Approach



Framework for Assessing Entrepreneurial Development

Elements of a Robust Innovation/Entrepreneurial Ecosystem that have the Capacity to Impact the Economic Vitality of a Region/State





Preliminary Entrepreneurial Dynamics Trends Analysis in Traded Sectors

Initial Analysis of Entrepreneurial Dynamics in Your Region's Traded Industry Sectors

Key Measures:

- Job distribution by age of firm
- Job creation by age of firm
- Business formation rates of start-ups
- Survival rates of startup companies
- Examining key elements of “net” employment growth
- The contribution of high-growth startups compared to all startups

Note on Data Sources:

- Two data sources used to provide a full depiction of entrepreneurial dynamics:
- ***The Quarterly Workforce Indicators (QWI) from U.S. Census*** is a new longitudinal database with detailed data related to the job creation and other characteristics of firms, including by age groupings.
 - ***Most Detailed Level of Geographic Coverage:*** County
 - ***Coverage:*** Covers over 95% of U.S. private sector jobs (does not cover ag jobs, self-employment)
 - ***Grouping of Employment by Age of Firms:*** 0-1 Years; 2-3 Years; 4-5 Years; 6-10 Years; 11+ Years
 - ***Industry Coverage:*** 2-digit industry, which can define at a high-level traded sector industries
 - But QWI does not provide intelligence at the firm level
 - All data is on a quarterly basis
- **The Business Dynamics Research Consortium (BDRC) database** is a time-series dataset that catalogues individual establishments by location, employment, sales, and industry from 1997 to 2017. The BDRC It is maintained by the University of Wisconsin
 - Coverage: It compiles multiple data sets to track performance and growth for more than 144 million individual businesses across the United States.
 - Provides extensive firm level data
 - Able to identify firm by address
 - Detailed industry coverage

Why Focus on Traded Industry Sectors?

- Not all new start-ups drive economic growth for state and regional economies → ***need to focus on new start-ups in traded sector activities*** that serve customers and markets beyond their local community
 - **Traded industries** serve broader reaching markets beyond the region in which they are located, often at a national or global scale
 - Includes: manufacturing; professional, scientific and technical services; information; finance and insurance; transportation and warehousing; mining; agriculture; and tourism related industries
 - **Local industries** serve the local market and are prevalent in most regions and correlated to size of population
 - Examples might include local Health Services, local Food and Beverage, or local Utilities industry clusters

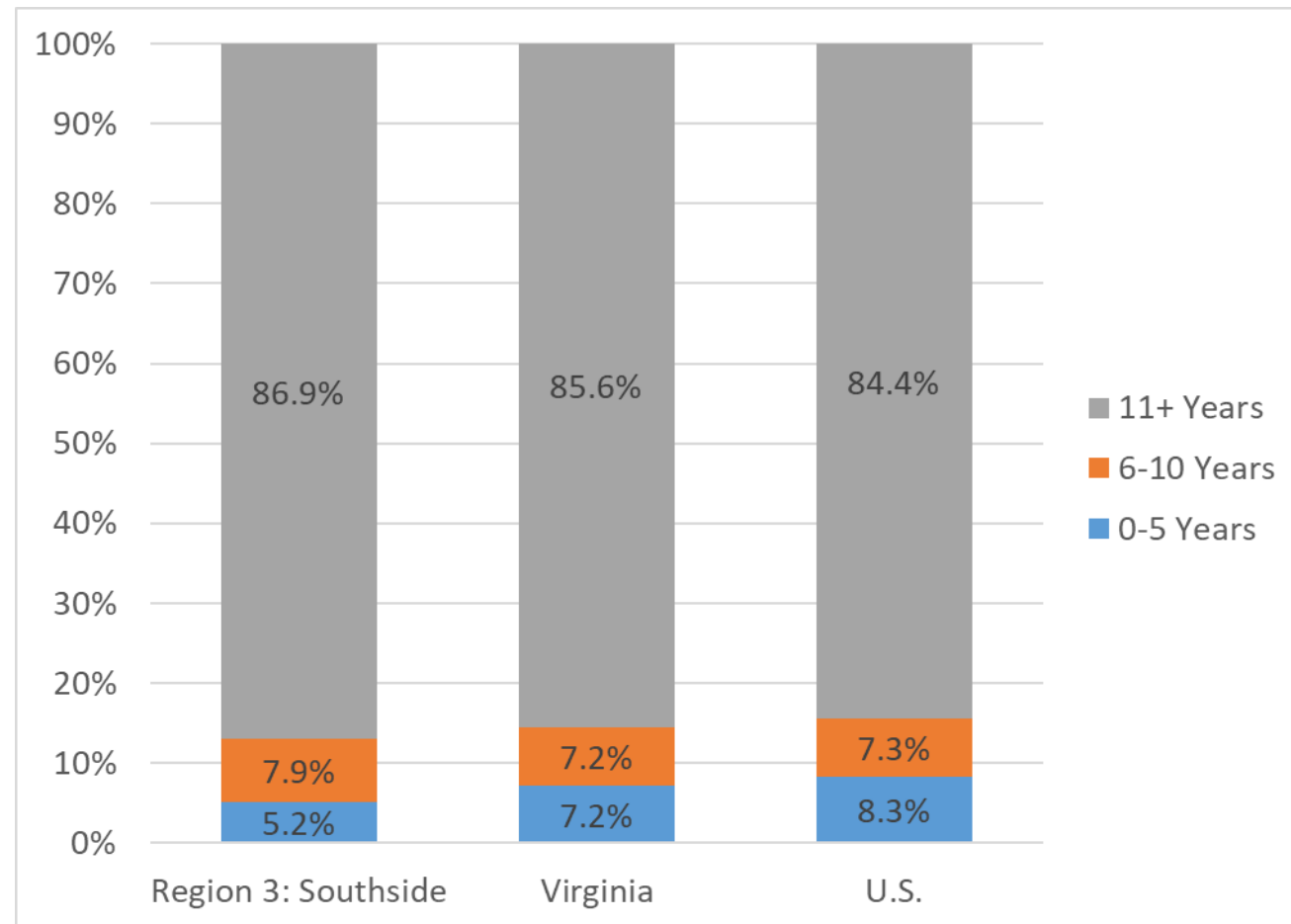
US Cluster Mapping Project describes the critical importance of a strong base of traded industry sectors :

"[Traded industry clusters] are free to choose their location of operation (unless the location of natural resources drives where they can be) and are highly concentrated in a few regions, tending to only appear in regions that afford specific competitive advantages.

Since traded clusters compete in cross-regional markets, they are exposed to competition from other regions...Traded clusters are the "engines" of regional economies; without strong traded clusters it is virtually impossible for a region to reach high levels of overall economic performance."

Regional Employment Distribution by Age of Firm for Traded Sector Industries

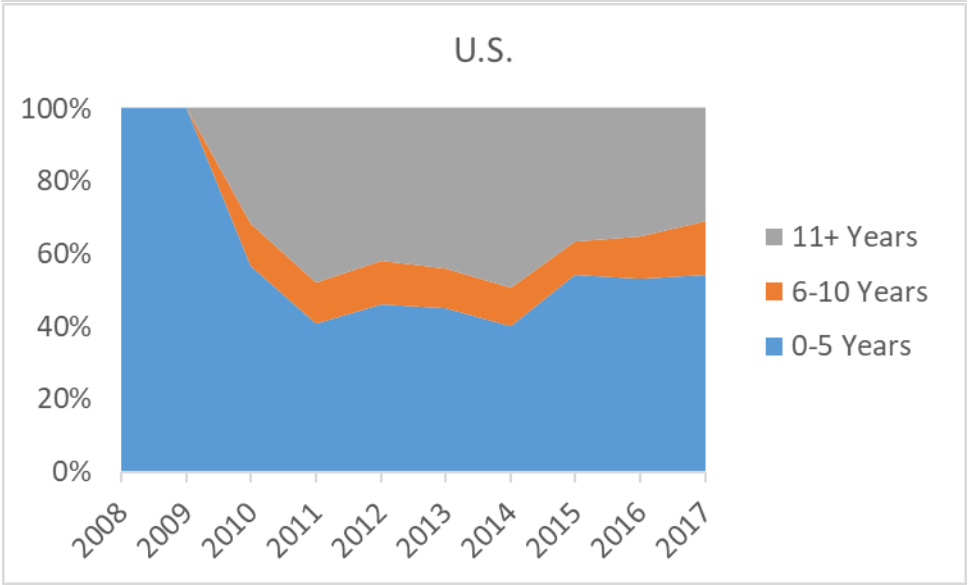
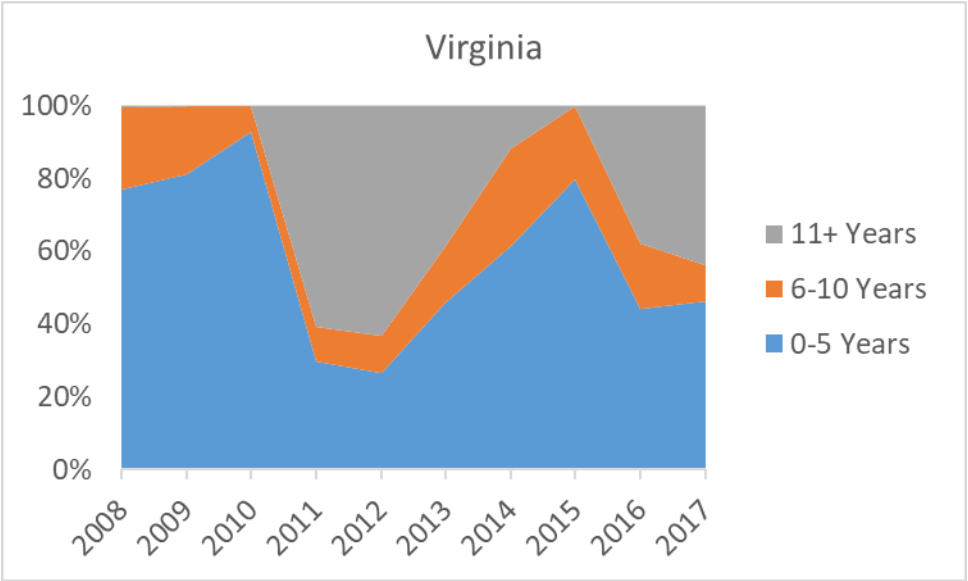
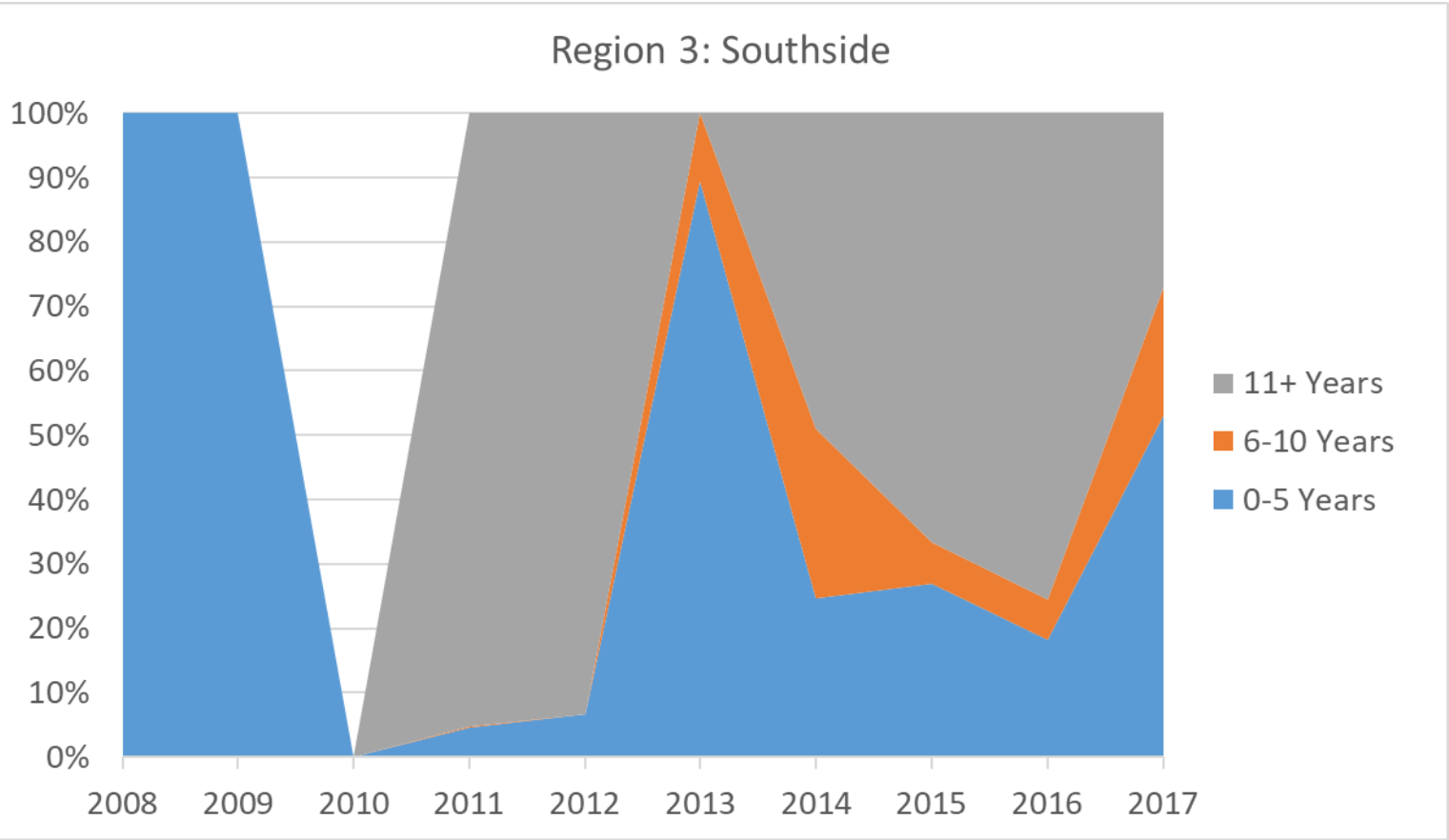
- Majority of employment base is contained within older firms, mirroring wider state and national trends



Traded Sector Employment Levels by Firm Age as a Percentage of Total Employment, Averaged 2008 Q1 through 2017 Q2

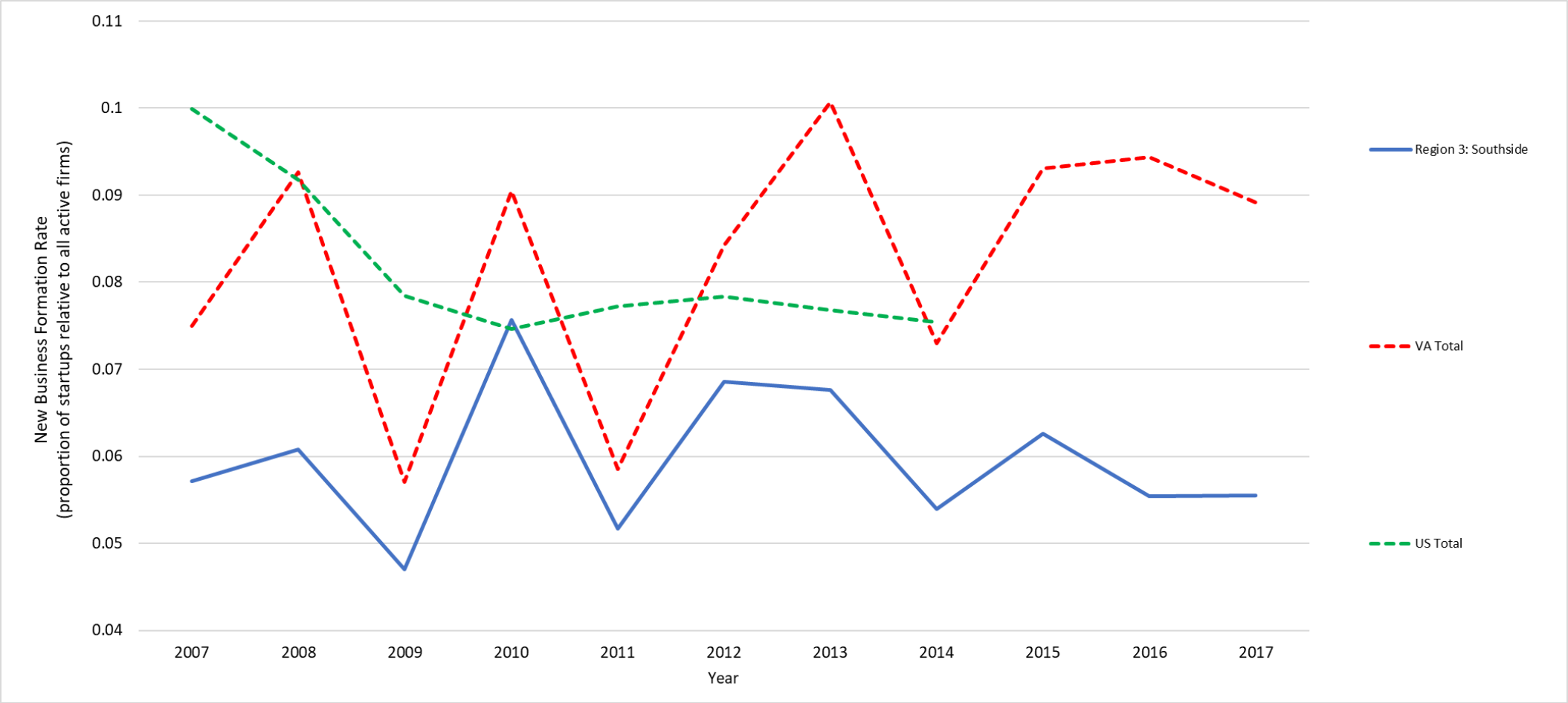
Trends in Net Job Growth Generation by Age of Firm for Traded Sector Industries

Traded Sector Net Job Change by Firm Age, 2008 Q1 through 2017 Q2



Overall New Business Formation Rates for Region Based on BDRC Firm Level Data

- Trends in overall new business formation rates for region have consistently underperformed state, particularly after 2011



*US new business formation rates available to 2014 via US Longitudinal Business Database

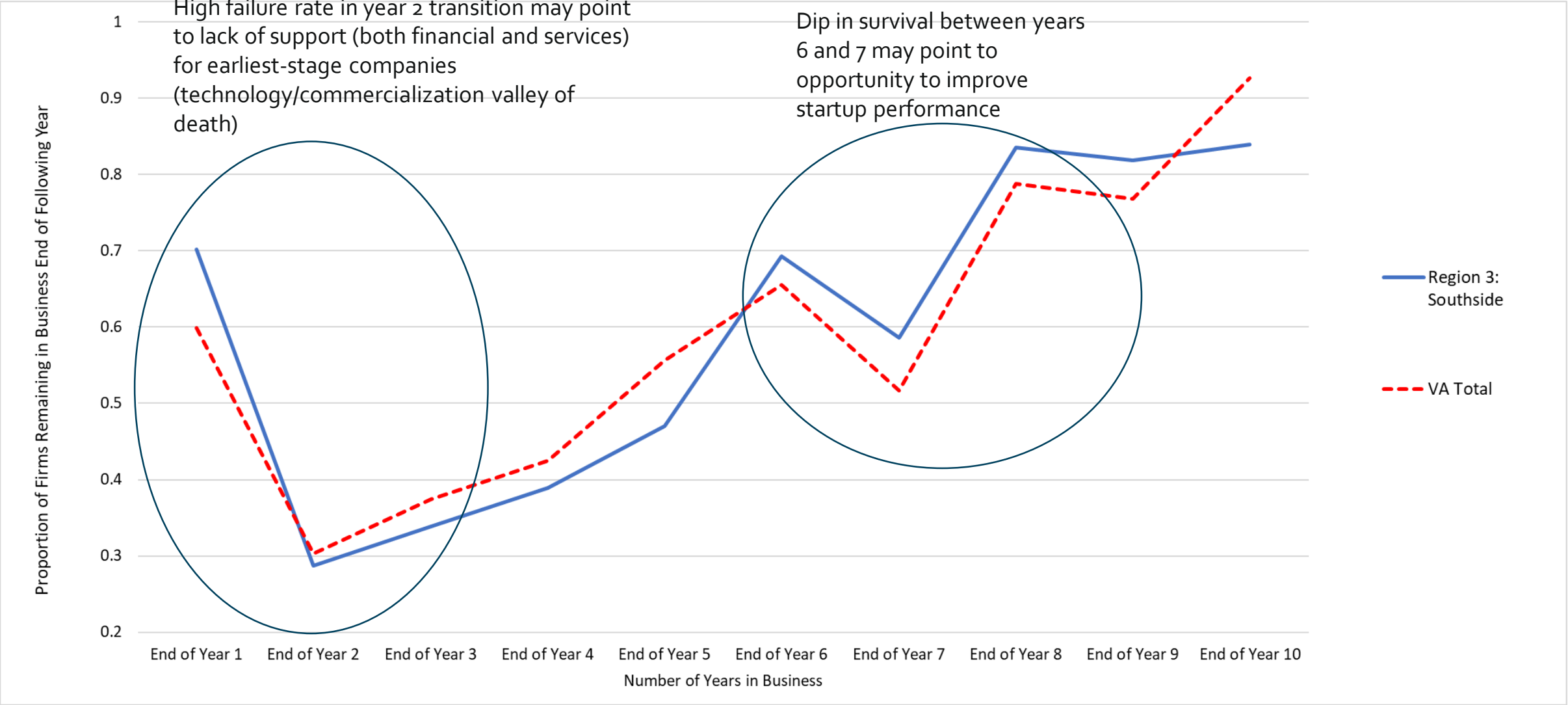
BDRC Profile of Startup Activity Trends in Region

Founding Year of Startup Cohort*	Number of Startups in Traded Sector Industries	Number of Startups Surviving by 2017	Start-up Employment Levels 2017
2007	133	41	249
2008	128	47	255
2009	91	27	206
2010	172	76	672
2011	88	34	172
2012	157	69	390
2013	152	56	291
2014	122	71	526
2015	122	82	364
2016	119	91	604
2017	115	115	576

*Composed of all new non-branch firms with first recorded employment activity in a given year

Year over Year Survival Rate Trends in Regional Traded Sector Startups

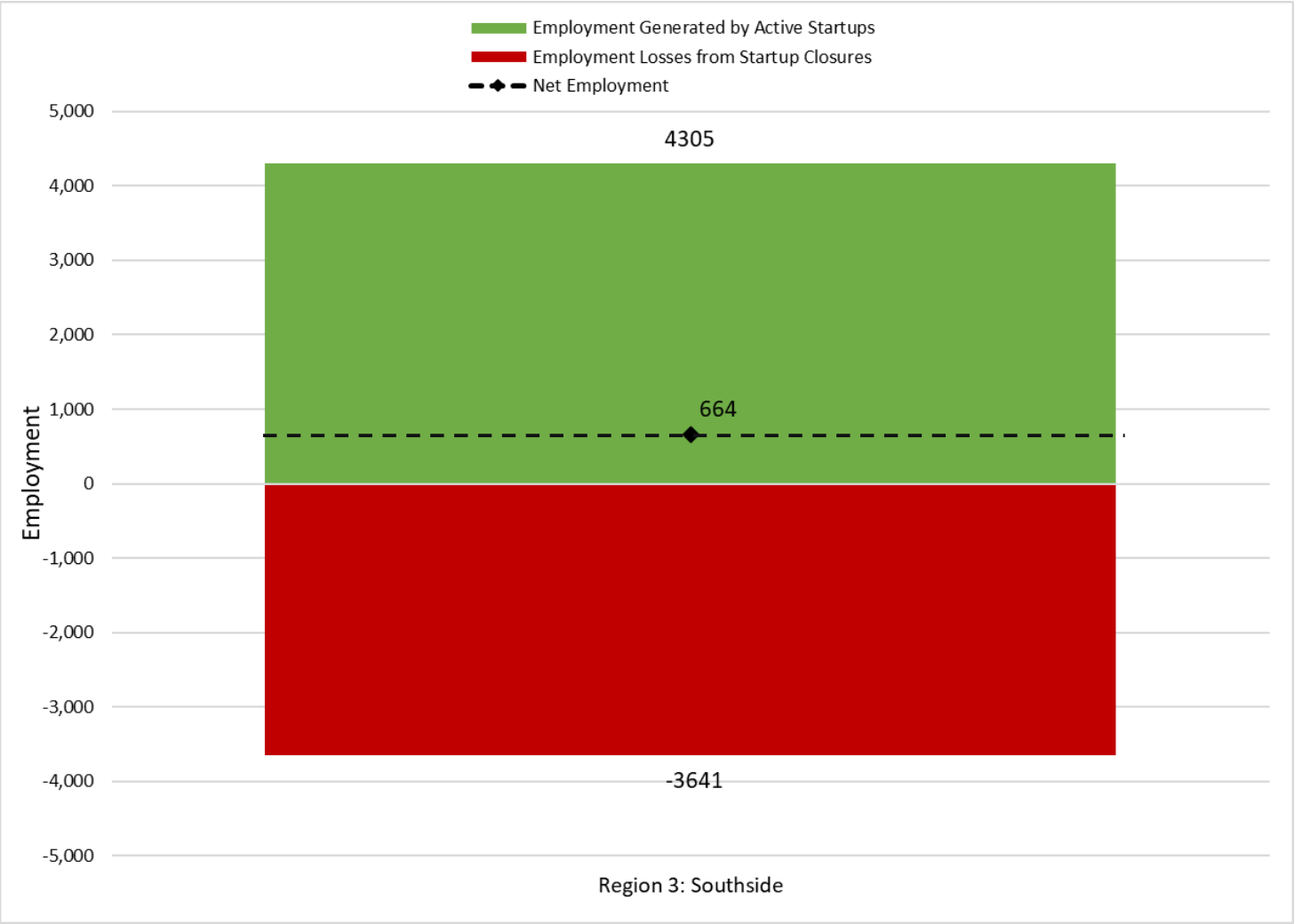
Cumulative 10-year startup cohort survival rates for region are 52.5% compared to a VA statewide rate 54.1%



*Startups defined as having firm age <10 years as of 2017

Net Employment Impacts Generated by Traded Sector Startup Firms in VA

- Significant churn within startups, though generally net employment gains from those surviving startup firms outpaces employment loss from failures across region



	Total Virginia Startups
Employment Generated by Active Startups	186,174
Employment Losses from Startup Closures	-134,415
Net Employment	51,759

*Indicates GO Virginia regions with research universities
**Startups defined as having firm age <10 years as of 2017

Profile of Traded Sector High Growth Startup* Activity in Region

Founding Year of Startup Cohort**	Total Number of Startups in Traded Sector Industries	Number of High Growth Start-ups in Traded Sector Industries*	Employment Levels of High Growth Start-ups, 2017
2007	133	38	65
2008	128	43	102
2009	91	21	135
2010	172	38	224
2011	88	34	4
2012	157	75	147
2013	152	74	100
2014	122	84	270
2015	122	85	137
2016	119	9	16
2017	115		

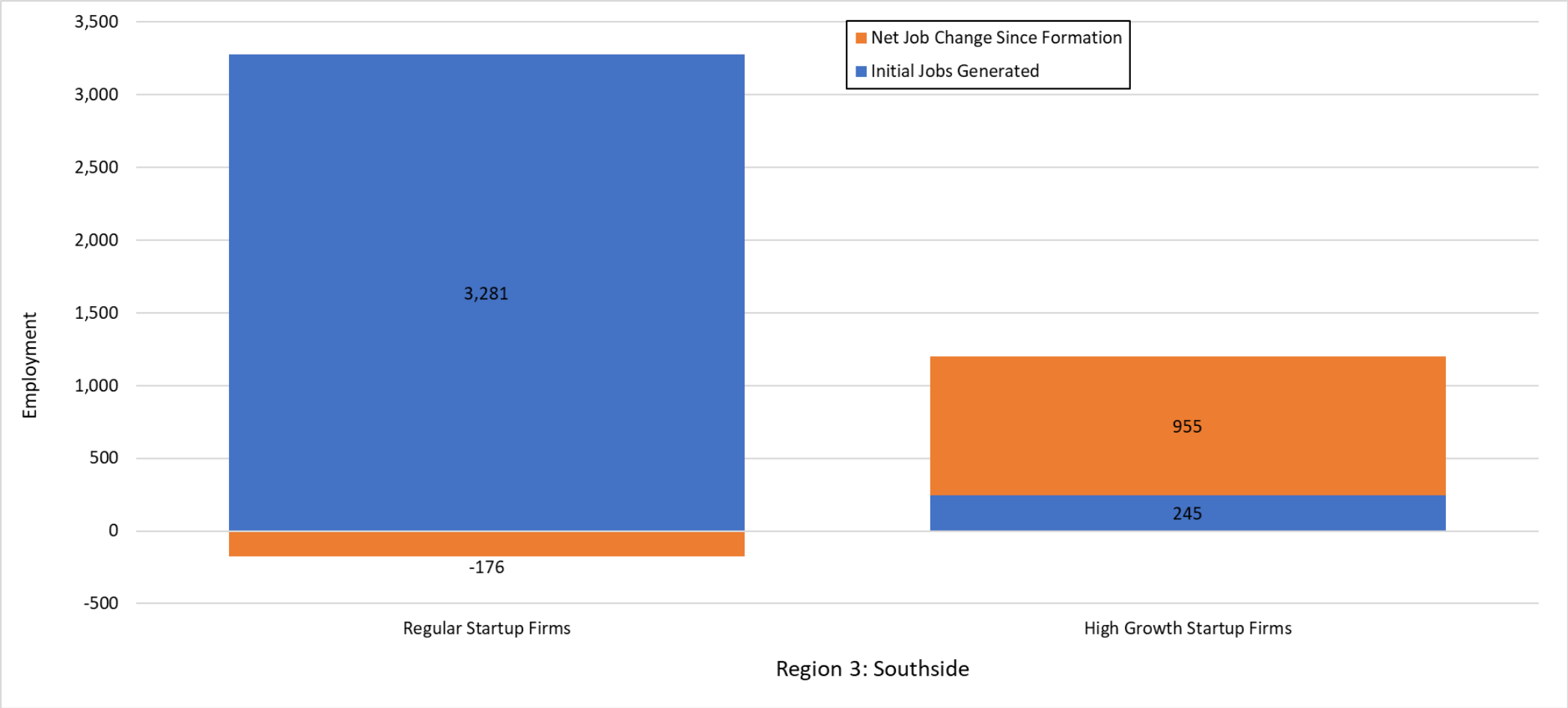
* High growth startups defined as >25% annualized employment growth over lifetime of business

** Composed of all new non-branch firms with first recorded employment activity in a given year

Employment Growth Impacts Generated by Current Traded Sector Startup Firms in Region

- Key to long term success is high growth startups – disproportionate share of lasting gains in employment observed from cohort of startups exhibiting high annualized growth rates

	Total VA Regular Startup Firms	Total VA High Growth Startup Firms
Initial Jobs Generated	124,266	10,474
Net Job Growth Since Formation	-959	52,944



*Indicates GO Virginia regions with research universities

**Startups defined as having firm age <10 years as of 2017, high growth startups defined as >25% annualized employment growth over lifetime of business

Profile of Startup Activity Within Key Regional Industry Clusters

Target Industry Clusters:

- Business Services/IT Data Centers
- Advanced Mfg. & Materials
- Natural Resource Products
- Health Care

Major Industry Cluster	Number of Startups in Cluster	Number of Start-ups Surviving by 2017	Start-up Employment Levels, 2017	Start-ups Industry Cluster Employment Concentration Index*	Number of High Growth Start-ups in Cluster**
Agriculture & Food Processing	195	113	599	2.73	9
Business Services	544	291	1,246	0.69	28
Energy, Natural Resources, & Finished Products	109	57	524	2.08	6
Engineering, R&D, Testing & Technical Services	43	25	131	0.33	5
Financial & Insurance Services	123	59	162	0.40	3
Health Care Services	57	35	498	1.20	11
Information Technology & Communications Services	50	25	186	0.32	6
Life Sciences	26	15	87	0.56	0
Manufacturing	98	59	488	1.69	9
Ship Building, Aerospace, & Defense	1	1	5	0.11	0
Transportation, Distribution and Logistics	205	79	364	0.87	20
Other Traded Sectors	528	247	1,556	0.73	48

*Represents a measure of specialization in startup activity in certain industry clusters given overall state trends, >1.2 indicates highly specialized concentration of startup generation in industry area

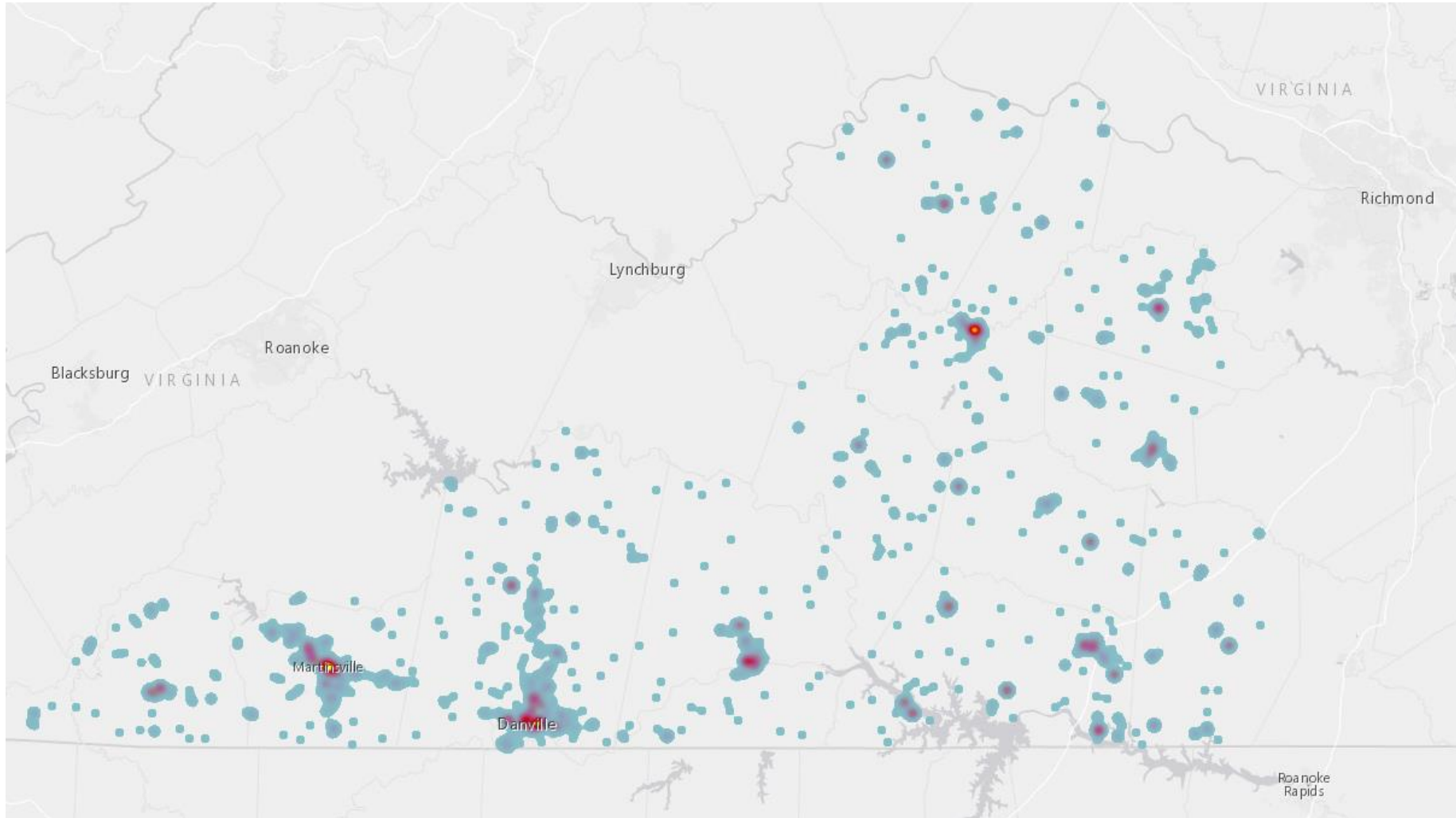
**Defined as >25% annualized employment growth over lifetime of business

Geographic Distribution of Traded Sector Startup Activity in Region

High Regional
Startup Activity
Levels



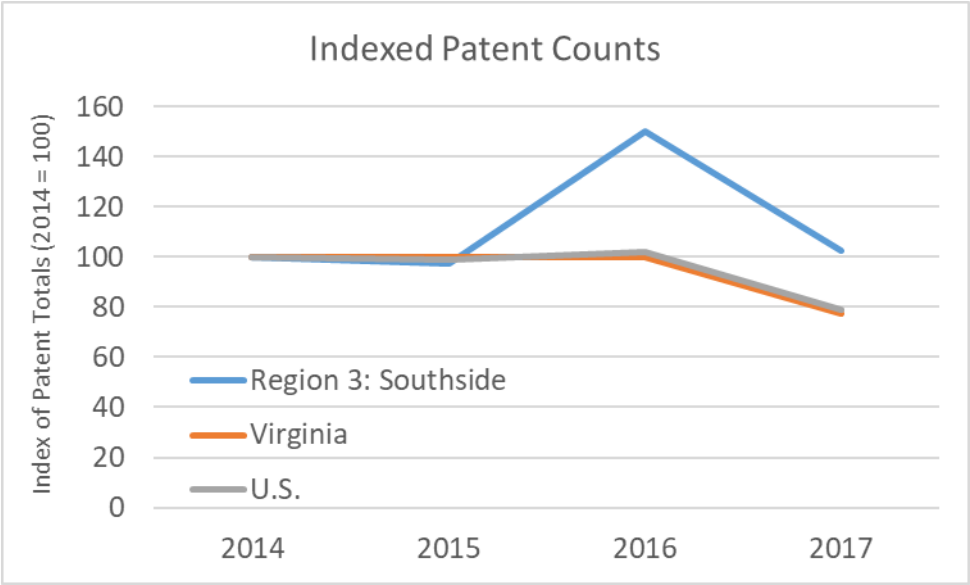
Low Regional
Startup Activity
Levels



Key Measures:

- Patent Activity of Inventors Residing in Region
- Venture Capital
- Federal Small Business Innovation Research (SBIR) Awards
- Utilization of SBA Loans

Regional Patent Activity

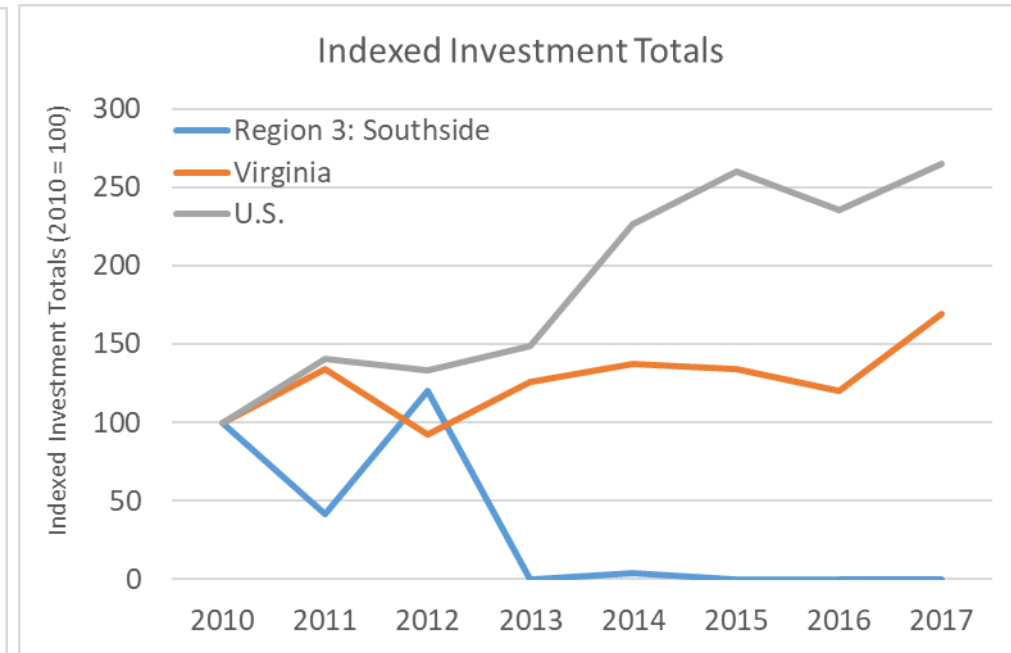
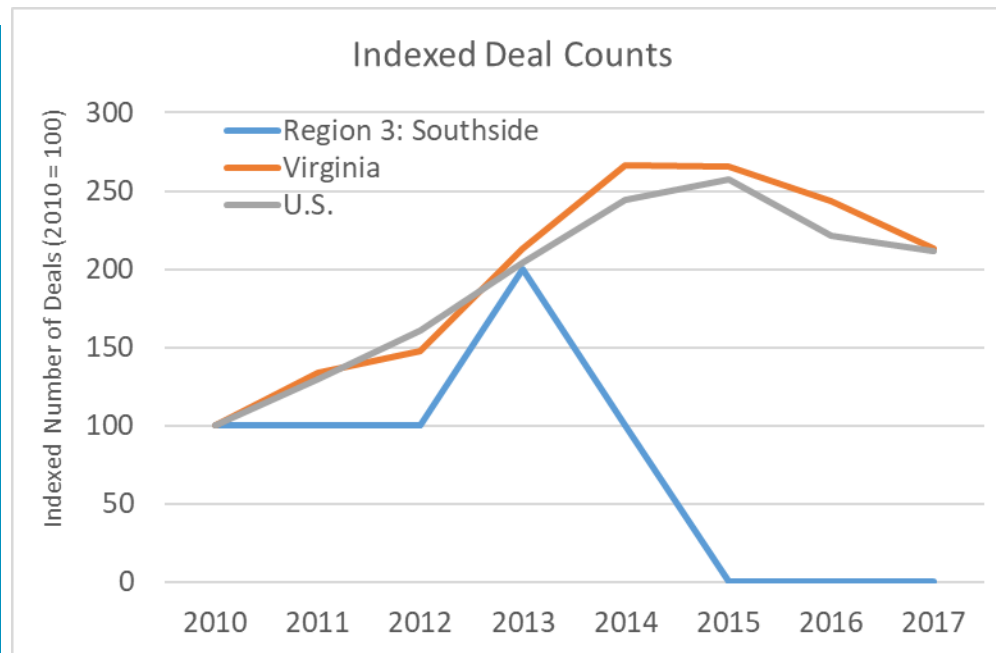


Total Patents, 2014-17

Region 3: Southside	2014	2015	2016	2017	Total
Patent Counts	40	39	60	41	180

Technology Class Area	Number of Patents with at least one inventor in Region, 2010-2017
Network arrangements or protocols for real-time communications	9
Optical components or elements other than lenses	8

Venture Capital

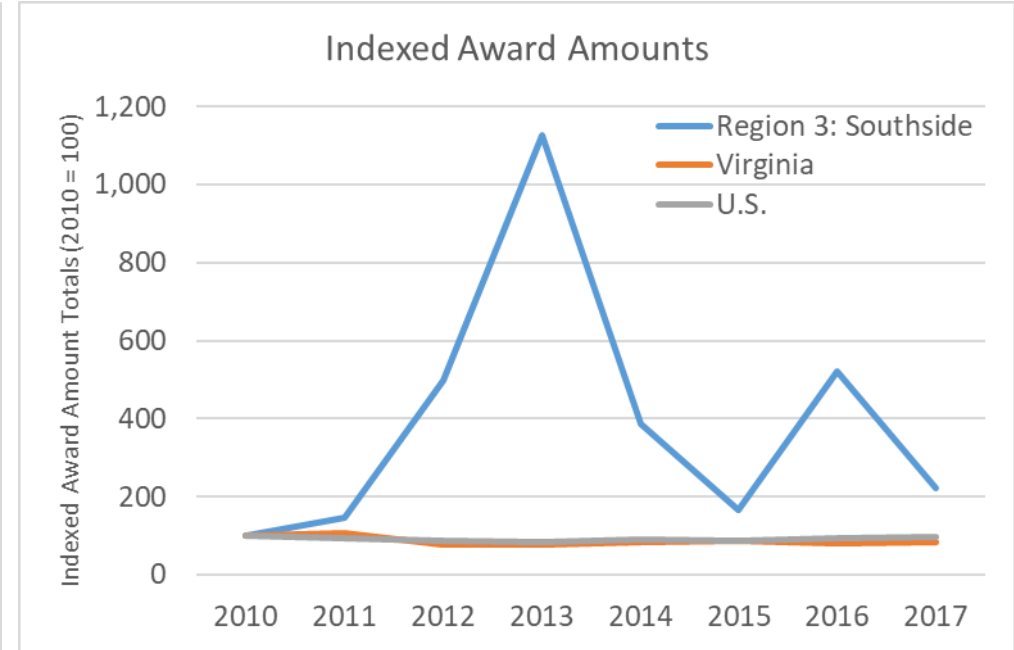
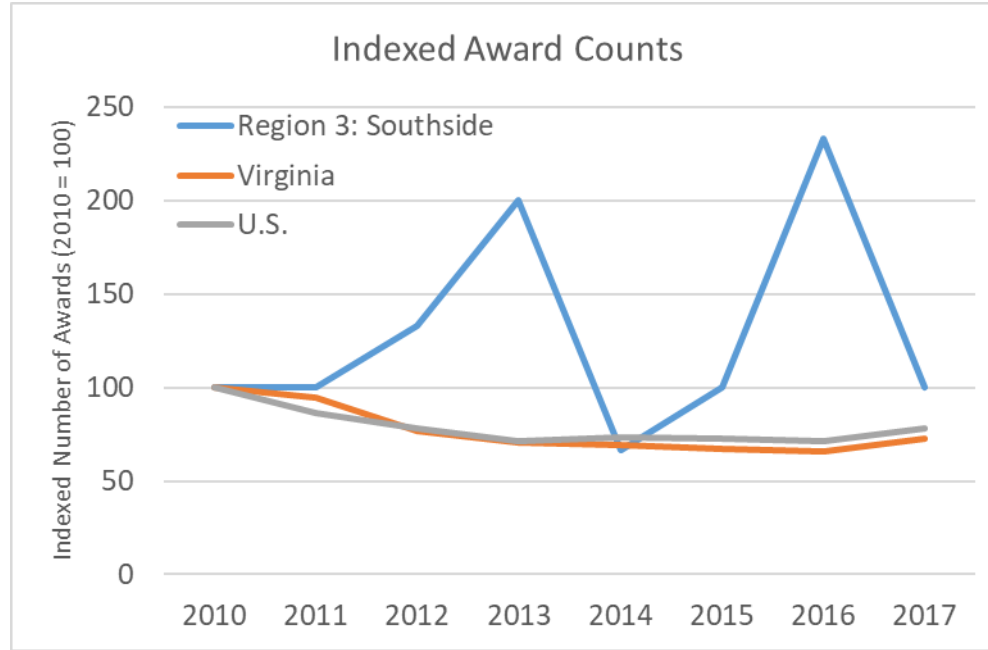


Region 3: Southside	2010	2011	2012	2013	2014	2015	2016	2017	Total
Deal Counts	1	1	1	2	1				6
Investment Totals (Millions)	\$6.1	\$2.5	\$7.3		\$0.3				\$16.1

All Companies Receiving VC Investment, 2010-17

Company	Industry Cluster	Deal Count	Investment Total (Millions)
Healthrageous	Life Sciences	3	\$15.84
KSI Data Sciences	Information Technology & Communications Services	1	\$0.25
Solex Architecture	Engineering, R&D, Testing & Technical Services	1	\$0.00
AllergEase	Agriculture & Food Processing	1	\$0.00

SBIR/STTR Awards



Region 3: Southside	2010	2011	2012	2013	2014	2015	2016	2017	Total
Award Counts	3	3	4	6	2	3	7	3	31
Award Amounts (Millions)	\$0.23	\$0.33	\$1.13	\$2.55	\$0.87	\$0.37	\$1.18	\$0.50	\$7.17

Companies Receiving Phase II Awards, 2015-17

Company	Phase II Award Counts	Phase II Award Amounts (Millions)
AxNano, LLC	1	\$0.30
IRFLex Corporation	1	\$0.20

Regional Use of SBA Loans

- **SBA 7(a) loans are the agency's primary program for financial assistance to small businesses**
 - Amounts: up to \$5M
 - SBA guarantees: 75% to 85%
 - Qualification: for-profit business, SBA size standards, demonstrate good credit/mgmt./ability to repay
 - Use of Proceeds: Startup costs, buying land/buildings/equipment, new construction, working capital, seasonal lines of credit.
 - Benefits: Flexible, longer terms, lower down payments, no prepayment penalties

Region 3: SBA 7(a) Loans and Loan Amounts, Cumulative Totals 2010-18*

Industry	Co's Receiving Loans	Total No. of Loans	Total Loan Amounts (\$)
Total, Traded Sectors	43	73	\$38,340,354

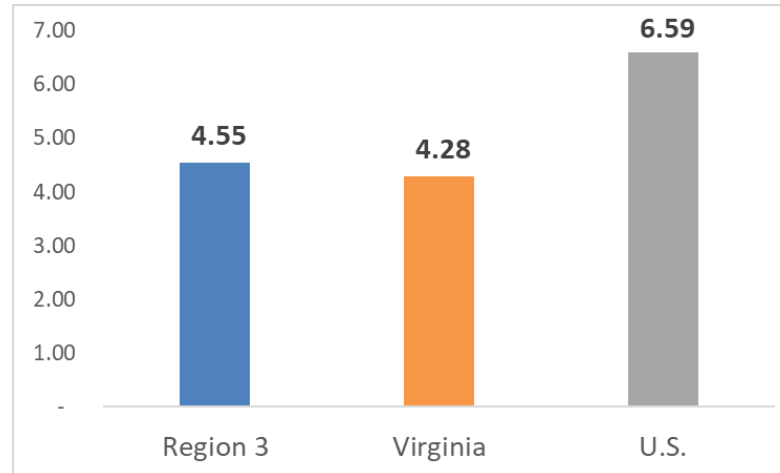
Source: TEconomy analysis of SBA loan data reports.

*Data for 2018 are through Q2.

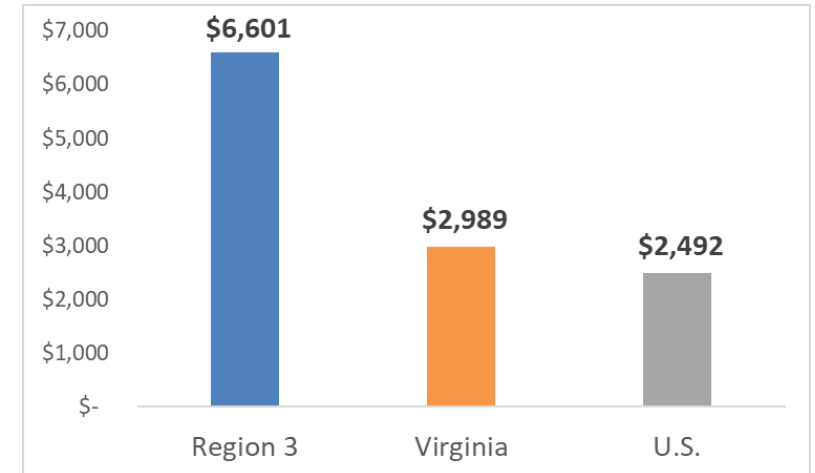
Regional Utilization of SBA Loans vs. State & U.S. Totals

- In 2017, regional companies approved for loan funding at a greater level relative to overall establishments compared with VA and US

SBA 7(a) Loan Counts, Traded Sector Companies Per 1,000 Establishments, 2017



SBA 7(a) Loan Amounts (\$), Traded Sector Companies Per Establishment, 2017



Summing Up Initial Trends Analysis

Strengths

- High concentration of employment in startups in 3 of 4 Target Industry Areas:
 - Manufacturing
 - Natural Resource Products
 - Healthcare
- Strong utilization of SBA Loans (\$)

Gaps or Weaknesses

- Underperforming state in overall startup rates/activity
- Lagging/little activity in key innovation ecosystem areas:
 - Patenting
 - VC Investments
 - SBIR Awards



Benchmarking Peer Regions

Why Benchmark?

- **Learn where you stand**
 - Analyze where you stand today against peer communities across the various components of the entrepreneurial ecosystem
- **Identify your competition**
 - Analyze how peer communities are doing by comparison across the various entrepreneurial and innovation components
- **Isolate the strategic issues**
 - Are there components of the entrepreneurial ecosystem for which you have comparative strengths and/or weaknesses?

Selecting Benchmark Regions

- Develop a set of regional benchmarks from outside of Virginia that have demonstrated successful approaches to entrepreneurial development based on economic attributes/characteristics of the nine GO Virginia regions:

Type of Regional Benchmark	Initial Benchmarks Identified
Major technology hub regions (Northern Virginia)	Raleigh/Durham
Medium-sized regions with urban core and multiple mid-tier research institutions (Richmond, Hampton Roads)	Dayton, OH
Rural regions with major research institutions (Blacksburg/Roanoke, Charlottesville)	West Lafayette, IN (Purdue)
Rural-based regions with minimal research anchors.	Greater Susquehanna, PA

Discussion

- What other regions do you:
 - Compare yourself to?
 - Aspire to be?
 - Believe have focused on entrepreneurial development in an effective way that could provide lessons learned for this effort?



Existing Entrepreneurial Efforts Upon Which to Build

Regional Needs Identified & Efforts Underway

- Region 3 Growth & Diversification Plan identifies entrepreneurship and small business development as an “opportunity for improvement” as it is “under-leveraged”, recognizing:
 - Entities engaged in these activities operate and developing blueprints **locally rather than regionally**
 - Need for greater emphasis on key ecosystem aspects including capital, incubators/accelerators, technical advising, mentoring
- Plan Recommendation:
 - “Create sustained regional platforms for entrepreneurship and small business development and recruitment.”
- **Key entities/activities underway:**
 - The Launch Place (Danville) and its Seed and Pre-seed Funds
 - Pitch Contests/Events: Big Idea Challenge, IdeaFest
 - Dan River Business Development Center – Incubator, Other Services
 - Others?

Findings from Statewide VRIC Situational Assessment

- There is a need to **improve the pathway** from ideation to market in order to increase the level of deal flow (widening the funnel), including:
 - *Catalyze scouting* (walking the halls with technology pull focus)
 - Lacking across all universities
 - *Address lack of access to proof-of-concept funding*
 - Existing university-based PoC funds are either small (VCU, GMU, VT and JMU) or limited to one technology area (UVA limited to life sciences), and only statewide support is CIT's CRCF that is limited in funding and entrepreneurial mentoring
 - *Increase efforts to engage grad students, post docs, and faculty*
 - Lacking across all universities
 - *Address variability in implementation of university technology transfer/commercialization approaches*

Findings from Statewide VRIC Situational Assessment

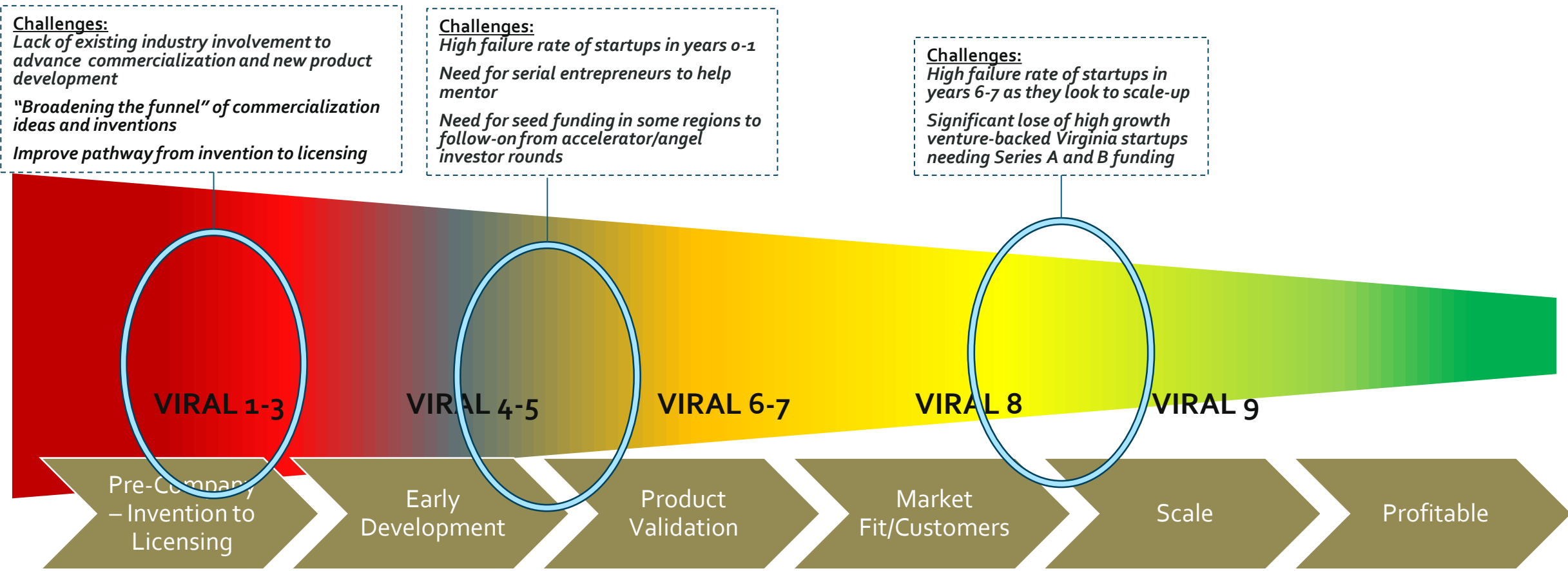
- There is not sufficient **entrepreneurial acumen** to develop the deal flow that does exist. There is a need to:
 - *Intervene when startup survival has critical downward inflection points between years 0-1 (early development) and then at years 6-7 (scale-up)*
 - *Keep a focus on those high growth potential firms which generate most job creation from startup activity*
 - *Create management teams for startup companies utilizing serial entrepreneurs*
 - *Create networks of mentors that can provide value-added services*

Findings from Statewide VRIC Situational Assessment

- Ability to access adequate **risk capital** varies by region, but statewide concern on availability of proof-of-concept at “invention to licensing stage” and Series A and B venture funding for high growth potential companies. There is a need to:
 - *Create proof-of-concept funds*
 - *Catalyze creation of pre-seed/risk-tolerant funding*
 - *Increase level of seed stage capital available to keep up with demand*
 - *Stimulate indigenous later-stage funds*
- There is a lack of **connectivity** - both across the state and even within some regions - in terms of infrastructure as well as resources. There is a need to:
 - *Connect ecosystem components (both services and capital) to better serve entrepreneurs.*

Situational Assessment Across Stages of Innovation Development

CONNECTIVITY (Circles Represent Gaps in Virginia)



Activities at Each Stage	Idea development, applied research, invention, proof-of-concept, IP creation, early team formation and licensing	Product development, testing, prototype and begin market testing	Further develop and validate/scale the product	Complete product development; and create early revenues.	Operating capital to expand markets	Mezzanine financing usually helps a company prepare for an IPO or acquisition.
--------------------------	--	--	--	--	-------------------------------------	--

Discussion

- What findings from the statewide assessment resonate with what you understand to be true about this region's entrepreneurial ecosystem?
- Are there additional gaps/issues not identified in the statewide assessment?
- How has the region worked to overcome these gaps/issues?
- What are the top priorities moving forward?
- Who else should we speak with?
 - Key thought leaders?
 - Entrepreneurs?
 - Others?

Next Steps:

- Finalize regional data profile and trends analysis
- Inventory entrepreneurial program activities, documenting types of assistance, sources and level of resources, available results and companies assisted
- Conduct stakeholder outreach to learn on-the-ground perspectives
- Further develop regional benchmarks
- Next Meeting: late Sept/early October to review findings from the situational analysis

Contact:

Deborah Cummings

Principal & Senior Director
TEconomy Partners, LLC.

614.395.3725

cummingsd@teconomypartners.com

Ryan Helwig

Principal & Project Director
TEconomy Partners, LLC.

216.385.1935

helwigr@teconomypartners.com



Innovating Tommorow's Economic Landscape

Task One: Trendline Assessment of Innovation and Entrepreneurship Ecosystem for Each GO Virginia Region

Objective:

To develop a robust quantitative assessment of entrepreneurial dynamism in each GO Virginia region.

Approach:

- New company formation and growth
- Contribution of entrepreneurial job growth to overall regional growth
- Analysis of companies assisted through existing entrepreneurial programs
- Innovation measures, such as patents and SBIR funding
- Risk financing across stages of pre-seed/accelerator, angel investment, seed, early stage, later stage and private equity.

Leverage of VRIC Study:

- Make use of VRIC's analysis of census data, patent data, SBIR data and risk capital

Deliverables:

- Individual regional profiles
- Summary of state and regional trendlines into a "Call to Action" briefing report to identify statewide issues and variations and groupings across regions

Task Two: Situational Assessment for Each GO Virginia Region

Objective:

To develop a qualitative assessment of the types and level of ongoing program activities, overall strengths and gaps in each region's entrepreneurial development

Approach:

- Inventory/survey of wide range of entrepreneurial program activities, documenting types of assistance, sources and level of resources, available results and companies assisted
- Stakeholder outreach to learn on-the-ground perspectives

Leverage of VRIC Study:

- Build upon ongoing VRIC inventory of entrepreneurial programs and resources
- Augment ongoing stakeholder interviews

Deliverables:

- Situational assessment for each region to further inform individual regional profiles
- Integrate intelligence gathered into summary "Call to Action"

Task Three: Strategic Directions Assessment for Each GO Virginia Region

Objective:

To develop a customized regional analysis integrating quantitative, qualitative and best practices as a basis for convening and facilitating regional leadership to think through their prioritization of key investments/activities to further their entrepreneurial development.

Approach:

- Identify a set of regional benchmarks that reflect the diversity of Virginia's regional circumstance to provide a more tailored assessment of competitive position and best practices for entrepreneurial development
- TEConomy will prepare a strategic directions assessment that integrates quantitative, qualitative and benchmarking/best practices
- TEConomy will facilitate a discussion of regional leadership to consider what is needed to further entrepreneurial development in each region

Leverage of VRIC Study:

- This regional benchmarking and integrated strategic directions goes beyond the scope of VRIC's efforts

Deliverables:

- Individual regional strategic direction assessments focusing on the gaps and opportunities for advancing entrepreneurial development to enable regional leadership to set priorities for future investments and activities.

Task Four: Implications for Advancing Statewide Approaches

Objective:

To provide shared resources and expertise on a multi-regional or statewide approach to support regional entrepreneurial development efforts

Approach:

- Consider based on the strategic directions assessments the implications for shared resources and expertise to strengthen the individual regional efforts
- Convene a workshop with the Regional Chairs of GO Virginia to present the common needs and gaps
- Present findings and summary of region-by-region profiles and strategic directions assessment in a briefing report of the project

Leverage of VRIC Study:

- Make use of VRIC's identification of statewide best practices in supporting entrepreneurial development across regions of a state

Deliverables:

- Identification of statewide needs and recommended approaches
- Final project report
- Creation of GO Virginia program template to guide regional funding requests