



MANY STATE AGENCIES HAVE CONTRIBUTED INSIGHTS AND/OR DATA THAT HAVE INFORMED THIS IMPACT ANALYSIS*

- VEC
- DHCD
- VDACS
- Virginia Department of Forestry
- Virginia Marine Products Board
- SBSD/VSBFA
- SCHEV
- VCCS
- TAX
- VDOT
- VHDA
- VTC

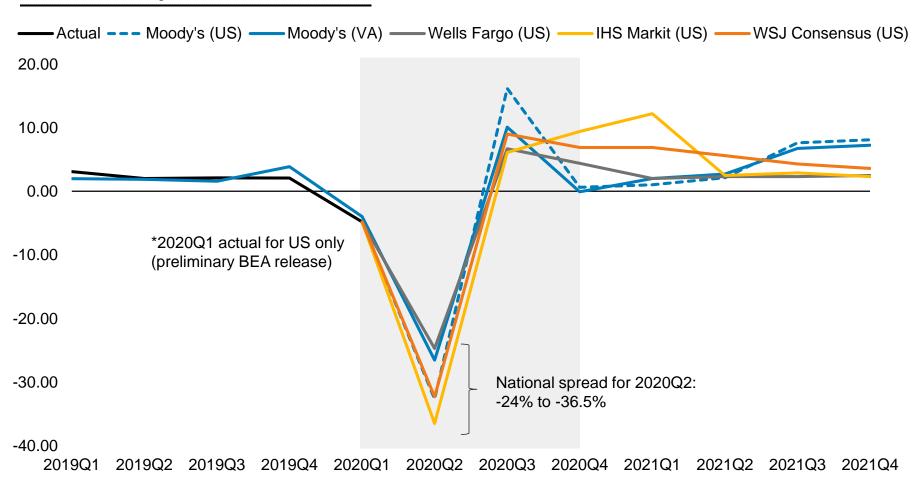
*** PLEASE NOTE ALL ESTIMATES IN THIS DOCUMENT ARE PRELIMINARY AND SUBJECT TO SUBSTANTIAL REVISION ***

National economic forecast

UNPRECEDENTED ECONOMIC SHOCK: FORECASTERS PREDICT SHARP DOWNTURN IN 2020 (ESPECIALLY CURRENT QUARTER)

Quarterly real GDP growth

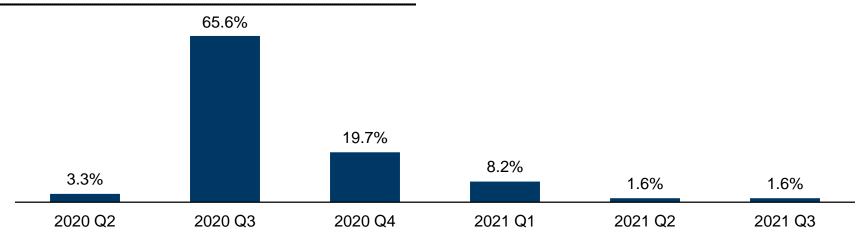
Annualized % change, billions of chained 2012 \$



MAJORITY OF ECONOMISTS SURVEYED BY THE WALL STREET JOURNAL EXPECT ECONOMIC RECOVERY TO START THIS QUARTER

When do you expect the economic recovery to start?

Survey of 60 economists by WSJ, May 1, 2020

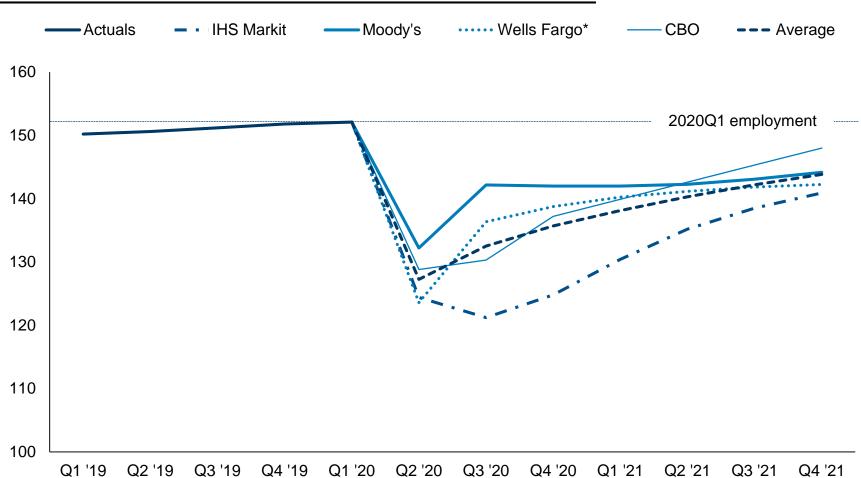


- Moody's Analytics current national and Virginia forecasts have job loss peaking in May 2019.
- The Wall Street Journal's April survey of leading economists found about two third of economists predicting the labor market's low point in the U.S. will be in the third guarter of 2020.
- A recent epidemiological model published by the University of Washington's Institute for Health Metrics and Evaluation (IHME), points to a mid- to late-April apex. Most public health experts agree that we would need 3-4 weeks of sustained drop in infection rates, deaths before a gradual easing of containment measures.
- There are other **key requisites for lifting containment measures** that need to be met, including adequate hospital, testing, and public health capacity. If these conditions cannot be met, further economic losses could be faced.

CURRENT FORECASTS DIFFER ON EXTENT OF DAMAGE AND RECOVERY TRAJECTORY, BUT ALIGN BY END OF 2021

Quarterly U.S. employment estimates from select macroeconomic forecasters

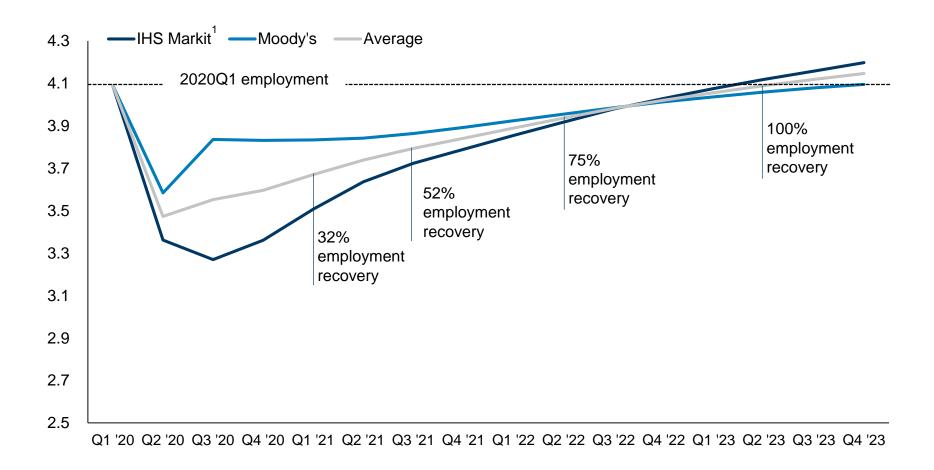
Total nonfarm payroll employment, 2019 – 2021, Millions of jobs



^{*}Wells Fargo publishes average monthly change by quarter. Quarterly estimate derived by tripling average monthly change Source: Moody's Analytics (May baseline); IHS Market (May forecast); Wells Fargo (May forecast); Congressional Budget Office; VEDP analysis

HALF OF JOBS LOST IN VIRGINIA MAY NOT BE REGAINED UNTIL LATE 2021, WITH FULL RECOVERY POSSIBLE IN LATE 2023

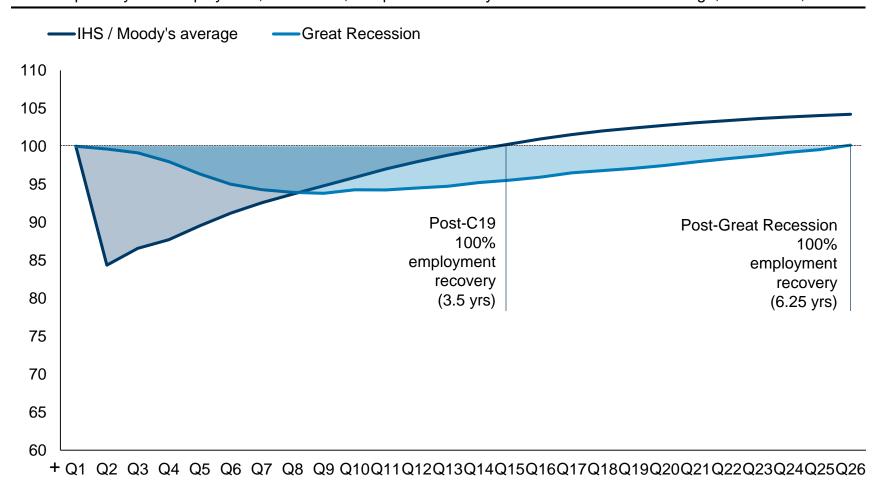
Quarterly Virginia employment estimates from select macroeconomic forecasters Total nonfarm payroll employment, 2019 – 2023, millions of jobs



FORECASTS SUGGEST POST-C19 RECOVERY WILL BE SIGNIFICANTLY QUICKER THAN AFTER GREAT RECESSION

Timeline of job loss recovery post-Great Recession compared to post-C19 current forecasts

Historic quarterly U.S. employment, 2009-2014, compared to Moody's/IHS Markit forecasts average, 2020-2026, indexed



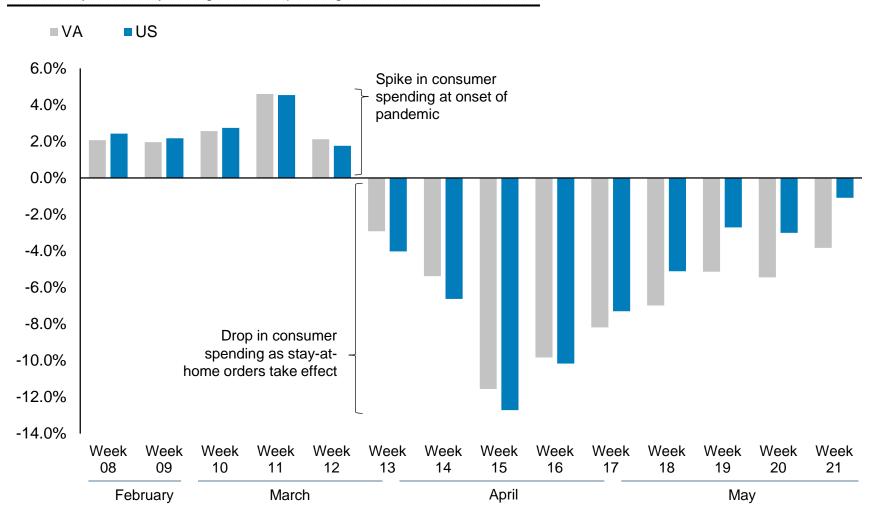
Source: Bureau of Labor Statistics, Current Employment Survey (historic); Moody's Analytics (May baseline); IHS Markit (May forecast); VEDP analysis

Impact to date

AFTER SPIKING IN EARLY MARCH, CONSUMER SPEND IN VA HAS BEEN BELOW 2019 LEVELS FOR THE PAST TWO MONTHS

Virginia and national consumer spending trends by week

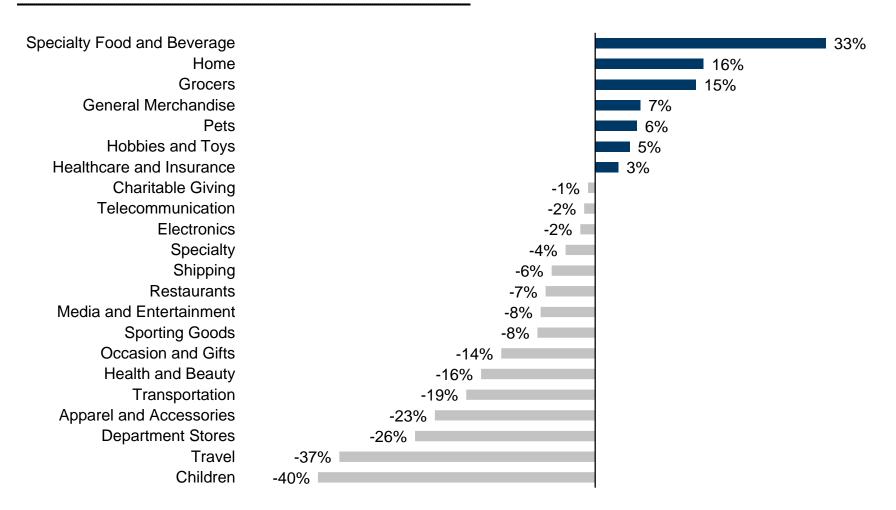
Year-over-year weekly change in total spending, 2019/2020, weeks 8 – 21



CONSUMER SPENDING IN VIRGINIA THIS YEAR HAS DROPPED ACROSS MOST CATEGORIES, BUT SOME HAVE SEEN GROWTH

COVID impact on Virginia consumer spending

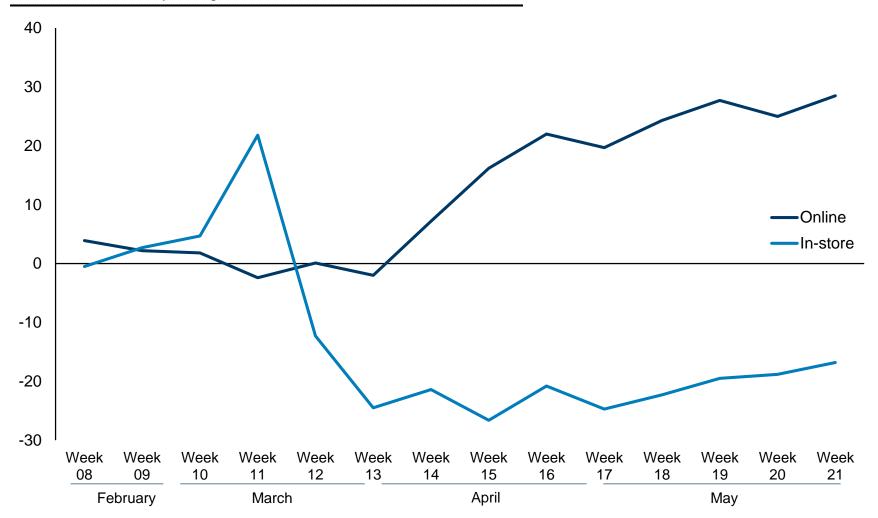
Year-to-date change in total spending, 2019/2020, weeks 1 - 21



RECENT INCREASES IN CONSUMER SPENDING ACTIVITY DRIVEN BY ONLINE SALES IN VIRGINIA, AS IN-STORE TRANSACTIONS STAGNATE

Growth in Virginia sales transactions by channel

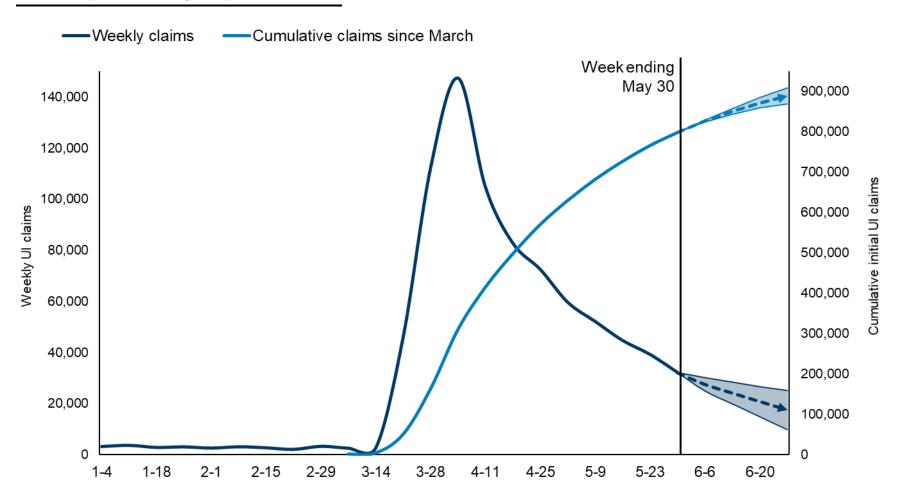
Year-over-Year weekly change in transactions, 2019/2020, weeks 8 - 21



ALMOST 800,000 VIRGINIANS HAVE FILED INITIAL UNEMPLOYMENT CLAIMS SINCE THE BEGINNING OF MARCH

Weekly UI initial claims¹ in Virginia

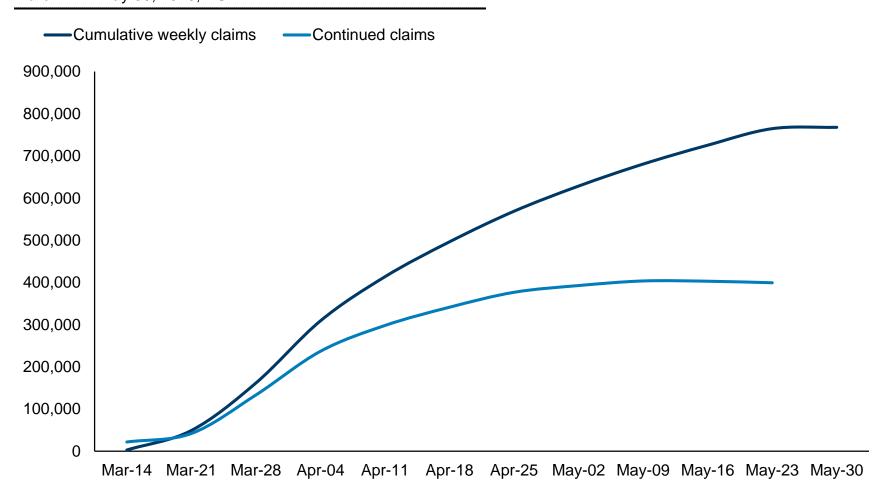
YTD weekly claims (through May, 30 2020), NSA



₁For Virginia UI numbers, Pandemic Unemployment Assistance (PUA) claims are included in total claims reported Source: Virginia Employment Commission; VEDP analysis

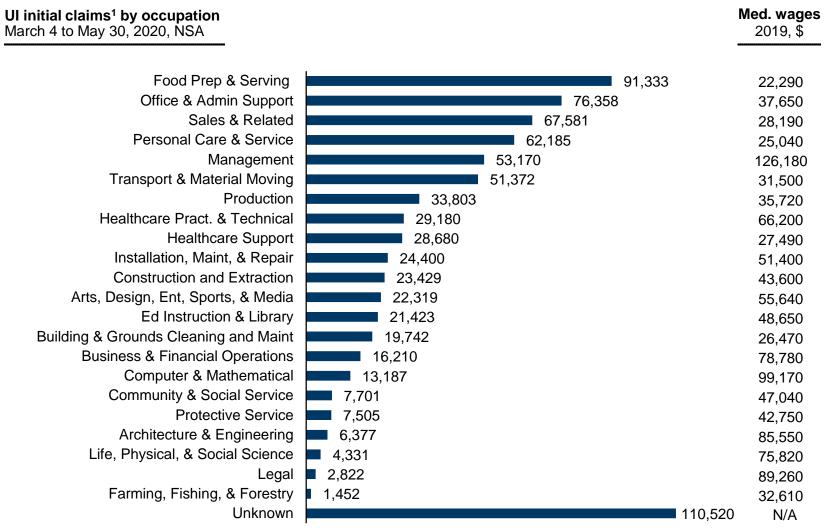
GAP BETWEEN CONTINUED AND CUMULATIVE INITIAL CLAIMS LIKELY POINTS TO SOME JOB CREATION, BUT ALSO HIGH REJECTION RATE

Cumulative UI initial claims¹ and continued claims in Virginia March 14 – May 30, 2020, NSA

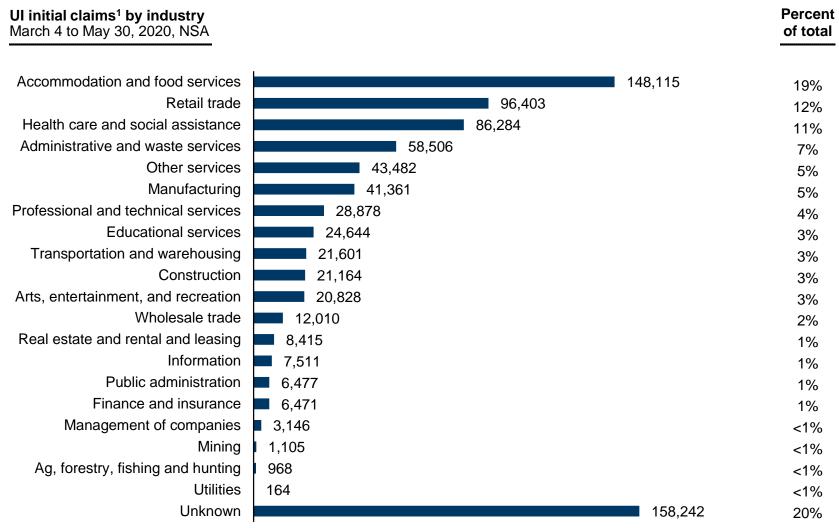


₁For Virginia UI numbers, Pandemic Unemployment Assistance (PUA) claims are included in total claims reported Source: Virginia Employment Commission

CLAIMS BY OCCUPATION: UNEMPLOYMENT CLAIMS HAVE BEEN CONCENTRATED IN A HALF DOZEN OCCUPATIONS

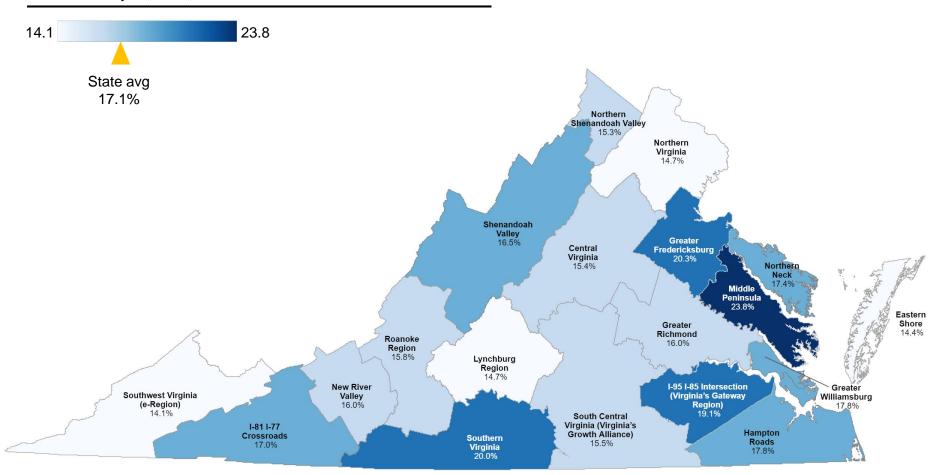


CLAIMS BY INDUSTRY: THREE INDUSTRIES ACCOUNT FOR THE MAJORITY OF INITIAL UI CLAIMS TIED TO SPECIFIC INDUSTRIES



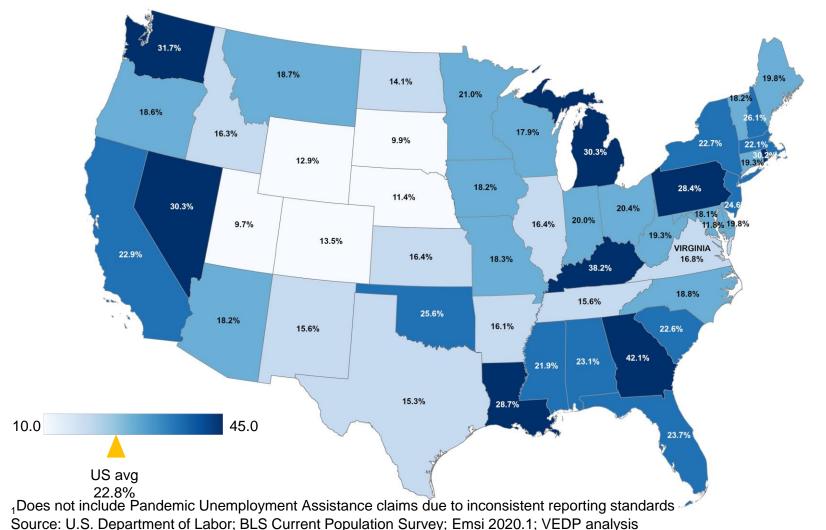
INITIAL UNEMPLOYMENT CLAIMS HAVE VARIED SIGNIFICANTLY ACROSS VIRGINIA REGIONS

UI initial claims and baseline unemployment as % of baseline jobs March 4 to May 30, 2020, NSA

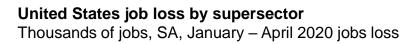


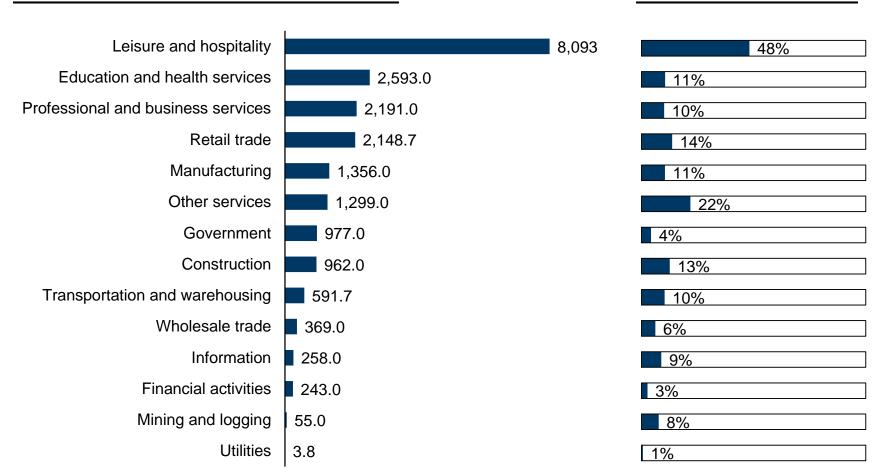
TO DATE, EMPLOYMENT IN VIRGINIA HAS NOT BEEN HIT AS HARD BY COVID-19 AS MOST OTHER STATES

UI initial claims¹ and baseline unemployment as % of baseline jobs March 4 to May 30, 2020, NSA, baseline = January 2020



AT PEAK IMPACT IN APRIL, U.S. NONFARM PAYROLL EMPLOYMENT¹ DROPPED BY 21.1 MILLION JOBS





¹ Nonfarm payroll does not include certain categories of workers, like agricultural workers and self-employed Source: Bureau of Labor Statistics, Current Employment Statistics

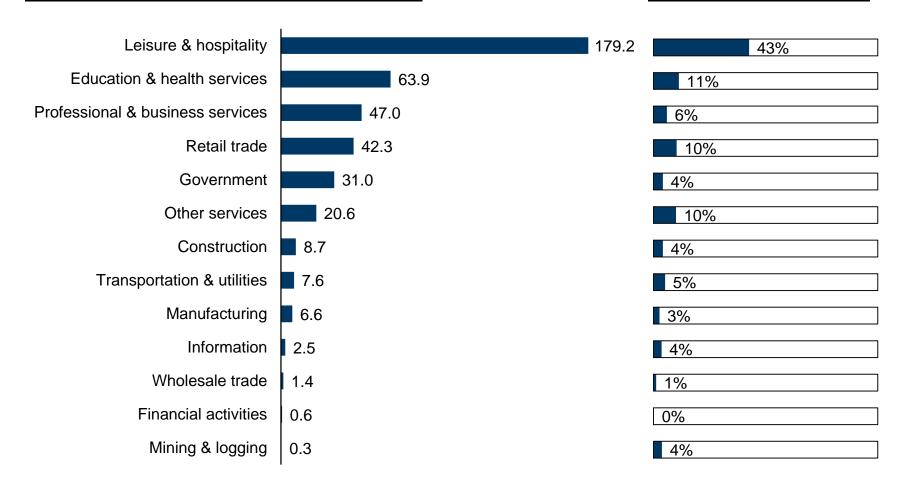
Job loss as a percentage

of January 2020 employment

VIRGINIA PAYROLLS SHED ~412K JOBS BETWEEN JANUARY & MID-APRIL¹, THE LATEST MONTH AVAILABLE

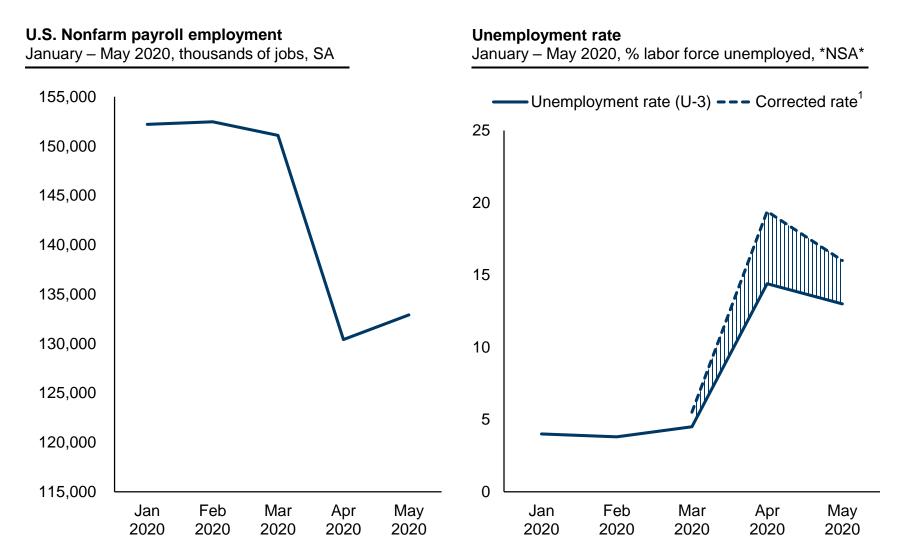
Virginia job loss by supersectorThousands of jobs, SA, January – April 2020 jobs loss

Job loss as a percentage of January 2020 employment



¹ Nonfarm payroll does not include certain categories of workers, like agricultural workers and self-employed Source: Bureau of Labor Statistics, Current Employment Statistics, SAE Program

THE MAY JOBS REPORT SURPRISED MOST FORECASTERS, WITH AN ALMOST 2.5M GAIN IN JOBS AND DROP IN UNEMPLOYMENT RATE

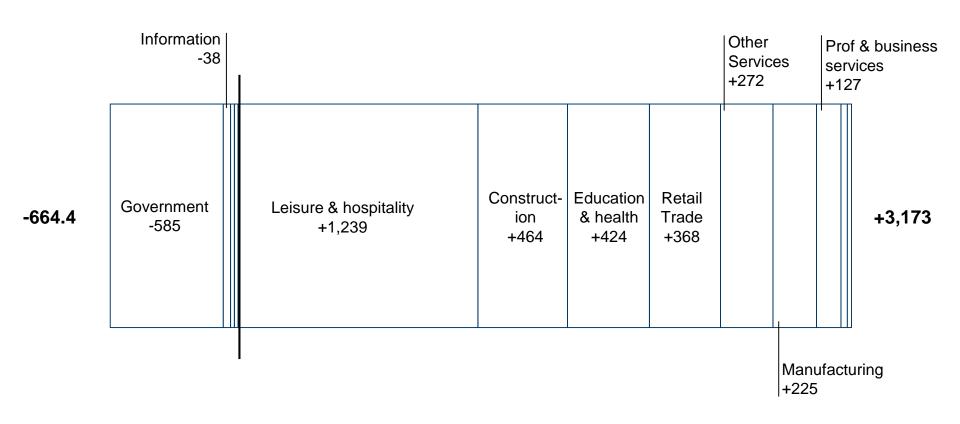


₁ Correction of misclassification error for some respondents absent from work due to 'other reasons' Source: Bureau of Labor Statistics, Current Employment Statistics, Current Population Survey, May 2020

JOBS GAINS WERE PRIMARILY DRIVEN BY REOPENING OF SERVICE SECTOR: LEISURE & HOSPITALITY WAS ~50% OF NET JOB GAIN IN MAY

Month-on-month job loss or gain by supersector

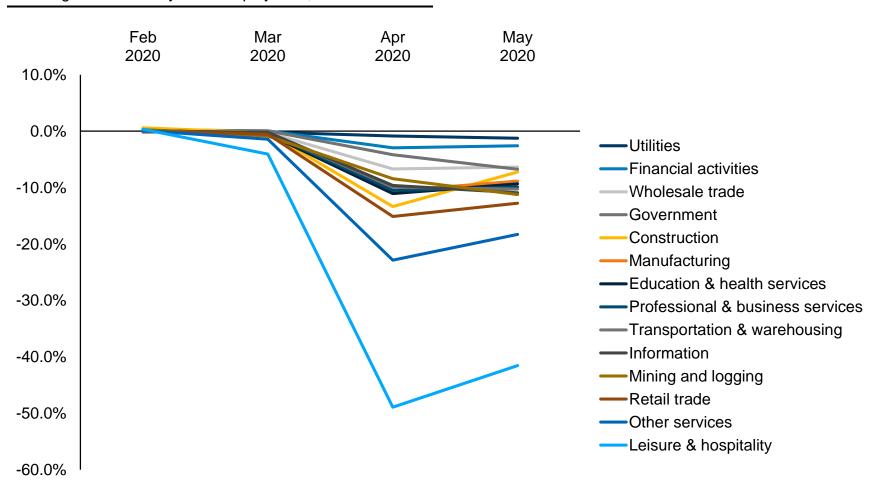
Change over previous month, thousands of jobs, SA, April / May 2020



EVEN AFTER GAINS IN MAY, EMPLOYMENT IN ALL SUPERSECTORS REMAINS BELOW JANUARY 2020 EMPLOYMENT LEVELS

Employment change from January 2020 by supersector

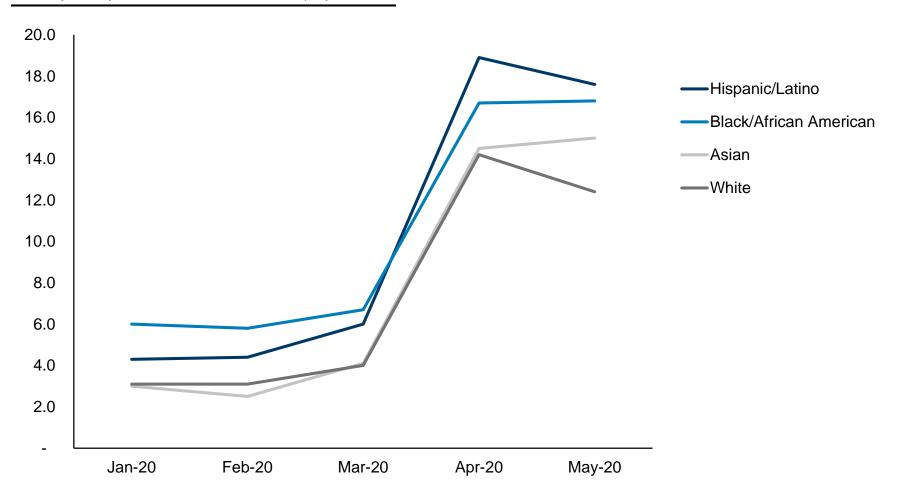
% change from January 2020 employment, SA



DESPITE OVERALL POSITIVE TRENDS, UNEMPLOYMENT RATES ARE NOT FALLING FOR ALL GROUPS OF WORKERS...

Unemployment rate by race / ethnicity

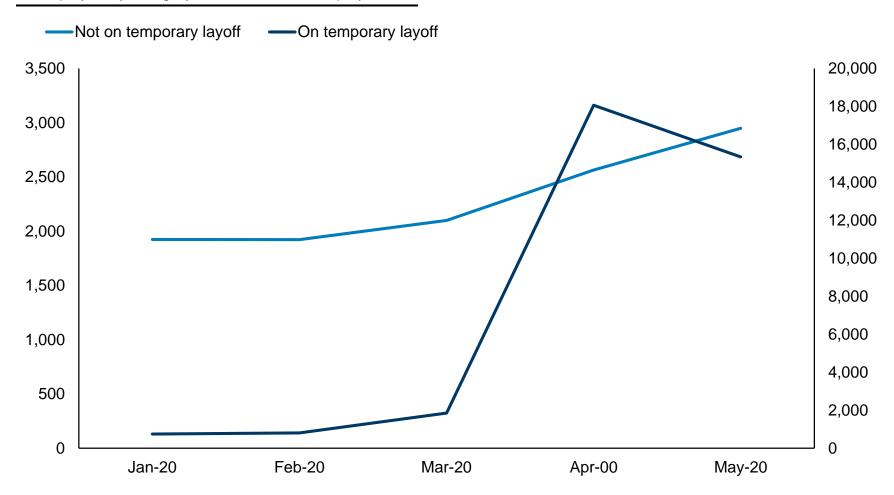
January - May 2020, % labor force unemployed, SA



...AND MOST JOB GAINS IN MAY LIKELY CAME FROM WORKERS ON TEMPORARY LAYOFF, PERMANENT LAYOFFS CONTINUED TO RISE

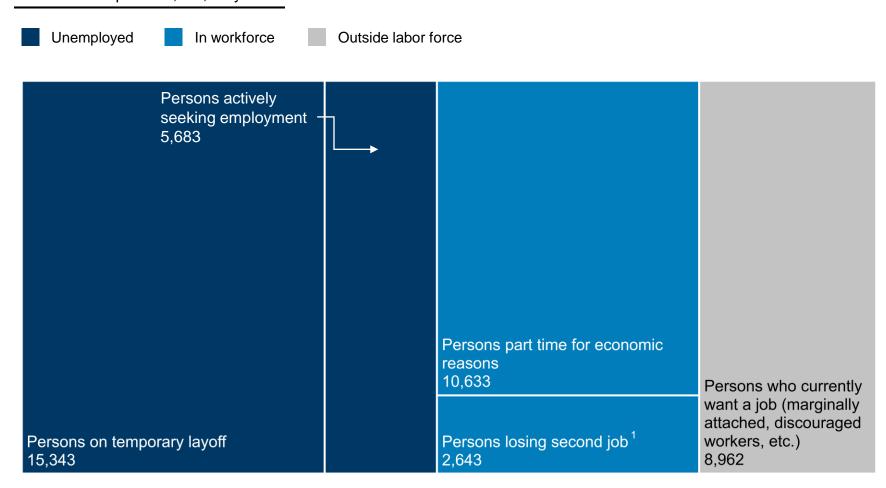
Temporary and permanent job losers

Unemployed by category, thousands of unemployed, SA



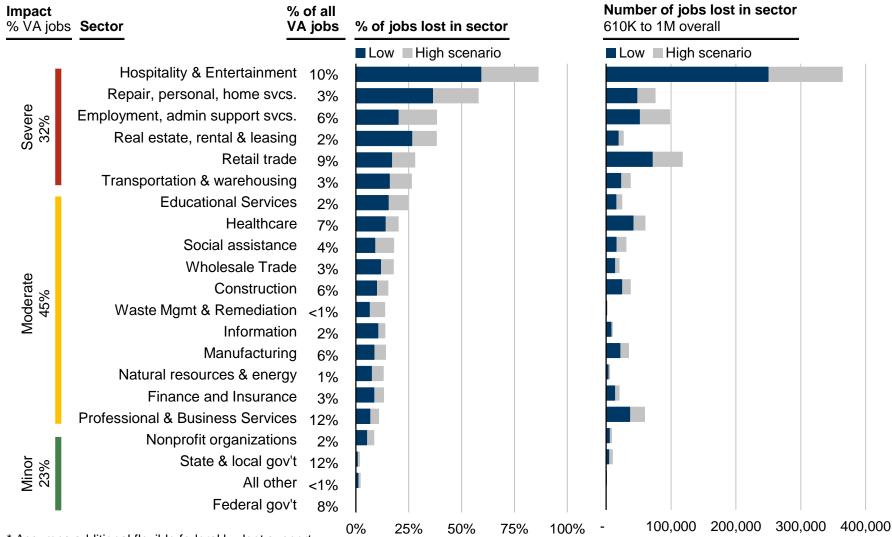
BEYOND THE ~20M STILL UNEMPLOYED, TENS OF MILLIONS MORE HAVE BEEN NEGATIVELY IMPACTED BY THE PANDEMIC

Persons by category Thousands of persons, SA, May 2020



VEDP estimates

AT OUTSET OF CRISIS, VEDP ESTIMATED ROUGHLY 660K-1M JOBS IN VA COULD BE LOST DUE TO DIRECT, INDIRECT, & INDUCED IMPACT

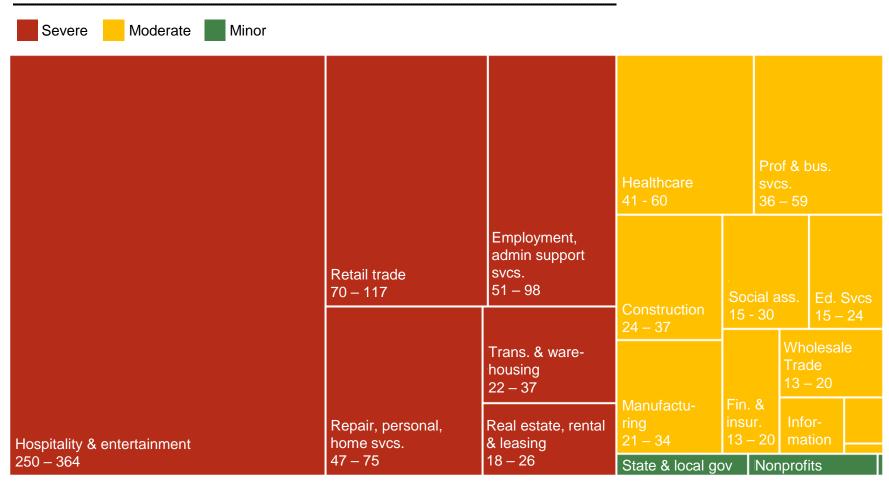


^{*} Assumes additional flexible federal budget support

SEVERELY IMPACTED INDUSTRIES REPRESENT OVER TWO-THIRDS OF TOTAL FORECASTED EMPLOYMENT LOSSES

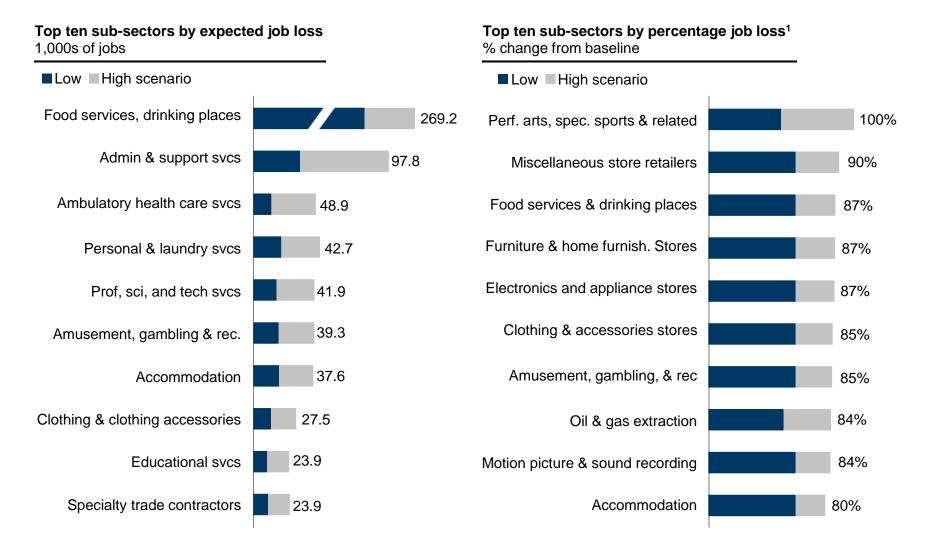
Estimated employment loss by industry

Range of estimated job losses in thousands, area based on average of high & low scenarios



Source: Emsi 2020.1; VEC UI claims; information from Data Compilation workgroup of Virginia Economic Strike Force; interviews with Virginia businesses and stakeholders; review of national economic forecasts, research, and press; VEDP analysis

MANY OF THE HARDEST HIT SUB-SECTORS ARE IN LEISURE, HOSPITALITY, RETAIL, AND LOCAL SERVICES INDUSTRIES



¹ Excludes some small sectors with negligible employment Source: VEDP analysis

NOTABLE IMPACTS IN OTHER SUB-SECTORS

Sector	Outlook
Aquaculture/seafood	VA fishing industry has been hit hard and quickly as restaurant orders declined sharply; demand from consumers through retail channels also fell partly because seafood may be viewed as a luxury during hard economic times. Many businesses in this sector are small.
Automotive manufacturing	Automotive industry was hit earlier and harder than most other manufacturing sectors in Virginia. The industry is facing collapsing demand for vehicles. High profile layoffs / suspension of operations include Volvo, Corning (New River Valley).
Tire manufacturing	Industry hit by declining demand for automobiles and planes. Goodyear (Danville) and Yokohama (Salem) both suspended production.
Newspapers	Layoffs and furloughs experienced throughout the state due to drop in advertising revenue, compounding already-existing challenges in the industry. Virginia-based Gannett and Lee Enterprises both reported furloughs.
Movie production	Production crews operating in Virginia and nationally have come to a complete halt, resulting in numerous layoffs / furloughs.
Commercial banking	Financial institutions are seeing surging activity due to the PPP and other programs. However, staff in branches are facing layoffs and furloughs as foot traffic collapses.
Mining	All major coal mines in SWVA shut down temporarily due to health crisis. Coal exports are already suffering and will likely continue because of strong dollar and declining global demand.
Nonprofits	Nonprofits are struggling to adapt during this time, some experiencing downturn in donations and others having difficulty implementing programs.
Governments	Federal, state, and local governments are not expected to be significantly impacted from an employment perspective. Due to impact on local budgets, however, over half a dozen localities in Virginia have instituted temporary furloughs for some non-essential staff.

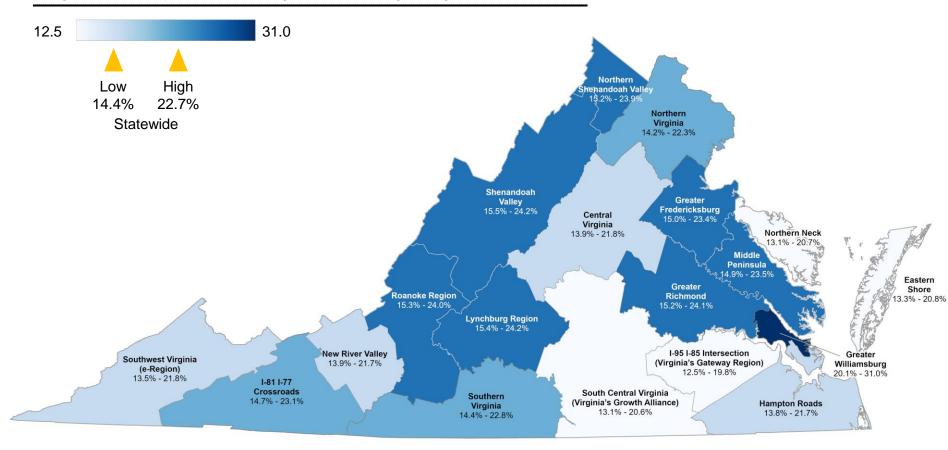
NET JOB CREATION (OR ONLY MODEST LOSSES) IS EXPECTED IN A HANDFUL OF INDUSTRIES

Sector	Outlook
Light trucking, couriers, & warehousing	The surge on online retail activity is creating significant new demand for last-mile logistics. Amazon alone has hired over 3,000 new employees in its warehouses in Virginia. VEDP estimates 10% employment increase in these sectors.
Food and beverage and general merchandise stores	Grocery stores, as well as general merchandise stores like Walmart are struggling to keep up with increasing demand. There have been multiple reports of companies in these industries hiring in Virginia.
Building material and garden equipment retail	Home improvement expenses have surged under the quarantine and chains like Home Depot and Lowes have reported significant hiring in Virginia and across the country.
Online retailers	Online retail sales have surged since the beginning of the COVID-19 crisis, significantly boosting revenue of online retailers. Some job creation is expected in this industry, although most will be in area of logistics (see above).
Data centers	Virginia's large data center industry stands to benefit from increased online traffic and use of streaming services in particular. Given the industry is not labor intensive, this will not equate to significant employment gains, but on-going capital investment likely to continue unabated.
Quick-service restaurants (QSRs, i.e., fast food)	While employment is expected to be lost in the fast food industry, industry stakeholder reports many companies are operating at around 80%, a stark contrast with the full-service restaurant industry, which has borne the brunt of the impact.
Food, textile, cleaning, and personal hygiene product manufacturing	Net job loss is expected across virtually all manufacturing industries, but certain segments are seeing a surge in demand and offsetting losses. These notably include food processing, specialty textiles (PPE), cleaning produces, and personal hygiene products among others. There are reports of manufacturers diversifying into these product categories.

POTENTIAL JOB LOSSES VARY BY REGION, LARGELY DUE TO DIFFERENCES IN INDUSTRY MIX (E.G., % OF JOBS IN HOSPITALITY)

Estimated jobs lost/furloughed as % of baseline jobs

Range of estimated job losses, shading based on average of high and low scenarios



Source: VEDP analysis

VARIOUS ORGS FORECASTING JOB LOSSES ARE USING DIFFERENT MEASURES AND METHODS; VEDP RESULTS LARGELY COMPARABLE

Important note on VEDP preliminary estimates

- VEDP preliminary estimates of 660K to 1M correspond to job loss due to direct, indirect, and induced impacts from COVID-19 pandemic. VEDP does not have forecast of the pace or extent of employment recovery over 2020 Q3 & Q4, so cannot estimate net impact for 2020 – e.g. end-of-year balance of job reductions and additions.
- VEDP estimates include payroll jobs covering all sectors, including agriculture, as well as sole proprietors (e.g. self-employed). Most other forecasters present job loss numbers using non-farm payroll, which provide poor or no coverage of the latter categories and may underrepresent full extent of job loss.

Comparison with other forecasts

- **Moody's** April Virginia forecast projects approximately 512K payroll non-farm jobs lost peak to trough (January 31 and May 31), with employment still down 349K jobs on net December 31.
- McKinsey & Company analyzed employment by occupation and determined that a total of 1.3M Virginia jobs were 'vulnerable' to layoff, hour, or wage reduction.
- Dynamic modelling conducted by UVA's **Weldon Cooper Center** projects payroll non-farm job losses ranging from 300K to 500K on net in 2020, based on scenarios ranging from 2% to 6% GDP contraction, respectively. However, Weldon Cooper has not estimated max job losses at peak.

Appendix

DATA SHARED BY DATA WORKGROUP MEMBERS AND STATUS

Agency		In forecast
Industry/area	Data and information provided	
DHCD Small businesses	Provided: National and Virginia-specific results from survey of small businesses (National Main Street Association) Qualitative information from check-in calls with small businesses	√
	Available later: Follow up survey of national and Virginia small businesses (National Main Street Association) – end of April	
DOF Wood Products	Provided: Qualitative outlook on sector, related press coverage Online resources on forest-related industry impact Available later: DOF survey of forest-related – by April 17	√
Marine Products Board/VDACS Seafood - Food & Beverage	Provided: Stats on commercial and recreational fisheries and aquaculture jobs, demand, revenue loss in VA Qualitative information about steps taken by industry, impact, concerns, and outlook for commercial and recreational fisheries Number of recreational fisheries jobs in VA: 5,893	√
SBFA (SBSD) Financial services / small businesses	Provided: ■ Results from survey of Virginia small businesses on impacts of COVID-19 ■ Data on VA SBFA loans applications for payment deferrals and term extensions; trends in COVID loan requests; and economic impact of concessions ■ Information about banks seeking economic relief for loans guaranteed by SBFA	√
	Available later: Updated stats on VA SBFA loans trends and performance	
SCHEV Higher ed	Provided: Enrollment by institution	√
	Available: Institution-level data on admissions, enrollment, retention and graduation, tuition and fees, student debt VLDS	

DATA SHARED BY DATA WORKGROUP MEMBERS AND STATUS (CONTINUED)

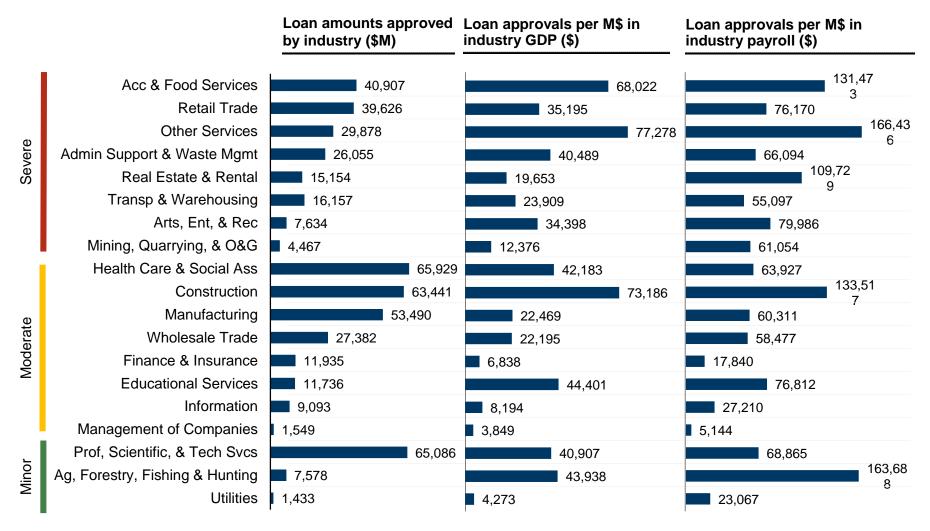
Agency		In forecast
Industry/area	Data and information provided	
Secretary of Education, Workforce	Provided: Access to COVID-19 dashboard that illustrates jobs impacted, UI claims, and socio-economic characteristics of impacted workers	√
Advisor	Available later:	
Workers	 Automation risk scores to assess which jobs may not come back after crisis 	
TAX Overall	Data provided: IHS Markit national economic forecast	√
economy	In progress: Virginia's economic forecast (certain component) Available at later date: Quarterly notebook Income tax withholdings (late April)	
VCCC	Sales and use tax collections by source (May)	
VCCS Higher Ed	Provided data: ■ Registrations for unemployment services ■ Profile of individuals registering for unemployment services and trends (demographic, occupational, etc.)	\checkmark
	In progress: Drill-down into unemployment services registrations Community college enrollment in credit and non-credit courses	
VDOT	In progress:	
Transportation	 Current traffic volume Motor vehicle sales Transit ridership Passenger volumes at air carrier airports 	√

DATA SHARED BY DATA WORKGROUP MEMBERS AND STATUS (CONTINUED)

Agency

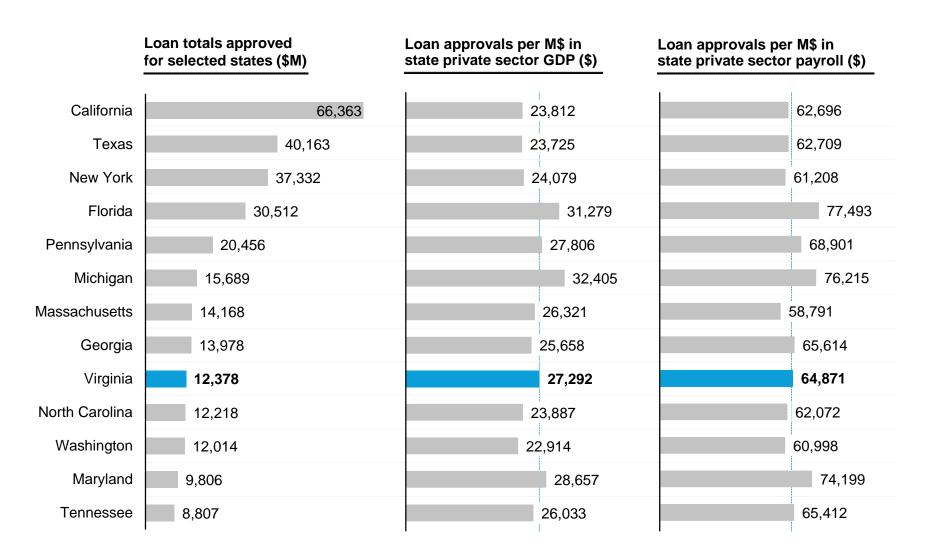
Industry/area	Data and information provided	In forecast
VEC	Provided	
Workers	■ Weekly UI claims by locality and industry	\checkmark
	■ Demographics profile of claimants	,
	In progress:	
	■ Weekly UI claims by occupation, by employer NAICS	
VHDA	Provided:	
Mortgage –	■ Trends in loans forbearance requests	
Financial services	■ Volume of loans in forbearance	•
	■ Servicer call center volume	
	■ Trends in new home purchase loan requests	
	■ Trends in rental housing market	
	■ Results from survey of VA realtors on home buyer and seller interest and behavior	
VTC	Provided:	
Tourism	■ Findings from Virginia-specific study of economic impact	\checkmark
	■ Findings from national study of economic impact due to travel losses	·
	 National and Virginia trends in weekly travel spending 	
	■ Results from VTC industry survey on traveler sentiment in VA	
	 Summary of results from other industry national surveys on traveler sentiment 	
	■ Hotel closures	
	■ Weekly trends in hotel occupancy and rates in US, VA, and major VA metros	
	Available later:	
	■ Study of economic impact in Virginia's 10 tourism regions	
	■ VA tax revenue impact	
	■ Jobs and wages impacted or lost	

PPP FUNDING USED BY A WIDE RANGE OF INDUSTRIES, NOT JUST THOSE MOST SEVERELY IMPACTED (NATIONWIDE)¹



¹ Excludes amounts for unclassified and unknown industries (237K loans amounting to \$11.7B) Source: U.S. Small Business Administration, loan approvals through May 30, 2020; Bureau of Economic Analysis; Bureau of Labor Statistics; VEDP analysis

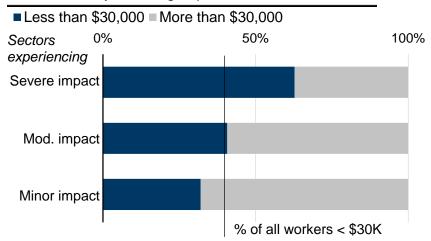
WITH \$510B IN PPP LOANS DISBURSED AS OF MAY 30, VIRGINIA HAS FARED RELATIVELY WELL AMONG OTHER LARGE STATE ECONOMIES¹



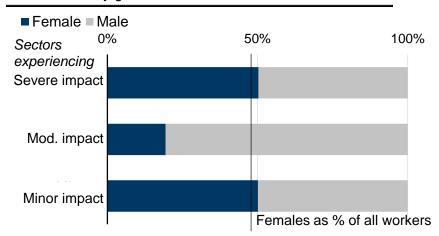
DEGREE OF IMPACT ON VIRGINIA WORKERS LIKELY TO VARY SIGNIFICANTLY DEPENDING UPON SOCIO-ECONOMICS

Lower-wage workers disproportionately represented in severe-impact sectors

% of workers by income group

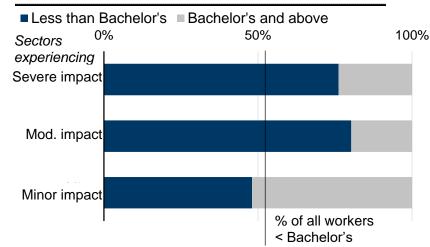


Genders equally represented in severe-impact sectors % of workers by gender



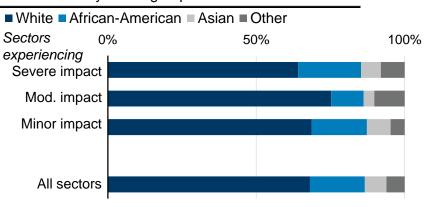
Workers without college degrees disproportionately represented in severe-impact sectors

% of workers by educational attainment

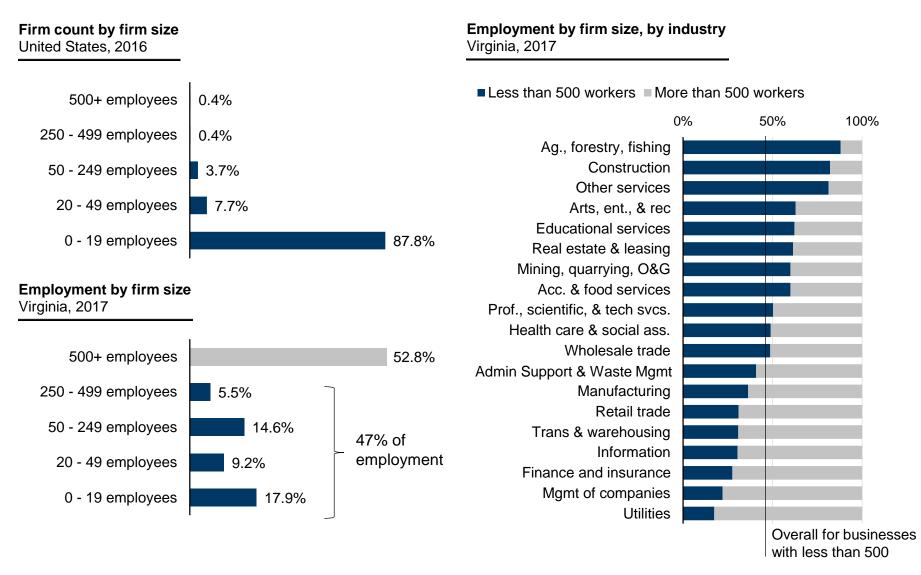


Minority workers slightly more heavily represented in severe-impact sectors

% of workers by ethnic group



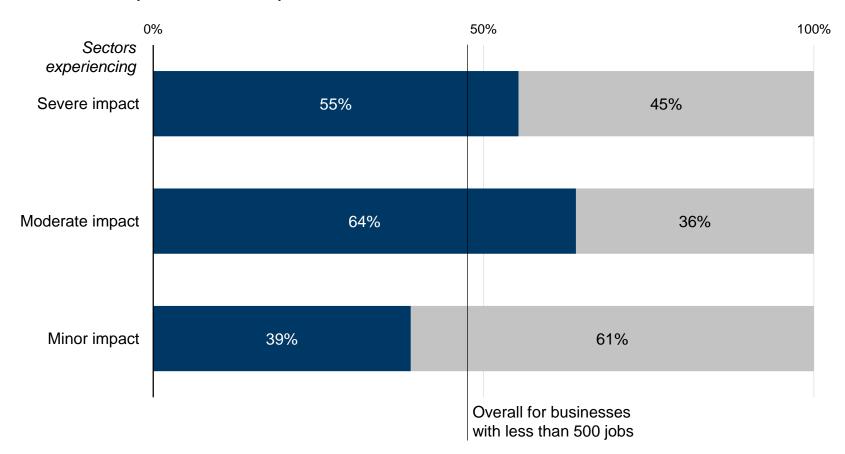
SMALL EMPLOYERS REPRESENT VAST MAJORITY OF FIRMS & HALF OF EMPLOYMENT, HIGHLY CONCENTRATED IN CERTAIN SECTORS



SMALL BUSINESSES (< 500 JOBS) DISPROPORTIONATELY FOUND IN SEVERELY- AND MODERATELY-IMPACTED SECTORS

Jobs in small vs. large firms in sectors with severe, moderate, or minor impact from COVID-19 % of jobs, 2019

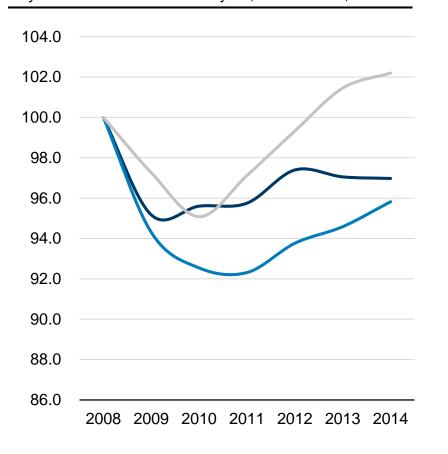
■ Less than 500 jobs ■ 500 or more jobs



FINDINGS FROM THE GREAT RECESSION: SMALL BUSINESS SECTOR MORE NEGATIVELY IMPACTED, SLOWER TO RECOVER

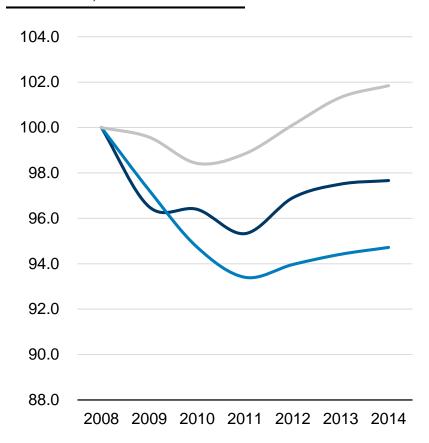
Employment change by firm size

Payroll workers on 3-12 each year, 2008 - 2014, indexed



Firm count change by firm size

2008 - 2014, indexed

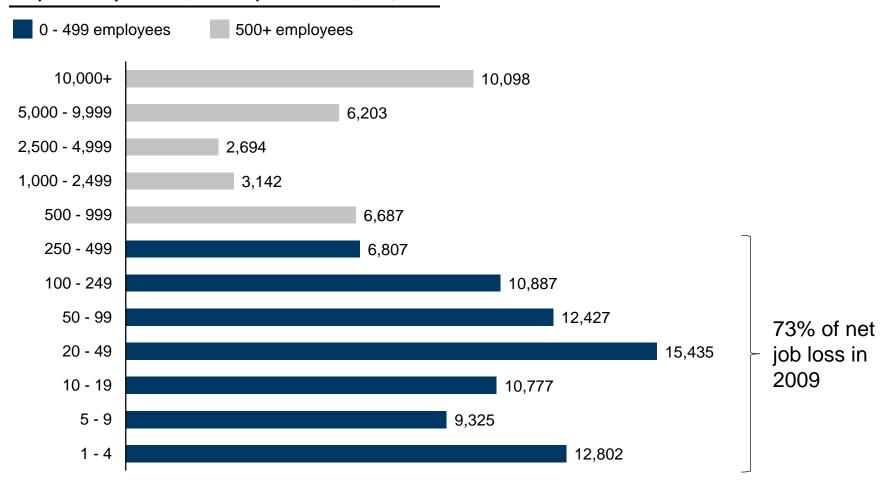


5 – 499 employees Micro-business (<5) 500+ employees

FINDINGS FROM THE GREAT RECESSION: SMALL BUSINESSES ACCOUNTED FOR 1/2 OF U.S. JOBS, BUT ~70% OF NET JOB LOSSES

Job loss by firm size

Net jobs loss by firm size, total net job loss = 107,284, 2009



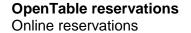
FINDINGS FROM THE GREAT RECESSION: VIRTUALLY ALL BUSINESS CLOSURES IN 2009 WERE FIRMS WITH FEWER THAN 500 EMPLOYEES

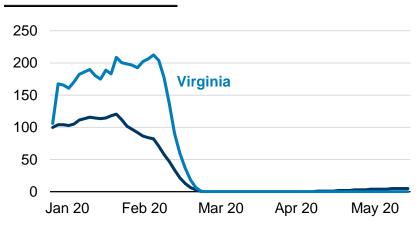
Business closures by size

Number of firms, total firm deaths = 12,110, 2009

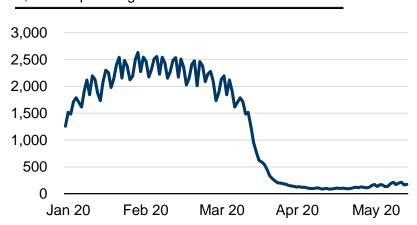


ECONOMIC ACTIVITY ACROSS LARGE SWATHS OF THE ECONOMY HAS HALTED; CONSUMER CONFIDENCE HAS PLUMMETED





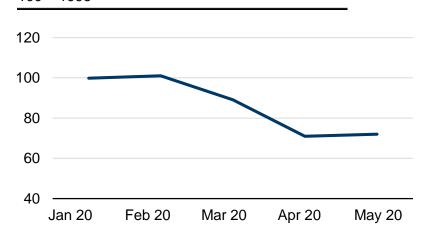
Passengers passing through TSA checkpoints 1,000s of passengers



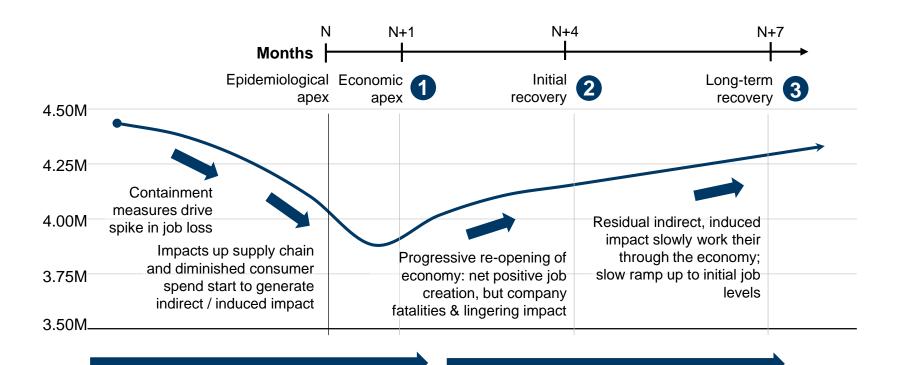
Weekly box office results Top 10 gross, M\$



Univ. of Michigan Consumer Confidence Index 100 = 1996



THREE PHASES OF ECONOMIC IMPACT AND RECOVERY



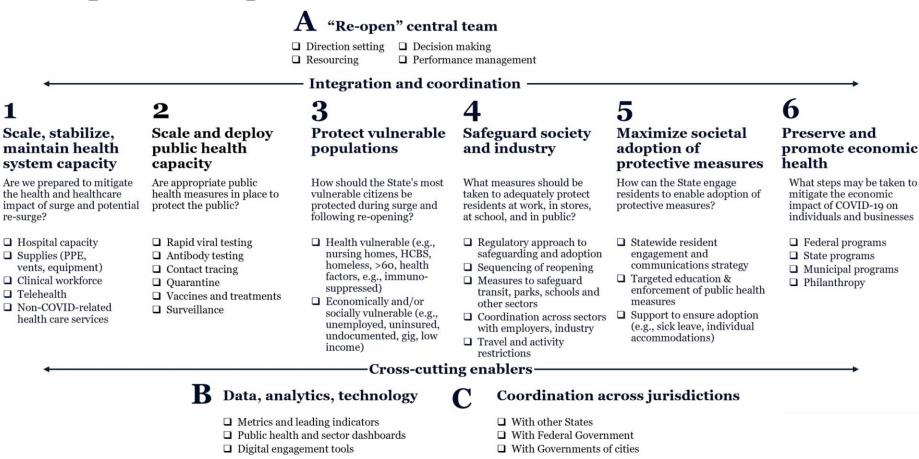
- Estimates of short-term direct impact based on stakeholder input and monitoring economic news & indicators
- First-take analysis of indirect / induced impact using IMPLAN
- Analysis of impacted industries' demographics
- Monitoring / analysis of fiscal / monetary measures and impacts / gaps

- Refine understanding and update 'damage report'
- Work with Weldon Cooper on dynamic modeling
- VEDP monitoring of economic indicators and maintaining dialogue with stakeholders
- Continued monitoring of policy measures, impacts, gaps

Source: VEDP analysis

PRELIMINARY, PREDECISIONAL, DRAFT PERSPECTIVE OF MCKINSEY ON STATE/LOCAL STRATEGIES FOR REOPENING

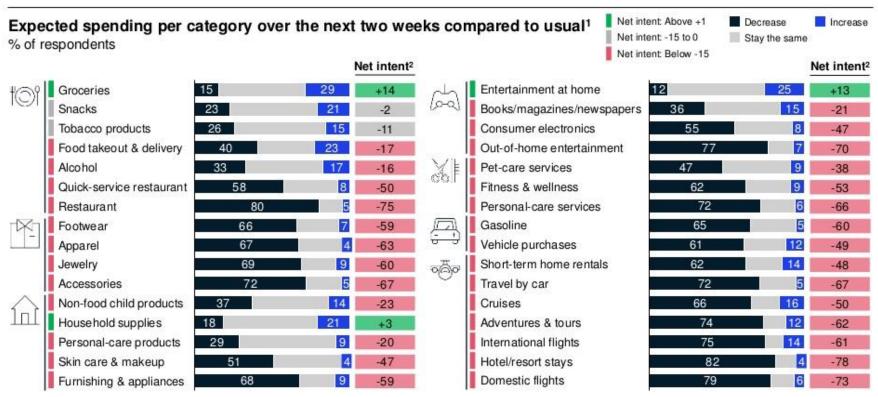
"Reopen" will require coordinated action across several dimensions



EXCERPT FROM MCKINSEY U.S. CONSUMER SENTIMENT SURVEY CONDUCTED 4/6-4/12 (NATIONAL PERSPECTIVE)



Consumers expect to cut spending across almost all categories, with the exception of groceries, home entertainment, and supplies



^{1.} Q: Over the next two weeks, do you expect that you will spend more, about the same, or less money on these categories than usual?; figures may not sum to 100% because of rounding. 2 Net intent is calculated by subtracting the % of respondents stating they expect to increase spending.

Source: McKinsey & Company COVID-19 US Consumer Pulse Survey 4/6-4/12/2020, n = 1,063, sampled and weighted to match US general population 18+ years

McKinsey & Company