



The Economic Outlook and Revenue Forecast through Fiscal Year 2022

Prepared by the Virginia Department of Taxation
for Review by the
Governor's Advisory Council on Revenue Estimates

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Introduction

The Joint Advisory Board of Economists (JABE) met in October as part of the regular fall forecasting process to consider three economic forecasts: the IHS Markit September standard forecast, the IHS Markit September alternative pessimistic forecast, and Moody's Analytics August standard forecast. The consensus of the Board was that the IHS Markit September standard forecast was the appropriate outlook for both Virginia and the nation.

The purpose of this meeting is to review the most current economic forecasts to determine the most likely path for the Virginia economy over the next biennium, and which of the resulting revenue forecasts seems appropriate. This forecast will serve as the basis for the budget to be released by the Governor in December.

Section 1 of this book contains a review of the national economic performance during fiscal year 2018. Summaries of IHS Markit October standard and alternative pessimistic national outlooks are presented.

Section 2 contains a review of Virginia's economic performance during fiscal year 2018. This is followed by a summary of the IHS Markit October standard and alternative pessimistic economic scenarios for Virginia developed by the Department of Taxation.

Section 3 contains a review of Virginia's general fund revenue collections during fiscal year 2018. This is followed by a summary of the October standard and alternative pessimistic forecasts.

Section 4 discusses nongeneral fund revenue and forecasts.

Historical and forecast economic data are contained in Appendix A. Appendix B is a history of general fund revenue collections. Appendix C contains detailed econometric output for major sources.

SECTION 1
THE U.S. ECONOMY

Section 1 The U.S. Economy

Introduction

This section begins with a review of fiscal year 2018, comparing actual U.S. economic growth to the official forecast for the year. The official forecast for fiscal year 2018 was based on IHS Markit's October 2017 U.S. standard outlook as approved by the Joint Advisory Board of Economists (JABE) and the Governor's Advisory Council on Revenue Estimates (GACRE).

Following the review of fiscal year 2018, the IHS Markit October standard forecast and the pessimistic alternative scenario are summarized.

Tabular data are presented throughout this section. More detailed tabular data are presented in the appendices. Appendix A-1 shows quarterly historical data for major forecast variables from fiscal year 2016 through fiscal year 2022. Appendix A-2 shows quarterly data for the two forecasts through fiscal year 2022. Appendix A-3 displays annual historical and forecast data from fiscal year 2000 through fiscal year 2022. Appendix A-4 displays regional employment data from fiscal year 2000 through fiscal year 2022.

Review of Fiscal Year 2018

At the time of IHS Markit's October 2017 forecast, the economy continued to improve. Although indicators were mixed, partially due to disruptions from hurricanes Harvey and Irma, solid underlying fundamentals suggested the economy would continue its moderate expansion.

Following is a summary of key assumptions included in the October 2017 standard forecast and how those assumptions fared over the fiscal year. Table 1.1 on the next page compares the official forecast and actual results for fiscal year 2018.

- Real GDP rose 2.6 percent for the fiscal year, ahead of the forecast of 2.4 percent growth.
- Total personal income rose 4.5 percent in fiscal year 2018, one percentage point ahead of the forecast. Wages and salaries grew 4.8 percent, 0.7 percentage point above the forecast of 4.1 percent.

Table 1.1 - Fiscal Year 2018 U.S. Forecast Performance (% Change)

	<u>Forecast</u>	<u>Actual</u>	<u>Actual Minus Forecast</u>
<u>Output, Income, and Spending (% of Total)</u>			
Real GDP	2.4	2.6	0.2
Total Personal Income	3.5	4.5	1.0
Wages and Salaries (50%)	4.1	4.8	0.7
Average Wage	2.7	3.2	0.5
Real Consumer Spending	2.5	2.5	0.0
<u>Employment and Labor Markets (% of Total)</u>			
Total Nonagricultural Employment	1.4	1.5	0.1
Construction (5%)	2.2	3.5	1.3
Manufacturing (9%)	1.3	1.5	0.2
Trade, Transportation, and Utilities (19%)	0.5	0.8	0.3
Information (2%)	(2.1)	(1.1)	1.0
Financial Activities (6%)	1.8	1.7	(0.1)
Professional and Business Services (14%)	3.1	2.4	(0.7)
Education and Health Services (16%)	2.0	2.1	0.1
Leisure and Hospitality (11%)	1.5	2.1	0.6
Other Services (4%)	0.6	1.6	1.0
Government (15%)	0.2	0.1	(0.1)
Unemployment Rate (%)	4.3	4.1	(0.2)
<u>Interest Rates (% of Total)</u>			
3-Month Treasury Bills	1.3	1.4	0.1
30-Year Treasury Bonds	3.3	2.9	(0.4)
<u>Prices (% of Total)</u>			
CPI	1.8	2.2	0.4
GDP Deflator	1.7	2.1	0.4

The Official forecast is IHS Markit's October 2017 U.S. standard scenario.

- Real consumer spending rose 2.5 percent in fiscal year 2018, matching the forecast.
- Total nonagricultural employment grew 1.5 percent, slightly ahead of the forecast of 1.4 percent. Most sectors finished the year ahead of expectations. The construction sector grew by 3.5 percent, ahead of the forecast of 2.2 percent growth. The only sector significantly below forecast was professional and business services.
- Prices increased more than expected. Growth in both the CPI and the GDP deflator increased 0.4 percent above their respective forecasts.

- IHS Markit expected the Federal Reserve Bank would raise the target federal funds rate by 25 basis points in December 2017, with the upper band of the target rate reaching 1.5 percent by the end of 2017, 2.25 percent by the end of 2018, and 3.0 percent by the end of 2019. The target rate range is currently 2.0 to 2.25 percent.

Recent Developments in the U.S. Economy

Recent national indicators suggest the economy continues to grow at a solid pace. According to the third estimate, real GDP grew at an annualized rate of 4.2 percent in the second quarter of 2018, up from 2.2 percent in the first quarter.

Job growth remains solid. Payroll employment grew by 134,000 jobs in September as Hurricane Florence subtracted from growth in retail trade and leisure/hospitality. August gains were revised substantially higher to 270,000 jobs. In a separate report, the unemployment rate fell to 3.7 percent in September. Initial claims for unemployment fell by 5,000 to 210,000 in the week ending October 13. The four-week moving average increased by 2,000 to 211,750, a very low level not seen in nearly five decades.

The Conference Board's index of leading indicators rose 0.5 percent in September, following a 0.4 percent increase in August. All components contributed to the increase in September with the exception of building permits and average workweek for production workers. The Conference Board's index of consumer confidence jumped 3.7 points to 138.4 in September, a high for this expansion. Both the present situation and expectations components increased for the month.

Although activity in the manufacturing sector has slowed, growth remains solid. The Institute of Supply Management index fell from 61.3 to 59.8 in September.

The CPI rose 0.1 percent in September following a 0.2 percent increase in August and stands 2.3 percent above September 2017. Core inflation (excluding food and energy prices) rose 0.1 percent and stands 2.2 percent above a year ago. The Federal Reserve announced at its September meeting that it will raise the federal funds target rate to 2.0 to 2.25 percent.

The IHS Markit U.S. Standard Forecast for Fiscal Years 2019-2022

Tables 1.2 and 1.3 at the end of this section compare the official October 2017 forecast with the IHS Markit October 2018 standard and pessimistic alternative forecasts.

In the October standard forecast, growth is somewhat stronger than the official forecast in fiscal years 2019-2020. IHS Markit believes solid underlying fundamentals will allow the U.S. economy to continue its modest expansion. Aided by fiscal stimulus,

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supportive financial conditions, strength in employment, income, and wealth, along with elevated consumer and business sentiment, IHS Markit expects GDP growth to remain near a 3 percent average over the second half of this year. They assign a 60 percent probability to the standard scenario.

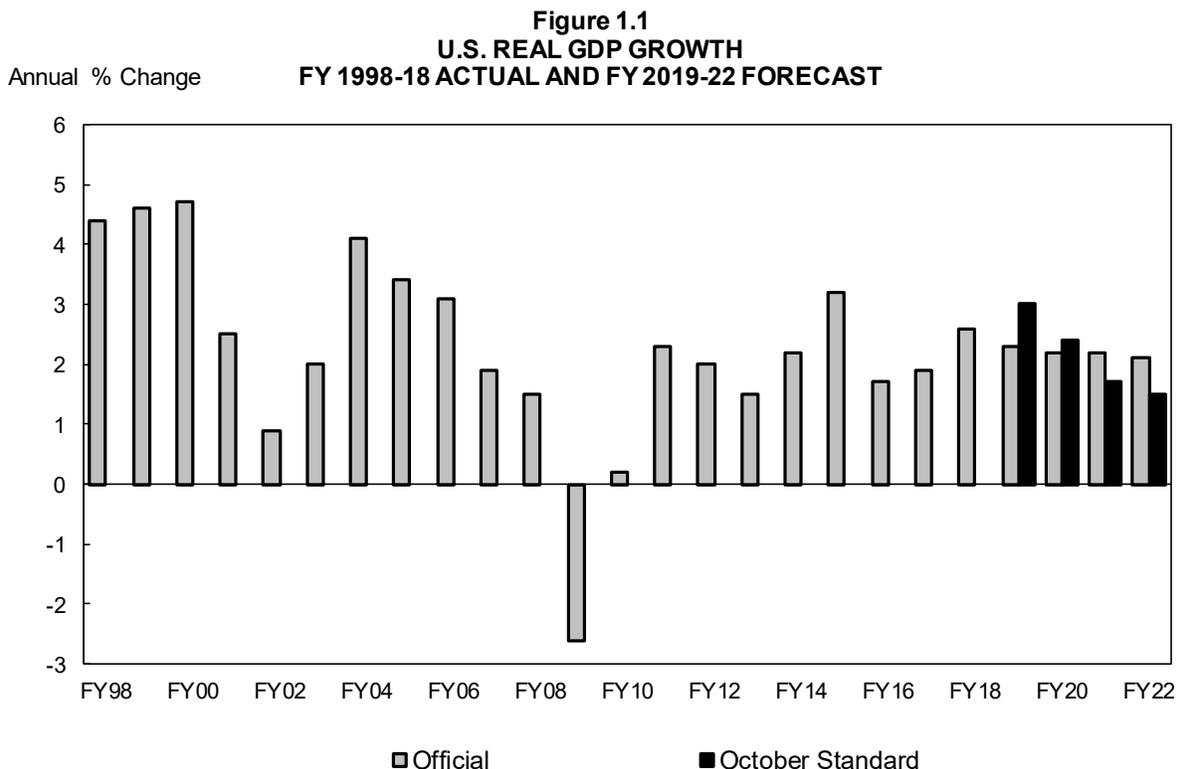
IHS expects real GDP growth of 3.0 percent in fiscal year 2019. It is then expected to grow 2.4 percent in fiscal year 2020, then drop to 1.7 then 1.5 percent in fiscal years 2021-2022. Figure 1.1 on the following page depicts GDP growth.

The outlook for the job market in the October standard forecast is also stronger than the official forecast in fiscal years 2019 and 2020. Payroll employment is expected to grow 1.6 percent in fiscal year 2019 and 1.3 percent in fiscal year 2020. The October standard forecast expects the unemployment rate to be about one-half percentage point below that predicted in the official forecast over the forecast horizon, falling to 3.5 percent in fiscal year 2020, compared with the official 4.3 percent.

Total personal income is expected to rise by 4.4 percent in fiscal year 2019, close to the official forecast. Income then increases at a slower rate than the official forecast through 2022. The October forecast for the largest component of personal income, wages and salaries, is also lower than the official over the forecast horizon. IHS Markit expects wages and salaries to rise 4.6 percent in fiscal year 2019, 4.8 percent in fiscal year 2020, then 4.6 and 4.4 percent in fiscal years 2021-2022.

Real consumer spending is expected to grow 2.9 percent in fiscal year 2019, higher than the official forecast of 2.4 percent. Growth falls each year reaching 2.0 percent in fiscal year 2022.

Chairman Jerome Powell recently defended the Federal Open Market Committee's continued strategy of gradually raising the overnight federal funds rate. IHS Markit expects a rate hike in December, the fourth this year, followed by three rate hikes in 2019 and one in 2020, which would bring the upper end of the target range to 3.5 percent.



Alternative U.S. Forecast

IHS Markit Pessimistic Alternative Scenario

In the pessimistic scenario, growth is similar to the standard forecast in fiscal year 2019, but substantially lower in fiscal years 2020 and 2021 before bouncing back in fiscal year 2022. Although the economy is bullish over the rest of this year, a broad loss of confidence and growing aversion to risk leads to declining investment and consumer spending which slows growth and finally ends the expansion with a three-quarter recession. In this scenario, the economy contracts at annual rates of 2.4 percent in the fourth quarter of 2019, 1.6 percent in the first quarter of 2020, and 1.3 percent in the in the second. Peak to trough real GDP declines 1.2 percent. IHS Markit assigns a 25 percent probability to this scenario.

On a fiscal year basis, real GDP increases by 3.1 percent in fiscal year 2019 and drops to 0.8 percent in 2020, and no growth in fiscal year 2021 before rising to 1.7 percent in fiscal year 2022, slightly above the official forecast. Total personal income increases by 4.2 percent in fiscal year 2019 then 3.3 and 2.5 percent in fiscal years 2020-2021. In fiscal year 2022, growth approaches the official forecast at 4.3 percent.

Growth in wages and salaries is also close to the October standard forecast in fiscal year 2019, but substantially below the standard in fiscal years 2020 and 2021.

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Wages and salaries grow by 4.4 percent in fiscal year 2019, 3.3 percent in fiscal year 2020 and 3.1 percent in fiscal year 2021 before accelerating to 4.7 percent in fiscal year 2022.

In the pessimistic scenario, employment growth drops to 1.5 percent in fiscal year 2019, 0.2 percent in fiscal year 2020, then drops by 0.5 percent in 2021. The unemployment rate is well above the standard forecast over the forecast horizon, rising to 5.7 percent by fiscal year 2022, more than a full percentage point above the standard outlook.

Table 1.2 - Fiscal Years 2017-2022 Official and October Forecasts
U.S. Economic Forecasts - Income and Other Indicators (% Change)

		<u>FY17</u>	<u>FY18</u>	<u>FY19</u>	<u>FY20</u>	<u>FY21</u>	<u>FY22</u>
<u>Output, Income, and Spending (% of Total)</u>							
Real GDP	Official (Oct '17)	1.9	2.4	2.3	2.2	2.2	2.1
	Oct Standard	1.9	2.6	3.0	2.4	1.7	1.5
	Oct Pessimistic			3.1	0.8	0.0	1.7
Total Personal Income	Official (Oct '17)	2.5	3.5	4.5	5.0	4.9	4.7
	Oct Standard	3.4	4.5	4.4	4.9	4.5	4.3
	Oct Pessimistic			4.2	3.3	2.5	4.3
Wages and Salaries (50%)	Official (Oct '17)	2.8	4.1	4.9	4.9	4.8	4.8
	Oct Standard	3.7	4.8	4.6	4.8	4.6	4.4
	Oct Pessimistic			4.4	3.3	3.1	4.7
Average Wage	Official (Oct '17)	1.1	2.7	3.7	3.8	4.0	4.0
	Oct Standard	1.9	3.2	3.0	3.5	3.9	4.1
	Oct Pessimistic			2.8	3.1	3.7	4.3
Real Consumer Spending	Official (Oct '17)	2.8	2.5	2.4	2.4	2.4	2.3
	Oct Standard	2.6	2.5	2.9	2.6	2.3	2.0
	Oct Pessimistic			2.7	1.4	0.6	1.5
<u>Interest Rates (%)</u>							
3-Month Treasury Bills	Official (Oct '17)	0.6	1.3	2.1	2.8	2.9	2.9
	Oct Standard	0.6	1.4	2.4	3.0	3.2	3.2
	Oct Pessimistic			2.3	1.1	0.3	1.0
30-Year Treasury Bonds	Official (Oct '17)	2.8	3.3	4.0	4.6	4.6	4.6
	Oct Standard	2.8	2.9	3.3	3.7	3.8	3.8
	Oct Pessimistic			3.0	2.1	2.4	3.1
<u>Prices (% of Total)</u>							
CPI	Official (Oct '17)	1.9	1.8	2.0	2.5	2.6	2.4
	Oct Standard	1.9	2.2	2.6	2.4	2.4	2.4
	Oct Pessimistic			2.5	2.2	2.4	2.7
GDP Deflator	Official (Oct '17)	1.6	1.7	2.3	2.1	2.2	2.1
	Oct Standard	1.6	2.1	2.4	2.5	2.5	2.5
	Oct Pessimistic			2.3	2.2	2.6	3.0

The Official forecast is IHS Markit's October 2017 U.S. standard scenario.

The Oct Standard forecast is IHS Markit's October 2018 U.S. standard forecast.

The Oct Pessimistic forecast is IHS Markit's October 2018 U.S. pessimistic alternative scenario.

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Table 1.3 - Fiscal Years 2017-2022 Official and October Forecasts
U.S. Economic Forecasts - Employment and Labor Markets (% Change)

		<u>FY17</u>	<u>FY18</u>	<u>FY19</u>	<u>FY20</u>	<u>FY21</u>	<u>FY22</u>
<u>Employment and Labor Markets (% of Total)</u>							
Total Nonagricultural Employment	Official (Oct '17)	1.6	1.4	1.2	1.0	0.8	0.8
	Oct Standard	1.7	1.5	1.6	1.3	0.7	0.3
	Oct Pessimistic			1.5	0.2	(0.5)	0.3
Construction (5%)	Official (Oct '17)	3.0	2.2	2.2	3.5	2.5	2.8
	Oct Standard	3.6	3.5	3.6	3.4	3.8	2.6
	Oct Pessimistic			4.1	2.1	(2.3)	1.5
Manufacturing (9%)	Official (Oct '17)	0.1	1.3	2.2	1.2	0.6	0.4
	Oct Standard	0.2	1.5	1.8	0.2	(0.7)	(0.9)
	Oct Pessimistic			1.1	(0.5)	(2.4)	(0.4)
Trade, Transportation, and Utilities (19%)	Official (Oct '17)	1.0	0.5	0.2	(0.1)	(0.2)	(0.1)
	Oct Standard	1.2	0.8	1.0	0.2	(0.6)	(0.7)
	Oct Pessimistic			0.8	(1.2)	(1.5)	(0.9)
Financial Activities (6%)	Official (Oct '17)	2.1	1.8	1.2	0.3	0.5	0.5
	Oct Standard	2.1	1.7	1.2	1.8	0.6	(0.2)
	Oct Pessimistic			1.6	1.2	(0.3)	(0.5)
Professional and Business Services (14%)	Official (Oct '17)	2.9	3.1	3.9	3.3	2.3	2.0
	Oct Standard	2.0	2.4	3.2	5.0	2.3	1.1
	Oct Pessimistic			2.4	0.7	(1.0)	4.0
Education and Health Services (16%)	Official (Oct '17)	2.5	2.0	1.1	0.8	0.8	0.9
	Oct Standard	2.7	2.1	2.0	0.8	0.2	0.5
	Oct Pessimistic			2.2	0.5	0.9	(0.1)
Leisure and Hospitality (11%)	Official (Oct '17)	2.3	1.5	0.2	(0.0)	0.8	0.7
	Oct Standard	2.9	2.1	1.4	0.2	2.0	0.8
	Oct Pessimistic			1.5	0.4	1.7	0.0
Government (15%)	Official (Oct '17)	0.9	0.2	0.4	0.8	0.2	0.5
	Oct Standard	0.9	0.1	0.1	0.9	0.4	0.6
	Oct Pessimistic			0.1	0.9	(0.6)	0.0
Unemployment Rate (%)	Official (Oct '17)	4.7	4.3	4.3	4.3	4.3	4.4
	Oct Standard	4.7	4.1	3.7	3.5	3.7	4.0
	Oct Pessimistic			3.8	4.6	5.6	5.7

The Official forecast is IHS Markit's October 2017 U.S. standard scenario.

The Oct Standard forecast is IHS Markit's October 2018 U.S. standard forecast.

The Oct Pessimistic forecast is IHS Markit's October 2018 U.S. pessimistic alternative scenario.

SECTION 2
THE VIRGINIA ECONOMY

Section 2 The Virginia Economy

Introduction

This section begins with a review of fiscal year 2018, comparing actual economic growth in Virginia to the official forecast for the year. The official forecast for Virginia was based on the IHS Markit's October 2017 U.S. standard forecast with modifications from both the JABE and the GACRE at their fall meetings, which resulted in a standard forecast. Following the review of fiscal year 2018, the October standard and pessimistic alternative forecast is summarized.

Tabular data are presented throughout this section. More detailed tabular data are presented in Appendix A. Table A.1 shows quarterly national and Virginia historical data for major forecast variables from fiscal year 2016 through fiscal year 2018. Table A.2 shows quarterly national and Virginia data for the three forecasts through fiscal year 2022. Table A.3 displays national and Virginia annual historical and forecast data from fiscal year 2000 through fiscal year 2022. Table A.4 displays annual regional historical and forecast employment data from fiscal year 2000 through fiscal year 2022.

The state and regional employment data used in the forecast are the result of a methodology that uses unemployment insurance tax records (ES-202) data to fine tune the current employment statistics (CES) survey data. To ensure that the most current Virginia employment data are used in the forecast, ES-202 data through the fourth quarter of calendar year 2017 have been incorporated into the CES employment data series. The revised employment series is then seasonally adjusted. This process yields a projection of the annual benchmark revisions that the Virginia Employment Commission will release early next calendar year. The table below compares the base CES employment data series with the series incorporating ES-202 data.

<u>FY18</u>	<u>CES</u>	<u>ES202</u>
Q1	0.9	1.1
Q2	0.6	1.0
Q3	0.9	1.6
Q4	1.3	2.0
Annual	0.9	1.4

Review of Fiscal Year 2018

Overview

In the official forecast for fiscal year 2018, employment and personal income in Virginia were expected to grow at a faster pace than in fiscal year 2017. Table 2.1 compares the official forecast and actual results for fiscal year 2018.

Table 2.1 - Fiscal Year 2018 Virginia Forecast Performance (% Change)

	<u>Forecast</u>	<u>Actual</u>	<u>Actual Minus Forecast</u>
<u>Income (% of Total)</u>			
Total Personal Income	3.3	4.1	0.8
Wages and Salaries (52%)	3.6	4.0	0.4
Average Wage	2.2	2.5	0.3
Dividends, Interest, and Rent (20%)	3.2	4.4	1.2
Supplements to Wages and Salaries (12%)	1.9	3.9	2.0
Proprietor's Income (6%)	2.9	4.6	1.7
Net Transfer Payments (6%)	3.9	5.3	1.4
<u>Employment and Labor Markets (% of Total)</u>			
Total Nonagricultural Employment	1.3	1.4	0.1
Construction and Mining (5%)	1.9	3.3	1.4
Manufacturing (6%)	(0.7)	1.3	2.0
Trade, Transportation, and Utilities (17%)	0.3	0.5	0.2
Information (2%)	1.7	(1.1)	(2.8)
Financial Activities (5%)	1.7	2.5	0.8
Professional and Business Services (19%)	2.6	2.3	(0.3)
Education and Health Services (14%)	2.0	1.9	(0.1)
Leisure and Hospitality (10%)	1.8	1.8	0.0
Other Services (5%)	2.5	2.5	0.0
Government (18%)	0.4	(0.1)	(0.5)
Unemployment Rate (%)	3.6	3.5	(0.1)

The forecast data are based on the October 2017 IHS Markit's U.S. standard forecast and the corresponding Virginia state forecast developed as recommended by JABE and GACRE members.

Following is a review of key assumptions included in the October 2017 official forecast compared with the actual outcome for the year.

Income

Total personal income increased 4.1 percent, which was 0.8 percentage points above the forecast. Proprietor's income grew 4.6 percent in fiscal year 2018, which was 1.7 percentage points above the forecast; and supplements to wages and salaries finished 2.0 percentage points ahead of the forecast. Net transfer payments, which increased by 5.3 percent, were 1.4 percentage points below the forecast. Wages and salaries, which accounted for 52 percent of total personal income in fiscal year 2018, grew 4.0 percent or 0.4 percentage points above the forecast. Dividends, interest, and rental income, which made up 20 percent of total personal income in fiscal year 2018, grew 4.4 percent, ahead of the forecast.

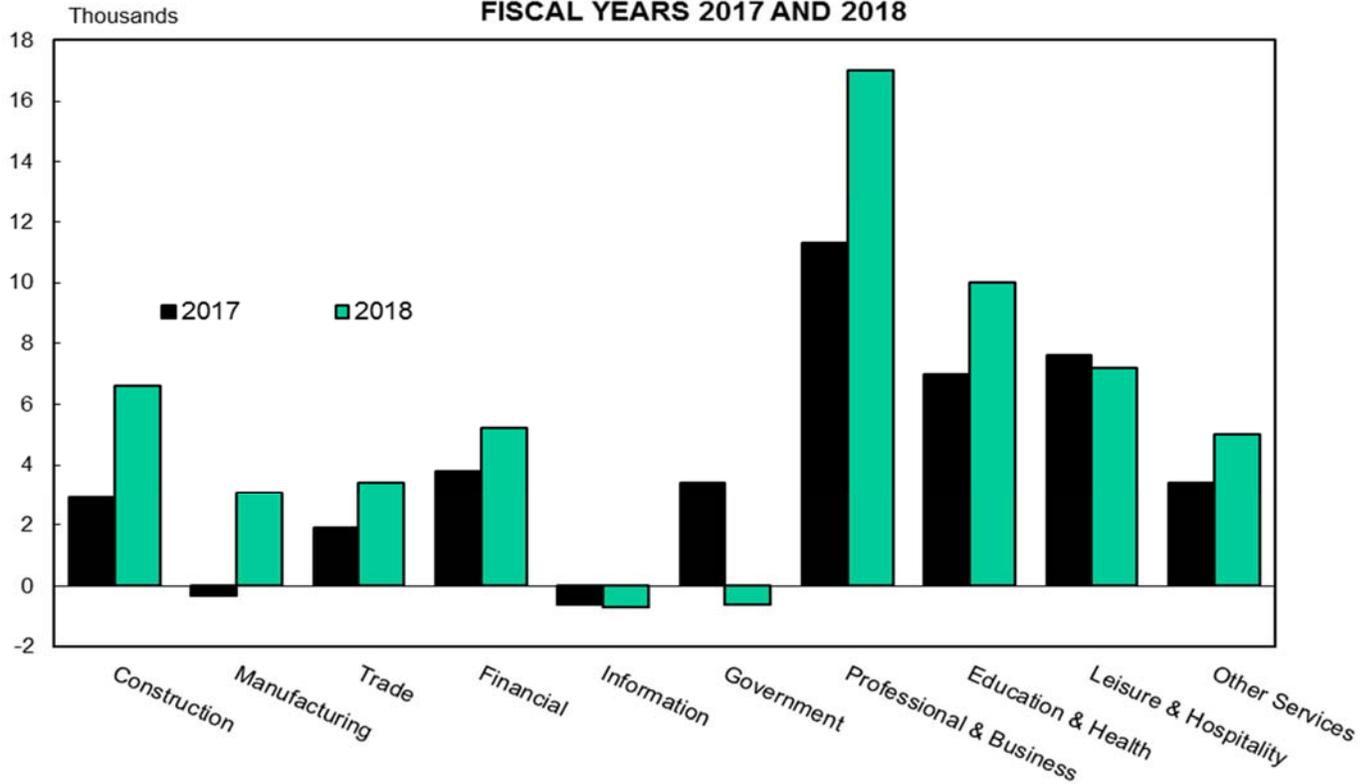
Employment

Payroll employment growth was slightly above expectations in fiscal year 2018. In the official forecast, total nonagricultural employment was projected to increase 1.3 percent, with the average annual employment level rising by 53,000 jobs. Actual job gains were 56,200, an increase of 1.4 percent. Lower-than-expected gains for information, government, professional and business services, and education and health services were offset by higher-than-expected gains in the construction, manufacturing, trade, transportation, and utilities, and the financial activities sectors. Overall, six out of ten major employment sectors reached or surpassed the official forecast in fiscal year 2018.

In terms of the number of jobs, the largest variance was concentrated in manufacturing which over performed the forecast by 4,600 jobs. The largest private sectors - professional and business services; trade, transportation and utilities; education and health services; and leisure and hospitality were very close to forecast. Government subtracted 600 jobs, instead of gaining the predicted 2,500 jobs. Relative to fiscal year 2017, most sectors posted higher job gains with the exception of leisure and hospitality, professional and business services, information, and government. Figure 2.1 on the following page displays fiscal year 2017 job gains and losses by sector compared with fiscal year 2018.

Tables 2.4 and 2.5 provide an overview of regional employment in Virginia. On a regional basis, Northern Virginia missed the forecast by 8,900 jobs, while all other regions performed better than the forecast. In Northern Virginia, which represents 37 percent of all jobs in the state, total employment rose by 22,100 jobs, below the predicted amount of 31,000. The professional and business services sector added 8,000 new jobs in fiscal year 2018, up from the 7,500 gain in fiscal year 2017. Education and health services added 4,400 jobs, down from 4,700 in fiscal year 2017. State and local government added 2,000 jobs, while the federal government lost 1,200 jobs.

Figure 2.1
VIRGINIA JOB GAINS/LOSSES BY SECTOR
FISCAL YEARS 2017 AND 2018



Employment in the Norfolk-Virginia Beach-Newport News MSA (20 percent of state employment) was above expectations in fiscal year 2018, rising by 1.3 percent compared with the forecast of 0.4 percent growth. The region gained 10,400 jobs in fiscal year 2018, compared with 6,500 in 2017. Most sectors were close to the forecast. Employment in the leisure and hospitality and professional and business services posted the strongest gains, while government continued to decline.

Employment in the Richmond-Petersburg MSA (17 percent of state employment) was above expectations by growing 1.8 percent in fiscal year 2018, ahead of the forecast of 1.4 percent. The region gained 12,100 jobs in fiscal year 2018, compared with 8,000 in 2017. Employment in trade, transportation, and utilities posted the strongest gains.

Outside of the three major metro areas, the remainder of the state (26 percent of state employment) increased 11,700 jobs in fiscal year 2018, following a meager gain of 2,400 in fiscal year 2017. Construction, professional and business services, other services, and education and health were the strongest performers, while trade, government, and information lost jobs.

Recent Developments in the Virginia Economy

In Virginia, payroll employment rose 1.7 percent in September from September of last year. Northern Virginia posted growth of 1.8 percent, Hampton Roads grew by 0.7 percent, and Richmond-Petersburg rose 1.4 percent. The seasonally adjusted unemployment rate decreased to 2.9 percent in September and stands 0.7 percent below September 2017.

The Virginia Leading Index was flat in August after increasing 0.2 percent in July. The U.S. leading index, future employment, and initial claims improved in August, while auto registrations decreased. The indexes for Richmond, Hampton Roads, Lynchburg, Charlottesville, Blacksburg, and Bristol rose in August while the indexes for Northern Virginia, Harrisonburg and Winchester declined. The Roanoke and Staunton indices were unchanged.

The October Standard Forecast for Fiscal Years 2019 through 2022

This section compares the official forecast, the IHS Markit's October 2017 forecast with two other forecasts. Tables 2.2 and 2.3 compare the official forecast with IHS Markit's October 2018 standard forecast and the pessimistic alternative scenario. Tables 2.4 and 2.5 show the October 2018 standard forecast and the pessimistic alternative scenario for regional employment. All four tables appear at the end of the section.

In the official forecast, economic growth in the Commonwealth was projected to moderately strengthen in fiscal years 2019 through 2022 relative to fiscal year 2018. The October standard forecast has personal income and wage and salary income growing at about a 4.0 to 4.5 percent pace over the forecasted horizon, while employment is forecast to increase 1.7 percent in fiscal year 2019 – faster than the 1.4 percent increase in fiscal year 2018. Federal government spending was virtually flat in calendar year 2017, but is expected to grow 3.6 percent in calendar year 2018 and 4.4 percent in calendar year 2019. Figure 2.2 on the next page compares employment growth in Virginia with that of the nation, while Figure 2.3 provides the same comparison for personal income.

As shown in Figure 2.4, according to the October standard forecast, total nonagricultural employment is expected to increase 1.7 percent (68,400 jobs) in fiscal year 2019, above the official forecast of 1.0 percent growth. The professional and business services sector and the education and health services sector are expected to be the main drivers over the forecast horizon. Overall, employment is expected to increase 1.1 percent in fiscal year 2020 and 0.6 percent in fiscal year 2021 as federal government stimulus fades.

Figure 2.2
U.S. AND VIRGINIA EMPLOYMENT GROWTH
HISTORY AND FORECAST - FISCAL YEARS 1996-2022

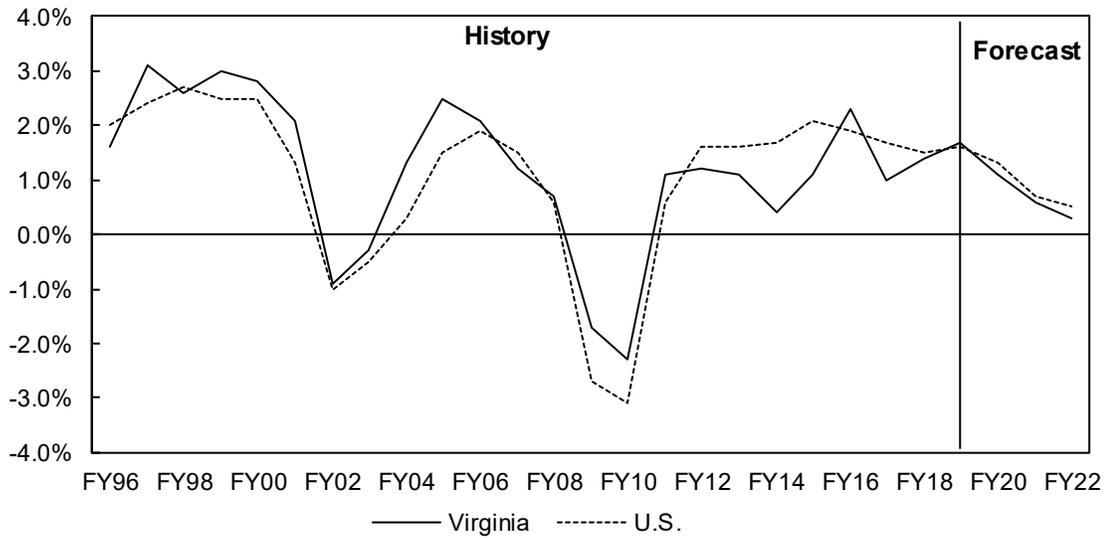


Figure 2.3
U.S. AND VIRGINIA PERSONAL INCOME GROWTH
HISTORY AND FORECAST - FISCAL YEARS 1996-2022

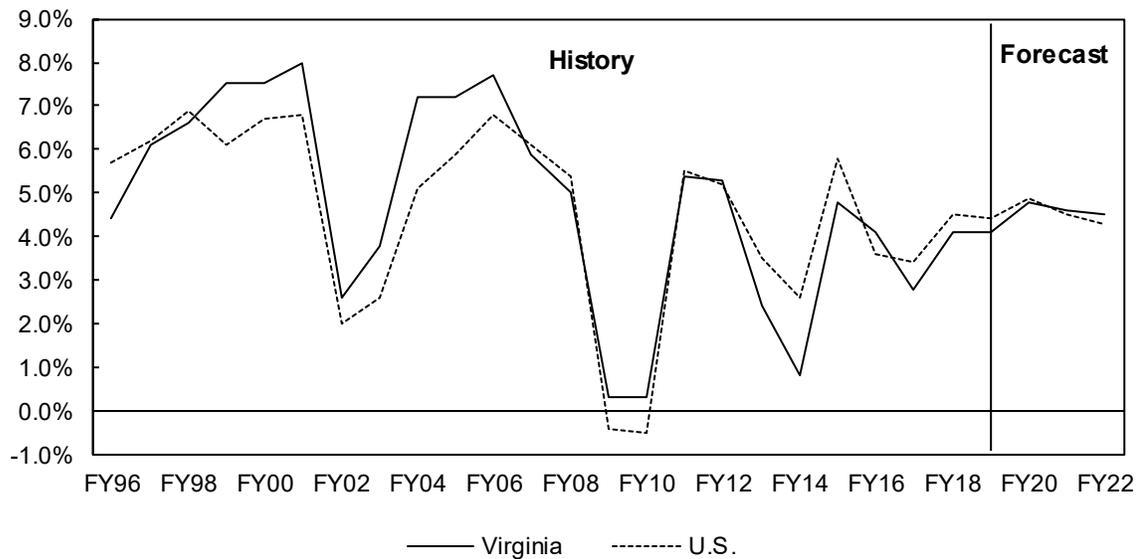
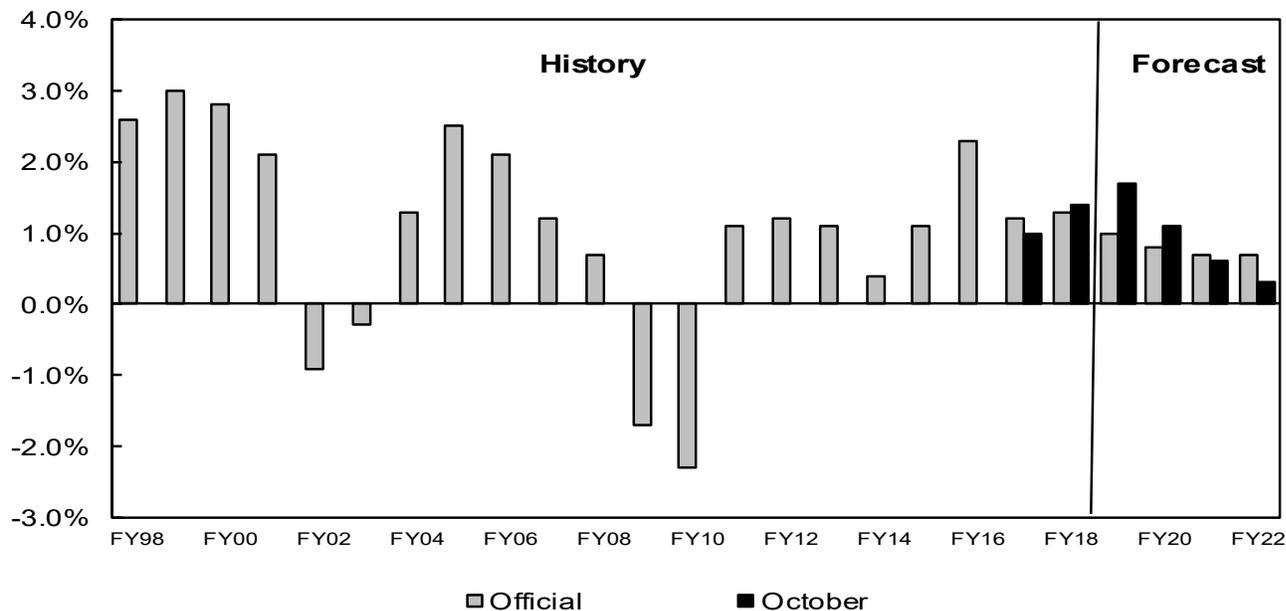


Figure 2.4
VIRGINIA EMPLOYMENT GROWTH
FY 1998-18 ACTUAL AND FY 2019-22 FORECAST



In the October standard forecast, total personal income is expected to grow somewhat faster over most of the forecast horizon than in the official forecast. Growth of 4.1 percent is expected in fiscal year 2019, then growth between 4.5 and 4.8 percent in fiscal years 2020 to 2022. Income from wages and salaries is expected to grow 4.3 percent in fiscal year 2019 and 4.2 percent in fiscal year 2020, 0.2 percentage points above the official forecast. Growth of dividends, interest, and rental income is expected to increase 3.8 percent in fiscal year 2019, and then accelerate to 6.8 percent in fiscal year 2020.

The outlook for proprietor's income is different from the official forecast: the October standard forecast predicts a 2.5 percent increase in fiscal year 2019 and a decline of 2.5 percent in 2020, as opposed to a decline in both fiscal year 2019 and fiscal year 2020 in the official forecast. Net transfer payments are expected to increase 4.3 percent in fiscal year 2019, and then increase to 9.8 percent and 12.0 percent in fiscal years 2020 and 2021, respectively. Figures 2.5 and 2.6 on the following page chart the annual percent change in personal income and wages and salaries, comparing the official forecast with the October standard forecast.

Figure 2.5
VIRGINIA PERSONAL INCOME GROWTH
FY 1998-18 ACTUAL AND FY 2019-22 FORECAST

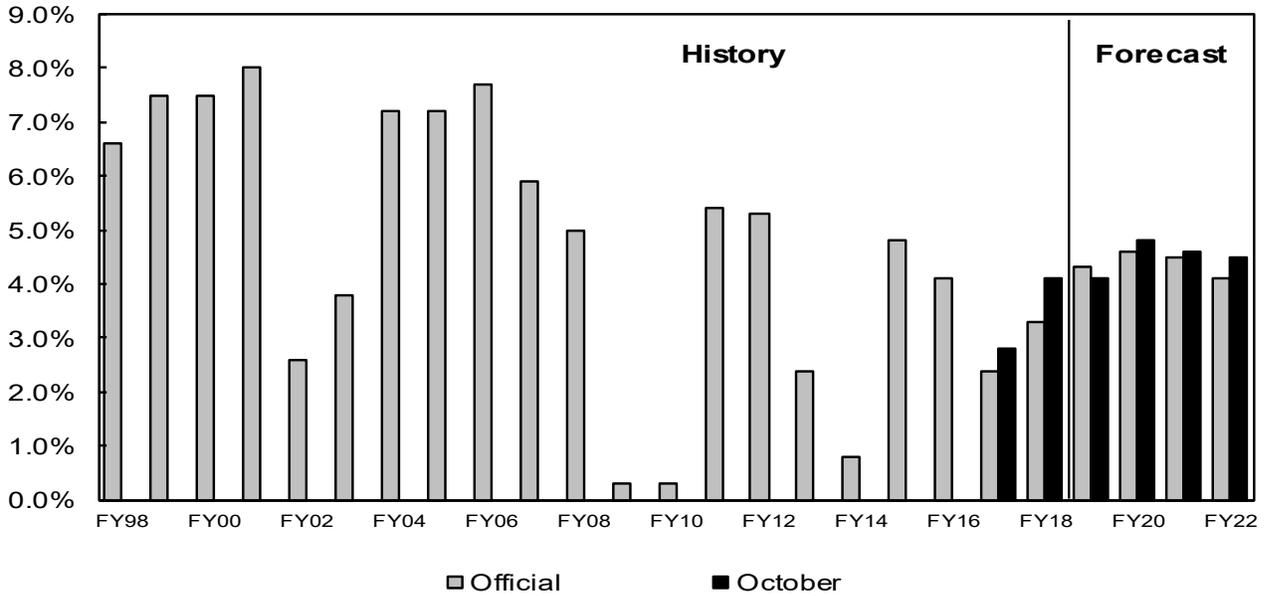
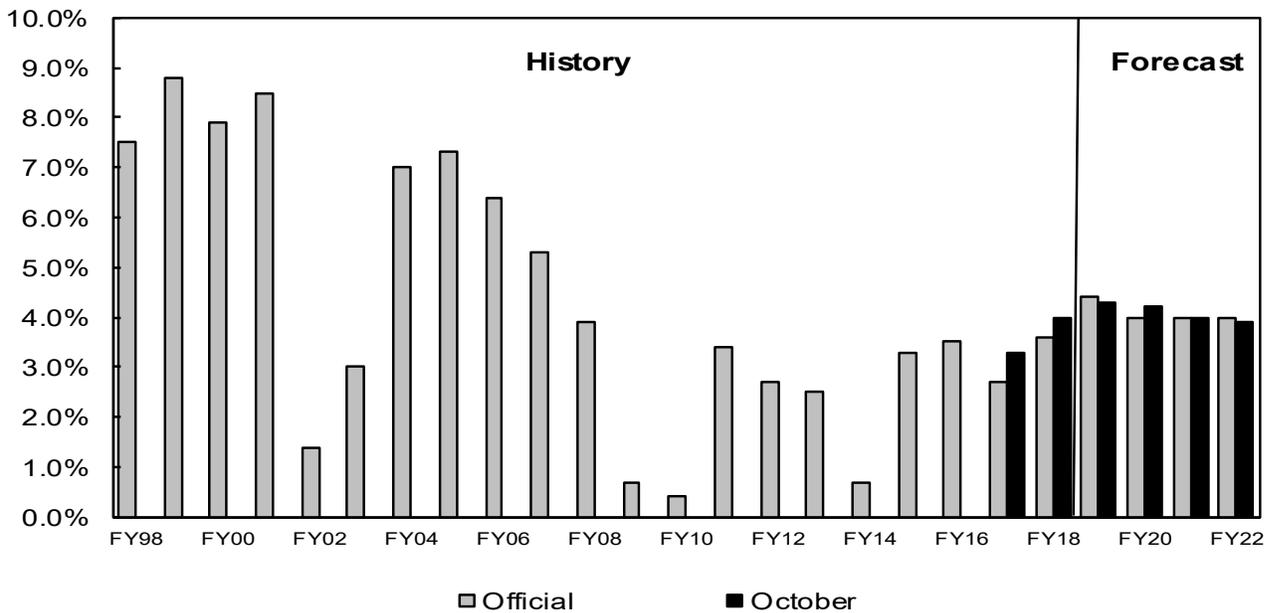


Figure 2.6
VIRGINIA WAGES AND SALARIES GROWTH
FY 1998-18 ACTUAL AND FY 2019-22 FORECAST



IHS Markit's Pessimistic Alternative Scenario

In the Virginia pessimistic alternative forecast, economic growth significantly slows, as a broad loss in confidence and growing aversion to risk leads to drops in a wide range of investment and consumer spending categories. Employment growth is 1.6 percent in fiscal year 2019, is flat in fiscal year 2020, then it declines 0.6 percent in 2021. Total personal income grows 3.5 percent in fiscal year 2020 and 2.8 percent in fiscal year 2021, compared with 4.8 percent and 4.6 percent in the October standard forecast. Wages and salaries grow 2.9 percent and 3.0 percent in fiscal years 2020-21. These growth rates are between 1.3 and 1.0 percentage points below the October standard forecast.

Virginia Economy

Table 2.2 - Fiscal Years 2017-2022 Official and October Forecasts
Virginia Economic Forecasts - Employment and Labor Markets (% Change)

		<u>FY17</u>	<u>FY18</u>	<u>FY19</u>	<u>FY20</u>	<u>FY21</u>	<u>FY22</u>
<u>Employment and Labor Markets (% of Total)</u>							
Total Nonagricultural Employment	Official (Oct '17)	1.2	1.3	1.0	0.8	0.7	0.7
	Oct Standard	1.0	1.4	1.7	1.1	0.6	0.3
	Oct Pessimistic			1.6	(0.0)	(0.6)	0.4
Construction and Mining (5%)	Official (Oct '17)	1.5	1.9	3.5	4.4	2.6	2.6
	Oct Standard	1.5	3.3	2.2	3.9	4.5	3.2
	Oct Pessimistic			2.8	2.5	(2.3)	2.0
Manufacturing (6%)	Official (Oct '17)	(0.5)	(0.7)	1.3	1.3	0.8	0.3
	Oct Standard	(0.1)	1.3	1.8	0.3	(0.9)	(1.3)
	Oct Pessimistic			0.9	(0.6)	(2.9)	(0.7)
Trade, Transportation, and Utilities (17%)	Official (Oct '17)	0.2	0.3	0.1	(0.1)	(0.2)	(0.4)
	Oct Standard	0.3	0.5	1.9	0.1	(0.8)	(0.8)
	Oct Pessimistic			1.6	(1.9)	(1.9)	(0.8)
Financial Activities (5%)	Official (Oct '17)	2.1	1.7	1.1	0.3	0.5	0.5
	Oct Standard	1.9	2.5	1.7	1.9	0.8	0.1
	Oct Pessimistic			2.3	1.1	(0.3)	(0.2)
Professional and Business Services (19%)	Official (Oct '17)	2.6	2.6	2.8	2.0	1.4	1.6
	Oct Standard	1.6	2.3	2.6	3.7	1.8	1.3
	Oct Pessimistic			1.9	0.3	(0.9)	3.4
Education and Health Services (14%)	Official (Oct '17)	1.4	2.0	0.8	0.5	0.9	1.1
	Oct Standard	1.3	1.9	2.4	0.8	0.4	0.9
	Oct Pessimistic			2.6	0.5	1.1	0.2
Leisure and Hospitality (10%)	Official (Oct '17)	2.1	1.8	0.8	0.2	0.8	0.5
	Oct Standard	1.9	1.8	2.1	0.2	1.7	0.8
	Oct Pessimistic			2.1	0.4	1.4	0.1
Government (18%)	Official (Oct '17)	0.3	0.4	(0.0)	0.2	0.3	0.3
	Oct Standard	0.5	(0.1)	(0.1)	0.4	(0.1)	(0.3)
	Oct Pessimistic			(0.1)	0.3	(0.2)	(0.2)
Unemployment Rate (%)	Official (Oct '17)	4.0	3.6	3.5	3.5	3.5	3.6
	Oct Standard	4.0	3.5	3.0	2.9	3.0	3.2
	Oct Pessimistic			3.1	3.6	4.2	4.2

The Official forecast is based on IHS Markit's October 2017 U.S. standard forecast with recommendations by JABE and GACRE.

The Oct Standard forecast is based on IHS Markit's October 2018 U.S. standard forecast.

The Oct Pessimistic forecast is based on IHS Markit's October 2018 U.S. pessimistic alternative scenario.

Table 2.3 - Fiscal Years 2017-2022 Official and October Forecasts
Virginia Economic Forecasts - Income (% Change)

		<u>FY17</u>	<u>FY18</u>	<u>FY19</u>	<u>FY20</u>	<u>FY21</u>	<u>FY22</u>
<u>Income (% of Total)</u>							
Total Personal Income	Official (Oct '17)	2.4	3.3	4.3	4.6	4.5	4.1
	Oct Standard	2.8	4.1	4.1	4.8	4.6	4.5
	Oct Pessimistic			4.0	3.5	2.8	4.3
Wages and Salaries (52%)	Official (Oct '17)	2.7	3.6	4.4	4.0	4.0	4.0
	Oct Standard	3.3	4.0	4.3	4.2	4.0	3.9
	Oct Pessimistic			4.1	2.9	3.0	3.9
Average Wage	Official (Oct '17)	1.5	2.2	3.4	3.1	3.2	3.3
	Oct Standard	2.3	2.5	2.5	3.0	3.4	3.6
	Oct Pessimistic			2.5	3.0	3.6	3.5
Dividends, Interest, and Rent (20%)	Official (Oct '17)	2.2	3.2	5.3	7.2	6.1	4.6
	Oct Standard	3.1	4.4	3.8	6.8	5.8	5.4
	Oct Pessimistic			3.6	3.4	(0.9)	4.3
Supplements to Wages and Salaries (12%)	Official (Oct '17)	(0.1)	1.9	3.0	3.6	3.4	3.0
	Oct Standard	0.6	3.9	3.1	4.6	4.8	4.7
	Oct Pessimistic			2.9	4.4	4.3	4.3
Proprietor's Income (6%)	Official (Oct '17)	2.6	2.9	(0.2)	(3.7)	0.0	(0.5)
	Oct Standard	(0.9)	4.6	2.5	(2.5)	(4.0)	(3.3)
	Oct Pessimistic			1.9	(3.3)	(2.9)	(2.3)
Net Transfer Payments (6%)	Official (Oct '17)	3.8	3.9	6.7	10.0	8.9	8.3
	Oct Standard	4.6	5.3	4.3	9.8	12.0	11.1
	Oct Pessimistic			5.3	12.3	13.0	10.7

The Official forecast is based on IHS Markit's October 2017 U.S. standard forecast with recommendations by JABE and GACRE.

The Oct Standard forecast is based on IHS Markit's October 2018 U.S. standard forecast.

The Oct Pessimistic forecast is based on IHS Markit's October 2018 U.S. pessimistic alternative scenario.

Virginia Economy

Table 2.4 - Fiscal Years 2017-2022 October Standard Forecast
Virginia Economic Forecast - Regional Employment (% Change)

		<u>FY17</u>	<u>FY18</u>	<u>FY19</u>	<u>FY20</u>	<u>FY21</u>	<u>FY22</u>
<u>Region by Sector (% of Total)</u>							
Northern Virginia (37%) *	Total Nonagricultural Employment	1.6	1.5	1.4	1.4	0.9	0.4
	Construction and Mining (5%) **	2.3	3.3	2.2	4.7	4.8	3.1
	Trade, Transportation, and Utilities (15%)	0.6	1.1	1.8	0.1	(1.0)	(1.0)
	Financial Activities (5%)	4.3	3.4	2.3	1.9	0.8	0.1
	Professional and Business Services (28%)	1.9	2.0	2.3	3.0	1.4	0.9
	Education and Health Services (11%)	3.0	2.7	2.9	1.0	0.4	1.1
	Leisure and Hospitality (10%)	2.0	0.9	0.7	0.2	1.8	0.8
	Government (16%)	0.6	0.3	(0.9)	0.5	0.5	(0.2)
Hampton Roads (20%)	Total Nonagricultural Employment	0.8	1.3	2.0	1.0	0.4	0.3
	Construction and Mining (5%)	1.9	2.3	3.3	5.0	4.8	4.6
	Trade, Transportation, and Utilities (17%)	1.1	0.4	3.5	0.1	(0.7)	(0.7)
	Financial Activities (5%)	(0.0)	2.5	4.1	1.6	0.7	0.1
	Professional and Business Services (14%)	1.8	3.4	2.8	3.9	2.1	1.4
	Education and Health Services (14%)	0.9	0.4	0.9	0.7	0.3	0.8
	Leisure and Hospitality (12%)	1.6	2.9	3.2	0.1	1.4	0.6
	Government (20%)	0.1	(0.3)	(0.7)	0.4	(0.7)	(0.7)
Richmond (17%)	Total Nonagricultural Employment	1.2	1.8	1.6	1.4	0.6	0.4
	Construction and Mining (6%)	1.9	2.7	(0.6)	3.7	3.8	2.5
	Trade, Transportation, and Utilities (18%)	(0.2)	2.7	2.4	0.4	(0.9)	(0.9)
	Financial Activities (8%)	1.2	2.3	(0.0)	2.0	0.8	0.1
	Professional and Business Services (17%)	1.6	1.2	2.1	4.8	2.3	1.6
	Education and Health Services (15%)	1.4	1.6	1.7	0.9	0.4	1.0
	Leisure and Hospitality (10%)	2.8	2.2	2.1	0.2	2.1	0.9
	Government (16%)	0.6	0.5	1.0	0.3	(0.3)	(0.3)
Balance (26%)	Total Nonagricultural Employment	0.2	1.1	2.0	0.7	0.3	0.2
	Construction and Mining (5%)	(0.2)	4.6	3.3	2.2	4.2	2.7
	Trade, Transportation, and Utilities (18%)	(0.3)	(1.5)	0.4	(0.2)	(0.7)	(0.6)
	Financial Activities (4%)	0.1	1.2	0.4	2.2	0.9	0.1
	Professional and Business Services (10%)	0.2	3.7	4.0	4.9	2.7	2.3
	Education and Health Services (15%)	(0.0)	2.4	3.4	0.6	0.3	0.6
	Leisure and Hospitality (10%)	1.5	1.8	2.9	0.2	1.6	0.7
	Government (20%)	0.6	(0.7)	0.6	0.2	(0.2)	0.0

The October Standard forecast from the Department of Taxation is based on IHS Markit's October 2018 U.S. standard forecast.

* Represents the percentage share of Virginia in fiscal year 2018.

** Represents the percentage share of total employment within the region in fiscal year 2018.

Table 2.5 - Fiscal Years 2017-2022 October Pessimistic Scenario
Virginia Economic Forecast - Regional Employment (% Change)

		<u>FY17</u>	<u>FY18</u>	<u>FY19</u>	<u>FY20</u>	<u>FY21</u>	<u>FY22</u>
<u>Region by Sector (% of Total)</u>							
Northern Virginia (37%) *	Total Nonagricultural Employment	1.6	1.5	1.4	0.1	(0.4)	0.4
	Construction and Mining (5%) **	2.3	3.3	2.9	3.1	(2.8)	1.8
	Trade, Transportation, and Utilities (15%)	0.6	1.1	1.5	(2.3)	(2.3)	(0.9)
	Financial Activities (5%)	4.3	3.4	2.9	1.1	(0.3)	(0.2)
	Professional and Business Services (28%)	1.9	2.0	1.8	0.4	(0.9)	2.2
	Education and Health Services (11%)	3.0	2.7	3.1	0.6	1.4	0.2
	Leisure and Hospitality (10%)	2.0	0.9	0.8	0.4	1.5	0.1
	Government (16%)	0.6	0.3	(0.9)	0.5	0.5	(0.0)
Hampton Roads (20%)	Total Nonagricultural Employment	0.8	1.3	1.9	(0.0)	(0.6)	0.4
	Construction and Mining (5%)	1.9	2.3	3.8	3.8	(1.3)	3.7
	Trade, Transportation, and Utilities (17%)	1.1	0.4	3.2	(1.8)	(1.8)	(0.7)
	Financial Activities (5%)	(0.0)	2.5	4.6	1.0	(0.3)	(0.2)
	Professional and Business Services (14%)	1.8	3.4	2.0	(0.1)	(1.1)	4.2
	Education and Health Services (14%)	0.9	0.4	1.1	0.4	1.0	0.2
	Leisure and Hospitality (12%)	1.6	2.9	3.3	0.3	1.2	0.1
	Government (20%)	0.1	(0.3)	(0.7)	0.4	(0.7)	(0.6)
Richmond (17%)	Total Nonagricultural Employment	1.2	1.8	1.5	0.0	(0.6)	0.4
	Construction and Mining (6%)	1.9	2.7	(0.1)	2.5	(2.3)	1.4
	Trade, Transportation, and Utilities (18%)	(0.2)	2.7	2.2	(1.7)	(2.1)	(1.1)
	Financial Activities (8%)	1.2	2.3	0.5	1.2	(0.3)	(0.2)
	Professional and Business Services (17%)	1.6	1.2	1.3	0.7	(1.0)	4.5
	Education and Health Services (15%)	1.4	1.6	1.9	0.5	1.3	0.2
	Leisure and Hospitality (10%)	2.8	2.2	2.2	0.5	1.8	0.1
	Government (16%)	0.6	0.5	1.0	0.3	(0.3)	(0.1)
Balance (26%)	Total Nonagricultural Employment	0.2	1.1	1.8	(0.3)	(0.8)	0.4
	Construction and Mining (5%)	(0.2)	4.6	3.9	0.9	(2.2)	1.6
	Trade, Transportation, and Utilities (18%)	(0.3)	(1.5)	0.2	(1.6)	(1.2)	(0.4)
	Financial Activities (4%)	0.1	1.2	1.0	1.3	(0.4)	(0.3)
	Professional and Business Services (10%)	0.2	3.7	2.9	(0.1)	(0.8)	6.2
	Education and Health Services (15%)	(0.0)	2.4	3.6	0.3	0.8	0.1
	Leisure and Hospitality (10%)	1.5	1.8	3.0	0.4	1.3	0.1
	Government (20%)	0.6	(0.7)	0.6	0.1	(0.5)	(0.1)

The October Pessimistic scenario from the Department of Taxation is based on IHS Markit's October 2018 U.S. pessimistic alternative scenario.

* Represents the percentage share of Virginia in fiscal year 2018.

** Represents the percentage share of total employment within the region in fiscal year 2018.

**SECTION 3
GENERAL FUND REVENUES**

Section 3 General Fund Revenues

Fiscal Year 2018 in Review

In fiscal year 2018, total general fund revenues rose 6.3 percent to \$19,880.8 million, with a surplus of \$552.6 million – 2.9 percent variance from forecast. Surpluses in individual withholding and nonwithholding taxes drove the surplus.

Table 3.1 on the next page compares actual revenues for fiscal year 2018 with the official forecast. The official revenue forecast was based on the October 2017 IHS Markit standard U.S. forecast, the corresponding Virginia economic forecast developed by the Department of Taxation with recommendations from GACRE, and includes actions of the 2018 General Assembly – Chapters 1 and 2.

Only three major sources exceeded expectations: Payroll withholding finished the year \$227.2 million above the estimate, a 1.8 percent variance; individual nonwithholding receipts were \$325.6 million ahead of the forecast (10.3 percent variance); and refunds were \$61.1 million lower than expected, contributing to the surplus. In total, net individual income tax receipts were \$613.9 million above forecast. In addition, sales tax collections exceeded the forecast by \$3.6 million (0.1) percent variance. The other major sources ended the year below expectations. Collections in corporate income tax were \$12.1 million short of the estimate, a variance of -1.4 percent. Wills, suits and deeds, mainly recordation taxes, missed its forecast by \$12.3 million, a -3.0 percent variance. Collections of taxes on insurance premiums were \$24.2 million short of the forecast.

Collectively, the five major sources ended the year \$568.9 million above the forecast (3.1 percent variance). Collections of miscellaneous taxes and other revenues were \$718.5 million in fiscal year 2018, missing the annual forecast by \$16.3 million (-2.2 percent variance).

Table 3.2 provides an evolutionary perspective of the fiscal year 2018 forecasts used by the Governor and General Assembly, in terms of their variance from actual collections. The variances for total revenues ranged from 4.6 percent in the August 2016 interim forecast to 1.3 percent in the May 2016 official forecast.

General Fund Revenues

Table 3.1
Fiscal Year 2018 General Fund Collections: Actual and Official Forecast
(Dollars in Millions)

	Fiscal Year 2017		Fiscal Year 2018					
	Actual	% Growth	Official Forecast	Actual	Forecast Variance		% Growth Over FY 17	
					Dollars	Percent	Official	Actual
MAJOR TAX SOURCES								
Corporate Income	\$ 827.0	8.1 %	\$ 874.0	\$ 861.9	\$ (12.1)	(1.4) %	5.7 %	4.2 %
Individual Income Tax:								
Gross	14,913.9	3.7	15,460.6	16,013.4	552.8	3.6	3.7	7.4
Withholding	11,895.4	5.2	12,313.3	12,540.5	227.2	1.8	3.5	5.4
Nonwithholding	3,018.5	(1.7)	3,147.3	3,472.9	325.6	10.3	4.3	15.1
Refunds	<u>(1,861.0)</u>	<u>2.2</u>	<u>(1,968.7)</u>	<u>(1,907.6)</u>	<u>61.1</u>	<u>(3.1)</u>	<u>5.8</u>	<u>2.5</u>
Net	13,052.9	4.0	13,491.9	14,105.8	613.9	4.5	3.4	8.1
Insurance Company Premiums	340.9	0.5	362.1	337.9	(24.2)	(6.7)	6.2	(0.9)
State Sales & Use Tax	3,357.1	1.9	3,458.2	3,461.8	3.6	0.1	3.0	3.1
Wills, Suits, Deeds, & Contract Fees	<u>394.4</u>	<u>6.9</u>	<u>407.2</u>	<u>394.9</u>	<u>(12.3)</u>	<u>(3.0)</u>	<u>3.3</u>	<u>0.1</u>
Total Major Tax Sources	\$ 17,972.2	3.7 %	\$ 18,593.4	\$ 19,162.3	\$ 568.9	3.1 %	3.5 %	6.6 %
MISCELLANEOUS TAXES AND OTHER REVENUES								
Alcoholic Beverage State Tax	\$ 180.7	3.1 %	\$ 189.7	\$ 191.0	\$ 1.3	0.7 %	5.0 %	5.7 %
Bank Franchise Tax	22.0	23.9	22.0	24.0	2.0	8.9	(0.2)	8.7
Beer & Beverage Excise Tax	41.7	(1.4)	42.3	40.9	(1.4)	(3.4)	1.5	(2.0)
Corporate Franchise & Charter Fees	53.4	(0.5)	51.2	53.6	2.4	4.7	(4.0)	0.5
Excess & Other Fees from Officers	(7.9)	(7.9)	(7.9)	(7.7)	0.2	(3.1)	0.4	3.5
Estate & Gifts	8.2	na	0.8	0.9	0.1	n/a	n/a	n/a
Institutional Revenues	2.3	(57.0)	2.1	2.8	0.7	31.3	(7.0)	22.1
Interest & Rents	56.0	6.4	68.1	61.7	(6.4)	(9.3)	21.7	10.3
Licenses & Permits	4.2	0.9	4.2	4.0	(0.2)	(4.6)	0.9	(3.7)
Miscellaneous Taxes and Penalties	237.3	(1.3)	231.5	229.2	(2.3)	(1.0)	(2.4)	(3.4)
Other Miscellaneous Revenues	30.1	(22.3)	32.8	19.4	(13.4)	(40.7)	8.9	(35.4)
Public Service GR / Consumption Tax	<u>95.1</u>	<u>2.7</u>	<u>98.0</u>	<u>98.7</u>	<u>0.7</u>	<u>0.7</u>	<u>3.1</u>	<u>3.8</u>
Total Misc. Taxes and Other Revenues	\$ 722.9	1.0 %	\$ 734.8	\$ 718.5	\$ (16.3)	(2.2) %	1.6 %	(0.6) %
TOTAL GF REVENUES	\$ 18,695.1	3.6 %	\$ 19,328.2	\$ 19,880.8	\$ 552.6	2.9 %	3.4 %	6.3 %
TRANSFERS								
A.B.C. Profits	\$ 110.5	27.7 %	\$ 104.1	\$ 109.5	\$ 5.4	5.1 %	(5.8) %	(0.9) %
Sales Tax (0.25%)	365.9	2.9	379.1	376.6	(2.5)	(0.7)	3.6	2.9
Transfers Per Appropriations Act	<u>176.9</u>	<u>47.9</u>	<u>142.1</u>	<u>142.2</u>	<u>0.1</u>	<u>0.1</u>	<u>(19.7)</u>	<u>(19.6)</u>
Total Transfers	\$ 653.3	16.3 %	\$ 625.3	\$ 628.3	\$ 3.0	0.5 %	(4.3) %	(3.8) %
TOTAL GENERAL FUND	\$ 19,348.4	4.0 %	\$ 19,953.5	\$ 20,509.0	\$ 555.5	2.8 %	3.1 %	6.0 %

The Official forecast is based on the October 2017 IHS Markit US Standard outlook and the corresponding Virginia economic outlook developed by the Department of Taxation with recommendations from GACRE. It includes actions of the 2018 General Assembly - Chapters 1 and 2.

Table 3.2
Actual Collections Over (Under) the Forecast
 Percent Variance

	June 7 2018 Official	December 18 2017 Introduced	April 28 2017 Official	December 16 2016 Introduced	August 2016 Interim	May 25 2016 Official	December 17 2015 Introduced
Major Tax Sources (96%)							
Corporate Income (4%)	(1.4)	(1.4)	2.5	4.5	19.0	17.0	18.9
Individual Income (71%)	4.6	4.6	5.3	5.4	5.7	2.0	2.6
Insurance Company Premiums (2%)	(6.7)	(6.7)	(7.4)	(7.4)	(4.7)	(3.5)	(2.1)
State Sales & Use Tax (17%)	0.1	0.1	0.3	0.5	(0.6)	(4.8)	(5.5)
Wills, Suits, Deeds & Contracts (2%)	(3.0)	(3.0)	(3.2)	(3.2)	1.4	1.4	4.1
Total Major Tax Sources	3.1	3.1	3.8	4.0	4.7	1.1	1.6
Miscellaneous Taxes & Other Revenues (4%)	(2.2)	(2.2)	(2.8)	(2.3)	2.5	4.7	4.8
Total Revenues	2.9	2.9	3.6	3.8	4.6	1.3	1.7

Numbers in parentheses indicate collections as a percentage of total general fund revenues. These may not add to 100 percent due to rounding.

The June 7, 2018 official forecast is based on the October 2017 IHS Markit U.S. standard outlook and the corresponding Virginia economic outlook developed by the Department of Taxation with recommendations from GACRE. It includes actions of the 2018 General Assembly - Chapters 1 and 2.

The December 18, 2017 forecast is based on the October 2017 IHS Markit U.S. standard outlook and the corresponding Virginia state forecast developed by the Department of Taxation with recommendations from JABE and GACRE and contains the same policy assumptions in Chapter 836.

The April 28, 2017 official forecast is based on the October 2016 IHS Markit U.S. standard outlook and the corresponding Virginia state forecast developed by the Department of Taxation and includes actions of the 2017 General Assembly - Chapter 836.

The December 16, 2016 forecast is based on the October 2016 IHS Markit U.S. standard outlook and the corresponding Virginia state forecast developed by the department of Taxation with recommendations from GACRE and Governor's amendments.

The August 2016 Interim forecast is based on the May 2016 IHS Economics U.S. standard outlook and includes recommendations from GACRE. The forecast also includes a collar in individual nonwithholding to one percent of total revenues as contained in Chapter 780 and a withholding model bias adjustment.

The May 25, 2016 official forecast is based on the November 2015 IHS Economics U.S. standard outlook and the corresponding Virginia state forecast developed by the Department of Taxation with recommendations from GACRE. It includes actions of the 2016 General Assembly - Chapters 732 and 780.

The December 17, 2015 forecast is based on the November 2015 IHS Economics U.S. standard outlook and includes recommendations from GACRE. The forecast also includes policy recommendations from the Governor including a collar in individual nonwithholding as it relates to one percent of total revenues.

Individual Income Taxes

Most of the surplus in fiscal year 2018 was attributable to individual income taxes. Collections of net individual income taxes (71 percent of total revenues) rose 8.1 percent in fiscal year 2018, well above the annual forecast of 3.4 percent growth. Receipts of \$14,105.8 million were \$613.9 million ahead of the official estimate, a variance of 4.5 percent from the forecast. Nonwithholding and withholding taxes accounted for the surplus, and refunds were somewhat lower than forecast.

Withholding: In fiscal year 2018, withholding receipts (63 percent of total revenues) increased 5.4 percent, significantly exceeding the forecast growth rate of 3.5 percent. Collections of \$12,540.5 million were \$227.2 million above the forecast, a variance of 1.8 percent. The acceleration in collections was somewhat overstated since June payments were inflated by about \$120 million due to timing of year-end payments from some employers. Still, the strength was broad-based among large and small businesses.

Nonwithholding: Collections of individual nonwithholding (17 percent of total revenues) rose 15.1 percent in fiscal year 2018, well ahead of the annual forecast of 4.3 percent growth.

General Fund Revenues

Receipts of \$3,472.9 million were \$325.6 million above the annual estimate, a forecast variance of 10.3 percent. These payments are historically tied to non-wage income sources – mainly the financial markets -- and are extremely volatile. This year the large surplus was due to the timing of payments related to federal tax changes. Also, the annual estimate included reducing the forecasted collections by \$193 million for the nonwithholding collar.

Refunds: Individual income tax refunds totaled \$1,907.6 million in fiscal year 2018, \$61.1 million less than expected. The amount of refunds issued grew 2.5 percent over last year, compared with the forecast of 5.8 percent growth.

Sales Taxes

Collections of sales and use taxes (17 percent of total revenues) were \$3,461.8 million in fiscal year 2018, \$3.6 million above the forecast. Collections rose 3.1 percent for the year, close to the forecast of 3.0 percent growth. The strength in collections followed two years in which growth was below 2.0 percent.

Corporate Income Taxes

Corporate income tax collections (4 percent of total revenues), historically the most volatile revenue source, fell short of the forecast. Collections of \$861.9 million were \$12.1 million below expectations. The fiscal year growth of 4.2 percent trailed the forecast of 5.7 percent.

Wills, Suits, Deeds, and Contract Fees

Wills, Suits, Deeds, and Contract Fees (2 percent of total revenues), of which the primary component is the recordation tax, fell short of the forecast in fiscal year 2018. Collections in this source were \$12.3 million less than expected, a variance of -3.0 percent. Collections finished the year at \$394.9 million, a slight 0.1 percent increase from fiscal year 2017 and well below the official forecast of 3.3 percent growth.

Insurance Premiums Taxes

Another major source to see a shortfall, collections of taxes on the premiums of insurance companies (2 percent of total revenues) were \$337.9 million in fiscal year 2018 – \$24.2 million below the annual estimate. The decline of 0.9 percent trailed the annual estimate of 6.2 percent growth. Prior year historic rehab tax credits resulted in over \$20 million in refunds in this source.

Miscellaneous Taxes and Other Revenues

Collectively, minor revenue sources finished the fiscal year 16.3 million below the annual forecast. Collections of \$718.5 million were 0.6 percent below fiscal year 2017, trailing the forecast of 1.6 percent growth.

The Revised General Fund Revenue Forecasts for Fiscal Years 2019-2022

This section presents two revised general fund revenue forecasts: the November standard and alternative pessimistic forecasts. The standard forecast is based on the IHS Markit October standard economic outlook and the corresponding state forecast developed by TAX with recommendations of the JABE. The basis for the alternative forecast is the IHS Markit alternative pessimistic economic scenario. These updated forecasts are compared with the official forecast based on the IHS Markit October 2017 standard outlook and the corresponding Virginia state forecast developed by the Department of Taxation, and reflects actions of the 2018 General Assembly, Chapter 2.

November Standard General Fund Revenue Forecast

Table 3.3 at the end of this section provides a comparison of the official revenue forecast with the November standard general fund forecast.

In the November standard forecast, total general fund revenues have been raised by \$226.4 million in fiscal year 2019. The increase from the official forecast comes mainly from upward revisions to individual income and sales taxes which are partially offset by downward revisions to corporate income and recordation taxes. Revenues are now expected to grow by 2.6 percent in fiscal year 2019, compared with a 1.5 percent increase in the official forecast. Revenues are expected to grow by 3.7 percent in fiscal year 2020. Over the fiscal year 2019 -2020 biennium, general fund revenues total \$41,558.1 million and are \$399.8 million above the official forecast.

Net Individual Income Taxes

The outlook for net individual income taxes in fiscal year 2019 has been revised upward from the official forecast by \$269.6 million for growth of 2.5 percent. Collections in this source are predicted to increase 4.3 percent in fiscal year 2020.

Withholding

The withholding revenue model is based on a direct relationship with wages and salaries (52 percent of total personal income) and net transfer payments (6 percent of total personal income) in Virginia. The historical data series in the withholding revenue model has been shortened to eliminate the strong growth due to high levels of defense spending prior to 2006.

Withholding in the November standard forecast has been raised by \$73.7 million in fiscal year 2019 for growth of 3.2 percent versus the 2.6 percent in the official forecast mainly due to strong first quarter collections, i.e. money in the bank. Withholding collections are projected to increase by 4.1 percent in fiscal year 2020.

General Fund Revenues

Nonwithholding

The revenue model for nonwithholding considers estimated and final payments independently. Estimated payments are modeled as a function of total proprietor's income, dividends, interest, and rental income, and the S&P 500 index, while final payments are driven solely by growth in the S&P 500 index.

The forecast for nonwithholding raises expected collections by \$152.7 million in fiscal year 2019 from the official forecast, raising growth from a 3.0 percent decrease to a 1.4 percent increase. The forecast predicts growth of 5.6 percent in fiscal year 2020. This includes a collar of 15.89 percent of total that is limited to one percent of total revenue in all three years.

Refunds

The forecast methodology for individual refunds relies on the revised outlook for withholding and nonwithholding, comparing taxable year individual income tax with taxable year refunds for the first and second half of a taxable year. Historical data are adjusted for the land preservation tax credit and the low-income credit. Future values of these credits are estimated and these amounts are added to the base refund forecast.

In the November standard revenue forecast, individual refunds are projected to grow 5.4 percent in fiscal year 2019 compared with the official forecast of a 7.7 percent increase. The forecast reduces refunds by \$43.2 million in fiscal year 2019. Land preservation credits are projected to be \$77.1 million each year. The outlook for low income credits is \$144.7 million in fiscal year 2019, increasing by about \$4.0 million a year over the forecast horizon.

Sales

The sales tax revenue model is based on a direct relationship with total personal income in Virginia. The November standard forecast increases sales tax collections by \$43.8 million in fiscal year 2019 for growth of 3.7 percent, compared with 2.5 percent in the official forecast. Growth in this source is expected to be 2.3 percent in fiscal year 2020.

Corporate

The corporate revenue model considers gross payments and refunds separately. Gross payments are modeled as a function of Virginia specific pre-tax corporate profits and the S&P 500 index. The November standard forecast reduces corporate income tax collections by \$63.6 million from the official forecast in fiscal year 2019, a decline of 1.6 percent compared with the official rate of a 5.8 percent increase. Collections are expected to rise by 3.3 percent in fiscal year 2020.

Wills, Suits, Deeds, and Contracts (Recordation)

The revenue model for wills, suits, deeds and contracts is based on mortgage originations, mortgage refinancing and home prices in Virginia, along with the yield on 30-year treasury bonds. The outlook for recordation taxes drives the other components of this source. The November standard forecast for this source is a 6.7 percent decline in fiscal year 2019, a downward revision of \$38.6 million. The estimate assumes collections will be flat through fiscal year 2022.

Insurance

In the November standard forecast, insurance premiums growth is raised from 11.4 percent to 17.0 percent in fiscal year 2019. The model calls for growth of 3.8 percent in fiscal year 2020.

Miscellaneous Taxes and Other Revenues

Collectively, minor revenue sources have been revised downward by \$3.5 million in fiscal year 2019 for an increase of 3.5 percent compared with 3.9 percent in the official forecast. The forecast expects collections of minor sources to grow 1.6 percent in fiscal year 2020.

General Fund Revenues

Table 3.3
The Official and November General Fund Forecast for Fiscal Year 2019
(Dollars in Millions)

November 19, 2018

	Fiscal Year 2019				
	Official	November	Change	% Growth Over FY 18	
	Forecast	Forecast		Official	November
MAJOR TAX SOURCES					
Corporate Income	\$ 912.0	\$ 848.4	\$ (63.6)	5.8 %	(1.6) %
Individual Income Tax:					
Gross	16,238.5	16,464.9	226.4	1.4	2.8
Withholding	12,870.2	12,943.9	73.7	2.6	3.2
Nonwithholding	3,368.3	3,521.0	152.7	(3.0)	1.4
Refunds	<u>(2,054.7)</u>	<u>(2,011.5)</u>	<u>43.2</u>	<u>7.7</u>	<u>5.4</u>
Net	14,183.8	14,453.4	269.6	0.6	2.5
Insurance Company Premiums	376.6	395.3	18.7	11.4	17.0
State Sales & Use Tax	3,547.3	3,591.1	43.8	2.5	3.7
Wills, Suits, Deeds, & Contract Fees	<u>407.2</u>	<u>368.6</u>	<u>(38.6)</u>	<u>3.1</u>	<u>(6.7)</u>
Total Major Tax Sources	\$ 19,426.9	\$ 19,656.8	\$ 229.9	1.4 %	2.6 %
MISCELLANEOUS TAXES AND OTHER REVENUES					
Alcoholic Beverage State Tax	\$ 197.5	\$ 199.1	\$ 1.6	3.4 %	4.3 %
Bank Franchise Tax	22.0	24.0	2.0	(8.2)	0.2
Beer & Beverage Excise Tax	42.3	40.9	(1.4)	3.5	0.1
Corporate Franchise & Charter Fees	51.2	53.7	2.5	(4.5)	0.1
Excess & Other Fees from Officers	(7.9)	(7.6)	0.3	3.2	(0.8)
Estate & Gifts	0.0	0.0	0.0	n/a	n/a
Institutional Revenues	2.1	2.6	0.5	(23.9)	(5.7)
Interest & Rents	66.5	68.8	2.3	7.7	11.4
Licenses & Permits	4.2	4.1	(0.1)	4.8	2.3
Miscellaneous Taxes and Penalties	234.9	232.0	(2.9)	2.5	1.2
Other Miscellaneous Revenues	36.0	27.0	(9.0)	85.1	38.8
Public Service GR / Consumption Tax	<u>98.0</u>	<u>98.7</u>	<u>0.7</u>	<u>(0.7) %</u>	<u>0.0</u>
Total Misc. Taxes and Other Revenues	\$ 746.8	\$ 743.3	\$ (3.5)	3.9 %	3.5 %
TOTAL GF REVENUES	\$ 20,173.7	\$ 20,400.1	\$ 226.4	1.5 %	2.6 %
TRANSFERS					
A.B.C. Profits	\$ 109.8	\$ 112.9	\$ 3.1	0.3 %	3.1 %
Sales Tax (0.375%)	386.7	389.9	3.2	2.7	3.5
Transfers Per Appropriations Act	<u>124.5</u>	<u>124.5</u>	<u>0.0</u>	<u>(12.4)</u>	<u>(12.4)</u>
Total Transfers	\$ 621.0	\$ 627.3	\$ 6.3	(1.2) %	(0.2) %
TOTAL GENERAL FUND	\$ 20,794.7	\$ 21,027.4	\$ 232.7	1.4 %	2.5 %

The Official forecast is based on the October 2017 IHS Markit Standard Outlook and the corresponding Virginia state forecast developed by the Department of Taxation with recommendations from GACRE. It includes actions of the 2018 General Assembly Session. Chapters 1 and 2. The November forecast is based on the October 2018 IHS Markit Standard Outlook and the corresponding Virginia state forecast developed by the Department of Taxation with recommendations from JABE and contains the same policy assumptions in Chapter 2.

General Fund Revenues

Table 3.3
The Official and November General Fund Forecast for Fiscal Year 2020
(Dollars in Millions)

November 19, 2018

	Fiscal Year 2020					2018-2020 Biennium		
	Official Forecast	November Forecast	Change	% Growth Over FY 19 Official	% Growth Over FY 19 November	Official Forecast	November Forecast	Change
MAJOR TAX SOURCES								
Corporate Income	\$ 926.4	\$ 876.2	\$ (50.2)	1.6 %	3.3 %	\$ 1,838.4	\$ 1,724.6	\$ (113.8)
Individual Income Tax:								
Gross	17,003.5	17,187.8	184.3	4.7	4.4	33,242.0	33,652.7	410.7
Withholding	13,368.5	13,469.7	101.2	3.9	4.1	26,238.7	26,413.6	174.9
Nonwithholding	3,635.0	3,718.1	83.1	7.9	5.6	7,003.3	7,239.1	235.8
Refunds	<u>(2,147.3)</u>	<u>(2,115.1)</u>	<u>32.2</u>	<u>4.5</u>	<u>5.2</u>	<u>(4,202.0)</u>	<u>(4,126.6)</u>	<u>75.4</u>
Net	14,856.2	15,072.7	216.5	4.7	4.3	29,040.0	29,526.1	486.1
Insurance Company Premiums	406.0	410.3	4.3	7.8	3.8	782.6	805.6	23.0
State Sales & Use Tax	3,625.2	3,675.2	50.0	2.2	2.3	7,172.5	7,266.3	93.8
Wills, Suits, Deeds, & Contract Fees	<u>407.2</u>	<u>368.6</u>	<u>(38.6)</u>	<u>0.0</u>	<u>0.0</u>	<u>814.4</u>	<u>737.2</u>	<u>(77.2)</u>
Total Major Tax Sources	\$ 20,221.0	\$ 20,403.0	\$ 182.0	4.1 %	3.8 %	\$ 39,647.9	\$ 40,059.8	\$ 411.9
MISCELLANEOUS TAXES AND OTHER REVENUES								
Alcoholic Beverage State Tax	\$ 205.9	\$ 207.5	\$ 1.6	4.3 %	4.2 %	\$ 403.4	\$ 406.6	\$ 3.2
Bank Franchise Tax	22.0	24.0	2.0	0.0	0.0	44.0	48.0	4.0
Beer & Beverage Excise Tax	42.3	40.9	(1.4)	0.0	0.0	84.6	81.8	(2.8)
Corporate Franchise & Charter Fees	51.2	53.7	2.5	0.0	0.0	102.4	107.4	5.0
Excess & Other Fees from Officers	(7.9)	(7.6)	0.3	0.0	0.0	(15.8)	(15.2)	0.6
Estate & Gifts	0.0	0.0	0.0	n/a	n/a	0.0	0.0	n/a
Institutional Revenues	2.1	2.6	0.5	0.0	0.0	4.2	5.2	1.0
Interest & Rents	73.0	74.8	1.8	9.8	8.7	139.5	143.6	4.1
Licenses & Permits	4.2	4.1	(0.1)	0.0	0.0	8.4	8.2	(0.2)
Miscellaneous Taxes and Penalties	240.3	232.7	(7.6)	2.3	0.3	475.2	464.7	(10.5)
Other Miscellaneous Revenues	32.5	23.6	(8.9)	(9.7)	(12.6)	68.5	50.6	(17.9)
Public Service GR / Consumption Tax	<u>98.0</u>	<u>98.7</u>	<u>0.7</u>	<u>0.0</u>	<u>0.0</u>	<u>196.0</u>	<u>197.4</u>	<u>1.4</u>
Total Misc. Taxes and Other Revenues	\$ 763.6	\$ 755.0	\$ (8.6)	2.2 %	1.6 %	\$ 1,510.4	\$ 1,498.3	\$ (12.1)
TOTAL GF REVENUES	\$ 20,984.6	\$ 21,158.0	\$ 173.4	4.0 %	3.7 %	\$ 41,158.3	\$ 41,558.1	\$ 399.8
TRANSFERS								
A.B.C. Profits	\$ 115.5	\$ 117.2	\$ 1.7	5.2 %	3.8 %	\$ 225.3	\$ 230.1	\$ 4.8
Sales Tax (0.375%)	395.2	399.0	3.8	2.2	2.3	781.9	788.9	7.0
Transfers Per Appropriations Act	<u>120.3</u>	<u>120.3</u>	<u>0.0</u>	<u>(3.4)</u>	<u>(3.4)</u>	<u>244.8</u>	<u>244.8</u>	<u>0.0</u>
Total Transfers	\$ 631.0	\$ 636.5	\$ 5.5	1.6 %	1.5 %	\$ 1,252.0	\$ 1,263.8	\$ 11.8
TOTAL GENERAL FUND	\$ 21,615.6	\$ 21,794.5	\$ 178.9	3.9 %	3.6 %	\$ 42,410.3	\$ 42,821.9	\$ 411.6

The Official forecast is based on the October 2017 IHS Markit Standard Outlook and the corresponding Virginia state forecast developed by the Department of Taxation with recommendations from GACRE. It includes actions of the 2018 General Assembly Session, Chapters 1 and 2.

The November forecast is based on the October 2018 IHS Markit Standard Outlook and the corresponding Virginia state forecast developed by the Department of Taxation with recommendations from JABE and contains the same policy assumptions in Chapter 2.

General Fund Revenues

Table 3.3
The November General Fund Forecast for Fiscal Years 2020-22
(Dollars in Millions)

November 19, 2018

	Fiscal Year 2021		Fiscal Year 2022		2020-2022 Biennium	
	November Forecast	% Growth Over FY 20	November Forecast	% Growth Over FY 21	November Forecast	% Growth Over 18-20
MAJOR TAX SOURCES						
Corporate Income	\$ 898.0	2.5 %	\$ 920.3	2.5 %	\$ 1,818.3	5.4 %
Individual Income Tax:						
Gross	17,907.8	4.2	18,641.5	4.1	36,549.3	8.6
Withholding	14,039.8	4.2	14,607.4	4.0	28,647.2	8.5
Nonwithholding	3,868.0	4.0	4,034.1	4.3	7,902.1	9.2
Refunds	<u>(2,235.2)</u>	5.7	<u>(2,325.4)</u>	4.0	<u>(4,560.6)</u>	10.5
Net	15,672.6	4.0	16,316.1	4.1	31,988.7	8.3
Insurance Company Premiums	412.9	0.6	435.9	5.6	848.8	5.4
State Sales & Use Tax	3,761.1	2.3	3,850.3	2.4	7,611.4	4.7
Wills, Suits, Deeds, & Contract Fees	<u>368.6</u>	<u>0.0</u>	<u>368.6</u>	<u>0.0</u>	<u>737.2</u>	<u>0.0</u>
Total Major Tax Sources	\$ 21,113.2	3.5 %	\$ 21,891.2	3.7 %	\$ 43,004.4	7.4 %
MISCELLANEOUS TAXES AND OTHER REVENUES						
Alcoholic Beverage State Tax	\$ 215.7	4.0 %	\$ 224.1	3.9 %	\$ 439.8	8.2 %
Bank Franchise Tax	24.0	0.0	24.0	0.0	48.0	0.0
Beer & Beverage Excise Tax	40.9	0.0	40.9	0.0	81.8	0.0
Corporate Franchise & Charter Fees	53.7	0.0	53.7	0.0	107.4	0.0
Excess & Other Fees from Officers	(7.6)	0.0	(7.6)	0.0	(15.2)	0.0
Estate & Gifts	0.0	n/a	0.0	n/a	0.0	n/a
Institutional Revenues	2.6	0.0	2.6	0.0	5.2	0.0
Interest & Rents	74.8	0.0	74.8	0.0	149.6	4.2
Licenses & Permits	4.1	0.0	4.1	0.0	8.2	0.0
Miscellaneous Taxes and Penalties	233.1	0.2	233.1	0.0	466.2	0.3
Other Miscellaneous Revenues	23.6	0.0	23.6	0.0	47.2	(6.7)
Public Service GR / Consumption Tax	<u>98.7</u>	<u>0.0</u>	<u>98.7</u>	<u>0.0</u>	<u>197.4</u>	<u>0.0</u>
Total Misc. Taxes and Other Revenues	\$ 763.6	1.1 %	\$ 772.0	1.1 %	\$ 1,535.6	2.5 %
TOTAL GF REVENUES	\$ 21,876.8	3.4 %	\$ 22,663.2	3.6 %	\$ 44,540.0	7.2 %
TRANSFERS						
A.B.C. Profits	\$ 118.4	1.0 %	\$ 122.2	3.2 %	\$ 240.6	4.6 %
Sales Tax (0.375%)	408.3	2.3	418.0	2.4	826.3	4.7
Transfers Per Appropriations Act	<u>115.0</u>	<u>(4.4)</u>	<u>115.0</u>	<u>0.0</u>	<u>230.0</u>	<u>(6.0)</u>
Total Transfers	\$ 641.7	0.8 %	\$ 655.2	2.1 %	\$ 1,296.9	2.6 %
TOTAL GENERAL FUND	\$ 22,518.5	3.3 %	\$ 23,318.4	3.6 %	\$ 45,836.9	7.0 %

The November forecast is based on the October 2018 IHS Markit Standard Outlook and the corresponding Virginia state forecast developed by the Department of Taxation with recommendations from JABE and contains the same policy assumptions in Chapter 2.

The Official forecast is based on the October 2017 IHS Markit Standard Outlook and the corresponding Virginia state forecast developed by the Department of Taxation with recommendations from GACRE. It includes actions of the 2018 General Assembly Session. Chapters 1 and 2.

The November Pessimistic Alternative Forecast for Fiscal Years 2019 - 2022

Table 3.4 at the end of this section compares the official forecast and the November alternative pessimistic general fund forecast. Although the forecast is more pessimistic than the current November standard, the forecast still calls for more revenue than the official forecast. The November alternative scenario increases the official forecast by \$117.5 million in fiscal year 2019, as growth increases from 1.5 percent to 2.1 percent. The pessimistic forecast expects total revenue growth of 1.9 percent in fiscal year 2020, compared with the official outlook of 4.0 percent. Over the fiscal year 2019 -2020 biennium, general fund revenues total \$40,971.4 million and are \$186.9 million below the official forecast.

Individual Income Taxes

In the November alternative forecast, the outlook for net individual income taxes has been revised upward from the official forecast in fiscal year 2019, but lowered in fiscal year 2020. The projected increase is \$187.1 million more than the official forecast in fiscal year 2019, for growth of 1.9 percent. Fiscal year 2020 collections are revised down by \$114.1 million for growth of 2.6 percent.

Withholding

The withholding revenue model is based on a direct relationship with wages and salaries (52 percent of total personal income) and net transfer payments (6 percent of total personal income) in Virginia. Withholding in the November alternative forecast essentially unchanged in fiscal year 2019 for growth of 2.6 percent. Under this scenario, withholding collections are revised downward by \$81.6 million 2020 resulting in growth of 3.2 percent.

Nonwithholding

The revenue model for nonwithholding considers estimated and final payments independently. Estimated payments are modeled as a function of total proprietor's income, dividends, interest, and rental income, and the S&P 500 index, while final payments are driven solely by growth in the S&P 500 index.

The November alternative forecast for nonwithholding raises expected collections by \$142.7 million from the current official forecast in fiscal year 2019 for growth of 1.1 percent. The forecast lowers collections by \$64.7 million in fiscal year 2020.

Refunds

The forecast methodology for individual refunds relies on the revised outlook for withholding and nonwithholding, comparing taxable year individual income tax with taxable year refunds for the first and second half of a taxable year. Historical data are adjusted for the land preservation tax credit and the low-income credit. Future values of these credits are estimated and these amounts are added to the base refund forecast.

General Fund Revenues

In the alternative forecast, individual refunds are decreased (adding more to general fund revenue) by \$43.2 million in fiscal year 2019 and \$32.2 million in 2020, the same as in the standard forecast. Land preservation credits are projected to be \$83.7 million each year. The outlook for low income credits is \$144.7 million in fiscal year 2019, increasing by about \$4.0 million a year over the forecast horizon.

Sales

The sales tax revenue model is based on a direct relationship with total personal income in Virginia. The November alternative forecast for sales tax collections increases the official forecast by \$43.8 million in fiscal year 2019, for growth of 3.7 percent compared with the official forecast of 2.5 percent growth. The forecast is reduced by \$12.9 million in fiscal year 2020.

Corporate

The corporate revenue model considers gross payments and refunds separately. Gross payments are modeled as a function of Virginia specific pre-tax corporate profits and the S&P 500 index. The November pessimistic forecast reduces corporate collections by \$87.2 million from the official forecast in fiscal year 2019, for a decline of 4.3 percent for the year compared with the official forecast of 5.8 percent growth. Collections are expected to fall by 0.5 percent in fiscal year 2020.

Wills, Suits, Deeds, and Contracts (Recordation)

The revenue model for wills, suits, deeds and contracts is based on mortgage originations, mortgage refinancing activity and home prices in Virginia, along with the yield on 30-year treasury bonds. The outlook for recordation taxes drives the other components of this source. The November alternative forecast calls for a 7.2 percent decline in fiscal year 2019, a downward revision of \$40.8 million. The estimate assumes a decline of 7.4 percent in fiscal year 2020.

Insurance

The November alternative forecast for taxes on the premiums of insurance companies is for growth of 16.8 percent in fiscal year 2019, up from the current forecast of 11.4 percent. The model calls for 4.0 percent growth in fiscal year 2020.

Miscellaneous Taxes and Other Revenues

Collectively, minor revenue sources have been lowered by \$3.5 million in fiscal year 2019 for growth of 3.5 percent compared with 3.9 percent in the official forecast. Collections in these sources are predicted to rise by 1.6 percent in fiscal year 2020.

Table 3.4
The Official and November Pessimistic General Fund Forecast for Fiscal Year 2019
(Dollars in Millions)

November 19, 2018

	Fiscal Year 2019				
	Official	Nov Pess	Change	% Growth Over FY 18	
	Forecast	Forecast		Official	Nov Pess
MAJOR TAX SOURCES					
Corporate Income	\$ 912.0	\$ 824.8	\$ (87.2)	5.8 %	(4.3) %
Individual Income Tax:					
Gross	16,238.5	16,382.4	143.9	1.4	2.3
Withholding	12,870.2	12,871.4	1.2	2.6	2.6
Nonwithholding	3,368.3	3,511.0	142.7	(3.0)	1.1
Refunds	<u>(2,054.7)</u>	<u>(2,011.5)</u>	<u>43.2</u>	<u>7.7</u>	<u>5.4</u>
Net	14,183.8	14,370.9	187.1	0.6	1.9
Insurance Company Premiums	376.6	394.7	18.1	11.4	16.8
State Sales & Use Tax	3,547.3	3,591.1	43.8	2.5	3.7
Wills, Suits, Deeds, & Contract Fees	<u>407.2</u>	<u>366.4</u>	<u>(40.8)</u>	<u>3.1</u>	<u>(7.2)</u>
Total Major Tax Sources	\$ 19,426.9	\$ 19,547.9	\$ 121.0	1.4 %	2.0 %
MISCELLANEOUS TAXES AND OTHER REVENUES					
Alcoholic Beverage State Tax	\$ 197.5	\$ 199.1	\$ 1.6	3.4 %	4.3 %
Bank Franchise Tax	22.0	24.0	2.0	(8.2)	0.2
Beer & Beverage Excise Tax	42.3	40.9	(1.4)	3.5	0.1
Corporate Franchise & Charter Fees	51.2	53.7	2.5	(4.5)	0.1
Excess & Other Fees from Officers	(7.9)	(7.6)	0.3	3.2	(0.8)
Estate & Gifts	0.0	0.0	0.0	n/a	n/a
Institutional Revenues	2.1	2.6	0.5	(23.9)	(5.7)
Interest & Rents	66.5	68.8	2.3	7.7 %	11.4
Licenses & Permits	4.2	4.1	(0.1)	4.8 %	2.3
Miscellaneous Taxes and Penalties	234.9	232.0	(2.9)	2.5 %	1.2
Other Miscellaneous Revenues	36.0	27.0	(9.0)	85.1 %	38.8
Public Service GR / Consumption Tax	<u>98.0</u>	<u>98.7</u>	<u>0.7</u>	<u>(0.7) %</u>	<u>0.0</u>
Total Misc. Taxes and Other Revenues	\$ 746.8	\$ 743.3	\$ (3.5)	3.9 %	3.5 %
TOTAL GF REVENUES	\$ 20,173.7	\$ 20,291.2	\$ 117.5	1.5 %	2.1 %
TRANSFERS					
A.B.C. Profits	\$ 109.8	\$ 112.9	\$ 3.1	0.3 %	3.1 %
Sales Tax (0.375%)	386.7	389.9	3.2	2.7	3.5
Transfers Per Appropriations Act	<u>124.5</u>	<u>124.5</u>	<u>0.0</u>	<u>(12.4)</u>	<u>(12.4)</u>
Total Transfers	\$ 621.0	\$ 627.3	\$ 6.3	(1.2) %	(0.2) %
TOTAL GENERAL FUND	\$ 20,794.7	\$ 20,918.5	\$ 123.8	1.4 %	2.0 %

The Official forecast is based on the October 2017 IHS Markit Standard Outlook and the corresponding Virginia state forecast developed by the Department of Taxation with recommendations from GACRE. It includes actions of the 2018 General Assembly Session. Chapters 1 and 2. The November forecast is based on the October 2018 IHS Markit Pessimistic Outlook and the corresponding Virginia state forecast developed by the Department of Taxation with recommendations from JABE and contains the same policy assumptions in Chapter 2.

General Fund Revenues

Table 3.4
The Official and November Pessimistic General Fund Forecast for Fiscal Year 2020
(Dollars in Millions)

November 19, 2018

	Fiscal Year 2020					2018-2020 Biennium		
	Official Forecast	Nov Pess Forecast	Change	% Growth Over FY 19		Official Forecast	Nov Pess Forecast	Change
				Official	Nov Pess			
MAJOR TAX SOURCES								
Corporate Income	\$ 926.4	\$ 820.9	\$ (105.5)	1.6 %	(0.5) %	\$ 1,838.4	\$ 1,645.7	\$ (192.7)
Individual Income Tax:								
Gross	17,003.5	16,857.2	(146.3)	4.7	2.9	33,242.0	33,239.6	(2.4)
Withholding	13,368.5	13,286.9	(81.6)	3.9	3.2	26,238.7	26,158.3	(80.4)
Nonwithholding	3,635.0	3,570.3	(64.7)	7.9	1.7	7,003.3	7,081.3	78.0
Refunds	<u>(2,147.3)</u>	<u>(2,115.1)</u>	<u>32.2</u>	<u>4.5</u>	<u>5.2</u>	<u>(4,202.0)</u>	<u>(4,126.6)</u>	<u>75.4</u>
Net	14,856.2	14,742.1	(114.1)	4.7	2.6	29,040.0	29,113.0	73.0
Insurance Company Premiums	406.0	410.5	4.5	7.8	4.0	782.6	805.2	22.6
State Sales & Use Tax	3,625.2	3,612.3	(12.9)	2.2	0.6	7,172.5	7,203.4	30.9
Wills, Suits, Deeds, & Contract Fees	<u>407.2</u>	<u>339.4</u>	<u>(67.8)</u>	<u>0.0</u>	<u>(7.4)</u>	<u>814.4</u>	<u>705.8</u>	<u>(108.6)</u>
Total Major Tax Sources	\$ 20,221.0	\$ 19,925.2	\$ (295.8)	4.1 %	1.9 %	\$ 39,647.9	\$ 39,473.1	\$ (174.8)
MISCELLANEOUS TAXES AND OTHER REVENUES								
Alcoholic Beverage State Tax	\$ 205.9	\$ 207.5	\$ 1.6	4.3 %	4.2 %	\$ 403.4	\$ 406.6	\$ 3.2
Bank Franchise Tax	22.0	24.0	2.0	0.0	0.0	44.0	48.0	4.0
Beer & Beverage Excise Tax	42.3	40.9	(1.4)	0.0	0.0	84.6	81.8	(2.8)
Corporate Franchise & Charter Fees	51.2	53.7	2.5	0.0	0.0	102.4	107.4	5.0
Excess & Other Fees from Officers	(7.9)	(7.6)	0.3	0.0	0.0	(15.8)	(15.2)	0.6
Estate & Gifts	0.0	0.0	0.0	n/a	n/a	0.0	0.0	n/a
Institutional Revenues	2.1	2.6	0.5	0.0	0.0	4.2	5.2	1.0
Interest & Rents	73.0	74.8	1.8	9.8	8.7	139.5	143.6	4.1
Licenses & Permits	4.2	4.1	(0.1)	0.0	0.0	8.4	8.2	(0.2)
Miscellaneous Taxes and Penalties	240.3	232.7	(7.6)	2.3	0.3	475.2	464.7	(10.5)
Other Miscellaneous Revenues	32.5	23.6	(8.9)	(9.7)	(12.6)	68.5	50.6	(17.9)
Public Service GR / Consumption Tax	<u>98.0</u>	<u>98.7</u>	<u>0.7</u>	<u>0.0</u>	<u>0.0</u>	<u>196.0</u>	<u>197.4</u>	<u>1.4</u>
Total Misc. Taxes and Other Revenues	\$ 763.6	\$ 755.0	\$ (8.6)	2.2 %	1.6 %	\$ 1,510.4	\$ 1,498.3	\$ (12.1)
TOTAL GF REVENUES	\$ 20,984.6	\$ 20,680.2	\$ (304.4)	4.0 %	1.9 %	\$ 41,158.3	\$ 40,971.4	\$ (186.9)
TRANSFERS								
A.B.C. Profits	\$ 115.5	\$ 117.2	\$ 1.7	5.2 %	3.8 %	\$ 225.3	\$ 230.1	\$ 4.8
Sales Tax (0.375%)	395.2	399.0	3.8	2.2	2.3	781.9	788.9	7.0
Transfers Per Appropriations Act	<u>120.3</u>	<u>120.3</u>	<u>0.0</u>	<u>(3.4)</u>	<u>(3.4)</u>	<u>244.8</u>	<u>244.8</u>	<u>0.0</u>
Total Transfers	\$ 631.0	\$ 636.5	\$ 5.5	1.6 %	1.5 %	\$ 1,252.0	\$ 1,263.8	\$ 11.8
TOTAL GENERAL FUND	\$ 21,615.6	\$ 21,316.7	\$ (298.9)	3.9 %	1.9 %	\$ 42,410.3	\$ 42,235.2	\$ (175.1)

The Official forecast is based on the October 2017 IHS Markit Standard Outlook and the corresponding Virginia state forecast developed by the Department of Taxation with recommendations from GACRE. It includes actions of the 2018 General Assembly Session, Chapters 1 and 2.

The November forecast is based on the October 2018 IHS Markit Pessimistic Outlook and the corresponding Virginia state forecast developed by the Department of Taxation with recommendations from JABE and contains the same policy assumptions in Chapter 2.

General Fund Revenues

Table 3.4
The November Pessimistic General Fund Forecast for Fiscal Years 2020-22
(Dollars in Millions)

November 19, 2018

	Fiscal Year 2021		Fiscal Year 2022		2020-2022 Biennium	
	Nov Pess Forecast	% Growth Over FY 20	Nov Pess Forecast	% Growth Over FY 21	Nov Pess Forecast	% Growth Over 18-20
MAJOR TAX SOURCES						
Corporate Income	\$ 858.8	4.6 %	\$ 898.1	4.6 %	\$ 1,756.9	6.8 %
Individual Income Tax:						
Gross	17,324.9	2.8	18,024.7	4.0	35,349.6	6.3
Withholding	13,788.1	3.8	14,364.4	4.2	28,152.5	7.6
Nonwithholding	3,536.8	(0.9)	3,660.3	3.5	7,197.1	1.6
Refunds	<u>(2,235.2)</u>	5.7	<u>(2,325.4)</u>	4.0	<u>(4,560.6)</u>	10.5
Net	15,089.7	2.4	15,699.3	4.0	30,789.0	5.8
Insurance Company Premiums	399.9	(2.6)	427.2	6.8	827.1	2.7
State Sales & Use Tax	3,667.0	1.5	3,751.7	2.3	7,418.7	3.0
Wills, Suits, Deeds, & Contract Fees	<u>339.4</u>	<u>0.0</u>	<u>339.4</u>	<u>0.0</u>	<u>678.8</u>	<u>(3.8)</u>
Total Major Tax Sources	<u>\$ 20,354.8</u>	<u>2.2 %</u>	<u>\$ 21,115.7</u>	<u>3.7 %</u>	<u>\$ 41,470.5</u>	<u>5.1 %</u>
MISCELLANEOUS TAXES AND OTHER REVENUES						
Alcoholic Beverage State Tax	\$ 215.7	4.0 %	\$ 224.1	3.9 %	\$ 439.8	8.2 %
Bank Franchise Tax	24.0	0.0	24.0	0.0	48.0	0.0
Beer & Beverage Excise Tax	40.9	0.0	40.9	0.0	81.8	0.0
Corporate Franchise & Charter Fees	53.7	0.0	53.7	0.0	107.4	0.0
Excess & Other Fees from Officers	(7.6)	0.0	(7.6)	0.0	(15.2)	0.0
Estate & Gifts	0.0	n/a	0.0	n/a	0.0	n/a
Institutional Revenues	2.6	0.0	2.6	0.0	5.2	0.0
Interest & Rents	74.8	0.0	74.8	0.0	149.6	4.2
Licenses & Permits	4.1	0.0	4.1	0.0	8.2	0.0
Miscellaneous Taxes and Penalties	233.1	0.2	233.1	0.0	466.2	0.3
Other Miscellaneous Revenues	23.6	0.0	23.6	0.0	47.2	(6.7)
Public Service GR / Consumption Tax	<u>98.7</u>	<u>0.0</u>	<u>98.7</u>	<u>0.0</u>	<u>197.4</u>	<u>0.0</u>
Total Misc. Taxes and Other Revenues	<u>\$ 763.6</u>	<u>1.1 %</u>	<u>\$ 772.0</u>	<u>1.1 %</u>	<u>\$ 1,535.6</u>	<u>2.5 %</u>
TOTAL GF REVENUES	<u>\$ 21,118.4</u>	<u>2.1 %</u>	<u>\$ 21,887.7</u>	<u>3.6 %</u>	<u>\$ 43,006.1</u>	<u>5.0 %</u>
TRANSFERS						
A.B.C. Profits	\$ 118.4	1.0 %	\$ 122.2	3.2 %	\$ 240.6	4.6 %
Sales Tax (0.375%)	408.3	2.3	418.0	2.4	826.3	4.7
Transfers Per Appropriations Act	<u>115.0</u>	<u>(4.4)</u>	<u>115.0</u>	<u>0.0</u>	<u>230.0</u>	<u>(6.0)</u>
Total Transfers	<u>\$ 641.7</u>	<u>0.8 %</u>	<u>\$ 655.2</u>	<u>2.1 %</u>	<u>\$ 1,296.9</u>	<u>2.6 %</u>
TOTAL GENERAL FUND	<u>\$ 21,760.1</u>	<u>2.1 %</u>	<u>\$ 22,542.9</u>	<u>3.6 %</u>	<u>\$ 44,303.0</u>	<u>4.9 %</u>

The November forecast is based on the October 2018 IHS Markit Pessimistic Outlook and the corresponding Virginia state forecast developed by the Department of Taxation with recommendations from JABE and contains the same policy assumptions in Chapter 2.

The Official forecast is based on the October 2017 IHS Markit Standard Outlook and the corresponding Virginia state forecast developed by the Department of Taxation with recommendations from GACRE. It includes actions of the 2018 General Assembly Session. Chapters 1 and 2.

General Fund Revenues

Legislative Changes Affecting the Forecast

Table 3.5 below lists the legislative and policy changes that affect the revenue forecast for fiscal years 2019-2022.

Table 3.5
Summary of Recent Legislation Affecting General Fund Revenues
(Millions of Dollars)

	FY19	FY20	FY21	FY22
CORPORATE INCOME TAX				
2018 Allow Metallurgical Coal Credits -- HB665/SB378, 2018	0.0	0.0	0.0	(6.5)
Increase Existing R&D Expenses Tax Credit Cap -- HB884/SB58, 2016	(1.0)	(1.0)	(1.0)	(1.0)
New Large R&D Tax Credit -- HB884/SB58, 2016	(20.0)	(20.0)	(20.0)	(20.0)
INDIVIDUAL INCOME TAX				
Land Preservation Tax Credit (Total Cost)	83.7	83.7	83.7	83.7
2018 Extend Cap on Land Preservation -- Chapter 2	(6.6)	(6.6)	0.0	0.0
ABLE Act Contribution Deduction -- HB30, 2016	(1.3)	(2.3)	(3.1)	(3.6)
2018 Federal Tax Conformity -- HB154/SB230, 2018	(3.3)	0.7	1.4	0.9
Notification of payroll system breaches -- Chapter 2, 2018	1.1	1.1	1.1	1.1
Ind. Inc. Tax Audit Positions -- Chapter 2, 2018	4.0	4.0	4.0	4.0
STATE SALES AND USE TAX				
Tighten Sales Tax Nexus -- 2017 C. 51, HB2058; C. 808, SB 962	11.1	11.1	11.1	11.1
Reflect SB1390 Sales Tax Enforcement -- 2017 C. 453, SB1390; C. 112, HB1913	5.4	5.4	5.4	5.4
ATV Sales Tax Increase -- 2018 C. 840, SB249; C. 838, HB 1441	0.2	0.2	0.2	0.2
INSURANCE COMPANY PREMIUMS				
Historic Rehab Tax Credit (\$5 mil) -- HB2460/SB1034, 2017 and Chapter 2, 2018	9.9	13.0	13.0	13.0
OTHER REVENUE				
Utility Credit HB1558 2018 one time windfall -- Chapter 2, 2018	3.4			
DNA Testing Fee -- HB1249, 2018	0.1	0.1	0.1	0.1

SECTION 4
NON-GENERAL FUND REVENUES

Section 4 Non-General Fund Revenues

Transportation Revenues

Most state taxes and fees used to finance the state's transportation programs are deposited into two funds: the Highway Maintenance and Operating Fund (HMOF) and the Transportation Trust Fund (TTF). The HMOF, which finances maintenance and operating costs, consists of traditional highway user taxes and fees. The TTF, which finances construction costs, consists of dedicated portions of highway user taxes and fees, as well as a portion of state sales and recordation taxes, interest earnings, and several miscellaneous sources. Within the TTF, which was created by a special session of the General Assembly in 1986, is the Priority Transportation Fund (PTF). This fund, which was created during the 2000 legislative session, consists of insurance premiums, interest payments, and a portion of the motor fuels tax.

Revenues used for the Commonwealth's transportation program are derived from the following taxes and fees:

- Motor Fuels and Road Use Taxes,
- A 4.15 percent Vehicle Sales and Use Tax,
- Licensing fees,
- 0.60 cent State Retail Sales and Use Tax,
- 0.3 percent State Retail Sales and Use tax,
- 3.0 cents of the State Recordation Tax,
- One-third of State Insurance Premiums Tax,
- International Registration Plan Fees,
- Interest Earnings, and
- Other miscellaneous taxes and fees.

In addition, federal, local, and toll revenues are also used to finance transportation programs. These revenue sources, however, do not determine the fiscal capacity of the state's transportation program and, therefore, are not addressed here. Instead, the discussion focuses on revenues from state sources.

NON-GENERAL FUND REVENUES

Fiscal Year 2018 in Review

Table 4.1 compares actual collections in fiscal year 2017 to the official forecast for the Commonwealth Transportation Fund (CTF). Total transportation revenues totaled over \$3.4 billion, an increase of \$4.9 million over last year. Revenue collections grew by 0.1 percent, trailing the official forecast of 0.5 percent growth, resulting in a forecast variance of 0.4 percent.

Table 4.1
Actual Collections Compared to the Official Forecast for Fiscal Year 2018
(Millions of Dollars)

Revenue Sources	FY2017 Actual	FY2018 Actual	FY2018 Forecast	Percent Change 2017-2018		Forecast Variance	
				Actual	Forecast	Amount	Percent
Motor Fuels Tax	857.9	843.5	886.3	(1.7)	3.3	(42.8)	(4.8)
Road Use Tax	12.3	11.7	10.5	(4.9)	(14.6)	1.2	11.4
Vehicle Sales Tax	957.7	943.6	922.4	(1.5)	(3.7)	21.2	2.3
Vehicle Licenses	260.2	258.8	259.2	(0.5)	(0.4)	(0.4)	(0.2)
State Sales Tax	1,020.4	1,043.8	1,047.0	2.3	2.6	(3.2)	(0.3)
Recordation Tax	48.1	47.8	48.3	(0.6)	0.4	(0.5)	(1.0)
Insurance Premiums Tax	163.1	168.0	168.0	3.0	3.0	0.0	0.0
Int'l Registration Plan	66.2	69.2	64.4	4.5	(2.7)	4.8	7.5
Interest Earnings	6.4	8.9	3.3	39.1	(48.4)	5.6	169.7
Rental Tax	39.5	40.2	40.9	1.8	3.5	(0.7)	(1.7)
Aviation Fuels Tax	2.0	2.0	1.9	0.0	(5.0)	0.1	5.3
Miscellaneous	18.4	19.6	17.2	6.5	(6.5)	2.4	14.0
TOTAL	\$3,452.2	\$3,457.1	\$3,469.4	0.1	0.5	(12.3)	(0.4)

Revenues from motor fuels taxes (24 percent of the CTF in fiscal year 2018) fell short the forecast by \$42.8 million in fiscal year 2018. Motor fuels tax collections declined by 1.7 percent in fiscal year 2018.

Gasoline consumption had been on a declining trend since reaching its peak consumption year in 2003. The fuel-economy of both cars and trucks has increased even faster than mandated by federal regulations as manufacturers have responded to demands from customers. As a result, the average vehicle being driven on U.S. highways is becoming steadily more fuel efficient as old cars and light trucks are retired and replaced by newer models.

The market for diesel fuel is different than the market for gasoline. Most diesel fuel is purchased and consumed by motor carriers, and reflects movement of freight through the state rather than commuter passenger travel. Motor carriers are sensitive to prices and are likely to purchase fuel in a state that has lower fuel tax rates. Motor carriers respond to the general economy more than passenger traffic: they tend to travel more miles when the economy is in an expansion and less when the economy is in a recession.

Revenues from the motor vehicle sales and use tax (27 percent of the CTF in fiscal year 2018) declined by 1.5 percent in fiscal year 2018. New car sales were down 3.4 percent and used car sales declined by 1.7 percent in fiscal year 2018 as the vehicle replacement cycle begins to peter out.

Revenues from the transportation share of the state retail sales tax (30 percent of the CTF in fiscal year 2018) increased by 2.3 percent.

Motor vehicle license fees (8 percent of the CTF in fiscal year 2016) declined by 0.5 percent in fiscal year 2018.

Collectively, all other taxes and revenues (11 percent of the CTF in fiscal year 2018) increased by 3.2 percent in fiscal year 2018.

Outlook for Key Tax Base Variables

Motor Fuel Consumption

Table 4.2 on the next page shows that gasoline consumption fell by 0.2 percent and diesel fuel consumption declined by 1.4 percent in fiscal year 2018.

The recent improvement in the economic outlook and the sharp decline in motor fuels prices is expected to provide a short-term boost to motor fuels consumption. Several years of low gasoline prices have upended a decade-long shift towards more fuel efficient vehicles in the United States. For two years in a row, the U.S. auto industry broke new records for total sales, as an improving labor market and cheap gas induced more motorists to take to the roads. In addition, the makeup of the U.S. auto fleet is changing, with 60 percent of auto sales in 2016 coming in the form of light trucks, which is an increase from the 56 percent share that trucks captured in 2015. For a stretch of time back in 2012-2013, when oil traded above \$90 per barrel, auto sales were roughly split between cars and trucks. In short, the three-year surge in gasoline consumption between 2014 and 2016 could be fleeting. Over the next year or two, gasoline prices will rise, which could put an end to expanding demand. Over the longer-term, not only are smaller cars becoming more efficient and even electrified, but so are gas guzzling SUVs and trucks.

NON-GENERAL FUND REVENUES

In addition to improvements in fuel efficiency, the expected future decline in gasoline consumption is attributable in large part to some powerful secular changes in U.S. culture and demographics:

- As the aging population leaves the workforce, the employment-population ratio has contracted.
- There is growing trend toward a portable workplace and the ability to work from home.
- Social media have provided powerful alternatives to face-to-face interaction requiring transportation (Internet apps, games, the ubiquitous mobile phone for talk and texting).
- There has been a general trend in young adults to drive less (related to points two and three above).
- The US is experiencing accelerating urban population growth, which reduces the per-capita dependence on gasoline.

Table 4.2
Motor Fuel Consumption, History and Forecast, Fiscal Years 2018 - 2020
(Percent Growth)

	<u>2018</u>	<u>2019</u>	<u>2020</u>
Taxable Gallons - Gasoline			
Official	(0.2)	0.8	1.5
Standard		1.8	0.8
Alternative		0.9	(0.1)
Taxable Gallons - Diesel			
Official	(1.4)	2.6	2.3
Standard		4.6	1.4
Alternative		4.1	(2.0)

Vehicle Sales

The official forecast anticipated that fiscal year 2018 new car sales would be flat. New car sales decreased by 3.4 percent, lagging the forecast of a no growth.

Used car sales were expected to increase by 3.3 percent in fiscal year 2018. Used car sales declined by 1.7 percent in fiscal year 2018.

Table 4.3 on the following page shows the official and November 2018 forecast for new and used vehicles. The discussion of the vehicle sales outlook is divided into two sections: new taxable titles and used taxable titles.

Table 4.3
Virginia Vehicle Market, History and Forecast, Fiscal Years 2018 - 2020
(Percent Growth)

	<u>2018</u>	<u>2019</u>	<u>2020</u>
New Taxable Titles			
Official	0.0	(1.3)	2.7
Standard	(3.4)	(3.1)	(1.6)
Alternative		(4.6)	(9.9)
Used Taxable Titles			
Official	3.3	2.6	0.2
Standard	(1.7)	1.0	2.5
Alternative		0.5	(0.5)

New Taxable Titles: In fiscal year 2018, over 377,700 new vehicles were titled in Virginia, a decline of 13,200 units from fiscal year 2017.

The November forecast expects a slight decline from the above-trend level of the past few years as new vehicle sales have peaked for this cycle. Sales will remain solid as conditions are supported by a tight job market, an increase in residential investment, stronger wage growth, and solid consumer confidence. Some headwinds are expected to constrain new vehicle sales including rising interest rates, increases in new vehicle prices, and tighter lending standards.

Used Taxable Titles: About 1.2 million used cars were sold in Virginia in fiscal year 2018, a decline of 1.7 percent. Used car sales generally follow a sales pattern similar to new car sales. As used car prices begin to moderate, sales of these vehicles should increase as lower prices relative to new cars make used vehicles more attractive to buyers.

NON-GENERAL FUND REVENUES

November 2018 Standard Commonwealth Transportation Fund Forecast

Table 4.4 on the following pages presents a comparison of the November 2018 standard forecast and the official forecast. In the Virginia standard forecast, economic growth continues to improve.

Beginning in fiscal year 2014, Chapter 766 (2013) provided a considerable influx of new revenues into the Commonwealth Transportation Fund:

- The bill eliminated the \$0.175 per gallon tax on motor fuels, and replaced it with a percentage-based tax of 5.1 percent for gasoline and 6 percent for diesel fuel.
- The bill raised the state sales and use tax across the Commonwealth from 4 percent to 4.3 percent and designated the increased revenues to the Commonwealth Transportation Fund.
- The bill increased the share of existing general sales and use tax revenues used for transportation from 0.50 percent to 0.60 percent.
- The bill amended the tax on the sale of motor vehicles (the "titling tax"). Previously, the titling tax was 3 percent. A new rate of 4.15 percent was phased in over four years.

The November forecast shows a decrease in revenues of \$43.8 million and \$33.6 million in fiscal years 2019 and 2020, respectively.

NON-GENERAL FUND REVENUES

Table 4.4
The Official and November Commonwealth Transportation Fund Update for Fiscal Year 2019
(Dollars in Millions)

November 1, 2018

	Fiscal Year 2018		Fiscal Year 2019				
	Actual	% Growth	Official Forecast	November Forecast	Change	% Growth over FY 18	
						Official	November
Highway Maintenance & Operating Fund							
Motor Fuels Tax	\$ 683.4	(1.7) %	\$ 724.4	\$ 720.4	\$ (4.0)	6.0 %	5.4 %
Road Tax	3.6	(14.3)	1.7	3.5	1.8	(52.8)	(2.8)
Motor Vehicle Sales And Use Tax	711.0	(1.5)	715.7	688.3	(27.4)	0.7	(3.2)
Motor Vehicle License Fees	237.2	(0.3)	236.7	236.6	(0.1)	(0.2)	(0.3)
Retail Sales and Use Tax	292.5	5.6	292.7	300.9	8.2	0.1	2.9
International Registration Plan	69.2	4.5	64.2	67.6	3.4	(7.2)	(2.3)
Miscellaneous	19.6	6.5	17.2	17.9	0.7	(12.2)	(8.7)
Total State Taxes and Fees	\$ 2,016.5	(0.2) %	\$ 2,052.6	\$ 2,035.2	\$ (17.4)	1.8 %	0.9 %
Transportation Trust Fund							
Motor Fuels Tax	\$ 160.1	(1.7) %	\$ 172.1	\$ 171.1	\$ (1.0)	7.5 %	6.9 %
Insurance Premiums Tax (1/3)	168.0	3.0	176.7	168.7	(8.0)	5.2	0.4
Road Tax	8.0	(1.2)	8.6	8.6	0.0	7.5	7.5
Motor Vehicle Sales And Use Tax	232.7	(1.4)	236.9	227.8	(9.1)	1.8	(2.1)
Motor Vehicle License Fees	21.6	(2.7)	22.5	22.0	(0.5)	4.2	1.9
Retail Sales and Use Tax	751.3	1.1	775.1	772.7	(2.4)	3.2	2.8
Recordation Tax	47.8	(0.6)	48.3	43.6	(4.7)	1.0	(8.8)
Interest Earnings	8.9	39.1	4.2	3.8	(0.4)	(52.8)	(57.3)
Rental Tax	40.2	1.8	42.4	42.1	(0.3)	5.5	4.7
Aviation Fuels Tax	2.0	0.0	1.9	1.9	0.0	(5.0)	(5.0)
Total State Taxes and Fees	\$ 1,440.6	0.6 %	\$ 1,488.7	\$ 1,462.3	\$ (26.4)	3.3 %	1.5 %
Total HMOF And TTF							
Motor Fuels Tax	\$ 843.5	(1.7) %	\$ 896.5	\$ 891.5	\$ (5.0)	6.3 %	5.7 %
Insurance Premiums Tax (1/3)	168.0	3.0	176.7	168.7	(8.0)	5.2	0.4
Road Tax	11.6	(5.7)	10.3	12.1	1.8	(11.2)	4.3
Motor Vehicle Sales and Use Tax	943.7	(1.5)	952.6	916.1	(36.5)	0.9	(2.9)
Motor Vehicle License Fees	258.8	(0.5)	259.2	258.6	(0.6)	0.2	(0.1)
International Registration Plan	69.2	4.5	64.2	67.6	3.4	(7.2)	(2.3)
Retail Sales and Use Tax	1,043.8	2.3	1,067.8	1,073.6	5.8	2.3	2.9
Recordation Tax (3 cents)	47.8	(0.6)	48.3	43.6	(4.7)	1.0	(8.8)
Interest Earnings	8.9	39.1	4.2	3.8	(0.4)	(52.8)	(57.3)
Rental Tax	40.2	1.8	42.4	42.1	(0.3)	5.5	4.7
Aviation Fuels Tax	2.0	0.0	1.9	1.9	0.0	(5.0)	(5.0)
Miscellaneous	19.6	6.5	17.2	17.9	0.7	(12.2)	(8.7)
Total State Taxes and Fees	\$ 3,457.1	0.1 %	\$ 3,541.3	\$ 3,497.5	\$ (43.8)	2.4 %	1.2 %
Transfers per the Appropriations Act							
Retail Sales Tax - AST (TTF)	0.0	n/a	0.0	0.0	0.0	n/a	n/a
Total Transfers	\$ 0.0	n/a	\$ 0.0	\$ 0.0	\$ 0.0	n/a	n/a %
Total Transportation Fund	\$ 3,457.1	0.1	\$ 3,541.3	\$ 3,497.5	\$ (43.8)	2.4 %	1.2 %

The Official forecast is based on the October 2017 Global Insight Standard outlook and the corresponding Virginia state forecast developed by the Department of Taxation.

The November forecast is based on the October 2018 IHS Markit Standard outlook and the corresponding Virginia state forecast developed by the Department of Taxation.

NON-GENERAL FUND REVENUES

Table 4.4
The Official and November Commonwealth Transportation Fund Update for Fiscal Year 2020
(Dollars in Millions)

November 1, 2018

	Fiscal Year 2020				
	Official Forecast	November Forecast	Change	% Growth over FY 19	
				Official	November
Highway Maintenance & Operating Fund					
Motor Fuels Tax	\$ 730.1	\$ 729.7	\$ (0.4)	0.8 %	1.3 %
Road Tax	1.4	3.2	1.8	(17.6)	(8.6)
Motor Vehicle Sales And Use Tax	723.2	692.2	(31.0)	1.0	0.6
Motor Vehicle License Fees	239.1	239.0	(0.1)	1.0	1.0
Retail Sales and Use Tax	299.2	308.0	8.8	2.2	2.4
International Registration Plan	65.0	65.0	0.0	1.2	(3.8)
Miscellaneous	17.2	17.9	0.7	0.0	0.0
Total State Taxes and Fees (HMOF)	\$ 2,075.2	\$ 2,055.0	\$ (20.2)	1.1 %	1.0 %
Transportation Trust Fund					
Motor Fuels Tax	\$ 173.4	\$ 173.3	\$ (0.1)	0.8 %	1.3 %
Insurance Premiums Tax (1/3)	184.4	188.0	3.6	4.4	11.4
Road Tax	8.6	8.7	0.1	0.0	1.2
Motor Vehicle Sales And Use Tax	239.3	229.1	(10.2)	1.0	0.6
Motor Vehicle License Fees	22.9	22.3	(0.6)	1.8	1.4
Retail Sales and Use Tax	792.2	790.8	(1.4)	2.2	2.3
Recordation Tax	48.3	43.6	(4.7)	0.0	0.0
Interest Earnings	4.5	4.0	(0.5)	7.1	5.3
Rental Tax	43.2	43.5	0.3	1.9	3.3
Aviation Fuels Tax	1.9	2.0	0.1	0.0	5.3
Total State Taxes and Fees (TTF)	\$ 1,518.7	\$ 1,505.3	\$ (13.4)	2.0 %	2.9 %
Total HMOF And TTF					
Motor Fuels Tax	\$ 903.5	\$ 903.0	\$ (0.5)	0.8 %	1.3 %
Insurance Premiums Tax (1/3)	184.4	188.0	3.6	4.4	11.4
Road Tax	10.0	11.9	1.9	(2.9)	(1.7)
Motor Vehicle Sales and Use Tax	962.5	921.3	(41.2)	1.0	0.6
Motor Vehicle License Fees	262.0	261.3	(0.7)	1.1	1.0
International Registration Plan	65.0	65.0	0.0	1.2	(3.8)
Retail Sales and Use Tax	1,091.4	1,098.8	7.4	2.2	2.3
Recordation Tax (3 cents)	48.3	43.6	(4.7)	0.0	0.0
Interest Earnings	4.5	4.0	(0.5)	7.1	5.3
Rental Tax	43.2	43.5	0.3	1.9	3.3
Aviation Fuels Tax	1.9	2.0	0.1	0.0	5.3
Miscellaneous	17.2	17.9	0.7	0.0	0.0
Total State Taxes and Fees	\$ 3,593.9	\$ 3,560.3	\$ (33.6)	1.5 %	1.8 %
Transfers per the Appropriations Act					
Retail Sales Tax - AST (TTF)	0.0	0.0	0.0	n/a	n/a
Total Transfers	\$ 0.0	\$ 0.0	\$ 0.0	n/a %	n/a %
Total Transportation Fund	\$ 3,593.9	\$ 3,560.3	\$ (33.6)	1.5 %	1.8 %

The Official forecast is based on the October 2017 Global Insight Standard outlook and the corresponding Virginia state forecast developed by the Department of Taxation.

The November forecast is based on the October 2018 IHS Markit Standard outlook and the corresponding Virginia state forecast developed by the Department of Taxation.

NON-GENERAL FUND REVENUES

Table 4.4
The November Commonwealth Transportation Fund Update for Fiscal Years 2021 through 2024
(Dollars in Millions)

November 1, 2018

	Fiscal Years 2021 through 2024							
	FY 21		FY 22		FY 23		FY 24	
	Forecast	% Growth	Forecast	% Growth	Forecast	% Growth	Forecast	% Growth
Highway Maintenance & Operating Fund								
Motor Fuels Tax	\$ 733.3	0.5	\$ 733.7	0.1	\$ 732.3	(0.2)	\$ 730.2	(0.3)
Road Tax	2.7	(15.6)	2.7	0.0	2.8	(3.7)	2.8	0.0
Motor Vehicle Sales And Use Tax	696.3	0.6	713.5	2.5	723.1	1.3	735.7	1.7
Motor Vehicle License Fees	239.2	0.1	239.2	0.0	239.2	0.0	239.2	0.0
Retail Sales and Use Tax	315.2	2.3	322.6	2.3	330.2	2.4	337.7	2.3
International Registration Plan	65.7	1.1	66.1	0.6	66.0	(0.2)	66.3	0.5
Miscellaneous	17.9	0.0	17.9	0.0	17.9	0.0	17.9	0.0
Total State Taxes and Fees (HMOF)	\$ 2,070.3	0.7	\$ 2,095.7	1.2%	\$ 2,111.5	0.8%	\$ 2,129.8	0.9%
Transportation Trust Fund								
Motor Fuels Tax	174.1	0.5	174.3	0.1	173.9	(0.2)	173.3	(0.3)
Insurance Premiums Tax (1/3)	199.4	6.1	199.8	0.2	209.0	4.6	218.0	4.3
Road Tax	8.6	(1.1)	8.5	(1.2)	8.3	(2.4)	8.2	(1.2)
Motor Vehicle Sales And Use Tax	230.3	0.5	235.8	2.4	238.8	1.3	242.9	1.7
Motor Vehicle License Fees	22.3	0.0	22.3	0.0	22.3	0.0	22.3	0.0
Retail Sales and Use Tax	809.4	2.4	828.5	2.4	847.9	2.3	867.1	2.3
Recordation Tax	43.6	0.0	43.6	0.0	43.6	0.0	43.6	0.0
Interest Earnings	4.0	0.0	4.0	0.0	4.0	0.0	4.0	0.0
Rental Tax	44.2	1.6	44.2	0.0	44.2	0.0	44.2	0.0
Aviation Fuels Tax	1.9	(5.0)	2.0	5.3	2.0	0.0	2.0	0.0
Total State Taxes and Fees (TTF)	\$ 1,537.8	2.2	\$ 1,563.0	1.6%	\$ 1,594.0	2.0%	\$ 1,625.6	2.0%
Total HMOF And TTF								
Motor Fuels Tax	907.4	0.5	908.0	0.1	906.2	(0.2)	903.5	(0.3)
Insurance Premiums Tax (1/3)	199.4	6.1	199.8	0.2	209.0	4.6	218.0	4.3
Road Tax	11.3	(5.0)	11.2	(0.9)	11.1	(0.9)	11.0	(0.9)
Motor Vehicle Sales and Use Tax	926.6	0.6	949.3	2.4	961.9	1.3	978.6	1.7
Motor Vehicle License Fees	261.5	0.1	261.5	0.0	261.5	0.0	261.5	0.0
International Registration Plan	65.7	1.1	66.1	0.6	66.0	(0.2)	66.3	0.5
Retail Sales and Use Tax	1,124.6	2.3	1,151.1	2.4	1,178.1	2.3	1,204.8	2.3
Recordation Tax (3 cents)	43.6	0.0	43.6	0.0	43.6	0.0	43.6	0.0
Interest Earnings	4.0	0.0	4.0	0.0	4.0	0.0	4.0	0.0
Rental Tax	44.2	1.6	44.2	0.0	44.2	0.0	44.2	0.0
Aviation Fuels Tax	1.9	(5.0)	2.0	5.3	2.0	0.0	2.0	0.0
Miscellaneous	17.9	0.0	17.9	0.0	17.9	0.0	17.9	0.0
Total State Taxes and Fees	\$ 3,608.1	1.3	\$ 3,658.7	1.4%	\$ 3,705.5	1.3%	\$ 3,755.4	1.3%
Transfers per the Appropriations Act								
Retail Sales Tax - AST (TTF)	0.0	n/a	0.0	n/a	0.0	n/a	0.0	n/a
Total Transfers	\$ -	n/a	\$ -	n/a	\$ -	n/a	\$ -	n/a
Total Transportation Fund	\$ 3,608.1	1.3	\$ 3,658.7	1.4%	\$ 3,705.5	1.3%	\$ 3,755.4	1.3%

The Official forecast is based on the October 2017 Global Insight Standard outlook and the corresponding Virginia state forecast developed by the Department of Taxation.

The November forecast is based on the October 2018 IHS Markit Standard outlook and the corresponding Virginia state forecast developed by the Department of Taxation.

NON-GENERAL FUND REVENUES

The Alternative Forecast

Table 4.5 on the following pages compares the official and November alternative Commonwealth Transportation Fund forecasts. Under the alternative forecast, total transportation fund revenues are reduced by a total of \$178.0 million over the next two fiscal years.

This forecast is based on IHS Markit October 2018 alternative forecast and the corresponding Virginia state forecast.

NON-GENERAL FUND REVENUES

Table 4.5
The Official and Nov. Alt. Commonwealth Transportation Fund Update for Fiscal Year 2019
(Dollars in Millions)

November 1, 2018

	Fiscal Year 2018		Fiscal Year 2019				
	Actual	% Growth	Official Forecast	November Forecast	Change	% Growth over FY 18	
						Official	November
Highway Maintenance & Operating Fund							
Motor Fuels Tax	\$ 683.4	(1.7) %	\$ 724.4	\$ 714.8	\$ (9.6)	6.0 %	4.6 %
Road Tax	3.6	(14.3)	1.7	3.5	1.8	(52.8)	(2.8)
Motor Vehicle Sales And Use Tax	711.0	(1.5)	715.7	681.4	(34.3)	0.7	(4.2)
Motor Vehicle License Fees	237.2	(0.3)	236.7	236.6	(0.1)	(0.2)	(0.3)
Retail Sales and Use Tax	292.5	5.6	292.7	300.9	8.2	0.1	2.9
International Registration Plan	69.2	4.5	64.2	67.6	3.4	(7.2)	(2.3)
Miscellaneous	19.6	6.5	17.2	17.9	0.7	(12.2)	(8.7)
Total State Taxes and Fees	\$ 2,016.5	(0.2) %	\$ 2,052.6	\$ 2,022.7	\$ (29.9)	1.8 %	0.3 %
Transportation Trust Fund							
Motor Fuels Tax	\$ 160.1	(1.7) %	\$ 172.1	\$ 169.8	\$ (2.3)	7.5 %	6.1 %
Insurance Premiums Tax (1/3)	168.0	3.0	176.7	168.7	(8.0)	5.2	0.4
Road Tax	8.0	(1.2)	8.6	8.6	0.0	7.5	7.5
Motor Vehicle Sales And Use Tax	232.7	(1.4)	236.9	227.8	(9.1)	1.8	(2.1)
Motor Vehicle License Fees	21.6	(2.7)	22.5	22.0	(0.5)	4.2	1.9
Retail Sales and Use Tax	751.3	1.1	775.1	772.7	(2.4)	3.2	2.8
Recordation Tax	47.8	(0.6)	48.3	43.6	(4.7)	1.0	(8.8)
Interest Earnings	8.9	39.1	4.2	3.8	(0.4)	(52.8)	(57.3)
Rental Tax	40.2	1.8	42.4	42.1	(0.3)	5.5	4.7
Aviation Fuels Tax	2.0	0.0	1.9	1.9	0.0	(5.0)	(5.0)
Total State Taxes and Fees	\$ 1,440.6	0.6 %	\$ 1,488.7	\$ 1,461.0	\$ (27.7)	3.3 %	1.4 %
Total HMOF And TTF							
Motor Fuels Tax	\$ 843.5	(1.7) %	\$ 896.5	\$ 884.6	\$ (11.9)	6.3 %	4.9 %
Insurance Premiums Tax (1/3)	168.0	3.0	176.7	168.7	(8.0)	5.2	0.4
Road Tax	11.6	(5.7)	10.3	12.1	1.8	(11.2)	4.3
Motor Vehicle Sales and Use Tax	943.7	(1.5)	952.6	909.2	(43.4)	0.9	(3.7)
Motor Vehicle License Fees	258.8	(0.5)	259.2	258.6	(0.6)	0.2	(0.1)
International Registration Plan	69.2	4.5	64.2	67.6	3.4	(7.2)	(2.3)
Retail Sales and Use Tax	1,043.8	2.3	1,067.8	1,073.6	5.8	2.3	2.9
Recordation Tax (3 cents)	47.8	(0.6)	48.3	43.6	(4.7)	1.0	(8.8)
Interest Earnings	8.9	39.1	4.2	3.8	(0.4)	(52.8)	(57.3)
Rental Tax	40.2	1.8	42.4	42.1	(0.3)	5.5	4.7
Aviation Fuels Tax	2.0	0.0	1.9	1.9	0.0	(5.0)	(5.0)
Miscellaneous	19.6	6.5	17.2	17.9	0.7	(12.2)	(8.7)
Total State Taxes and Fees	\$ 3,457.1	0.1 %	\$ 3,541.3	\$ 3,483.7	\$ (57.6)	2.4 %	0.8 %
Transfers per the Appropriations Act							
Retail Sales Tax - AST (TTF)	0.0	n/a	0.0	0.0	0.0	n/a	n/a
Total Transfers	\$ 0.0	n/a	\$ 0.0	\$ 0.0	\$ 0.0	n/a	n/a %
Total Transportation Fund	\$ 3,457.1	0.1	\$ 3,541.3	\$ 3,483.7	\$ (57.6)	2.4 %	0.8 %

The Official forecast is based on the October 2017 Global Insight Standard outlook and the corresponding Virginia state forecast developed by the Department of Taxation.

The Nov. Alt. forecast is based on the October 2018 IHS Markit Alternative outlook and the corresponding Virginia state forecast developed by the Department of Taxation.

NON-GENERAL FUND REVENUES

Table 4.5
The Official and Nov. Alt. Commonwealth Transportation Fund Update for Fiscal Year 2020
(Dollars in Millions)

November 1, 2018

	Fiscal Year 2020				
	Official Forecast	November Forecast	Change	% Growth over FY 19	
				Official	November
Highway Maintenance & Operating Fund					
Motor Fuels Tax	\$ 730.1	\$ 710.7	\$ (19.4)	0.8 %	(0.6) %
Road Tax	1.4	3.2	1.8	(17.6)	(8.6)
Motor Vehicle Sales And Use Tax	723.2	647.8	(75.4)	1.0	(4.9)
Motor Vehicle License Fees	239.1	239.0	(0.1)	1.0	1.0
Retail Sales and Use Tax	299.2	302.7	3.5	2.2	0.6
International Registration Plan	65.0	65.0	0.0	1.2	(3.8)
Miscellaneous	17.2	17.9	0.7	0.0	0.0
Total State Taxes and Fees (HMOF)	\$ 2,075.2	\$ 1,986.3	\$ (88.9)	1.1 %	(1.8) %
Transportation Trust Fund					
Motor Fuels Tax	\$ 173.4	\$ 168.7	\$ (4.7)	0.8 %	(0.6) %
Insurance Premiums Tax (1/3)	184.4	188.0	3.6	4.4	11.4
Road Tax	8.6	8.7	0.1	0.0	1.2
Motor Vehicle Sales And Use Tax	239.3	229.1	(10.2)	1.0	0.6
Motor Vehicle License Fees	22.9	22.3	(0.6)	1.8	1.4
Retail Sales and Use Tax	792.2	777.3	(14.9)	2.2	0.6
Recordation Tax	48.3	43.6	(4.7)	0.0	0.0
Interest Earnings	4.5	4.0	(0.5)	7.1	5.3
Rental Tax	43.2	43.5	0.3	1.9	3.3
Aviation Fuels Tax	1.9	2.0	0.1	0.0	5.3
Total State Taxes and Fees (TTF)	\$ 1,518.7	\$ 1,487.2	\$ (31.5)	2.0 %	1.8 %
Total HMOF And TTF					
Motor Fuels Tax	\$ 903.5	\$ 879.4	\$ (24.1)	0.8 %	(0.6) %
Insurance Premiums Tax (1/3)	184.4	188.0	3.6	4.4	11.4
Road Tax	10.0	11.9	1.9	(2.9)	(1.7)
Motor Vehicle Sales and Use Tax	962.5	876.9	(85.6)	1.0	(3.6)
Motor Vehicle License Fees	262.0	261.3	(0.7)	1.1	1.0
International Registration Plan	65.0	65.0	0.0	1.2	(3.8)
Retail Sales and Use Tax	1,091.4	1,080.0	(11.4)	2.2	0.6
Recordation Tax (3 cents)	48.3	43.6	(4.7)	0.0	0.0
Interest Earnings	4.5	4.0	(0.5)	7.1	5.3
Rental Tax	43.2	43.5	0.3	1.9	3.3
Aviation Fuels Tax	1.9	2.0	0.1	0.0	5.3
Miscellaneous	17.2	17.9	0.7	0.0	0.0
Total State Taxes and Fees	\$ 3,593.9	\$ 3,473.5	\$ (120.4)	1.5 %	(0.3) %
Transfers per the Appropriations Act					
Retail Sales Tax - AST (TTF)	0.0	0.0	0.0	n/a	n/a
Total Transfers	\$ 0.0	\$ 0.0	\$ 0.0	n/a %	n/a %
Total Transportation Fund	\$ 3,593.9	\$ 3,473.5	\$ (120.4)	1.5 %	(0.3) %

The Official forecast is based on the October 2017 Global Insight Standard outlook and the corresponding Virginia state forecast developed by the Department of Taxation.

The Nov. Alt. forecast is based on the October 2018 IHS Markit Alternative outlook and the corresponding Virginia state forecast developed by the Department of Taxation.

NON-GENERAL FUND REVENUES

Table 4.5
The Nov. Alt. Commonwealth Transportation Fund Update for Fiscal Years 2021 through 2024
(Dollars in Millions)

November 1, 2018

	Fiscal Years 2021 through 2024							
	FY 21	%	FY 22	%	FY 23	%	FY 24	%
	Forecast	Growth	Forecast	Growth	Forecast	Growth	Forecast	Growth
Highway Maintenance & Operating Fund								
Motor Fuels Tax	\$ 701.6	(1.3)	\$ 700.4	(0.2)	\$ 700.0	(0.1)	\$ 698.1	(0.3)
Road Tax	2.7	(15.6)	2.7	0.0	2.8	(3.7)	2.8	0.0
Motor Vehicle Sales And Use Tax	629.9	(2.8)	677.1	7.5	709.9	4.8	728.6	2.6
Motor Vehicle License Fees	239.2	0.1	239.2	0.0	239.2	0.0	239.2	0.0
Retail Sales and Use Tax	307.4	1.6	314.4	2.3	322.3	2.5	330.0	2.4
International Registration Plan	65.7	1.1	66.1	0.6	66.0	(0.2)	66.3	0.5
Miscellaneous	17.9	0.0	17.9	0.0	17.9	0.0	17.9	0.0
Total State Taxes and Fees (HMOF)	\$ 1,964.4	(1.1)	\$ 2,017.8	2.7%	\$ 2,058.1	2.0%	\$ 2,082.9	1.2%
Transportation Trust Fund								
Motor Fuels Tax	166.6	(1.2)	166.4	(0.1)	166.3	(0.1)	165.8	(0.3)
Insurance Premiums Tax (1/3)	199.4	6.1	199.8	0.2	209.0	4.6	218.0	4.3
Road Tax	8.6	(1.1)	8.5	(1.2)	8.3	(2.4)	8.2	(1.2)
Motor Vehicle Sales And Use Tax	230.3	0.5	235.8	2.4	238.8	1.3	242.9	1.7
Motor Vehicle License Fees	22.3	0.0	22.3	0.0	22.3	0.0	22.3	0.0
Retail Sales and Use Tax	789.1	1.5	807.3	2.3	827.5	2.5	847.2	2.4
Recordation Tax	43.6	0.0	43.6	0.0	43.6	0.0	43.6	0.0
Interest Earnings	4.0	0.0	4.0	0.0	4.0	0.0	4.0	0.0
Rental Tax	44.2	1.6	44.2	0.0	44.2	0.0	44.2	0.0
Aviation Fuels Tax	1.9	(5.0)	2.0	5.3	2.0	0.0	2.0	0.0
Total State Taxes and Fees (TTF)	\$ 1,510.0	1.5	\$ 1,533.9	1.6%	\$ 1,566.0	2.1%	\$ 1,598.2	2.1%
Total HMOF And TTF								
Motor Fuels Tax	868.2	(1.3)	866.8	(0.2)	866.3	(0.1)	863.9	(0.3)
Insurance Premiums Tax (1/3)	199.4	6.1	199.8	0.2	209.0	4.6	218.0	4.3
Road Tax	11.3	(5.0)	11.2	(0.9)	11.1	(0.9)	11.0	(0.9)
Motor Vehicle Sales and Use Tax	860.2	(1.9)	912.9	6.1	948.7	3.9	971.5	2.4
Motor Vehicle License Fees	261.5	0.1	261.5	0.0	261.5	0.0	261.5	0.0
International Registration Plan	65.7	1.1	66.1	0.6	66.0	(0.2)	66.3	0.5
Retail Sales and Use Tax	1,096.5	1.5	1,121.7	2.3	1,149.8	2.5	1,177.2	2.4
Recordation Tax (3 cents)	43.6	0.0	43.6	0.0	43.6	0.0	43.6	0.0
Interest Earnings	4.0	0.0	4.0	0.0	4.0	0.0	4.0	0.0
Rental Tax	44.2	1.6	44.2	0.0	44.2	0.0	44.2	0.0
Aviation Fuels Tax	1.9	(5.0)	2.0	5.3	2.0	0.0	2.0	0.0
Miscellaneous	17.9	0.0	17.9	0.0	17.9	0.0	17.9	0.0
Total State Taxes and Fees	\$ 3,474.4	0.0	\$ 3,551.7	2.2%	\$ 3,624.1	2.0%	\$ 3,681.1	1.6%
Transfers per the Appropriations Act								
Retail Sales Tax - AST (TTF)	0.0	n/a	0.0	n/a	0.0	n/a	0.0	n/a
Total Transfers	\$ -	n/a	\$ -	n/a	\$ -	n/a	\$ -	n/a
Total Transportation Fund	\$ 3,474.4	0.0	\$ 3,551.7	2.2%	\$ 3,624.1	2.0%	\$ 3,681.1	1.6%

The Official forecast is based on the October 2017 Global Insight Standard outlook and the corresponding Virginia state forecast developed by the Department of Taxation.

The Nov. Alt. forecast is based on the October 2018 IHS Markit Alternative outlook and the corresponding Virginia state forecast developed by the Department of Taxation.

NON-GENERAL FUND REVENUES

ABC Revenues and Profits Fiscal Year 2018

In fiscal year 2018, ABC's total revenue, excluding state tax receipts, was \$844.9 million. Gross sales of alcoholic beverages in the retail stores accounted for 97.3 percent of the revenue. The remaining 2.7 percent of revenue was generated largely through the Department's regulatory and licensing activities. Table 4.6 shows ABC's revenues, costs, and profits for fiscal years 2015 through 2018. Along with the net ABC profits, Table 4.6 also shows transfers required by the Acts of the Assembly and net profits for distribution transferred to the General Fund.

Table 4.6
Department of Alcoholic Beverage Control Components
of the Enterprise Fund - Revenues, Expenses, and Disbursements
Fiscal Years 2015-2018 (\$ millions)

	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
Total Revenue*	730.1	771.9	807.6	844.9
Cost of Goods & Total Operating Expenses	577.7	606.6	637.0	664.2
Net ABC Profit	152.5	165.2	172.9	181.2
Transfer to the General Fund:				
Reimbursement for Appropriations as provided by the Acts of the Assembly	67.5	68.0	69.4	69.9
Net Profits for Distribution	84.6	96.9	101.7	109.3

*These revenue figures exclude receipts collected under the state tax on alcoholic beverages and the general sales tax.

ABC Revenues and Profit Forecast for 2019-2022

Comparisons of ABC's performance in fiscal year 2017, estimated performance for fiscal year 2018, and actual performance in fiscal year 2018, are included in Table 4.7. Fiscal Year 2018 compared to 2017 shows an increase in sales, an increase in net ABC profits for distribution, and an increase in state tax revenue. Table 4.8 contains fiscal year 2018 results for store sales, profits for distribution and state tax revenues along with the 2019 through 2022 forecasts. Profit forecasts in Table 4.8 are net of any transfers mandated by the Appropriation Act.

Table 4.7
A Comparison of Fiscal Year 2017 Results
to Fiscal Year 2018 Estimated and Actual Results
(\$ millions)

	<u>FY17</u> <u>Actual</u>	<u>FY18</u> <u>Estimate</u>	<u>FY18</u> <u>Actual</u>	<u>FY18 Variance</u>		<u>FY18 v FY17</u>	
				<u>Amount</u>	<u>Percent</u>	<u>Estimate</u>	<u>Actual</u>
Total Store Sales*	940.1	981.6	983.4	1.8	0.0	41.5	43.3
Net ABC Profit for Distribution	101.7	104.1	109.3	5.2	0.0	2.4	7.6
State Tax Revenue**	182.1	189.7	189.4	(0.3)	(0.0)	7.6	7.3

*These figures include state tax on alcoholic beverages excluding the general sales tax collected at ABC stores

**State Tax Revenue does not include \$9.1m wine liter tax transferred to DBHDS

ABC's profit forecast is a factor of two elements: sales performance and trends in expenses. In both cases, forecasts beyond fiscal year 2019 are more prone to forecast error given the uncertainty with the economy and impacts on customer behavior and ABC's cost structure.

In fiscal year 2019, ABC expects sales to continue to grow in both the retail and mixed beverage licensee (restaurant) segments. Sales from ABC's retail outlets continue to increase year over year. Uncontrollable factors such as holiday season sales and sales from restaurants have the potential to significantly impact the accuracy of ABC's sales forecast. Currently, ABC is experiencing growth in both retail and restaurant sales.

On the expense side, ABC is faced with mandated salary and benefit costs, energy inflation, automatic rent escalation, telecommunication and technology costs and growth in credit card discount fees that are all very difficult to influence in the short run. Personnel costs account for 60 percent of ABC non-merchandise expenditures, 17 percent are for continuous charges such as rent and utilities, 18 percent are for contractual services such as credit cards fees, shipping product to stores and telecommunications, and 5 percent are for miscellaneous expenses such as supplies and materials, equipment and depreciation. In fiscal years 2019 through 2022, increases in expenditures are exacerbated by the need to make significant ongoing infrastructure improvements in order to improve our information technology infrastructure. Currently, several of the ABC's systems are dated and have reached their end-of-life, needing to be upgraded to maintain viability and to keep up with ABC's growing needs. Upgrading the outdated systems also addresses an Auditor of Public Accounts audit point, ensuring that ABC complies with state and industry security standards. Changes in salary and benefit cost rates, as well as mandated Appropriations Act transfers, can also significantly impact the accuracy of ABC's expense forecasts. Additionally, implementation of GASB 87 will have an impact on profit in fiscal year 2021 and beyond.

NON-GENERAL FUND REVENUES

Table 4.8
Forecast of ABC Store Sales, ABC State Tax on Alcohol,
and Net Profits for Distribution
(\$ millions)

	<u>Actual</u>	<u>Forecast</u>			
	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
Total ABC Store Sales: (1)	983.4	1,031.0	1,078.4	1,124.3	1,172.0
Adjusted Net Profits for Distribution: (2) (3) (5)	109.3	112.9	117.2	118.4	122.2
ABC State Tax Revenues:(1)					
Spirits	160.9	169.9	177.7	185.3	193.1
Wine (4)	28.5	29.2	29.8	30.4	31.0
Total Tax Revenue:	189.4	199.1	207.5	215.7	224.1

(1) Excludes the general sales tax and lottery sales

(2) Does not include appropriation transfers mandated by Virginia Acts of Assembly

(3) ABC develops forecasts on an accrual basis. The transfer of profits occurs on a cash basis.
Variances often occur at year end when ABC has to transfer estimated profits on June 30th.

(4) Wine figure excludes statutory transfers

(5) GASB 87 will be implemented in 2021, which will impact profits for distribution

Distribution of ABC Profits and ABC State Tax Revenues

During fiscal year 2018, ABC contributed \$181.2 million (accrual basis) of net profits to the Commonwealth, and collected \$240.2 million of taxes on store sales, wine and beer and an additional \$45.4 million of general sales tax totaling \$466.8 million.

Net ABC profits are generally earmarked for deposit in the General Fund; certain appropriations have been made by the General Assembly to recover alcohol-related program costs. Such programs include the Department of Behavioral Health and Developmental Services' programs for the treatment of alcoholics. The transfers for these programs and others were \$69.9 million in fiscal year 2018. These appropriations are charged against net ABC profits before being transferred to the General Fund. The remaining ABC profits are transferred into the General Fund as ABC profits. ABC expects to meet transfer requirements in fiscal year 2019 given the projected increase in gross sales. However, risks include reduced purchases (economy or weather related), particularly during the holiday season, and unforeseen increases in expenses.

In any given time period, amounts transferred to the General Fund will not correspond to net ABC profit earned, due to a 50 day interval before the profits are transferred to the Fund. This issue is exacerbated at year-end when ABC must estimate fourth quarter profits and make the transfer in advance of year-end closing.

Virginia Lottery

Each fiscal year, the Lottery makes periodic transfers of net income (revenues from sales plus other income, minus expenses) to the Lottery Proceeds Fund, in accordance with the schedule included in the Appropriations Act. Expenses are comprised of prizes to players, commissions to retailers, ticket printing and distribution, contractual fees for gaming system operations, and administrative operating costs. The primary drivers of the net income transferred are sales of lottery products and prizes paid to players.

Actual Results - Fiscal Year 2018

The Virginia Lottery transferred \$596.7 million to the Lottery Proceeds Fund during fiscal year 2018. The Lottery also transferred \$2.0 million for debt set-off to the Department of Taxation and \$14.1 million from unclaimed prizes to the Literary Fund. Sales for fiscal year 2018 were \$2.1 billion, an increase of \$15.0 million (+7.5 percent) from fiscal year 2017. Net income was \$606.2 million, \$47.9 million (+8.6 percent) more than fiscal year 2017, due to strong sales.

Total transfers to the Lottery Proceeds Fund during fiscal year 2018 were as follows: \$11.8 million in residual profits from fiscal year 2017, and \$584.9 in estimated profits from fiscal year 2018. The \$9.6 million of residual fiscal year 2018 profits, transferred in August 2018 after the 2018 fiscal year results were certified by the Auditor of Public Accounts, will be included in the total fiscal year 2019 transfers.

Forecast Overview - Fiscal Years 2019 through 2020

The Virginia Lottery developed its sales and revenue forecasts based upon a variety of baseline assumptions, including:

- the economic outlook as endorsed by the Joint Advisory Board of Economists, in particular with respect to long-term interest rates and US Treasury-issued bond yields;
- continued traditional lottery gaming competition from neighboring jurisdictions, as well as the increased competition from internet lottery sales and casino-style gaming in nearby jurisdictions including Maryland, Washington, D.C., North Carolina, West Virginia, Kentucky and Delaware;
- no legislatively-mandated change in the overall compensation rate paid to retailers offering Lottery products, or other constraints on Lottery expenses including prizes;
- no additional legislatively mandated limitation on the administrative spending for the Lottery, other than the current statutory 10 percent spending cap in place since the Lottery's inception;
- no new constraints on the Lottery's sales and marketing efforts, including the ability to advertise products, establish prizes paid to players, and offer licensed property games that appeal to consumers; and
- no new, non-traditional product-line offerings such as video lottery game offerings, and no expansion of internet gaming in Virginia.

NON-GENERAL FUND REVENUES

For fiscal year 2019, the Lottery is projecting sales of \$2.2 billion and net income (turnover to the Lottery Proceeds Fund) of \$606.2 million. Prize expense is estimated to be \$1.378 billion, or 61.9 percent of sales; retailer compensation is forecast to be \$126.1 million, or 5.7 percent of sales. This forecast takes into account current trends and simulation models for jackpot progressions and sales, and statistically expected prize expense rates. In addition to this estimate, a one-time adjustment of \$16.6 million from the Mega Millions record breaking jackpot roll to over \$1.5 billion in October 2018 is added to the standard forecast of sales and profits. The total estimated \$622.8 million (\$622,835,726) net income, plus the residual \$9.6 million of fiscal year 2018 profits that will be transferred during fiscal year 2019, brings the total expected transfers to the Lottery Proceeds Fund for fiscal year 2019 to \$632.4 million. This is an increase of \$39.9 million over the figure in Chapter 2 for fiscal year 2019.

For fiscal year 2020, the Lottery expects that sales will grow to \$2.3 billion, creating revenue for the Lottery Proceeds Fund of \$628.8 million, which is an increase of \$30.4 million over the figure in Chapter 2 for fiscal year 2020.

Sales Projections for Fiscal Years 2019 through 2020

For each fiscal year forecast, the Lottery total forecast is the sum of sales forecasts developed by the Lottery for each of its products. The methodology for each estimate is dependent upon the nature of the product. The data used in our models include such factors as: experiences of other U.S. and Canadian lotteries, variability of prize percentage, economic variables such as predicted interest rates, seasonal factors, promotions, product life cycle, and the Lottery's future plans for each of the products.

Scratch Games

Scratch games account for about 55 percent of total lottery sales. Sales of scratch games are expected to sustain the recent growth in prior years over the forecast period, as players continue to support the variety of games offered in Virginia. The key to the maintenance and growth of scratch sales over the forecast horizon will be actively managing our comprehensive portfolio of games at various price points and prize levels, as well as continuing to maintain and expand our retail distribution network and improve the use of technology for our 5,300 retail partners across Virginia.

The Jackpot-Style Games: Mega Millions, Powerball, Bank a Million, and Cash 4 Life

About 10 percent of the Lottery's sales come from jackpot-style games - those games offering top prizes in the millions of dollars. The Lottery currently offers four such games - Mega Millions, Powerball, Bank a Million and Cash 4 Life. "Luck of the draw" plays a major role in the sales performance of Mega Millions and Powerball. Drawings of random numbers determine whether the jackpot prize is won or whether it "rolls" and continues to grow. High jackpots increase levels of play. Conversely, high frequency of jackpot winners means less jackpot growth and lower sales. Since drawings of random numbers determine

the frequency of jackpot wins, which is a large determinant of sales levels for these games, there is inherently a large degree of uncertainty in any forecast for these large jackpot games.

Another key determinant of sales levels for these games is the prevailing interest rate. The Lottery invests the prize pool for each jackpot prize in U.S. Treasury Bonds to create the necessary annuity income stream. At a given level of sales and resulting cash pool, the higher the yield of the bonds, the higher an annuity jackpot prize may be advertised. Higher advertised jackpots lead to higher sales. Thus in periods of high interest rates, jackpots grow relatively quickly and sales are stable. In periods of low interest rates, jackpots grow slowly and sales decline. Current bond yields continue to be very low.

Bank a Million and Cash 4 Life, the other jackpot-style games currently offered in Virginia, offer a fixed prize to players without regard to the number of winners resulting from any single drawing. Player awareness of these types of games, and frequent game refreshes, are key to these products' success. These games also pose a short-term profitability risk because of the large fixed prizes available for each drawing.

Efforts to expand multi-state jackpot game offerings among all U.S. Lottery states led to the 2010 breakthrough agreement between the two major consortia – Mega Millions and Powerball. Those efforts were intended to strengthen both the current games and potentially lead to further collaborative game offerings. Because there are so many states involved in these types of national agreements, these types of initiatives have experienced delays and setbacks over the years. The recent change to the Mega Millions game, increasing the price per ticket to \$2, and making the jackpot prize harder to win, delivered the intended results of improving the growth of the jackpot and therefore increase player interest in the game. The sales and profit forecast includes the expected impact of this game change; it is similar to the Powerball game change implemented in 2015. For fiscal year 2019, a one-time profit impact of \$19.2 million is the result of the record-setting Mega Millions jackpot already experienced in October 2018 – while the game performed as expected after the change, it is important to note that the change took a full year to occur. These record-breaking situations can occur, but the timing cannot be predicted.

Daily Games

The Lottery's other drawing games – those games sold through the network of Lottery computer terminals and where winners are determined by a random drawing – collectively referred to as “daily games,” are Pick 3, Pick 4 and Cash 5. Daily games comprise about a third of total Lottery sales. Each of these products operates on approximately the same profit margin. While Pick 3 and Pick 4 are very mature products, total sales are forecast to continue increasing slightly. Cash 5 is expected to continue to exhibit stable sales, an unusual phenomenon and contrary to the experiences of other U.S. lotteries that have seen their Cash 5 sales decline more significantly.

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Other Products

Since fiscal year 2007, the Lottery has offered two additional products to players: the limited-time offering of raffle tickets, and a new line of “print and play” style games. Raffle style games offer a fixed number of tickets for sale, and each ticket has an equal chance to win predetermined prizes. Print and play style games are printed at retailer terminals, and offer an instant-win experience for consumers. These offerings were re-branded in fiscal year 2016, with a new look, new game offerings, and the new “Print n’ Play” name, and players have responded with strong sales growth in these products. These other products comprise less than 5 percent of total lottery sales.

Net Income for Fiscal Years 2019 through 2020

The Lottery is forecasting net income of \$625.4 million for fiscal year 2019, and \$628.8 million for fiscal year 2020. The Lottery’s largest expense, prizes to players, is expected to increase over this period as players continue to buy more of the higher price point scratch games, which pay a higher portion of sales back in prizes. Retailers should continue to earn commissions and incentives equal to about 5.6 percent of sales. Operating expenses are projected to remain low, forecast to stabilize around 5.3 percent of total sales – about half of the 10 percent statutory maximum.

The Virginia Lottery, celebrating its 30th year in fiscal year 2019, with its current product mix, continues to operate at a mature stage. Virginia continues to support sustaining sales and net income through innovations in existing products, ongoing operating efficiencies, retailer recruitment and expansion initiatives, continued innovation through technology and digital advancement, and crucial marketing endeavors.

Table 4.9
Forecast of Lottery Sales and Transfers to the Lottery Proceeds Fund
\$ Millions

	FY19	FY20	FY21	FY22
Sales	2,226.3	2,317.0	2,351.8	2,375.3
- Prize Expense	1,377.8	1,435.8	1,460.9	1,479.2
- Retailer Compensation	126.1	131.3	133.3	134.6
- Operating Expenses	117.3	122.2	124.0	125.3
+ Other Income	1.0	1.0	1.1	1.1
Net Income	606.1	628.7	634.7	637.3
Other Transfers	26.2	-	-	-
Total Available	632.3	628.7	634.7	637.3

Ongoing Risks to the Forecast

There are always a number of ongoing risks associated with the Virginia Lottery's forecast that could significantly affect the Lottery's transfer to the Lottery Proceeds Fund. The first is luck. Since the basis of many of the Lottery's products is a random drawing, in the relatively short period of one year, a wide range of outcomes can occur. If the Lottery experiences unusually high payouts in its daily games in any given year, sales may be higher than projected, but income lower simply due to players winning more money. Luck is also a primary driver of sales for Mega Millions and Powerball. If jackpots are won with more frequency than expected, then sales will be lower than expected, due to small jackpots. Of course, a long period without a jackpot win can generate much higher sales due to the exponential growth of the jackpot; this was the case in January 2016 when the Powerball jackpot grew to a world record \$1.6 billion, and earlier this fiscal year with Mega Millions setting a record of \$1.5 billion. This type of sales activity is never anticipated as part of a forecast of expected results, and can have longer-term negative impacts on game sales.

A second risk is competition from other gaming opportunities available to consumers. Many state lotteries, including North Carolina, Kentucky and Georgia, have initiated internet-based product offerings not available in Virginia. With the December 2011 Department of Justice ruling that helped clarify the legality of internet gaming, many states are progressing toward offering internet gaming that would provide Virginia consumers a more readily available outlet for their gaming dollars. This continued expansion will also change consumer expectations and demands for how they are able to buy Lottery products. Virginia has a statutory restriction that allows only subscription-based internet Lottery sales. A legislative study of internet gaming was conducted in 2015, and there is continued interest among players to legalize additional internet lottery sales to meet digital player expectations.

Increased competition from casino offerings in Maryland, which began in 2010, may have an increasingly negative impact on traditional lottery product sales in Virginia – in particular, the casino just across the Virginia border at National Harbor on the Potomac River which has won \$1.16 billion from players since it opened in late 2016. This increase in competition for gaming dollars along the heavily populated northern Virginia border is in addition to the well-established competition from video lottery and table games offerings in West Virginia. Expanded gaming options in West Virginia and Delaware are also aggressively advertised in Virginia markets. And the legalization of historic horse wagering in Virginia, and the potential for Tribal gaming, will provide in-state gaming options in competition with the Lottery games.

There are two other digital gaming opportunities readily available to Virginia consumers. Online pari-mutuel wagering on Virginia and out-of-state horse races has generated over three-quarters of a billion dollars of activity since 2004. Fantasy sports offerings like Fan Duel and Draft Kings are also available, since becoming specifically legalized in the Commonwealth during the 2016 Legislative Session. The Fantasy Sports Trade Association estimates that 18 percent of adults in the US play fantasy sports and that 64 percent of them play daily fantasy sports (DFS). Most DFS contests require an entry fee

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and offer cash prizes. That equates to over 750,000 Virginians entering DFS contests annually. If those players are wagering the national average of \$318 per capita, then that would equate to \$238.6 million. Prevalence of play in the Commonwealth may be higher than nationally, since Virginia has expressly legalized the games and required consumer protection measures. Finally, the 2018 Supreme Court ruling that repealed the Professional Amateur Sports Protection Act (PASPA) has made legalized sports betting a reality in several states, as nearby as West Virginia, New Jersey, Pennsylvania and Delaware, with news of other states joining each week.

The current estimates of sales and profits also presume that the Lottery's appropriation authority is sufficient to support its operations for activities including investments in technology, sales equipment necessary for the expansion of the Lottery retailer network, advertising, and contractual commitments to vendor partners that are primarily based on percentage of sales agreements. Estimates also do not anticipate any change in the distribution of lottery profits, or any change in the prize allocations or prize types available to players.

APPENDIX A ECONOMIC DATA

TABLE A.1 - QUARTERLY NATIONAL AND VIRGINIA ECONOMIC VARIABLES

	History											
	2015.3	2015.4	2016.1	2016.2	2016.3	2016.4	2017.1	2017.2	2017.3	2017.4	2018.1	2018.2
Real Gross Domestic Product, Billions \$, SAAR	17,438.8	17,456.2	17,523.4	17,622.5	17,706.7	17,784.2	17,863.0	17,995.2	18,120.8	18,223.8	18,324.0	18,511.6
Annualized % Change	1.0	0.4	1.5	2.3	1.9	1.8	1.8	3.0	2.8	2.3	2.2	4.2
% Change from Prior Year's Quarter	2.4	2.0	1.6	1.3	1.5	1.9	1.9	2.1	2.3	2.5	2.6	2.9
Real Consumer Spending, Billions \$, SAAR	11,972.0	12,039.7	12,111.8	12,214.1	12,294.3	12,372.7	12,427.6	12,515.9	12,584.9	12,706.4	12,722.8	12,842.0
Annualized % Change	2.9	2.3	2.4	3.4	2.7	2.6	1.8	2.9	2.2	3.9	0.5	3.8
% Change from Prior Year's Quarter	3.6	3.0	2.7	2.7	2.7	2.8	2.6	2.5	2.4	2.7	2.4	2.6
U.S. Personal Income, Billions \$, SAAR	15,842.9	15,882.1	15,946.5	16,031.6	16,170.6	16,351.8	16,604.4	16,721.2	16,895.1	17,103.1	17,319.2	17,499.8
Annualized % Change	4.2	1.0	1.6	2.2	3.5	4.6	6.3	2.8	4.2	5.0	5.2	4.2
% Change from Prior Year's Quarter	4.8	3.8	3.1	2.2	2.1	3.0	4.1	4.3	4.5	4.6	4.3	4.7
Virginia Personal Income, Millions \$, SAAR	444,788.5	444,689.8	444,128.4	445,770.6	449,312.3	455,522.7	460,985.3	463,775.2	468,952.4	473,260.1	478,911.1	484,091.9
Annualized % Change	3.9	(0.1)	(0.5)	1.5	3.2	5.6	4.9	2.4	4.5	3.7	4.9	4.4
% Change from Prior Year's Quarter	5.2	3.9	2.5	1.2	1.0	2.4	3.8	4.0	4.4	3.9	3.9	4.4
Virginia Wages and Salaries, Millions \$, SAAR	227,611.5	228,182.6	227,571.5	228,624.7	231,154.7	235,221.0	237,441.5	238,550.6	241,619.3	242,821.1	246,142.7	249,416.3
Annualized % Change	4.7	1.0	(1.1)	1.9	4.5	7.2	3.8	1.9	5.2	2.0	5.6	5.4
% Change from Prior Year's Quarter	5.4	4.2	2.9	1.6	1.6	3.1	4.3	4.3	4.5	3.2	3.7	4.6
Virginia Dividends, Interest, and Rent, Millions \$, SAAR	90,602.9	90,249.6	90,483.2	91,098.8	91,653.0	92,577.9	94,401.9	95,003.7	95,444.9	97,416.4	98,306.6	99,069.0
Annualized % Change	4.2	(1.6)	1.0	2.7	2.5	4.1	8.1	2.6	1.9	8.5	3.7	3.1
% Change from Prior Year's Quarter	5.0	3.5	2.9	1.6	1.2	2.6	4.3	4.3	4.1	5.2	4.1	4.3
Virginia Total Proprietor's Income, Millions \$, SAAR	28,263.5	27,840.8	26,604.3	26,444.4	26,598.9	27,056.1	27,165.1	27,374.7	27,649.5	28,077.7	28,483.7	28,967.1
Annualized % Change	5.8	(5.8)	(16.6)	(2.4)	2.4	7.1	1.6	3.1	4.1	6.3	5.9	7.0
% Change from Prior Year's Quarter	0.8	(0.6)	(4.7)	(5.1)	(5.9)	(2.8)	2.1	3.5	3.9	3.8	4.9	5.8

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.1 - QUARTERLY NATIONAL AND VIRGINIA ECONOMIC VARIABLES

	History											
	2015.3	2015.4	2016.1	2016.2	2016.3	2016.4	2017.1	2017.2	2017.3	2017.4	2018.1	2018.2
Total U.S. Employment, Millions, SA	142.1	142.8	143.4	144.0	144.7	145.3	145.9	146.3	146.9	147.4	148.1	148.7
Annualized % Change	1.8	2.0	1.7	1.5	2.0	1.5	1.6	1.3	1.5	1.5	1.7	1.7
% Change from Prior Year's Quarter	2.0	2.0	1.9	1.8	1.8	1.7	1.7	1.6	1.5	1.5	1.5	1.6
Virginia Total Nonag. Employment, Thousands, SA	3,876.5	3,900.0	3,902.4	3,906.3	3,918.6	3,929.5	3,946.0	3,952.3	3,960.7	3,969.8	4,010.3	4,030.6
Annualized % Change	3.4	2.4	0.2	0.4	1.3	1.1	1.7	0.6	0.9	0.9	4.1	2.0
% Change from Prior Year's Quarter	2.3	2.8	2.3	1.6	1.1	0.8	1.1	1.2	1.1	1.0	1.6	2.0
CPI, All Urban, 1982-1984=1.0, SA	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.5
Annualized % Change	1.5	0.1	(0.1)	2.7	1.8	2.7	3.0	0.1	2.1	3.3	3.5	1.7
% Change from Prior Year's Quarter	0.2	0.4	1.1	1.1	1.1	1.8	2.6	1.9	2.0	2.1	2.3	2.6
Refiner's Acquisition Cost of Oil, \$ per Barrel	47.6	40.6	30.8	42.2	42.9	46.5	50.0	47.7	48.4	56.7	61.9	67.2
Quarterly Change	(9.8)	(7.0)	(9.8)	11.4	0.7	3.6	3.4	(2.2)	0.7	8.2	5.2	5.4
Change from Prior Year's Quarter	(48.8)	(33.2)	(17.2)	(15.2)	(4.7)	5.9	19.2	5.5	5.5	10.1	11.9	19.5
Before-Tax Corporate Profits, Billions \$, SAAR	2,129.6	1,990.3	2,037.8	2,146.8	2,137.5	2,196.7	2,211.8	2,200.4	2,230.7	2,084.6	2,111.0	2,197.2
Annualized % Change	(15.7)	(23.7)	9.9	23.2	(1.7)	11.5	2.8	(2.1)	5.6	(23.7)	5.2	17.3
% Change from Prior Year's Quarter	(8.1)	(12.4)	(7.1)	(3.4)	0.4	10.4	8.5	2.5	4.4	(5.1)	(4.6)	(0.1)
S&P 500 Stock Market Index, Level	2,026.1	2,053.2	1,948.3	2,075.0	2,161.4	2,184.9	2,323.9	2,396.2	2,467.7	2,605.0	2,732.6	2,703.2
Annualized % Change	(13.7)	5.4	(18.9)	28.7	17.7	4.4	28.0	13.0	12.5	24.2	21.1	(4.2)
% Change from Prior Year's Quarter	2.5	2.0	(5.6)	(1.3)	6.7	6.4	19.3	15.5	14.2	19.2	17.6	12.8
30-Year Treasury Bonds, Level	3.0	3.0	2.7	2.6	2.3	2.8	3.0	2.9	2.8	2.8	3.0	3.1
Quarterly Change	0.1	0.0	(0.2)	(0.2)	(0.3)	0.5	0.2	(0.1)	(0.1)	(0.0)	0.2	0.1
Change from Prior Year's Quarter	(0.3)	(0.0)	0.2	(0.3)	(0.7)	(0.1)	0.3	0.3	0.5	(0.0)	(0.0)	0.2

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.2 - QUARTERLY NATIONAL AND VIRGINIA ECONOMIC VARIABLES

	October Standard Forecast											
	2018.3	2018.4	2019.1	2019.2	2019.3	2019.4	2020.1	2020.2	2020.3	2020.4	2021.1	2021.2
Real Gross Domestic Product, Billions \$, SAAR	18,668.0	18,792.4	18,906.1	19,029.2	19,148.1	19,255.8	19,348.9	19,438.1	19,512.4	19,588.5	19,665.6	19,739.3
Annualized % Change	3.4	2.7	2.4	2.6	2.5	2.3	1.9	1.9	1.5	1.6	1.6	1.5
% Change from Prior Year's Quarter	3.0	3.1	3.2	2.8	2.6	2.5	2.3	2.1	1.9	1.7	1.6	1.5
Real Consumer Spending, Billions \$, SAAR	12,957.2	13,032.6	13,114.2	13,204.0	13,293.8	13,379.7	13,461.0	13,535.4	13,611.4	13,685.9	13,757.6	13,826.1
Annualized % Change	3.6	2.4	2.5	2.8	2.7	2.6	2.5	2.2	2.3	2.2	2.1	2.0
% Change from Prior Year's Quarter	3.0	2.6	3.1	2.8	2.6	2.7	2.6	2.5	2.4	2.3	2.2	2.1
U.S. Personal Income, Billions \$, SAAR	17,673.7	17,833.0	18,069.2	18,286.7	18,508.8	18,733.8	18,979.1	19,196.5	19,392.9	19,593.2	19,824.1	20,028.3
Annualized % Change	4.0	3.7	5.4	4.9	4.9	5.0	5.3	4.7	4.2	4.2	4.8	4.2
% Change from Prior Year's Quarter	4.6	4.3	4.3	4.5	4.7	5.1	5.0	5.0	4.8	4.6	4.5	4.3
Virginia Personal Income, Millions \$, SAAR	486,890.4	492,024.9	499,229.3	505,202.6	510,762.0	516,527.5	523,072.5	527,710.2	534,263.1	540,384.2	546,820.1	552,740.8
Annualized % Change	2.3	4.3	6.0	4.9	4.5	4.6	5.2	3.6	5.1	4.7	4.8	4.4
% Change from Prior Year's Quarter	3.8	4.0	4.2	4.4	4.9	5.0	4.8	4.5	4.6	4.6	4.5	4.7
Virginia Wages and Salaries, Millions \$, SAAR	250,527.4	253,963.0	257,341.6	260,078.7	262,423.3	265,037.9	267,831.7	269,237.5	272,679.3	275,700.2	278,273.9	280,938.9
Annualized % Change	1.8	5.6	5.4	4.3	3.7	4.0	4.3	2.1	5.2	4.5	3.8	3.9
% Change from Prior Year's Quarter	3.7	4.6	4.5	4.3	4.7	4.4	4.1	3.5	3.9	4.0	3.9	4.3
Virginia Dividends, Interest, and Rent, Millions \$, SAAR	99,156.8	100,068.7	101,903.1	103,774.0	105,597.2	107,352.5	108,999.1	110,576.7	112,098.6	113,575.3	115,096.0	116,663.8
Annualized % Change	0.4	3.7	7.5	7.5	7.2	6.8	6.3	5.9	5.6	5.4	5.5	5.6
% Change from Prior Year's Quarter	3.9	2.7	3.7	4.7	6.5	7.3	7.0	6.6	6.2	5.8	5.6	5.5
Virginia Total Proprietor's Income, Millions \$, SAAR	28,983.4	29,101.0	29,029.2	28,851.8	28,659.0	28,450.8	28,160.7	27,809.6	27,518.6	27,253.5	26,990.7	26,760.3
Annualized % Change	0.2	1.6	(1.0)	(2.4)	(2.6)	(2.9)	(4.0)	(4.9)	(4.1)	(3.8)	(3.8)	(3.4)
% Change from Prior Year's Quarter	4.8	3.6	1.9	(0.4)	(1.1)	(2.2)	(3.0)	(3.6)	(4.0)	(4.2)	(4.2)	(3.8)

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

October Standard Forecast

	2021.3	2021.4	2022.1	2022.2
Real Gross Domestic Product, Billions \$, SAAR	19,811.3	19,887.3	19,962.7	20,039.0
Annualized % Change	1.5	1.5	1.5	1.5
% Change from Prior Year's Quarter	1.5	1.5	1.5	1.5
Real Consumer Spending, Billions \$, SAAR	13,893.1	13,959.9	14,026.4	14,089.6
Annualized % Change	2.0	1.9	1.9	1.8
% Change from Prior Year's Quarter	2.1	2.0	2.0	1.9
U.S. Personal Income, Billions \$, SAAR	20,231.0	20,436.0	20,661.6	20,863.9
Annualized % Change	4.1	4.1	4.5	4.0
% Change from Prior Year's Quarter	4.3	4.3	4.2	4.2
Virginia Personal Income, Millions \$, SAAR	558,741.4	564,882.5	571,586.3	577,605.5
Annualized % Change	4.4	4.5	4.8	4.3
% Change from Prior Year's Quarter	4.6	4.5	4.5	4.5
Virginia Wages and Salaries, Millions \$, SAAR	283,644.4	286,443.6	289,211.3	291,953.6
Annualized % Change	3.9	4.0	3.9	3.8
% Change from Prior Year's Quarter	4.0	3.9	3.9	3.9
Virginia Dividends, Interest, and Rent, Millions \$, SAAR	118,225.3	119,808.3	121,325.4	122,831.4
Annualized % Change	5.5	5.5	5.2	5.1
% Change from Prior Year's Quarter	5.5	5.5	5.4	5.3
Virginia Total Proprietor's Income, Millions \$, SAAR	26,546.7	26,354.6	26,102.7	25,900.6
Annualized % Change	(3.2)	(2.9)	(3.8)	(3.1)
% Change from Prior Year's Quarter	(3.5)	(3.3)	(3.3)	(3.2)

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

	October Standard Forecast											
	2018.3	2018.4	2019.1	2019.2	2019.3	2019.4	2020.1	2020.2	2020.3	2020.4	2021.1	2021.2
Total U.S. Employment, Millions, SA	149.3	149.9	150.4	150.9	151.4	151.8	152.2	152.8	152.9	153.0	153.2	153.4
Annualized % Change	1.6	1.6	1.4	1.3	1.3	1.2	1.1	1.5	0.2	0.4	0.5	0.4
% Change from Prior Year's Quarter	1.6	1.7	1.6	1.5	1.4	1.3	1.2	1.3	1.0	0.8	0.7	0.4
Virginia Total Nonag. Employment, Thousands, SA	4,040.8	4,054.9	4,067.7	4,081.4	4,093.0	4,102.2	4,112.6	4,119.5	4,126.7	4,128.8	4,132.9	4,137.4
Annualized % Change	1.0	1.4	1.3	1.4	1.1	0.9	1.0	0.7	0.7	0.2	0.4	0.4
% Change from Prior Year's Quarter	2.0	2.1	1.4	1.3	1.3	1.2	1.1	0.9	0.8	0.6	0.5	0.4
CPI, All Urban, 1982-1984=1.0, SA	2.5	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.7	2.7	2.7
Annualized % Change	2.1	3.6	2.7	1.8	1.4	2.8	3.7	2.0	1.9	2.1	2.7	2.4
% Change from Prior Year's Quarter	2.6	2.7	2.5	2.5	2.4	2.2	2.4	2.5	2.6	2.4	2.2	2.3
Refiner's Acquisition Cost of Oil, \$ per Barrel	68.2	73.2	74.9	73.6	69.8	71.8	76.7	75.3	73.8	73.1	74.6	74.9
Quarterly Change	1.0	4.9	1.8	(1.3)	(3.8)	2.0	4.8	(1.4)	(1.5)	(0.7)	1.5	0.3
Change from Prior Year's Quarter	19.8	16.5	13.1	6.4	1.6	(1.3)	1.7	1.7	4.0	1.3	(2.0)	(0.4)
Before-Tax Corporate Profits, Billions \$, SAAR	2,186.5	2,245.9	2,260.0	2,274.5	2,295.7	2,329.1	2,353.8	2,346.1	2,346.7	2,358.3	2,381.1	2,400.9
Annualized % Change	(1.9)	11.3	2.5	2.6	3.8	5.9	4.3	(1.3)	0.1	2.0	3.9	3.4
% Change from Prior Year's Quarter	(2.0)	7.7	7.1	3.5	5.0	3.7	4.2	3.1	2.2	1.3	1.2	2.3
S&P 500 Stock Market Index, Level	2,851.0	2,933.4	2,962.0	2,981.5	2,997.5	3,006.7	3,010.7	3,012.2	3,014.9	3,017.8	3,019.8	3,021.6
Annualized % Change	23.7	12.1	4.0	2.7	2.2	1.2	0.5	0.2	0.4	0.4	0.3	0.2
% Change from Prior Year's Quarter	15.5	12.6	8.4	10.3	5.1	2.5	1.6	1.0	0.6	0.4	0.3	0.3
30-Year Treasury Bonds, Level	3.1	3.3	3.4	3.5	3.6	3.6	3.7	3.7	3.7	3.7	3.8	3.8
Quarterly Change	(0.0)	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Change from Prior Year's Quarter	0.3	0.5	0.4	0.4	0.5	0.4	0.3	0.2	0.2	0.1	0.1	0.0

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

October Standard Forecast

	2021.3	2021.4	2022.1	2022.2
Total U.S. Employment, Millions, SA	153.5	153.6	153.7	153.8
Annualized % Change	0.3	0.3	0.2	0.2
% Change from Prior Year's Quarter	0.4	0.4	0.3	0.2
Virginia Total Nonag. Employment, Thousands, SA	4,140.9	4,144.2	4,147.4	4,149.9
Annualized % Change	0.3	0.3	0.3	0.2
% Change from Prior Year's Quarter	0.3	0.4	0.4	0.3
CPI, All Urban, 1982-1984=1.0, SA	2.7	2.7	2.7	2.8
Annualized % Change	2.4	2.3	2.3	2.2
% Change from Prior Year's Quarter	2.4	2.4	2.3	2.3
Refiner's Acquisition Cost of Oil, \$ per Barrel	74.9	74.9	74.9	74.9
Quarterly Change	0.0	0.0	0.0	(0.0)
Change from Prior Year's Quarter	1.1	1.8	0.3	0.0
Before-Tax Corporate Profits, Billions \$, SAAR	2,417.4	2,437.5	2,455.4	2,477.7
Annualized % Change	2.8	3.4	3.0	3.7
% Change from Prior Year's Quarter	3.0	3.4	3.1	3.2
S&P 500 Stock Market Index, Level	3,024.7	3,031.2	3,041.8	3,055.0
Annualized % Change	0.4	0.9	1.4	1.7
% Change from Prior Year's Quarter	0.3	0.4	0.7	1.1
30-Year Treasury Bonds, Level	3.8	3.8	3.8	3.8
Quarterly Change	0.0	0.0	0.0	0.0
Change from Prior Year's Quarter	0.0	0.0	0.0	0.0

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.2 - QUARTERLY NATIONAL AND VIRGINIA ECONOMIC VARIABLES

	Pessimistic Alternative Scenario											
	2018.3	2018.4	2019.1	2019.2	2019.3	2019.4	2020.1	2020.2	2020.3	2020.4	2021.1	2021.2
Real Gross Domestic Product, Billions \$, SAAR	18,659.0	18,775.2	18,921.0	19,071.2	19,151.3	19,034.2	18,958.3	18,897.5	18,905.7	18,967.8	19,053.4	19,138.2
Annualized % Change	3.2	2.5	3.1	3.2	1.7	(2.4)	(1.6)	(1.3)	0.2	1.3	1.8	1.8
% Change from Prior Year's Quarter	3.0	3.0	3.3	3.0	2.6	1.4	0.2	(0.9)	(1.3)	(0.3)	0.5	1.3
Real Consumer Spending, Billions \$, SAAR	12,953.5	13,018.8	13,104.6	13,176.0	13,252.6	13,248.3	13,242.2	13,228.9	13,254.8	13,304.9	13,349.1	13,393.1
Annualized % Change	3.5	2.0	2.7	2.2	2.3	(0.1)	(0.2)	(0.4)	0.8	1.5	1.3	1.3
% Change from Prior Year's Quarter	2.9	2.5	3.0	2.6	2.3	1.8	1.1	0.4	0.0	0.4	0.8	1.2
U.S. Personal Income, Billions \$, SAAR	17,664.7	17,800.6	18,021.7	18,194.3	18,360.8	18,480.2	18,577.2	18,646.0	18,727.8	18,872.9	19,071.8	19,257.7
Annualized % Change	3.8	3.1	5.1	3.9	3.7	2.6	2.1	1.5	1.8	3.1	4.3	4.0
% Change from Prior Year's Quarter	4.6	4.1	4.1	4.0	3.9	3.8	3.1	2.5	2.0	2.1	2.7	3.3
Virginia Personal Income, Millions \$, SAAR	486,667.2	491,818.5	498,736.8	503,993.0	508,178.4	511,207.6	514,564.8	515,985.0	519,640.9	523,970.7	529,073.4	533,969.2
Annualized % Change	2.1	4.3	5.7	4.3	3.4	2.4	2.7	1.1	2.9	3.4	4.0	3.8
% Change from Prior Year's Quarter	3.8	3.9	4.1	4.1	4.4	3.9	3.2	2.4	2.3	2.5	2.8	3.5
Virginia Wages and Salaries, Millions \$, SAAR	250,326.2	253,612.3	257,055.4	259,273.1	260,874.4	261,865.9	263,467.0	263,725.2	266,387.5	269,122.3	271,461.5	273,940.4
Annualized % Change	1.5	5.4	5.5	3.5	2.5	1.5	2.5	0.4	4.1	4.2	3.5	3.7
% Change from Prior Year's Quarter	3.6	4.4	4.4	4.0	4.2	3.3	2.5	1.7	2.1	2.8	3.0	3.9
Virginia Dividends, Interest, and Rent, Millions \$, SAAR	99,156.6	100,171.8	101,720.1	103,329.2	104,538.1	105,056.9	104,552.9	103,920.7	103,263.1	103,232.7	103,634.4	104,365.5
Annualized % Change	0.4	4.2	6.3	6.5	4.8	2.0	(1.9)	(2.4)	(2.5)	(0.1)	1.6	2.9
% Change from Prior Year's Quarter	3.9	2.8	3.5	4.3	5.4	4.9	2.8	0.6	(1.2)	(1.7)	(0.9)	0.4
Virginia Total Proprietor's Income, Millions \$, SAAR	28,966.5	28,881.1	28,823.1	28,617.1	28,394.7	28,030.0	27,717.2	27,378.1	27,245.2	27,127.4	27,002.9	26,901.5
Annualized % Change	(0.0)	(1.2)	(0.8)	(2.8)	(3.1)	(5.0)	(4.4)	(4.8)	(1.9)	(1.7)	(1.8)	(1.5)
% Change from Prior Year's Quarter	4.8	2.9	1.2	(1.2)	(2.0)	(2.9)	(3.8)	(4.3)	(4.0)	(3.2)	(2.6)	(1.7)

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

Pessimistic Alternative Forecast

	2021.3	2021.4	2022.1	2022.2
Real Gross Domestic Product, Billions \$, SAAR	19,222.5	19,304.4	19,374.6	19,435.8
Annualized % Change	1.8	1.7	1.5	1.3
% Change from Prior Year's Quarter	1.7	1.8	1.7	1.6
Real Consumer Spending, Billions \$, SAAR	13,440.3	13,492.9	13,547.7	13,595.2
Annualized % Change	1.4	1.6	1.6	1.4
% Change from Prior Year's Quarter	1.4	1.4	1.5	1.5
U.S. Personal Income, Billions \$, SAAR	19,464.3	19,683.7	19,925.7	20,139.3
Annualized % Change	4.4	4.6	5.0	4.4
% Change from Prior Year's Quarter	3.9	4.3	4.5	4.6
Virginia Personal Income, Millions \$, SAAR	539,634.6	545,853.7	552,687.0	558,861.1
Annualized % Change	4.3	4.7	5.1	4.5
% Change from Prior Year's Quarter	3.8	4.2	4.5	4.7
Virginia Wages and Salaries, Millions \$, SAAR	276,618.8	279,486.0	282,246.7	285,019.5
Annualized % Change	4.0	4.2	4.0	4.0
% Change from Prior Year's Quarter	3.8	3.9	4.0	4.0
Virginia Dividends, Interest, and Rent, Millions \$, SAAR	105,634.4	107,259.9	108,881.7	110,553.5
Annualized % Change	5.0	6.3	6.2	6.3
% Change from Prior Year's Quarter	2.3	3.9	5.1	5.9
Virginia Total Proprietor's Income, Millions \$, SAAR	26,760.6	26,593.2	26,324.3	26,085.8
Annualized % Change	(2.1)	(2.5)	(4.0)	(3.6)
% Change from Prior Year's Quarter	(1.8)	(2.0)	(2.5)	(3.0)

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.2 - QUARTERLY NATIONAL AND VIRGINIA ECONOMIC VARIABLES

	Pessimistic Alternative Scenario											
	2018.3	2018.4	2019.1	2019.2	2019.3	2019.4	2020.1	2020.2	2020.3	2020.4	2021.1	2021.2
Total U.S. Employment, Millions, SA	149.3	149.8	150.3	150.5	150.6	150.5	150.2	149.9	149.4	149.4	149.6	149.7
Annualized % Change	1.5	1.5	1.5	0.3	0.4	(0.4)	(0.8)	(0.8)	(1.3)	(0.1)	0.5	0.3
% Change from Prior Year's Quarter	1.6	1.6	1.5	1.2	0.9	0.5	(0.1)	(0.4)	(0.8)	(0.7)	(0.4)	(0.2)
Virginia Total Nonag. Employment, Thousands, SA	4,040.1	4,052.4	4,066.9	4,068.2	4,071.0	4,061.3	4,051.8	4,036.3	4,029.0	4,028.6	4,032.0	4,035.4
Annualized % Change	0.9	1.2	1.4	0.1	0.3	(0.9)	(0.9)	(1.5)	(0.7)	(0.0)	0.3	0.3
% Change from Prior Year's Quarter	2.0	2.1	1.4	0.9	0.8	0.2	(0.4)	(0.8)	(1.0)	(0.8)	(0.5)	(0.0)
CPI, All Urban, 1982-1984=1.0, SA	2.5	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.7	2.7	2.7
Annualized % Change	2.0	3.4	2.5	1.6	1.2	2.7	3.6	2.0	2.0	2.3	2.9	2.7
% Change from Prior Year's Quarter	2.6	2.7	2.4	2.4	2.2	2.0	2.2	2.3	2.6	2.5	2.3	2.5
Refiner's Acquisition Cost of Oil, \$ per Barrel	68.2	73.2	74.9	73.5	69.6	71.5	76.1	74.6	73.0	72.2	73.6	73.8
Quarterly Change	1.0	4.9	1.7	(1.4)	(3.9)	1.9	4.7	(1.5)	(1.6)	(0.8)	1.4	0.2
Change from Prior Year's Quarter	19.8	16.5	13.0	6.3	1.4	(1.7)	1.2	1.1	3.4	0.8	(2.5)	(0.8)
Before-Tax Corporate Profits, Billions \$, SAAR	2,169.9	2,102.8	2,105.0	2,183.0	2,223.8	2,117.4	2,117.7	2,108.1	2,149.9	2,209.1	2,293.8	2,366.9
Annualized % Change	(4.9)	(11.8)	0.4	15.7	7.7	(17.8)	0.1	(1.8)	8.2	11.5	16.2	13.4
% Change from Prior Year's Quarter	(2.7)	0.9	(0.3)	(0.6)	2.5	0.7	0.6	(3.4)	(3.3)	4.3	8.3	12.3
S&P 500 Stock Market Index, Level	2,893.5	2,997.0	3,047.9	3,055.6	3,059.7	2,997.8	2,960.6	2,921.2	2,924.1	2,927.2	2,929.6	2,931.9
Annualized % Change	31.3	15.1	7.0	1.0	0.5	(7.8)	(4.9)	(5.2)	0.4	0.4	0.3	0.3
% Change from Prior Year's Quarter	17.3	15.0	11.5	13.0	5.7	0.0	(2.9)	(4.4)	(4.4)	(2.4)	(1.0)	0.4
30-Year Treasury Bonds, Level	3.1	3.2	3.2	2.5	2.2	2.2	2.1	2.1	2.1	2.4	2.6	2.6
Quarterly Change	(0.0)	0.1	0.0	(0.7)	(0.3)	(0.0)	(0.1)	(0.0)	0.1	0.2	0.2	0.0
Change from Prior Year's Quarter	0.3	0.4	0.2	(0.5)	(0.8)	(1.0)	(1.1)	(0.5)	(0.1)	0.2	0.5	0.5

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

Pessimistic Alternative Forecast

	2021.3	2021.4	2022.1	2022.2
Total U.S. Employment, Millions, SA	149.8	149.9	150.1	150.2
Annualized % Change	0.2	0.4	0.4	0.4
% Change from Prior Year's Quarter	0.2	0.4	0.3	0.4
Virginia Total Nonag. Employment, Thousands, SA	4,039.0	4,044.7	4,050.1	4,055.5
Annualized % Change	0.4	0.6	0.5	0.5
% Change from Prior Year's Quarter	0.2	0.4	0.4	0.5
CPI, All Urban, 1982-1984=1.0, SA	2.7	2.7	2.7	2.8
Annualized % Change	2.7	2.7	2.7	2.5
% Change from Prior Year's Quarter	2.7	2.8	2.7	2.7
Refiner's Acquisition Cost of Oil, \$ per Barrel	73.8	73.9	74.1	74.2
Quarterly Change	0.0	0.1	0.1	0.1
Change from Prior Year's Quarter	0.8	1.7	0.4	0.4
Before-Tax Corporate Profits, Billions \$, SAAR	2,409.5	2,428.1	2,424.2	2,410.4
Annualized % Change	7.4	3.1	(0.6)	(2.3)
% Change from Prior Year's Quarter	12.1	9.9	5.7	1.8
S&P 500 Stock Market Index, Level	2,935.4	2,942.5	2,953.4	2,966.8
Annualized % Change	0.5	1.0	1.5	1.8
% Change from Prior Year's Quarter	0.4	0.5	0.8	1.2
30-Year Treasury Bonds, Level	2.8	3.0	3.3	3.5
Quarterly Change	0.2	0.2	0.2	0.2
Change from Prior Year's Quarter	0.7	0.7	0.7	0.9

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.3 - ANNUAL NATIONAL AND VIRGINIA ECONOMIC VARIABLES

		History											
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Real Gross Domestic Product, Billions \$, SAAR	Calendar Year	13,131.0	13,262.1	13,493.1	13,879.1	14,406.4	14,912.5	15,338.3	15,626.0	15,604.7	15,208.8	15,598.8	15,840.7
	% Change	4.1	1.0	1.7	2.9	3.8	3.5	2.9	1.9	(0.1)	(2.5)	2.6	1.6
	Fiscal Year	12,906.2	13,240.4	13,350.2	13,620.7	14,170.3	14,671.6	15,152.1	15,464.7	15,713.1	15,321.3	15,379.4	15,740.1
	% Change	4.8	2.6	0.8	2.0	4.0	3.5	3.3	2.1	1.6	(2.5)	0.4	2.3
Real Consumer Spending, Billions \$, SAAR	Calendar Year	8,643.4	8,861.1	9,088.7	9,377.5	9,729.3	10,075.9	10,384.5	10,615.3	10,592.8	10,460.0	10,643.0	10,843.8
	% Change	5.1	2.5	2.6	3.2	3.8	3.6	3.1	2.2	(0.2)	(1.3)	1.7	1.9
	Fiscal Year	8,446.5	8,766.3	8,972.8	9,206.7	9,561.1	9,907.8	10,237.7	10,513.6	10,655.3	10,485.6	10,524.4	10,765.2
	% Change	5.3	3.8	2.4	2.6	3.8	3.6	3.3	2.7	1.3	(1.6)	0.4	2.3
U.S. Personal Income, Billions \$, SAAR	Calendar Year	8,652.6	9,005.6	9,159.0	9,487.5	10,035.1	10,598.2	11,381.7	12,007.8	12,442.2	12,059.1	12,551.6	13,326.8
	% Change	8.1	4.1	1.7	3.6	5.8	5.6	7.4	5.5	3.6	(3.1)	4.1	6.2
	Fiscal Year	8,321.3	8,889.7	9,057.9	9,290.5	9,737.2	10,313.1	11,015.7	11,706.7	12,293.8	12,221.0	12,233.0	12,965.8
	% Change	6.7	6.8	1.9	2.6	4.8	5.9	6.8	6.3	5.0	(0.6)	0.1	6.0
Virginia Personal Income, Millions \$, SAAR	Calendar Year	232,452.9	244,136.7	250,928.1	265,980.4	284,957.1	304,720.5	326,171.6	343,287.8	356,434.4	348,944.2	364,382.5	386,298.0
	% Change	8.4	5.0	2.8	6.0	7.1	6.9	7.0	5.2	3.8	(2.1)	4.4	6.0
	Fiscal Year	222,894.5	240,301.2	246,515.3	257,161.4	275,268.3	294,805.4	316,665.0	334,680.2	351,288.0	352,172.0	354,957.7	375,648.9
	% Change	7.5	7.8	2.6	4.3	7.0	7.1	7.4	5.7	5.0	0.3	0.8	5.8
Virginia Wages and Salaries, Millions \$, SAAR	Calendar Year	132,384.5	138,736.6	140,653.9	147,673.6	158,766.2	169,084.5	178,943.9	188,715.7	193,712.8	191,515.0	196,438.8	202,093.4
	% Change	9.4	4.8	1.4	5.0	7.5	6.5	5.8	5.5	2.6	(1.1)	2.6	2.9
	Fiscal Year	126,298.8	136,927.4	138,904.8	143,167.4	153,070.7	164,268.0	174,730.6	183,994.3	191,305.2	192,561.0	193,289.7	199,878.5
	% Change	7.9	8.4	1.4	3.1	6.9	7.3	6.4	5.3	4.0	0.7	0.4	3.4
Virginia Dividends, Interest, and Rent, Millions \$, SAAR	Calendar Year	47,512.0	48,422.3	48,425.5	51,183.5	53,163.9	57,833.8	65,511.9	71,184.0	73,613.7	65,766.1	65,756.5	73,017.2
	% Change	8.7	1.9	0.0	5.7	3.9	8.8	13.3	8.7	3.4	(10.7)	(0.0)	11.0
	Fiscal Year	45,520.1	48,496.8	48,270.9	49,595.5	52,040.1	55,092.5	61,850.0	68,339.7	73,066.8	70,335.8	64,470.0	69,186.0
	% Change	5.6	6.5	(0.5)	2.7	4.9	5.9	12.3	10.5	6.9	(3.7)	(8.3)	7.3
Virginia Total Proprietor's Income, Millions \$, SAAR	Calendar Year	16,121.3	17,726.4	18,350.6	19,099.7	21,785.4	22,832.5	24,154.5	22,177.1	19,905.0	16,828.6	22,314.4	24,758.2
	% Change	18.9	10.0	3.5	4.1	14.1	4.8	5.8	(8.2)	(10.2)	(15.5)	32.6	11.0
	Fiscal Year	14,757.2	16,996.3	18,142.6	18,590.1	20,473.8	22,206.2	23,807.3	23,248.1	21,147.9	17,866.1	19,579.5	23,359.4
	% Change	14.9	15.2	6.7	2.5	10.1	8.5	7.2	(2.3)	(9.0)	(15.5)	9.6	19.3

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.3 - ANNUAL NATIONAL AND VIRGINIA ECONOMIC VARIABLES

		History							October Standard Forecast			
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Real Gross Domestic Product, Billions \$, SAAR	Calendar Year	16,197.0	16,495.4	16,899.8	17,386.7	17,659.2	18,050.7	18,574.0	19,084.8	19,472.0	19,775.9	20,075.7
	% Change	2.2	1.8	2.5	2.9	1.6	2.2	2.9	2.8	2.0	1.6	1.5
	Fiscal Year	16,038.3	16,311.5	16,661.8	17,199.8	17,510.2	17,837.3	18,295.0	18,848.9	19,297.7	19,626.5	19,925.1
	% Change	1.9	1.7	2.1	3.2	1.8	1.9	2.6	3.0	2.4	1.7	1.5
Real Consumer Spending, Billions \$, SAAR	Calendar Year	11,006.8	11,166.9	11,494.3	11,921.9	12,248.2	12,558.7	12,888.7	13,247.9	13,573.4	13,859.2	14,119.7
	% Change	1.5	1.5	2.9	3.7	2.7	2.5	2.6	2.8	2.5	2.1	1.9
	Fiscal Year	10,928.7	11,075.2	11,291.8	11,729.3	12,084.4	12,402.6	12,714.0	13,077.0	13,417.5	13,720.3	13,992.2
	% Change	1.5	1.3	2.0	3.9	3.0	2.6	2.5	2.9	2.6	2.3	2.0
U.S. Personal Income, Billions \$, SAAR	Calendar Year	14,010.1	14,181.1	14,991.8	15,719.5	16,125.1	16,830.9	17,581.4	18,399.6	19,290.4	20,129.9	20,967.2
	% Change	5.1	1.2	5.7	4.9	2.6	4.4	4.5	4.7	4.8	4.4	4.2
	Fiscal Year	13,653.5	14,111.1	14,535.2	15,391.9	15,925.8	16,462.0	17,204.3	17,965.6	18,854.5	19,709.6	20,548.1
	% Change	5.3	3.4	3.0	5.9	3.5	3.4	4.5	4.4	4.9	4.5	4.3
Virginia Personal Income, Millions \$, SAAR	Calendar Year	404,772.5	402,064.6	420,235.9	440,823.7	448,683.5	466,743.3	485,479.6	507,930.3	531,357.5	555,796.2	580,603.9
	% Change	4.8	(0.7)	4.5	4.9	1.8	4.0	4.0	4.6	4.6	4.6	4.5
	Fiscal Year	395,593.0	404,767.5	409,121.6	431,143.5	444,844.3	457,398.9	476,303.9	495,836.8	519,518.1	543,552.0	568,203.9
	% Change	5.3	2.3	1.1	5.4	3.2	2.8	4.1	4.1	4.8	4.6	4.5
Virginia Wages and Salaries, Millions \$, SAAR	Calendar Year	208,182.2	210,447.7	215,870.6	225,512.3	230,643.0	240,108.1	250,012.4	261,220.4	271,362.2	282,325.2	293,330.9
	% Change	3.0	1.1	2.6	4.5	2.3	4.1	4.1	4.5	3.9	4.0	3.9
	Fiscal Year	204,801.6	210,485.7	212,113.3	220,270.0	227,997.6	235,592.0	244,999.8	255,477.7	266,132.6	276,898.1	287,813.2
	% Change	2.5	2.8	0.8	3.8	3.5	3.3	4.0	4.3	4.2	4.0	3.9
Virginia Dividends, Interest, and Rent, Millions \$, SAAR	Calendar Year	80,742.6	78,101.2	85,007.2	89,604.6	91,453.2	95,566.7	99,150.3	104,656.7	111,312.4	117,448.4	123,558.6
	% Change	10.6	(3.3)	8.8	5.4	2.1	4.5	3.7	5.6	6.4	5.5	5.2
	Fiscal Year	77,051.8	79,643.7	81,064.4	87,766.0	90,608.6	93,409.1	97,559.2	101,225.7	108,131.4	114,358.4	120,547.6
	% Change	11.4	3.4	1.8	8.3	3.2	3.1	4.4	3.8	6.8	5.8	5.4
Virginia Total Proprietor's Income, Millions \$, SAAR	Calendar Year	28,688.7	26,519.8	27,656.1	27,970.8	26,675.9	27,566.8	28,883.8	28,747.7	27,685.6	26,663.1	25,807.3
	% Change	15.9	(7.6)	4.3	1.1	(4.6)	3.3	4.8	(0.5)	(3.7)	(3.7)	(3.2)
	Fiscal Year	27,018.0	27,685.5	26,948.4	27,955.5	27,288.2	27,048.7	28,294.5	28,991.3	28,270.0	27,130.8	26,226.2
	% Change	15.7	2.5	(2.7)	3.7	(2.4)	(0.9)	4.6	2.5	(2.5)	(4.0)	(3.3)

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.3 - ANNUAL NATIONAL AND VIRGINIA ECONOMIC VARIABLES

		Pessimistic Alternative Scenario			
		2019	2020	2021	2022
Real Gross Domestic Product, Billions \$, SAAR	Calendar Year	19,044.4	18,932.3	19,179.6	19,464.5
	% Change	2.6	(0.6)	1.3	1.5
	Fiscal Year	18,856.6	19,010.3	19,016.3	19,334.3
	% Change	3.1	0.8	0.0	1.7
Real Consumer Spending, Billions \$, SAAR	Calendar Year	13,195.4	13,257.7	13,418.8	13,619.0
	% Change	2.4	0.5	1.2	1.5
	Fiscal Year	13,063.2	13,243.0	13,325.4	13,519.0
	% Change	2.7	1.4	0.6	1.5
U.S. Personal Income, Billions \$, SAAR	Calendar Year	18,264.2	18,706.0	19,369.4	20,248.6
	% Change	3.9	2.4	3.5	4.5
	Fiscal Year	17,920.3	18,516.0	18,982.5	19,803.3
	% Change	4.2	3.3	2.5	4.3
Virginia Personal Income, Millions \$, SAAR	Calendar Year	505,528.9	518,540.4	537,132.7	562,061.5
	% Change	4.2	2.6	3.6	4.6
	Fiscal Year	495,303.9	512,483.9	526,663.6	549,259.1
	% Change	4.0	3.5	2.8	4.3
Virginia Wages and Salaries, Millions \$, SAAR	Calendar Year	259,767.2	265,675.5	275,376.7	286,489.0
	% Change	4.0	2.3	3.7	4.0
	Fiscal Year	255,066.7	262,483.1	270,228.0	280,842.7
	% Change	4.1	2.9	3.0	3.9
Virginia Dividends, Interest, and Rent, Millions \$, SAAR	Calendar Year	103,661.1	103,742.3	105,223.6	111,374.5
	% Change	4.5	0.1	1.4	5.8
	Fiscal Year	101,094.4	104,517.2	103,623.9	108,082.3
	% Change	3.6	3.4	(0.9)	4.3
Virginia Total Proprietor's Income, Millions \$, SAAR	Calendar Year	28,466.2	27,367.0	26,814.6	25,970.8
	% Change	(1.2)	(3.9)	(2.0)	(3.1)
	Fiscal Year	28,822.0	27,880.0	27,069.3	26,441.0
	% Change	1.9	(3.3)	(2.9)	(2.3)

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.3 - ANNUAL NATIONAL AND VIRGINIA ECONOMIC VARIABLES

		History											
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total U.S. Employment, Millions, SA	Calendar Year	132.0	132.1	130.7	130.3	131.8	134.0	136.5	138.0	137.2	131.3	130.4	131.9
	% Change	2.2	0.0	(1.1)	(0.2)	1.1	1.7	1.8	1.1	(0.5)	(4.3)	(0.7)	1.2
	Fiscal Year	130.8	132.5	131.2	130.5	130.8	132.8	135.4	137.3	138.2	134.4	130.2	131.0
	% Change	2.5	1.3	(1.0)	(0.5)	0.3	1.5	1.9	1.5	0.6	(2.7)	(3.1)	0.6
Virginia Total Nonag. Employment, Thousands, SA	Calendar Year	3,519.4	3,522.2	3,499.3	3,501.8	3,587.4	3,667.0	3,732.2	3,769.4	3,772.5	3,650.5	3,646.4	3,692.7
	% Change	3.1	0.1	(0.6)	0.1	2.4	2.2	1.8	1.0	0.1	(3.2)	(0.1)	1.3
	Fiscal Year	3,466.2	3,538.0	3,504.5	3,494.8	3,539.1	3,628.9	3,706.3	3,752.4	3,778.6	3,716.1	3,631.3	3,670.4
	% Change	2.8	2.1	(0.9)	(0.3)	1.3	2.5	2.1	1.2	0.7	(1.7)	(2.3)	1.1
CPI, All Urban, 1982-1984=1.0, SA	Calendar Year	1.7	1.8	1.8	1.8	1.9	2.0	2.0	2.1	2.2	2.1	2.2	2.2
	% Change	3.4	2.8	1.6	2.3	2.7	3.4	3.2	2.9	3.8	(0.3)	1.6	3.1
	Fiscal Year	1.7	1.8	1.8	1.8	1.9	1.9	2.0	2.0	2.1	2.1	2.2	2.2
	% Change	2.9	3.4	1.8	2.2	2.2	3.0	3.8	2.6	3.7	1.4	1.0	2.0
Refiner's Acquisition Cost of Oil, \$ per Barrel	Calendar Year	28.2	23.0	24.0	28.6	36.9	50.3	60.1	68.0	94.3	59.2	76.7	101.8
	Change	10.8	(5.3)	1.1	4.6	8.3	13.4	9.8	7.9	26.3	(35.1)	17.5	25.1
	Fiscal Year	24.2	27.2	21.4	27.6	30.8	42.6	58.1	59.1	90.9	66.5	72.7	89.4
	Change	11.7	3.0	(5.8)	6.2	3.2	11.8	15.5	1.0	31.8	(24.4)	6.2	16.7
Before-Tax Corporate Profits, Billions \$, SAAR	Calendar Year	746.6	689.0	788.5	970.1	1,257.7	1,665.2	1,844.2	1,751.9	1,379.3	1,467.5	1,834.0	1,818.2
	% Change	(2.5)	(7.7)	14.4	23.0	29.6	32.4	10.7	(5.0)	(21.3)	6.4	25.0	(0.9)
	Fiscal Year	771.2	726.4	684.9	890.1	1,114.5	1,458.2	1,776.7	1,817.1	1,644.6	1,249.9	1,706.1	1,833.3
	% Change	4.4	(5.8)	(5.7)	30.0	25.2	30.8	21.8	2.3	(9.5)	(24.0)	36.5	7.5
S&P 500 Stock Market Index, Level	Calendar Year	1,426.8	1,192.1	995.6	963.7	1,130.6	1,207.1	1,310.7	1,476.7	1,220.9	946.7	1,139.3	1,268.9
	% Change	7.6	(16.4)	(16.5)	(3.2)	17.3	6.8	8.6	12.7	(17.3)	(22.5)	20.3	11.4
	Fiscal Year	1,395.4	1,337.4	1,114.9	895.1	1,078.3	1,160.0	1,254.9	1,399.9	1,426.7	965.8	1,085.6	1,230.5
	% Change	16.4	(4.2)	(16.6)	(19.7)	20.5	7.6	8.2	11.6	1.9	(32.3)	12.4	13.4
30-Year Treasury Bonds, Level	Calendar Year	5.9	5.5	5.4	5.1	5.1	4.6	4.9	4.8	4.3	4.1	4.3	3.9
	Change	0.1	(0.4)	(0.1)	(0.4)	0.1	(0.6)	0.3	(0.0)	(0.6)	(0.2)	0.2	(0.3)
	Fiscal Year	6.1	5.7	5.5	5.0	5.2	4.8	4.7	4.9	4.6	3.9	4.4	4.2
	Change	0.7	(0.5)	(0.1)	(0.5)	0.2	(0.4)	(0.1)	0.2	(0.2)	(0.7)	0.5	(0.2)

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.3 - ANNUAL NATIONAL AND VIRGINIA ECONOMIC VARIABLES

		History							October Standard Forecast			
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total U.S. Employment, Millions, SA	Calendar Year	134.2	136.4	138.9	141.8	144.3	146.6	149.0	151.1	152.7	153.5	153.8
	% Change	1.7	1.6	1.9	2.1	1.8	1.6	1.6	1.4	1.1	0.5	0.2
	Fiscal Year	133.1	135.2	137.6	140.4	143.1	145.5	147.8	150.1	152.1	153.1	153.7
	% Change	1.6	1.6	1.7	2.1	1.9	1.7	1.5	1.6	1.3	0.7	0.3
Virginia Total Nonag. Employment, Thousands, SA	Calendar Year	3,735.7	3,762.3	3,783.3	3,858.8	3,914.2	3,957.2	4,034.1	4,086.1	4,121.9	4,138.9	4,150.5
	% Change	1.2	0.7	0.6	2.0	1.4	1.1	1.9	1.3	0.9	0.4	0.3
	Fiscal Year	3,714.6	3,753.8	3,768.7	3,810.7	3,896.3	3,936.6	3,992.9	4,061.2	4,106.8	4,131.5	4,145.6
	% Change	1.2	1.1	0.4	1.1	2.2	1.0	1.4	1.7	1.1	0.6	0.3
CPI, All Urban, 1982-1984=1.0, SA	Calendar Year	2.3	2.3	2.4	2.4	2.4	2.5	2.5	2.6	2.6	2.7	2.8
	% Change	2.1	1.5	1.6	0.1	1.3	2.1	2.6	2.4	2.5	2.3	2.3
	Fiscal Year	2.3	2.3	2.3	2.4	2.4	2.4	2.5	2.5	2.6	2.7	2.7
	% Change	2.9	1.7	1.6	0.7	0.7	1.9	2.2	2.6	2.4	2.4	2.4
Refiner's Acquisition Cost of Oil, \$ per Barrel	Calendar Year	101.0	100.5	92.2	48.4	40.6	50.7	67.6	72.6	74.7	74.8	74.8
	Change	(0.8)	(0.5)	(8.2)	(43.8)	(7.8)	10.1	16.9	4.9	2.2	0.1	(0.0)
	Fiscal Year	103.6	98.8	100.0	68.9	40.3	46.8	58.5	72.5	73.4	74.1	74.9
	Change	14.2	(4.7)	1.2	(31.1)	(28.6)	6.5	11.8	13.9	0.9	0.7	0.8
Before-Tax Corporate Profits, Billions \$, SAAR	Calendar Year	2,156.1	2,151.5	2,262.5	2,134.2	2,129.7	2,181.9	2,185.2	2,289.8	2,351.2	2,409.2	2,489.7
	% Change	18.6	(0.2)	5.2	(5.7)	(0.2)	2.4	0.2	4.8	2.7	2.5	3.3
	Fiscal Year	2,011.3	2,132.6	2,206.8	2,251.0	2,076.1	2,186.6	2,155.9	2,241.7	2,331.2	2,371.7	2,447.0
	% Change	9.7	6.0	3.5	2.0	(7.8)	5.3	(1.4)	4.0	4.0	1.7	3.2
S&P 500 Stock Market Index, Level	Calendar Year	1,379.6	1,642.5	1,930.7	2,061.2	2,092.4	2,448.2	2,805.0	2,986.9	3,013.9	3,024.3	3,063.4
	% Change	8.7	19.1	17.5	6.8	1.5	17.0	14.6	6.5	0.9	0.3	1.3
	Fiscal Year	1,287.9	1,486.2	1,795.1	2,038.4	2,025.7	2,266.6	2,627.1	2,932.0	3,006.8	3,018.5	3,038.2
	% Change	4.7	15.4	20.8	13.6	(0.6)	11.9	15.9	11.6	2.6	0.4	0.7
30-Year Treasury Bonds, Level	Calendar Year	2.9	3.4	3.3	2.8	2.6	2.9	3.1	3.5	3.7	3.8	3.8
	Change	(1.0)	0.5	(0.1)	(0.5)	(0.2)	0.3	0.2	0.4	0.2	0.0	0.0
	Fiscal Year	3.2	3.0	3.7	2.9	2.8	2.8	2.9	3.3	3.7	3.8	3.8
	Change	(1.0)	(0.2)	0.7	(0.7)	(0.1)	(0.0)	0.2	0.4	0.3	0.1	0.0

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.3 - ANNUAL NATIONAL AND VIRGINIA ECONOMIC VARIABLES

		Pessimistic Alternative Scenario			
		2019	2020	2021	2022
Total U.S. Employment, Millions, SA	Calendar Year	150.5	149.7	149.7	150.3
	% Change	1.0	(0.5)	0.0	0.4
	Fiscal Year	150.0	150.3	149.5	150.0
	% Change	1.5	0.2	(0.5)	0.3
Virginia Total Nonag. Employment, Thousands, SA	Calendar Year	4,066.9	4,036.4	4,037.8	4,057.8
	% Change	0.8	(0.7)	0.0	0.5
	Fiscal Year	4,056.9	4,055.1	4,031.2	4,047.3
	% Change	1.6	(0.0)	(0.6)	0.4
CPI, All Urban, 1982-1984=1.0, SA	Calendar Year	2.6	2.6	2.7	2.8
	% Change	2.2	2.4	2.5	2.7
	Fiscal Year	2.5	2.6	2.7	2.7
	% Change	2.5	2.2	2.4	2.7
Refiner's Acquisition Cost of Oil, \$ per Barrel	Calendar Year	72.4	74.0	73.8	74.2
	Change	4.7	1.6	(0.2)	0.4
	Fiscal Year	72.5	73.0	73.2	74.0
	Change	13.9	0.5	0.2	0.8
Before-Tax Corporate Profits, Billions \$, SAAR	Calendar Year	2,157.3	2,146.2	2,374.6	2,406.7
	% Change	0.6	(0.5)	10.6	1.4
	Fiscal Year	2,140.2	2,141.8	2,254.9	2,418.1
	% Change	(0.7)	0.1	5.3	7.2
S&P 500 Stock Market Index, Level	Calendar Year	3,040.3	2,933.3	2,934.9	2,975.4
	% Change	7.4	(3.5)	0.1	1.4
	Fiscal Year	2,998.5	2,984.8	2,928.2	2,949.5
	% Change	14.1	(0.5)	(1.9)	0.7
30-Year Treasury Bonds, Level	Calendar Year	2.6	2.2	2.8	3.5
	Change	(0.5)	(0.4)	0.6	0.7
	Fiscal Year	3.0	2.1	2.4	3.1
	Change	0.1	(0.9)	0.3	0.7

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.3 - ANNUAL NATIONAL AND VIRGINIA ECONOMIC VARIABLES

Virginia		History											
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Construction and Mining Thousands, SA	Calendar Year	221.6	228.4	224.9	227.6	241.1	254.2	260.0	250.7	234.1	200.6	193.4	189.4
	% Change	5.3	3.1	(1.5)	1.2	5.9	5.4	2.3	(3.6)	(6.6)	(14.3)	(3.6)	(2.0)
	Fiscal Year	215.2	226.3	226.7	224.1	234.5	247.7	260.0	255.9	243.6	216.9	194.2	192.1
	% Change	3.3	5.2	0.2	(1.1)	4.7	5.6	4.9	(1.6)	(4.8)	(10.9)	(10.5)	(1.1)
Manufacturing Thousands, SA	Calendar Year	363.6	341.3	320.1	305.0	298.7	295.8	288.1	277.8	264.8	239.3	230.5	231.0
	% Change	(0.9)	(6.1)	(6.2)	(4.7)	(2.1)	(1.0)	(2.6)	(3.6)	(4.7)	(9.6)	(3.7)	0.2
	Fiscal Year	366.7	354.6	328.4	313.8	299.3	298.0	292.7	282.9	271.6	252.5	233.1	230.0
	% Change	(1.1)	(3.3)	(7.4)	(4.4)	(4.6)	(0.4)	(1.8)	(3.4)	(4.0)	(7.0)	(7.7)	(1.3)
Trade, Transportation, and Utilities Thousands, SA	Calendar Year	650.7	644.8	636.5	635.2	646.5	657.2	663.0	668.1	659.2	624.4	621.1	628.7
	% Change	2.2	(0.9)	(1.3)	(0.2)	1.8	1.7	0.9	0.8	(1.3)	(5.3)	(0.5)	1.2
	Fiscal Year	644.1	650.6	639.4	634.1	641.3	651.6	661.3	665.5	666.3	642.0	618.9	625.4
	% Change	2.5	1.0	(1.7)	(0.8)	1.1	1.6	1.5	0.6	0.1	(3.7)	(3.6)	1.1
Financial Activities Thousands, SA	Calendar Year	178.9	179.9	182.2	186.5	189.0	192.5	194.8	193.6	188.6	179.9	179.1	182.5
	% Change	3.2	0.6	1.2	2.4	1.4	1.8	1.2	(0.6)	(2.6)	(4.6)	(0.5)	1.9
	Fiscal Year	175.7	180.3	180.7	184.2	187.6	190.8	194.0	195.1	191.1	184.5	178.1	180.6
	% Change	3.3	2.6	0.2	1.9	1.8	1.7	1.7	0.6	(2.1)	(3.4)	(3.5)	1.4
Professional and Business Services Thousands, SA	Calendar Year	567.9	559.5	547.0	549.3	578.5	606.0	628.5	646.3	657.0	640.1	650.3	667.5
	% Change	5.5	(1.5)	(2.2)	0.4	5.3	4.8	3.7	2.8	1.7	(2.6)	1.6	2.6
	Fiscal Year	552.7	569.2	552.0	545.2	561.4	593.6	618.6	637.6	653.3	649.8	641.3	660.0
	% Change	5.4	3.0	(3.0)	(1.2)	3.0	5.7	4.2	3.1	2.5	(0.5)	(1.3)	2.9
Education and Health Services Thousands, SA	Calendar Year	335.1	350.4	366.8	374.3	384.9	396.4	411.1	428.2	447.8	455.9	463.1	469.7
	% Change	2.1	4.6	4.7	2.0	2.8	3.0	3.7	4.2	4.6	1.8	1.6	1.4
	Fiscal Year	331.1	342.4	358.8	371.4	379.3	390.0	403.7	418.7	439.6	452.6	458.0	467.7
	% Change	2.3	3.4	4.8	3.5	2.1	2.8	3.5	3.7	5.0	3.0	1.2	2.1
Leisure and Hospitality Thousands, SA	Calendar Year	297.1	301.2	303.9	308.5	320.1	329.4	338.8	345.3	349.3	341.6	341.3	349.2
	% Change	3.5	1.4	0.9	1.5	3.8	2.9	2.8	1.9	1.2	(2.2)	(0.1)	2.3
	Fiscal Year	291.9	300.1	301.3	305.9	314.3	325.1	334.4	342.4	348.6	345.0	339.5	345.5
	% Change	2.4	2.8	0.4	1.5	2.8	3.4	2.9	2.4	1.8	(1.0)	(1.6)	1.8
Government Thousands, SA	Calendar Year	624.6	629.2	634.9	637.5	650.9	661.9	674.8	683.4	695.5	701.7	707.0	713.2
	% Change	2.2	0.7	0.9	0.4	2.1	1.7	2.0	1.3	1.8	0.9	0.8	0.9
	Fiscal Year	618.5	627.6	631.5	636.0	643.6	656.6	668.5	679.6	688.2	700.3	705.4	708.2
	% Change	2.0	1.5	0.6	0.7	1.2	2.0	1.8	1.7	1.3	1.8	0.7	0.4

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.3 - ANNUAL NATIONAL AND VIRGINIA ECONOMIC VARIABLES

Virginia		History							October Standard Forecast			
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Construction and Mining Thousands, SA	Calendar Year	187.5	186.9	187.9	193.7	196.1	199.9	208.8	212.6	222.6	231.0	237.7
	% Change	(1.0)	(0.3)	0.5	3.1	1.2	2.0	4.4	1.8	4.7	3.8	2.9
	Fiscal Year	188.3	187.1	186.8	190.2	195.4	198.3	204.9	209.3	217.5	227.2	234.4
	% Change	(1.9)	(0.6)	(0.2)	1.8	2.7	1.5	3.3	2.2	3.9	4.5	3.2
Manufacturing Thousands, SA	Calendar Year	231.5	230.8	231.8	233.6	232.7	234.1	239.0	241.3	240.6	237.5	234.8
	% Change	0.2	(0.3)	0.4	0.8	(0.4)	0.6	2.1	1.0	(0.3)	(1.3)	(1.1)
	Fiscal Year	231.5	231.2	231.2	232.3	233.5	233.2	236.4	240.5	241.3	239.1	236.1
	% Change	0.6	(0.1)	(0.0)	0.5	0.5	(0.1)	1.3	1.8	0.3	(0.9)	(1.3)
Trade, Transportation, and Utilities Thousands, SA	Calendar Year	633.5	635.2	641.5	653.5	661.4	662.8	672.3	679.6	675.6	670.7	663.9
	% Change	0.8	0.3	1.0	1.9	1.2	0.2	1.4	1.1	(0.6)	(0.7)	(1.0)
	Fiscal Year	631.3	633.7	638.5	645.6	660.1	662.1	665.5	677.8	678.6	672.9	667.6
	% Change	0.9	0.4	0.8	1.1	2.2	0.3	0.5	1.9	0.1	(0.8)	(0.8)
Financial Activities Thousands, SA	Calendar Year	188.3	192.5	194.0	197.7	201.0	205.7	209.9	214.2	217.0	217.8	217.7
	% Change	3.1	2.2	0.8	1.9	1.7	2.4	2.0	2.0	1.3	0.3	(0.0)
	Fiscal Year	185.3	190.9	193.2	195.7	199.3	203.1	208.3	211.8	215.9	217.6	217.8
	% Change	2.6	3.0	1.2	1.3	1.9	1.9	2.5	1.7	1.9	0.8	0.1
Professional and Business Services Thousands, SA	Calendar Year	678.4	681.3	682.1	702.3	715.3	729.7	748.6	772.3	795.1	805.4	816.9
	% Change	1.6	0.4	0.1	3.0	1.9	2.0	2.6	3.2	2.9	1.3	1.4
	Fiscal Year	673.3	682.4	679.4	689.5	710.9	722.2	739.2	758.3	786.2	800.6	810.9
	% Change	2.0	1.4	(0.4)	1.5	3.1	1.6	2.3	2.6	3.7	1.8	1.3
Education and Health Services Thousands, SA	Calendar Year	480.4	491.4	497.7	513.9	525.4	532.3	547.2	555.2	556.5	560.7	565.0
	% Change	2.3	2.3	1.3	3.2	2.2	1.3	2.8	1.5	0.2	0.7	0.8
	Fiscal Year	473.6	487.4	494.3	503.7	521.9	528.9	539.0	551.9	556.2	558.2	563.1
	% Change	1.3	2.9	1.4	1.9	3.6	1.3	1.9	2.4	0.8	0.4	0.9
Leisure and Hospitality Thousands, SA	Calendar Year	358.9	366.1	371.3	386.0	399.2	404.3	416.0	418.1	422.4	427.6	429.9
	% Change	2.8	2.0	1.4	4.0	3.4	1.3	2.9	0.5	1.0	1.2	0.6
	Fiscal Year	354.2	362.8	368.7	376.4	394.8	402.4	409.6	418.0	418.7	425.8	429.0
	% Change	2.5	2.4	1.6	2.1	4.9	1.9	1.8	2.1	0.2	1.7	0.8
Government Thousands, SA	Calendar Year	713.4	712.5	710.5	711.3	714.4	716.2	714.3	715.3	718.1	714.9	713.7
	% Change	0.0	(0.1)	(0.3)	0.1	0.4	0.2	(0.3)	0.1	0.4	(0.4)	(0.2)
	Fiscal Year	714.5	713.5	710.3	711.1	712.6	715.9	715.4	714.5	717.0	716.4	714.4
	% Change	0.9	(0.1)	(0.5)	0.1	0.2	0.5	(0.1)	(0.1)	0.4	(0.1)	(0.3)

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.3 - ANNUAL NATIONAL AND VIRGINIA ECONOMIC VARIABLES

Virginia		Pessimistic Alternative Scenario			
		2019	2020	2021	2022
Construction and Mining Thousands, SA	Calendar Year	214.7	213.4	211.3	221.0
	% Change	2.7	(0.6)	(1.0)	4.6
	Fiscal Year	210.6	215.9	211.0	215.2
	% Change	2.8	2.5	(2.3)	2.0
Manufacturing Thousands, SA	Calendar Year	238.5	233.6	228.6	229.7
	% Change	(0.0)	(2.1)	(2.1)	0.5
	Fiscal Year	238.6	237.2	230.2	228.7
	% Change	0.9	(0.6)	(2.9)	(0.7)
Trade, Transportation, and Utilities Thousands, SA	Calendar Year	671.9	654.3	650.0	641.7
	% Change	(0.1)	(2.6)	(0.7)	(1.3)
	Fiscal Year	676.0	663.4	651.0	646.1
	% Change	1.6	(1.9)	(1.9)	(0.8)
Financial Activities Thousands, SA	Calendar Year	215.2	214.8	214.7	214.0
	% Change	2.4	(0.2)	(0.1)	(0.3)
	Fiscal Year	212.9	215.4	214.7	214.2
	% Change	2.3	1.1	(0.3)	(0.2)
Professional and Business Services Thousands, SA	Calendar Year	761.0	744.7	761.9	784.6
	% Change	1.9	(2.1)	2.3	3.0
	Fiscal Year	753.4	755.8	748.7	774.4
	% Change	1.9	0.3	(0.9)	3.4
Education and Health Services Thousands, SA	Calendar Year	554.4	559.0	563.2	563.2
	% Change	1.2	0.8	0.8	(0.0)
	Fiscal Year	553.1	555.6	561.7	562.7
	% Change	2.6	0.5	1.1	0.2
Leisure and Hospitality Thousands, SA	Calendar Year	418.2	424.0	426.2	426.8
	% Change	0.5	1.4	0.5	0.1
	Fiscal Year	418.3	420.0	426.0	426.3
	% Change	2.1	0.4	1.4	0.1
Government Thousands, SA	Calendar Year	715.2	717.7	714.2	714.0
	% Change	0.1	0.3	(0.5)	(0.0)
	Fiscal Year	714.5	716.9	715.6	714.2
	% Change	(0.1)	0.3	(0.2)	(0.2)

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.4 - ANNUAL VIRGINIA REGIONAL EMPLOYMENT

Northern Virginia		History											
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total Nonagricultural Employment Thousands, SA	Calendar Year	1,159.2	1,176.5	1,165.2	1,180.4	1,233.8	1,278.7	1,309.7	1,325.6	1,328.8	1,305.8	1,317.5	1,344.5
	% Change	6.3	1.5	(1.0)	1.3	4.5	3.6	2.4	1.2	0.2	(1.7)	0.9	2.1
	Fiscal Year	1,125.7	1,176.8	1,169.5	1,166.0	1,207.0	1,256.7	1,298.6	1,318.8	1,329.2	1,316.6	1,307.0	1,332.0
	% Change	6.3	4.5	(0.6)	(0.3)	3.5	4.1	3.3	1.6	0.8	(0.9)	(0.7)	1.9
Construction and Mining Thousands, SA	Calendar Year	74.7	79.9	79.4	79.8	87.1	94.0	96.7	89.0	80.7	70.1	68.2	67.8
	% Change	10.1	7.0	(0.6)	0.4	9.1	8.0	2.8	(7.9)	(9.3)	(13.2)	(2.6)	(0.6)
	Fiscal Year	71.2	77.9	79.8	78.4	83.7	90.4	97.1	93.2	84.9	74.9	68.2	68.2
	% Change	8.8	9.3	2.5	(1.8)	6.7	8.1	7.4	(4.1)	(8.8)	(11.8)	(9.0)	(0.0)
Trade, Transportation, and Utilities Thousands, SA	Calendar Year	200.0	201.2	200.1	200.6	207.8	213.8	212.2	212.8	210.9	200.7	200.6	204.5
	% Change	3.3	0.6	(0.6)	0.3	3.6	2.9	(0.7)	0.3	(0.9)	(4.8)	(0.1)	2.0
	Fiscal Year	197.3	201.4	200.2	199.9	203.8	211.8	213.2	212.4	212.8	205.5	199.4	203.0
	% Change	4.4	2.1	(0.6)	(0.2)	2.0	3.9	0.7	(0.4)	0.2	(3.4)	(3.0)	1.8
Financial Activities Thousands, SA	Calendar Year	62.7	63.3	65.4	66.3	67.4	69.5	70.4	69.4	66.9	64.5	64.8	65.5
	% Change	3.3	1.0	3.4	1.4	1.6	3.1	1.3	(1.4)	(3.6)	(3.6)	0.5	1.1
	Fiscal Year	61.7	63.0	64.2	65.9	66.7	68.4	70.3	70.3	68.0	65.5	64.4	65.3
	% Change	3.0	2.0	2.0	2.6	1.2	2.6	2.8	(0.0)	(3.2)	(3.7)	(1.7)	1.4
Professional and Business Services Thousands, SA	Calendar Year	286.1	287.2	277.9	284.3	307.5	324.0	338.0	348.7	356.3	356.4	364.8	375.1
	% Change	8.6	0.4	(3.2)	2.3	8.2	5.4	4.3	3.2	2.2	0.0	2.4	2.8
	Fiscal Year	275.1	290.5	281.9	277.9	295.5	316.8	331.6	343.7	353.0	356.5	359.0	370.5
	% Change	9.4	5.6	(2.9)	(1.4)	6.3	7.2	4.7	3.7	2.7	1.0	0.7	3.2
Education and Health Services Thousands, SA	Calendar Year	95.9	101.2	105.2	107.4	110.3	115.6	119.1	122.9	127.3	131.7	135.8	141.4
	% Change	6.9	5.4	3.9	2.1	2.7	4.9	3.0	3.2	3.5	3.5	3.1	4.1
	Fiscal Year	92.7	98.5	103.4	106.7	108.3	113.1	117.3	121.1	125.0	129.3	134.0	138.5
	% Change	6.1	6.3	5.0	3.1	1.5	4.5	3.7	3.3	3.2	3.4	3.6	3.4
Leisure and Hospitality Thousands, SA	Calendar Year	97.1	99.0	101.2	103.8	108.8	111.6	113.2	115.9	118.7	116.0	116.8	121.3
	% Change	6.3	2.0	2.2	2.5	4.8	2.6	1.4	2.4	2.4	(2.3)	0.7	3.8
	Fiscal Year	94.2	98.4	99.8	102.3	106.4	110.6	112.3	114.4	117.9	117.3	115.6	119.3
	% Change	4.8	4.4	1.5	2.5	4.0	4.0	1.5	1.8	3.0	(0.4)	(1.4)	3.2
Government Thousands, SA	Calendar Year	176.8	180.1	184.6	191.2	198.2	203.5	209.8	215.1	218.9	224.1	228.9	231.1
	% Change	3.1	1.9	2.5	3.5	3.7	2.6	3.1	2.5	1.8	2.4	2.1	0.9
	Fiscal Year	174.9	178.1	182.5	187.1	195.2	200.6	207.1	212.5	216.8	221.6	227.0	229.6
	% Change	3.3	1.8	2.4	2.5	4.3	2.8	3.3	2.6	2.0	2.2	2.4	1.1

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.4 - ANNUAL VIRGINIA REGIONAL EMPLOYMENT

Northern Virginia		History							October Standard Forecast			
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total Nonagricultural Employment Thousands, SA	Calendar Year	1,369.3	1,378.5	1,379.3	1,409.0	1,438.0	1,461.0	1,483.6	1,504.4	1,521.3	1,530.7	1,535.5
	% Change	1.8	0.7	0.1	2.2	2.1	1.6	1.5	1.4	1.1	0.6	0.3
	Fiscal Year	1,357.0	1,377.8	1,376.7	1,389.1	1,426.8	1,450.2	1,472.3	1,493.5	1,513.7	1,526.9	1,533.5
	% Change	1.9	1.5	(0.1)	0.9	2.7	1.6	1.5	1.4	1.4	0.9	0.4
Construction and Mining Thousands, SA	Calendar Year	68.2	68.9	68.8	69.5	71.7	73.4	76.1	78.2	82.3	85.5	87.9
	% Change	0.6	0.9	(0.1)	0.9	3.2	2.4	3.6	2.8	5.2	3.9	2.8
	Fiscal Year	68.2	68.5	69.0	68.6	70.9	72.6	75.0	76.6	80.2	84.1	86.7
	% Change	0.0	0.4	0.8	(0.6)	3.4	2.3	3.3	2.2	4.7	4.8	3.1
Trade, Transportation, and Utilities Thousands, SA	Calendar Year	206.6	207.6	208.9	212.4	214.5	216.6	220.3	222.6	221.1	219.2	216.5
	% Change	1.0	0.5	0.6	1.7	1.0	1.0	1.7	1.0	(0.7)	(0.9)	(1.2)
	Fiscal Year	205.6	207.2	208.1	210.0	214.2	215.5	218.0	221.9	222.2	220.1	217.9
	% Change	1.3	0.8	0.4	0.9	2.0	0.6	1.1	1.8	0.1	(1.0)	(1.0)
Financial Activities Thousands, SA	Calendar Year	66.9	68.6	68.6	70.3	73.4	76.4	78.5	80.2	81.3	81.5	81.5
	% Change	2.2	2.5	0.0	2.5	4.3	4.1	2.8	2.2	1.3	0.3	(0.0)
	Fiscal Year	66.0	68.0	68.6	69.2	71.9	75.0	77.5	79.4	80.9	81.5	81.6
	% Change	1.1	3.0	0.9	0.9	3.8	4.3	3.4	2.3	1.9	0.8	0.1
Professional and Business Services Thousands, SA	Calendar Year	383.5	381.1	376.2	384.8	393.4	401.1	409.0	420.6	430.4	434.3	438.4
	% Change	2.2	(0.6)	(1.3)	2.3	2.2	2.0	2.0	2.8	2.3	0.9	1.0
	Fiscal Year	380.1	384.2	377.1	379.2	389.5	397.0	405.0	414.3	426.7	432.6	436.3
	% Change	2.6	1.1	(1.8)	0.5	2.7	1.9	2.0	2.3	3.0	1.4	0.9
Education and Health Services Thousands, SA	Calendar Year	145.5	147.9	149.9	155.6	161.1	165.7	170.7	174.0	174.5	176.2	177.9
	% Change	2.9	1.7	1.3	3.8	3.6	2.8	3.0	2.0	0.3	0.9	1.0
	Fiscal Year	143.2	147.4	148.6	152.0	158.9	163.6	167.9	172.7	174.4	175.2	177.1
	% Change	3.3	3.0	0.8	2.3	4.5	3.0	2.7	2.9	1.0	0.4	1.1
Leisure and Hospitality Thousands, SA	Calendar Year	126.2	130.1	132.7	139.5	145.1	146.8	148.3	148.6	150.2	152.1	153.0
	% Change	4.1	3.1	2.0	5.2	4.0	1.2	1.0	0.2	1.1	1.3	0.6
	Fiscal Year	123.7	128.2	131.4	135.1	143.3	146.2	147.6	148.5	148.8	151.4	152.6
	% Change	3.6	3.7	2.5	2.8	6.1	2.0	0.9	0.7	0.2	1.8	0.8
Government Thousands, SA	Calendar Year	233.6	234.6	233.2	234.5	235.4	236.8	236.1	235.6	237.3	237.3	236.7
	% Change	1.1	0.4	(0.6)	0.5	0.4	0.6	(0.3)	(0.2)	0.7	0.0	(0.3)
	Fiscal Year	232.2	235.1	233.3	233.8	234.9	236.3	237.1	235.1	236.3	237.6	237.1
	% Change	1.2	1.2	(0.8)	0.2	0.5	0.6	0.3	(0.9)	0.5	0.5	(0.2)

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.4 - ANNUAL VIRGINIA REGIONAL EMPLOYMENT

Northern Virginia		Pessimistic Alternative Scenario			
		2019	2020	2021	2022
Total Nonagricultural Employment Thousands, SA	Calendar Year	1,497.3	1,488.1	1,489.4	1,497.2
	% Change	0.9	(0.6)	0.1	0.5
	Fiscal Year	1,492.2	1,493.7	1,487.0	1,493.2
	% Change	1.4	0.1	(0.4)	0.4
Construction and Mining Thousands, SA	Calendar Year	79.1	78.4	77.3	80.9
	% Change	3.8	(0.8)	(1.5)	4.6
	Fiscal Year	77.2	79.6	77.3	78.7
	% Change	2.9	3.1	(2.8)	1.8
Trade, Transportation, and Utilities Thousands, SA	Calendar Year	219.5	212.6	210.7	207.6
	% Change	(0.4)	(3.1)	(0.9)	(1.5)
	Fiscal Year	221.2	216.2	211.2	209.3
	% Change	1.5	(2.3)	(2.3)	(0.9)
Financial Activities Thousands, SA	Calendar Year	80.6	80.4	80.4	80.2
	% Change	2.6	(0.2)	(0.1)	(0.3)
	Fiscal Year	79.8	80.7	80.4	80.2
	% Change	2.9	1.1	(0.3)	(0.2)
Professional and Business Services Thousands, SA	Calendar Year	415.9	409.6	414.8	423.5
	% Change	1.8	(1.5)	1.3	2.1
	Fiscal Year	412.5	414.2	410.4	419.4
	% Change	1.8	0.4	(0.9)	2.2
Education and Health Services Thousands, SA	Calendar Year	173.7	175.5	177.2	177.1
	% Change	1.7	1.0	1.0	(0.0)
	Fiscal Year	173.2	174.2	176.6	177.0
	% Change	3.1	0.6	1.4	0.2
Leisure and Hospitality Thousands, SA	Calendar Year	148.6	150.8	151.6	151.8
	% Change	0.2	1.4	0.5	0.1
	Fiscal Year	148.7	149.3	151.5	151.6
	% Change	0.8	0.4	1.5	0.1
Government Thousands, SA	Calendar Year	235.5	237.2	237.3	237.2
	% Change	(0.2)	0.7	0.1	(0.1)
	Fiscal Year	235.1	236.2	237.5	237.3
	% Change	(0.9)	0.5	0.5	(0.0)

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.4 - ANNUAL VIRGINIA REGIONAL EMPLOYMENT

Hampton Roads		History											
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total Nonagricultural Employment Thousands, SA	Calendar Year	720.3	730.5	733.9	737.6	749.9	761.0	767.4	775.5	767.2	742.2	737.1	740.1
	% Change	1.9	1.4	0.5	0.5	1.7	1.5	0.8	1.1	(1.1)	(3.3)	(0.7)	0.4
	Fiscal Year	714.3	725.0	733.2	735.4	742.9	756.0	765.0	771.5	773.4	755.2	737.3	737.9
	% Change	1.9	1.5	1.1	0.3	1.0	1.8	1.2	0.8	0.2	(2.4)	(2.4)	0.1
Construction and Mining Thousands, SA	Calendar Year	43.9	45.9	44.6	47.1	48.7	49.9	49.8	48.4	45.2	38.4	36.9	35.1
	% Change	2.4	4.4	(2.8)	5.6	3.4	2.5	(0.2)	(2.7)	(6.5)	(15.2)	(3.9)	(4.7)
	Fiscal Year	43.3	45.0	45.3	45.2	48.2	49.4	50.2	49.1	47.1	41.8	37.2	36.2
	% Change	1.1	4.1	0.7	(0.4)	6.8	2.4	1.6	(2.2)	(4.1)	(11.2)	(11.1)	(2.6)
Trade, Transportation, and Utilities Thousands, SA	Calendar Year	137.4	138.7	138.8	135.7	138.6	140.5	141.5	142.7	138.0	128.8	128.0	127.7
	% Change	1.6	1.0	0.0	(2.3)	2.2	1.3	0.7	0.9	(3.3)	(6.6)	(0.6)	(0.2)
	Fiscal Year	136.2	138.4	138.7	137.5	136.6	139.5	141.3	142.1	141.2	133.0	127.9	128.1
	% Change	1.5	1.6	0.2	(0.9)	(0.6)	2.1	1.2	0.6	(0.7)	(5.8)	(3.9)	0.2
Financial Activities Thousands, SA	Calendar Year	36.5	36.7	36.8	37.6	39.7	39.9	40.7	41.5	40.2	37.5	36.4	36.8
	% Change	1.2	0.6	0.2	2.2	5.6	0.7	1.9	2.1	(3.3)	(6.7)	(2.8)	1.1
	Fiscal Year	36.1	36.7	36.7	37.1	38.6	39.8	40.2	41.4	41.0	39.0	36.6	36.6
	% Change	2.0	1.8	(0.1)	1.1	4.2	3.1	0.9	3.0	(0.9)	(5.0)	(6.2)	0.2
Professional and Business Services Thousands, SA	Calendar Year	98.9	103.0	104.7	104.3	100.2	101.4	101.7	102.6	104.7	99.5	97.9	98.6
	% Change	0.9	4.1	1.7	(0.4)	(3.9)	1.2	0.3	0.9	2.0	(5.0)	(1.6)	0.7
	Fiscal Year	99.3	100.1	104.7	104.4	102.0	101.1	101.5	101.9	104.0	102.6	98.0	98.1
	% Change	3.9	0.8	4.6	(0.3)	(2.3)	(0.9)	0.4	0.5	2.0	(1.3)	(4.5)	0.1
Education and Health Services Thousands, SA	Calendar Year	73.4	74.8	77.5	78.8	82.8	85.6	88.0	90.6	91.7	93.7	94.7	98.0
	% Change	2.6	1.9	3.7	1.6	5.0	3.4	2.8	3.0	1.2	2.2	1.1	3.4
	Fiscal Year	72.4	74.1	76.2	78.1	80.9	84.0	86.9	89.3	91.2	92.8	94.1	96.4
	% Change	2.6	2.4	2.8	2.6	3.6	3.8	3.5	2.7	2.2	1.7	1.4	2.4
Leisure and Hospitality Thousands, SA	Calendar Year	74.2	76.2	76.5	76.5	79.0	82.0	84.6	85.9	85.9	83.3	83.4	83.3
	% Change	1.7	2.7	0.4	(0.0)	3.2	3.8	3.2	1.6	(0.1)	(3.0)	0.1	(0.0)
	Fiscal Year	73.4	75.4	76.1	76.7	77.4	80.6	83.4	85.2	86.5	84.2	83.0	83.5
	% Change	0.7	2.7	1.0	0.8	0.9	4.1	3.6	2.2	1.5	(2.8)	(1.3)	0.5
Government Thousands, SA	Calendar Year	146.0	147.7	149.6	149.5	151.5	151.7	153.1	155.6	158.1	159.9	161.6	162.5
	% Change	1.1	1.1	1.3	(0.0)	1.3	0.1	1.0	1.6	1.6	1.1	1.1	0.6
	Fiscal Year	145.3	146.7	148.9	149.6	150.4	151.6	152.2	154.3	156.8	159.4	161.0	161.4
	% Change	0.4	1.0	1.5	0.5	0.5	0.8	0.3	1.4	1.6	1.7	1.0	0.3

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.4 - ANNUAL VIRGINIA REGIONAL EMPLOYMENT

Hampton Roads		History							October Standard Forecast			
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total Nonagricultural Employment Thousands, SA	Calendar Year	746.8	756.5	758.4	767.0	772.7	781.3	797.3	807.7	814.2	815.9	818.6
	% Change	0.9	1.3	0.2	1.1	0.7	1.1	2.1	1.3	0.8	0.2	0.3
	Fiscal Year	743.2	752.3	757.6	761.0	770.9	777.4	787.8	803.5	811.6	815.0	817.4
	% Change	0.7	1.2	0.7	0.4	1.3	0.8	1.3	2.0	1.0	0.4	0.3
Construction and Mining Thousands, SA	Calendar Year	34.5	34.7	34.5	36.0	36.3	37.4	38.4	40.0	42.0	44.0	46.0
	% Change	(1.6)	0.5	(0.7)	4.4	0.9	3.1	2.6	4.3	4.9	4.7	4.5
	Fiscal Year	34.5	34.7	34.5	35.0	36.3	37.0	37.8	39.1	41.0	43.0	45.0
	% Change	(4.5)	0.4	(0.6)	1.6	3.6	1.9	2.3	3.3	5.0	4.8	4.6
Trade, Transportation, and Utilities Thousands, SA	Calendar Year	127.4	128.3	129.5	131.6	133.9	134.3	137.4	139.9	139.2	138.3	137.0
	% Change	(0.3)	0.7	0.9	1.7	1.7	0.3	2.3	1.8	(0.5)	(0.7)	(0.9)
	Fiscal Year	127.4	127.4	128.8	130.6	132.8	134.3	134.9	139.6	139.8	138.7	137.7
	% Change	(0.6)	(0.0)	1.1	1.4	1.7	1.1	0.4	3.5	0.1	(0.7)	(0.7)
Financial Activities Thousands, SA	Calendar Year	37.4	37.8	37.8	38.0	37.8	37.9	39.6	40.7	41.1	41.3	41.2
	% Change	1.7	1.0	(0.2)	0.5	(0.6)	0.5	4.5	2.6	1.1	0.3	(0.0)
	Fiscal Year	37.1	37.8	37.8	38.0	37.8	37.7	38.7	40.3	41.0	41.2	41.3
	% Change	1.1	1.9	0.0	0.5	(0.5)	(0.0)	2.5	4.1	1.6	0.7	0.1
Professional and Business Services Thousands, SA	Calendar Year	99.7	102.5	104.4	105.0	104.3	108.4	111.8	115.2	119.0	120.8	122.7
	% Change	1.2	2.8	1.8	0.6	(0.6)	3.9	3.1	3.0	3.3	1.4	1.6
	Fiscal Year	99.2	101.5	103.2	104.6	104.6	106.4	110.1	113.1	117.5	120.0	121.7
	% Change	1.1	2.3	1.7	1.3	(0.0)	1.8	3.4	2.8	3.9	2.1	1.4
Education and Health Services Thousands, SA	Calendar Year	100.4	104.2	105.3	108.6	110.7	111.5	112.2	113.3	113.6	114.3	115.1
	% Change	2.5	3.8	1.1	3.1	1.9	0.7	0.7	1.0	0.2	0.7	0.7
	Fiscal Year	99.0	102.4	105.0	106.4	110.2	111.2	111.7	112.7	113.5	113.9	114.8
	% Change	2.8	3.4	2.5	1.3	3.6	0.9	0.4	0.9	0.7	0.3	0.8
Leisure and Hospitality Thousands, SA	Calendar Year	84.0	85.3	85.6	87.8	91.0	92.1	96.5	97.2	98.0	99.0	99.5
	% Change	0.8	1.6	0.3	2.6	3.7	1.1	4.9	0.7	0.9	1.0	0.5
	Fiscal Year	83.6	84.6	85.6	85.9	90.1	91.5	94.1	97.2	97.3	98.7	99.3
	% Change	0.2	1.1	1.3	0.3	4.8	1.6	2.9	3.2	0.1	1.4	0.6
Government Thousands, SA	Calendar Year	162.8	161.7	159.9	159.7	160.0	159.7	158.6	158.2	159.0	156.7	156.3
	% Change	0.1	(0.7)	(1.1)	(0.1)	0.2	(0.2)	(0.7)	(0.3)	0.5	(1.4)	(0.2)
	Fiscal Year	163.2	162.2	160.8	159.7	159.8	159.9	159.4	158.2	158.8	157.7	156.5
	% Change	1.1	(0.6)	(0.9)	(0.7)	0.1	0.1	(0.3)	(0.7)	0.4	(0.7)	(0.7)

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.4 - ANNUAL VIRGINIA REGIONAL EMPLOYMENT

		Pessimistic Alternative Scenario			
		2019	2020	2021	2022
Hampton Roads					
Total Nonagricultural Employment Thousands, SA	Calendar Year	804.3	799.5	799.1	802.9
	% Change	0.9	(0.6)	(0.0)	0.5
	Fiscal Year	802.8	802.5	798.1	801.0
	% Change	1.9	(0.0)	(0.6)	0.4
Construction and Mining Thousands, SA	Calendar Year	40.4	40.4	40.6	43.1
	% Change	5.1	0.1	0.5	6.1
	Fiscal Year	39.3	40.8	40.2	41.7
	% Change	3.8	3.8	(1.3)	3.7
Trade, Transportation, and Utilities Thousands, SA	Calendar Year	138.4	135.0	134.1	132.5
	% Change	0.7	(2.5)	(0.7)	(1.2)
	Fiscal Year	139.2	136.8	134.3	133.3
	% Change	3.2	(1.8)	(1.8)	(0.7)
Financial Activities Thousands, SA	Calendar Year	40.8	40.8	40.8	40.6
	% Change	2.9	(0.2)	(0.1)	(0.3)
	Fiscal Year	40.5	40.9	40.8	40.7
	% Change	4.6	1.0	(0.3)	(0.2)
Professional and Business Services Thousands, SA	Calendar Year	113.2	110.2	113.4	117.3
	% Change	1.5	(2.7)	2.9	3.5
	Fiscal Year	112.3	112.2	111.0	115.6
	% Change	2.0	(0.1)	(1.1)	4.2
Education and Health Services Thousands, SA	Calendar Year	113.2	114.0	114.8	114.8
	% Change	0.8	0.7	0.7	(0.0)
	Fiscal Year	113.0	113.4	114.5	114.7
	% Change	1.1	0.4	1.0	0.2
Leisure and Hospitality Thousands, SA	Calendar Year	97.2	98.3	98.8	98.9
	% Change	0.6	1.2	0.4	0.1
	Fiscal Year	97.2	97.6	98.7	98.8
	% Change	3.3	0.3	1.2	0.1
Government Thousands, SA	Calendar Year	158.2	159.0	156.8	156.6
	% Change	(0.3)	0.5	(1.4)	(0.1)
	Fiscal Year	158.2	158.8	157.7	156.7
	% Change	(0.7)	0.4	(0.7)	(0.6)

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.4 - ANNUAL VIRGINIA REGIONAL EMPLOYMENT

Richmond		History											
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total Nonagricultural Employment Thousands, SA	Calendar Year	578.8	580.3	578.2	578.7	593.8	606.0	615.2	622.7	620.0	595.4	591.9	600.5
	% Change	2.4	0.2	(0.4)	0.1	2.6	2.1	1.5	1.2	(0.4)	(4.0)	(0.6)	1.5
	Fiscal Year	572.3	581.6	578.6	576.8	586.2	600.7	609.6	620.6	622.3	609.7	590.3	594.9
	% Change	2.6	1.6	(0.5)	(0.3)	1.6	2.5	1.5	1.8	0.3	(2.0)	(3.2)	0.8
Construction and Mining Thousands, SA	Calendar Year	38.8	39.2	39.1	39.2	40.7	43.1	44.0	45.0	41.4	34.6	32.4	31.8
	% Change	5.1	1.0	(0.3)	0.2	3.8	5.9	2.2	2.1	(8.0)	(16.4)	(6.4)	(1.9)
	Fiscal Year	37.7	39.3	38.9	39.0	39.6	42.2	43.7	44.5	43.9	37.9	32.9	32.1
	% Change	3.6	4.2	(1.0)	0.3	1.4	6.5	3.8	1.8	(1.5)	(13.5)	(13.3)	(2.2)
Trade, Transportation, and Utilities Thousands, SA	Calendar Year	110.6	109.9	109.6	109.5	110.4	110.4	112.6	115.2	114.1	108.2	107.4	109.4
	% Change	2.4	(0.7)	(0.2)	(0.2)	0.8	0.0	2.0	2.3	(0.9)	(5.1)	(0.8)	1.9
	Fiscal Year	109.7	110.7	109.4	109.5	110.3	109.8	111.6	113.9	115.0	111.7	107.0	108.2
	% Change	3.0	0.9	(1.2)	0.1	0.8	(0.4)	1.6	2.1	1.0	(2.9)	(4.2)	1.0
Financial Activities Thousands, SA	Calendar Year	44.9	46.8	46.5	46.2	46.7	46.5	46.3	45.6	44.0	42.9	42.4	44.0
	% Change	3.3	4.3	(0.8)	(0.6)	1.1	(0.4)	(0.3)	(1.7)	(3.5)	(2.4)	(1.0)	3.6
	Fiscal Year	44.3	45.9	47.1	45.9	46.7	46.5	46.5	46.0	44.7	43.5	42.4	42.8
	% Change	6.1	3.6	2.6	(2.6)	1.8	(0.3)	(0.1)	(1.1)	(2.7)	(2.6)	(2.6)	1.0
Professional and Business Services Thousands, SA	Calendar Year	91.5	89.2	87.3	83.5	87.7	92.5	95.1	98.4	98.9	92.2	92.6	96.3
	% Change	3.8	(2.5)	(2.1)	(4.4)	5.0	5.5	2.8	3.4	0.5	(6.7)	0.4	4.0
	Fiscal Year	89.4	91.2	88.1	84.8	85.0	90.5	93.7	97.2	99.3	95.7	91.2	94.8
	% Change	1.1	2.0	(3.4)	(3.7)	0.3	6.4	3.5	3.7	2.2	(3.7)	(4.7)	4.0
Education and Health Services Thousands, SA	Calendar Year	51.7	53.9	56.7	60.6	65.1	68.5	71.3	73.9	80.4	82.9	84.5	86.1
	% Change	(0.1)	4.3	5.2	6.9	7.4	5.3	4.1	3.7	8.8	3.1	1.9	1.8
	Fiscal Year	51.8	52.4	55.3	58.6	62.9	66.7	69.8	72.3	77.5	81.9	84.1	84.7
	% Change	2.5	1.1	5.5	6.0	7.3	6.1	4.6	3.6	7.1	5.7	2.7	0.8
Leisure and Hospitality Thousands, SA	Calendar Year	43.9	44.8	44.2	45.7	48.0	49.0	51.1	51.9	52.3	51.4	51.0	53.0
	% Change	2.4	2.2	(1.5)	3.5	5.1	2.0	4.4	1.5	0.8	(1.8)	(0.8)	4.0
	Fiscal Year	43.6	44.4	44.5	44.6	47.0	48.4	50.0	51.7	52.3	51.9	50.8	51.7
	% Change	2.1	1.9	0.2	0.3	5.3	3.0	3.3	3.4	1.1	(0.8)	(2.1)	1.7
Government Thousands, SA	Calendar Year	105.6	107.0	108.3	109.4	110.4	111.4	111.4	110.3	109.0	110.3	111.1	110.7
	% Change	2.5	1.4	1.2	1.1	0.9	1.0	(0.1)	(0.9)	(1.2)	1.2	0.7	(0.3)
	Fiscal Year	104.2	106.4	107.8	109.0	109.5	111.7	110.8	111.8	108.6	110.1	110.8	110.6
	% Change	2.4	2.2	1.3	1.1	0.5	2.0	(0.8)	0.9	(2.9)	1.4	0.6	(0.1)

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.4 - ANNUAL VIRGINIA REGIONAL EMPLOYMENT

Richmond		History							October Standard Forecast			
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total Nonagricultural Employment Thousands, SA	Calendar Year	612.9	622.5	633.3	651.4	664.0	673.2	686.3	696.3	702.8	706.0	708.1
	% Change	2.1	1.6	1.7	2.9	1.9	1.4	1.9	1.5	0.9	0.4	0.3
	Fiscal Year	606.6	618.0	627.9	640.3	660.2	668.2	680.2	690.9	700.3	704.5	707.2
	% Change	2.0	1.9	1.6	2.0	3.1	1.2	1.8	1.6	1.4	0.6	0.4
Construction and Mining Thousands, SA	Calendar Year	32.5	33.2	33.8	36.1	36.9	37.8	38.1	38.7	40.3	41.5	42.5
	% Change	2.4	2.0	2.0	6.8	2.0	2.6	0.7	1.5	4.1	3.1	2.2
	Fiscal Year	32.0	33.0	33.2	35.0	36.6	37.3	38.3	38.1	39.5	41.0	42.0
	% Change	(0.3)	3.1	0.6	5.3	4.6	1.9	2.7	(0.6)	3.7	3.8	2.5
Trade, Transportation, and Utilities Thousands, SA	Calendar Year	112.0	114.4	117.5	119.8	121.8	122.2	126.8	128.3	127.7	126.7	125.3
	% Change	2.4	2.2	2.7	2.0	1.7	0.3	3.7	1.2	(0.5)	(0.8)	(1.1)
	Fiscal Year	110.5	113.4	116.3	118.0	121.8	121.5	124.7	127.7	128.2	127.1	126.0
	% Change	2.1	2.6	2.5	1.5	3.2	(0.2)	2.7	2.4	0.4	(0.9)	(0.9)
Financial Activities Thousands, SA	Calendar Year	46.5	47.8	48.7	50.4	50.5	51.5	52.1	52.7	53.5	53.7	53.6
	% Change	5.8	2.7	2.0	3.4	0.2	2.1	1.1	1.2	1.4	0.4	(0.0)
	Fiscal Year	45.4	47.2	48.3	49.6	50.4	51.0	52.1	52.1	53.2	53.6	53.7
	% Change	5.9	4.1	2.2	2.8	1.4	1.2	2.3	(0.0)	2.0	0.8	0.1
Professional and Business Services Thousands, SA	Calendar Year	98.8	100.4	102.5	109.4	112.8	114.5	116.3	120.7	125.2	127.3	129.6
	% Change	2.6	1.6	2.1	6.7	3.2	1.5	1.6	3.8	3.7	1.6	1.8
	Fiscal Year	97.3	99.6	101.4	105.1	112.2	113.9	115.4	117.8	123.4	126.3	128.4
	% Change	2.6	2.3	1.9	3.6	6.7	1.6	1.2	2.1	4.8	2.3	1.6
Education and Health Services Thousands, SA	Calendar Year	88.7	91.0	93.2	95.6	97.0	98.6	100.3	101.7	102.0	102.9	103.8
	% Change	3.1	2.5	2.5	2.5	1.4	1.7	1.7	1.4	0.3	0.9	0.9
	Fiscal Year	87.4	90.0	92.3	94.2	96.5	97.9	99.4	101.1	102.0	102.4	103.4
	% Change	3.2	3.0	2.6	2.1	2.4	1.4	1.6	1.7	0.9	0.4	1.0
Leisure and Hospitality Thousands, SA	Calendar Year	55.5	57.1	58.0	60.9	63.4	64.8	66.7	67.1	67.9	69.0	69.4
	% Change	4.6	2.9	1.6	5.0	4.1	2.3	2.8	0.6	1.3	1.5	0.7
	Fiscal Year	54.6	56.3	57.6	59.0	62.5	64.3	65.7	67.1	67.2	68.6	69.3
	% Change	5.5	3.2	2.3	2.5	5.9	2.8	2.2	2.1	0.2	2.1	0.9
Government Thousands, SA	Calendar Year	110.2	109.5	109.8	109.5	110.6	111.0	111.8	112.5	112.8	112.3	111.9
	% Change	(0.5)	(0.7)	0.3	(0.3)	1.0	0.3	0.7	0.7	0.2	(0.5)	(0.3)
	Fiscal Year	110.8	109.7	109.3	109.8	110.1	110.7	111.3	112.4	112.8	112.5	112.1
	% Change	0.1	(1.0)	(0.3)	0.4	0.3	0.6	0.5	1.0	0.3	(0.3)	(0.3)

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

TABLE A.4 - ANNUAL VIRGINIA REGIONAL EMPLOYMENT

		Pessimistic Alternative Scenario			
		2019	2020	2021	2022
Richmond					
Total Nonagricultural Employment Thousands, SA	Calendar Year	693.0	687.2	688.6	691.5
	% Change	1.0	(0.8)	0.2	0.4
	Fiscal Year	690.5	690.7	686.9	689.9
	% Change	1.5	0.0	(0.6)	0.4
Construction and Mining Thousands, SA	Calendar Year	39.0	38.7	38.3	39.7
	% Change	2.3	(0.7)	(1.2)	3.7
	Fiscal Year	38.3	39.2	38.3	38.8
	% Change	(0.1)	2.5	(2.3)	1.4
Trade, Transportation, and Utilities Thousands, SA	Calendar Year	126.9	123.3	122.2	120.3
	% Change	0.1	(2.9)	(0.9)	(1.5)
	Fiscal Year	127.4	125.2	122.5	121.2
	% Change	2.2	(1.7)	(2.1)	(1.1)
Financial Activities Thousands, SA	Calendar Year	53.0	52.9	52.9	52.7
	% Change	1.6	(0.2)	(0.0)	(0.3)
	Fiscal Year	52.4	53.1	52.9	52.8
	% Change	0.5	1.2	(0.3)	(0.2)
Professional and Business Services Thousands, SA	Calendar Year	118.6	115.5	119.1	123.6
	% Change	2.2	(2.6)	3.1	3.8
	Fiscal Year	116.8	117.6	116.5	121.7
	% Change	1.3	0.7	(1.0)	4.5
Education and Health Services Thousands, SA	Calendar Year	101.6	102.5	103.4	103.4
	% Change	1.2	0.9	0.9	(0.0)
	Fiscal Year	101.3	101.8	103.1	103.3
	% Change	1.9	0.5	1.3	0.2
Leisure and Hospitality Thousands, SA	Calendar Year	67.1	68.3	68.7	68.8
	% Change	0.5	1.7	0.6	0.2
	Fiscal Year	67.1	67.5	68.6	68.7
	% Change	2.2	0.5	1.8	0.1
Government Thousands, SA	Calendar Year	112.5	112.8	112.4	112.3
	% Change	0.7	0.2	(0.3)	(0.1)
	Fiscal Year	112.4	112.8	112.5	112.4
	% Change	1.0	0.3	(0.3)	(0.1)

SAAR: Seasonally Adjusted at Annual Rates

SA: Seasonally Adjusted

APPENDIX B

Review of General Fund Revenue

TABLE B.1 - QUARTERLY GENERAL FUND REVENUES
(Millions of Dollars)

	2004 3	2004 4	2005 1	2005 2	2005 3	2005 4	2006 1	2006 2	2006 3	2006 4	2007 1	2007 2	2007 3	2007 4	2008 1
Withholding	1,768.0	1,905.5	1,992.0	1,847.5	1,897.2	1,996.5	2,131.5	2,028.5	1,970.4	2,110.3	2,292.5	2,192.2	2,062.9	2,244.9	2,411.8
Annual % Change	10.1	5.8	7.0	4.4	7.3	4.8	7.0	9.8	3.9	5.7	7.6	8.1	4.7	6.4	5.2
Nonwithholding	286.6	209.9	415.0	1,162.0	349.0	225.7	483.9	1,435.1	356.4	264.8	512.5	1,648.3	394.1	260.1	556.6
Annual % Change	19.2	30.8	36.3	35.5	21.8	7.5	16.6	23.5	2.1	17.3	5.9	14.9	10.6	(1.8)	8.6
Gross Individual Income Tax	2,054.7	2,115.5	2,407.0	3,009.5	2,246.3	2,222.2	2,615.5	3,463.6	2,326.8	2,375.2	2,805.0	3,840.4	2,457.0	2,505.1	2,968.4
Annual % Change	11.3	7.8	11.1	14.5	9.3	5.0	8.7	15.1	3.6	6.9	7.2	10.9	5.6	5.5	5.8
Individual Refunds	87.8	81.1	588.0	477.3	50.5	62.5	638.4	531.2	110.2	109.8	740.4	599.5	83.6	143.9	811.3
Annual % Change	1.6	11.8	1.6	(0.5)	(42.5)	(22.9)	8.6	11.3	118.3	75.6	16.0	12.9	(24.1)	31.1	9.6
Net Individual Income Tax	1,966.9	2,034.3	1,819.0	2,532.2	2,195.8	2,159.7	1,977.0	2,932.4	2,216.7	2,265.4	2,064.6	3,240.9	2,373.3	2,361.2	2,157.2
Annual % Change	11.7	7.7	14.6	17.9	11.6	6.2	8.7	15.8	1.0	4.9	4.4	10.5	7.1	4.2	4.5
Sales and Use Tax	524.3	727.0	736.0	958.8	579.3	728.6	758.5	746.3	762.3	746.9	774.8	765.1	785.8	798.2	723.3
Annual % Change	7.3	17.3	18.2	15.4	10.5	0.2	3.1	(22.2)	31.6	2.5	2.1	2.5	3.1	6.9	(6.6)
Corporate Income Tax	122.0	124.9	90.0	279.9	214.7	256.1	116.0	280.3	256.9	186.6	118.7	317.4	217.7	115.4	138.7
Annual % Change	8.1	228.4	103.2	21.4	76.0	105.1	29.0	0.2	19.7	(27.2)	2.3	13.2	(15.2)	(38.1)	16.9
Wills, Suits, Deeds, Contracts	113.8	150.6	141.9	189.8	202.8	170.1	149.7	172.1	150.8	143.6	133.9	154.7	130.7	112.6	98.6
Annual % Change	21.5	89.3	109.6	90.4	78.3	13.0	5.5	(9.3)	(25.7)	(15.6)	(10.5)	(10.1)	(13.3)	(21.6)	(26.4)
Insurance Premiums	88.0	69.0	38.3	178.3	84.1	72.1	36.3	181.3	87.9	61.4	38.0	197.6	101.7	61.5	32.1
Annual % Change	10.4	9.3	(10.1)	7.5	(4.4)	4.4	(5.2)	1.7	4.5	(14.8)	4.7	9.0	15.8	0.1	(15.7)
Interest Income	27.1	22.1	23.8	10.8	44.7	26.0	39.6	6.1	91.7	42.9	53.8	(12.4)	105.5	66.2	37.5
Annual % Change	(9.2)	99.7	71.0	64.5	65.0	17.7	66.4	(43.9)	105.0	64.7	35.7	(303.9)	15.1	54.4	(30.3)
Alcoholic Beverage Sales	12.6	34.8	38.1	59.0	13.5	36.4	40.6	62.4	14.3	38.0	42.1	67.5	13.8	39.6	45.5
Annual % Change	(2.6)	5.8	2.4	7.2	7.4	4.7	6.5	5.8	5.5	4.2	3.6	8.2	(3.4)	4.5	8.0
All Other Revenues	155.2	122.6	118.5	177.9	110.9	111.7	148.8	180.2	127.2	111.1	128.6	176.9	113.6	144.0	147.2
Annual % Change	6.0	9.6	(17.7)	(29.2)	(28.6)	(8.9)	25.7	1.3	14.7	(0.5)	(13.6)	(1.8)	(10.7)	29.6	14.4
Total General Fund Revenues	3,009.8	3,285.3	3,005.5	4,386.6	3,445.8	3,560.8	3,266.7	4,561.0	3,707.7	3,595.9	3,354.5	4,907.7	3,842.1	3,698.7	3,380.0
Annual % Change	10.5	15.4	17.4	15.8	14.5	8.4	8.7	4.0	7.6	1.0	2.7	7.6	3.6	2.9	0.8

TABLE B.1 - QUARTERLY GENERAL FUND REVENUES
(Millions of Dollars)

	2008 2	2008 3	2008 4	2009 1	2009 2	2009 3	2009 4	2010 1	2010 2	2010 3	2010 4	2011 1	2011 2	2011 3	2011 4
Withholding	2,213.9	2,175.8	2,384.3	2,306.6	2,271.5	2,125.0	2,328.6	2,416.4	2,306.1	2,219.1	2,459.9	2,538.5	2,417.6	2,308.0	2,510.9
Annual % Change	1.0	5.5	6.2	(4.4)	2.6	(2.3)	(2.3)	4.8	1.5	4.4	5.6	5.1	4.8	4.0	2.1
Nonwithholding	1,650.4	406.5	243.3	458.8	1,201.8	311.3	217.8	373.0	1,004.6	292.9	204.6	435.7	1,245.4	348.0	222.8
Annual % Change	0.1	3.1	(6.5)	(17.6)	(27.2)	(23.4)	(10.5)	(18.7)	(16.4)	(5.9)	(6.0)	16.8	24.0	18.8	8.9
Gross Individual Income Tax	3,864.3	2,582.2	2,627.6	2,765.4	3,473.3	2,436.3	2,546.4	2,789.4	3,310.7	2,512.0	2,664.5	2,974.2	3,663.0	2,655.9	2,733.7
Annual % Change	0.6	5.1	4.9	(6.8)	(10.1)	(5.6)	(3.1)	0.9	(4.7)	3.1	4.6	6.6	10.6	5.7	2.6
Individual Refunds	641.1	127.2	141.3	873.2	825.8	150.8	182.3	947.1	714.4	123.1	160.9	888.2	697.1	105.7	132.1
Annual % Change	6.9	52.0	(1.8)	7.6	28.8	18.6	29.1	8.5	(13.5)	(18.4)	(11.8)	(6.2)	(2.4)	(14.1)	(17.9)
Net Individual Income Tax	3,223.2	2,455.0	2,486.3	1,892.2	2,647.5	2,285.5	2,364.1	1,842.3	2,596.4	2,388.9	2,503.6	2,086.1	2,965.8	2,550.2	2,601.6
Annual % Change	(0.5)	3.4	5.3	(12.3)	(17.9)	(6.9)	(4.9)	(2.6)	(1.9)	4.5	5.9	13.2	14.2	6.8	3.9
Sales and Use Tax	768.3	769.9	729.2	708.8	695.4	724.7	724.0	674.5	959.4	577.9	746.3	719.7	968.5	620.4	772.0
Annual % Change	0.4	(2.0)	(8.6)	(2.0)	(9.5)	(5.9)	(0.7)	(4.8)	38.0	(20.3)	3.1	6.7	0.9	7.3	3.5
Corporate Income Tax	336.0	191.4	71.9	71.1	313.6	176.3	175.6	56.8	397.8	177.6	160.5	127.8	356.4	191.3	134.4
Annual % Change	5.8	(12.1)	(37.7)	(48.7)	(6.7)	(7.9)	144.4	(20.2)	26.8	0.7	(8.6)	125.1	(10.4)	7.7	(16.3)
Wills, Suits, Deeds, Contracts	114.5	90.3	66.2	68.4	89.3	80.5	74.6	60.1	75.0	75.7	77.7	63.3	74.7	78.9	79.8
Annual % Change	(26.0)	(30.9)	(41.2)	(30.6)	(22.0)	(10.9)	12.8	(12.2)	(16.0)	(5.9)	4.1	5.4	(0.4)	4.2	2.8
Insurance Premiums	201.5	0.0	75.6	(20.2)	199.6	0.0	75.1	(20.3)	207.1	0.0	80.5	(9.4)	210.4	0.0	56.4
Annual % Change	2.0	(100.0)	22.9	(163.0)	(0.9)	NA	(0.6)	0.4	3.7	NA	7.2	(53.7)	1.6	NA	(29.9)
Interest Income	(19.9)	74.6	25.4	23.3	(19.0)	40.3	26.4	33.3	(5.7)	25.7	21.6	23.8	10.0	29.5	17.0
Annual % Change	60.5	(29.3)	(61.7)	(37.8)	(4.2)	(45.9)	3.9	42.8	(70.0)	(36.2)	(18.0)	(28.5)	(274.5)	14.5	(21.5)
Alcoholic Beverage Sales	70.0	12.8	41.5	47.1	71.8	12.3	42.2	47.5	73.0	12.8	43.2	48.7	74.3	13.8	45.0
Annual % Change	3.6	(7.2)	4.7	3.5	2.7	(4.0)	1.7	1.0	1.7	3.9	2.2	2.5	1.7	7.9	4.2
All Other Revenues	152.6	85.8	102.9	103.4	143.7	87.4	71.8	97.5	164.1	89.4	81.1	105.7	151.9	89.1	77.2
Annual % Change	(13.8)	(24.5)	(28.5)	(29.8)	(5.8)	1.9	(30.2)	(5.7)	14.2	2.4	12.9	8.4	(7.4)	(0.3)	(4.9)
Total General Fund Revenues	4,846.1	3,679.9	3,599.0	2,894.2	4,142.0	3,407.0	3,553.9	2,791.6	4,467.0	3,348.1	3,714.5	3,165.6	4,812.0	3,573.2	3,783.4
Annual % Change	(1.3)	(4.2)	(2.7)	(14.4)	(14.5)	(7.4)	(1.3)	(3.5)	7.8	(1.7)	4.5	13.4	7.7	6.7	1.9

TABLE B.1 - QUARTERLY GENERAL FUND REVENUES
(Millions of Dollars)

	2012 1	2012 2	2012 3	2012 4	2013 1	2013 2	2013 3	2013 4	2014 1	2014 2	2014 3	2014 4	2015 1	2015 2	2015 3
Withholding	2,640.7	2,580.0	2,292.0	2,606.4	2,761.1	2,591.9	2,403.1	2,659.9	2,803.7	2,617.5	2,554.4	2,820.0	2,875.3	2,794.7	2,666.5
Annual % Change	4.0	6.7	(0.7)	3.8	4.6	0.5	4.8	2.1	1.5	1.0	6.3	6.0	2.6	6.8	4.4
Nonwithholding	468.9	1,318.3	362.4	201.3	575.7	1,668.3	372.8	260.6	496.7	1,394.8	427.7	327.6	602.1	1,684.2	472.0
Annual % Change	7.6	5.9	4.1	(9.6)	22.8	26.5	2.9	29.4	(13.7)	(16.4)	14.7	25.7	21.2	20.7	10.3
Gross Individual Income Tax	3,109.6	3,898.3	2,654.4	2,807.7	3,336.8	4,260.1	2,775.9	2,920.4	3,300.5	4,012.4	2,982.1	3,147.6	3,477.4	4,478.9	3,138.5
Annual % Change	4.6	6.4	(0.1)	2.7	7.3	9.3	4.6	4.0	(1.1)	(5.8)	7.4	7.8	5.4	11.6	5.2
Individual Refunds	862.9	684.1	98.2	108.9	827.8	684.2	118.6	156.9	820.2	660.1	123.5	156.8	790.5	686.5	122.9
Annual % Change	(2.9)	(1.9)	(7.1)	(17.6)	(4.1)	0.0	20.8	44.2	(0.9)	(3.5)	4.1	(0.1)	(3.6)	4.0	(0.5)
Net Individual Income Tax	2,246.7	3,214.2	2,556.2	2,698.9	2,509.1	3,575.9	2,657.3	2,763.5	2,480.3	3,352.3	2,858.6	2,990.8	2,686.9	3,792.3	3,015.6
Annual % Change	7.7	8.4	0.2	3.7	11.7	11.3	4.0	2.4	(1.1)	(6.3)	7.6	8.2	8.3	13.1	5.5
Sales and Use Tax	768.1	961.0	684.7	777.1	787.0	971.0	653.9	766.1	721.1	925.3	684.0	778.5	764.3	1,008.7	648.9
Annual % Change	6.7	(0.8)	10.4	0.7	2.5	1.0	(4.5)	(1.4)	(8.4)	(4.7)	4.6	1.6	6.0	9.0	(5.1)
Corporate Income Tax	162.4	371.8	168.8	197.9	84.5	345.6	201.5	102.2	124.0	329.8	226.6	140.2	144.6	320.6	188.0
Annual % Change	27.1	4.3	(11.8)	47.2	(48.0)	(7.0)	19.4	(48.4)	46.8	(4.6)	12.4	37.2	16.6	(2.8)	(17.0)
Wills, Suits, Deeds, Contracts	73.5	89.8	90.7	92.2	91.3	103.3	93.2	76.2	60.6	80.8	87.5	80.9	76.1	101.8	96.0
Annual % Change	16.1	20.2	14.9	15.5	24.1	15.1	2.8	(17.3)	(33.6)	(21.8)	(6.1)	6.1	25.7	26.1	9.7
Insurance Premiums	(15.2)	211.7	0.0	79.9	(21.0)	203.3	0.0	90.3	3.5	226.7	0.0	75.5	5.3	219.9	0.0
Annual % Change	62.4	0.6	NA	41.7	37.7	(4.0)	NA	12.9	(116.5)	11.5	NA	NA	NA	NA	NA
Interest Income	19.9	10.8	26.9	15.1	21.8	3.7	18.3	22.8	23.4	9.6	18.0	14.5	12.7	3.6	18.2
Annual % Change	(16.2)	8.0	(8.9)	(10.9)	9.2	(65.4)	(31.7)	50.5	7.3	157.4	(2.0)	(36.6)	(45.9)	(62.4)	1.5
Alcoholic Beverage Sales	50.6	77.0	15.7	46.1	53.2	80.2	14.8	47.7	54.4	82.3	15.2	49.0	56.8	86.8	11.8
Annual % Change	4.0	3.6	13.7	2.6	5.1	4.1	(5.8)	3.4	2.3	2.7	2.8	2.7	4.3	5.5	(22.6)
All Other Revenues	107.3	140.3	76.6	88.2	101.3	159.6	83.3	79.5	105.0	161.8	82.9	88.0	104.8	160.5	87.9
Annual % Change	1.6	(7.7)	(14.0)	14.3	(5.6)	13.8	8.7	(9.8)	3.6	1.4	(0.5)	10.6	(0.2)	(0.8)	6.1
Total General Fund Revenues	3,413.4	5,076.6	3,619.5	3,995.5	3,627.1	5,442.5	3,722.3	3,948.3	3,572.3	5,168.5	3,972.6	4,217.2	3,851.4	5,694.3	4,066.3
Annual % Change	7.8	5.5	1.3	5.6	6.3	7.2	2.8	(1.2)	(1.5)	(5.0)	6.7	6.8	7.8	10.2	2.4

TABLE B.1 - QUARTERLY GENERAL FUND REVENUES
(Millions of Dollars)

	2015 4	2016 1	2016 2	2016 3	2016 4	2017 1	2017 2	2017 3	2017 4	2018 1	2018 2	2018 3
Withholding	2,829.2	3,029.1	2,781.5	2,777.0	2,966.4	3,231.3	2,920.7	2,888.1	3,026.9	3,441.1	3,184.5	2,920.9
Annual % Change	0.3	5.3	(0.5)	4.1	4.8	6.7	5.0	4.0	2.0	6.5	9.0	1.1
Nonwithholding	316.8	652.9	1,628.4	470.8	329.5	683.1	1,535.1	463.8	581.7	688.5	1,738.9	530.3
Annual % Change	(3.3)	8.4	(3.3)	(0.2)	4.0	4.6	(5.7)	(1.5)	76.6	0.8	13.3	14.4
Gross Individual Income Tax	3,146.1	3,682.0	4,409.8	3,247.8	3,295.9	3,914.4	4,455.8	3,351.8	3,608.6	4,129.5	4,923.4	3,451.2
Annual % Change	(0.0)	5.9	(1.5)	3.5	4.8	6.3	1.0	3.2	9.5	5.5	10.5	3.0
Individual Refunds	165.8	844.6	687.4	114.9	143.0	871.4	731.6	126.7	162.3	876.1	742.5	137.9
Annual % Change	5.8	6.8	0.1	(6.5)	(13.7)	3.2	6.4	10.3	13.5	0.5	1.5	8.8
Net Individual Income Tax	2,980.2	2,837.4	3,722.4	3,132.9	3,152.8	3,043.0	3,724.2	3,225.1	3,446.3	3,253.5	4,180.9	3,313.3
Annual % Change	(0.4)	5.6	(1.8)	3.9	5.8	7.2	0.0	2.9	9.3	6.9	12.3	2.7
Sales and Use Tax	831.6	781.5	1,033.9	649.9	827.1	820.0	1,060.1	667.2	865.2	832.2	1,097.2	717.2
Annual % Change	6.8	2.2	2.5	0.2	(0.5)	4.9	2.5	2.7	4.6	1.5	3.5	7.5
Corporate Income Tax	101.7	164.3	311.0	197.5	119.8	147.8	361.8	252.7	134.9	104.5	369.9	227.4
Annual % Change	(27.5)	13.6	(3.0)	5.1	17.8	(10.0)	16.3	27.9	12.6	(29.3)	2.2	(10.0)
Wills, Suits, Deeds, Contracts	90.4	78.7	104.0	109.6	98.5	80.4	105.9	107.1	94.2	83.1	110.5	97.4
Annual % Change	11.8	3.4	2.1	14.2	8.9	2.1	1.8	(2.3)	(4.4)	3.4	4.3	(9.1)
Insurance Premiums	87.4	8.1	243.5	0.0	90.2	7.0	243.7	0.0	94.7	(11.0)	254.3	0.0
Annual % Change	NA											
Interest Income	14.6	15.7	3.5	25.0	10.8	18.9	0.9	28.2	21.6	10.7	1.0	42.6
Annual % Change	1.4	24.2	(1.9)	36.8	(26.2)	20.3	(73.4)	12.8	100.1	(43.6)	2.2	51.2
Alcoholic Beverage Sales	55.1	59.2	91.5	14.1	53.8	60.6	93.9	15.3	55.4	61.9	99.3	14.0
Annual % Change	12.5	4.3	5.3	20.3	(2.5)	2.3	2.6	7.9	3.1	2.1	5.8	(8.0)
All Other Revenues	90.6	97.6	169.7	82.2	87.1	105.8	169.8	86.8	70.7	105.4	162.3	89.3
Annual % Change	3.0	(6.9)	5.7	(6.5)	(3.9)	8.4	0.1	5.6	(18.8)	(0.4)	(4.4)	2.8
Total General Fund Revenues	4,251.8	4,042.5	5,679.5	4,211.3	4,440.0	4,283.4	5,760.3	4,382.3	4,782.9	4,440.2	6,275.4	4,501.2
Annual % Change	0.8	5.0	(0.3)	3.6	4.4	6.0	1.4	4.1	7.7	3.7	8.9	2.7

TABLE B.2 - ANNUAL GENERAL FUND REVENUES
(Millions of Dollars)

		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Withholding	Calendar Year	4,550.9	4,979.1	5,673.3	6,007.5	6,347.5	6,513.0	6,772.2	7,305.3	7,733.2	8,240.8
	% Change	9.7	9.4	13.9	5.9	5.7	2.6	4.0	7.9	5.9	6.6
	Fiscal Year	4,303.0	4,759.0	5,311.9	5,861.3	6,254.9	6,422.4	6,567.4	7,039.3	7,513.0	8,053.7
	% Change	6.3	10.6	11.6	10.3	6.7	2.7	2.3	7.2	6.7	7.2
Nonwithholding	Calendar Year	1,084.4	1,317.7	1,596.4	1,640.6	1,801.7	1,456.4	1,423.7	1,658.4	2,151.8	2,540.3
	% Change	21.8	21.5	21.2	2.8	9.8	(19.2)	(2.2)	16.5	29.7	18.1
	Fiscal Year	1,041.9	1,284.7	1,487.8	1,669.7	1,806.8	1,459.5	1,402.7	1,562.8	2,073.5	2,493.8
	% Change	18.6	23.3	15.8	12.2	8.2	(19.2)	(3.9)	11.4	32.7	20.3
Gross Individual Income Tax	Calendar Year	5,635.3	6,296.7	7,269.7	7,648.1	8,149.2	7,969.4	8,195.9	8,963.7	9,884.9	10,781.0
	% Change	11.8	11.7	15.5	5.2	6.6	(2.2)	2.8	9.4	10.3	9.1
	Fiscal Year	5,344.9	6,043.7	6,799.8	7,530.9	8,061.7	7,881.9	7,970.1	8,602.1	9,586.6	10,547.5
	% Change	8.5	13.1	12.5	10.8	7.0	(2.2)	1.1	7.9	11.4	10.0
Individual Refunds	Calendar Year	628.5	655.2	717.4	773.8	902.6	1,108.8	1,167.3	1,227.3	1,178.3	1,389.6
	% Change	7.0	4.2	9.5	7.9	16.6	22.8	5.3	5.1	(4.0)	17.9
	Fiscal Year	617.1	638.2	711.9	702.0	835.4	1,171.1	1,194.4	1,217.2	1,234.2	1,282.6
	% Change	6.6	3.4	11.5	(1.4)	19.0	40.2	2.0	1.9	1.4	3.9
Net Individual Income Tax	Calendar Year	5,006.8	5,641.5	6,552.3	6,874.3	7,246.6	6,860.6	7,028.6	7,736.4	8,706.7	9,391.4
	% Change	12.5	12.7	16.1	4.9	5.4	(5.3)	2.4	10.1	12.5	7.9
	Fiscal Year	4,727.8	5,405.4	6,087.9	6,828.9	7,226.3	6,710.8	6,775.7	7,384.9	8,352.4	9,264.9
	% Change	8.7	14.3	12.6	12.2	5.8	(7.1)	1.0	9.0	13.1	10.9
Sales and Use Tax	Calendar Year	1,872.4	1,992.4	2,140.7	2,233.3	2,289.5	2,309.9	2,410.4	2,705.1	3,002.6	3,014.1
	% Change	5.0	6.4	7.4	4.3	2.5	0.9	4.4	12.2	11.0	0.4
	Fiscal Year	1,826.8	1,919.2	2,065.3	2,201.5	2,273.0	2,429.8	2,336.0	2,562.3	2,946.1	2,812.7
	% Change	6.1	5.1	7.6	6.6	3.2	6.9	(3.9)	9.7	15.0	(4.5)
Corporate Income Tax	Calendar Year	448.8	458.1	462.8	497.5	326.2	320.5	348.6	521.7	840.6	839.8
	% Change	16.0	2.1	1.0	7.5	(34.4)	(1.8)	8.8	49.7	61.1	(0.1)
	Fiscal Year	432.3	450.8	420.4	565.9	363.8	290.2	343.3	425.7	616.7	867.1
	% Change	7.4	4.3	(6.7)	34.6	(35.7)	(20.2)	18.3	24.0	44.9	40.6
Wills, Suits, Deeds, Contracts	Calendar Year	112.5	148.5	151.3	150.8	195.5	247.2	319.5	431.7	704.7	616.2
	% Change	13.5	32.0	1.9	(0.3)	29.6	26.4	29.3	35.1	63.2	(12.6)
	Fiscal Year	103.4	126.8	157.9	146.3	167.6	214.4	285.8	340.6	596.1	694.7
	% Change	8.3	22.6	24.5	(7.3)	14.6	27.9	33.3	19.1	75.0	16.6

TABLE B.2 - ANNUAL GENERAL FUND REVENUES
(Millions of Dollars)

		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Withholding	Calendar Year	8,792.5	9,185.8	9,031.7	9,401.4	9,775.0	10,119.1	10,415.9	10,795.6	11,165.7	11,554.0	12,066.9	
	% Change	6.7	4.5	(1.7)	4.1	4.0	3.5	2.9	3.6	3.4	3.5	4.4	
	Fiscal Year	8,565.5	8,933.6	9,138.1	9,176.2	9,635.1	10,039.7	10,251.3	10,484.2	11,044.3	11,306.3	11,895.4	12,540.5
	% Change	6.4	4.3	2.3	0.4	5.0	4.2	2.1	2.3	5.3	2.4	5.2	5.4
Nonwithholding	Calendar Year	2,815.0	2,856.7	2,189.8	1,875.2	2,251.8	2,350.9	2,877.3	2,646.9	3,075.1	3,081.5	3,263.7	
	% Change	10.8	1.5	(23.3)	(14.4)	20.1	4.4	22.4	(8.0)	16.2	0.2	5.9	
	Fiscal Year	2,782.0	2,861.2	2,310.4	1,906.8	2,178.6	2,357.9	2,807.7	2,524.9	3,041.6	3,070.1	3,018.5	3,472.9
	% Change	11.6	2.8	(19.2)	(17.5)	14.3	8.2	19.1	(10.1)	20.5	0.9	(1.7)	15.1
Gross Individual Income Tax	Calendar Year	11,607.5	12,042.5	11,221.4	11,276.6	12,026.8	12,470.0	13,293.3	13,442.5	14,240.8	14,635.5	15,330.6	
	% Change	7.7	3.7	(6.8)	0.5	6.7	3.7	6.6	1.1	5.9	2.8	4.7	
	Fiscal Year	11,347.4	11,794.7	11,448.5	11,082.9	11,813.7	12,397.6	13,059.0	13,009.2	14,086.0	14,376.4	14,913.9	16,013.4
	% Change	7.6	3.9	(2.9)	(3.2)	6.6	4.9	5.3	(0.4)	8.3	2.1	3.7	7.4
Individual Refunds	Calendar Year	1,567.4	1,720.8	2,032.1	1,945.5	1,823.1	1,754.0	1,787.6	1,760.5	1,765.7	1,790.0	1,892.1	
	% Change	12.8	9.8	18.1	(4.3)	(6.3)	(3.8)	1.9	(1.5)	0.3	1.4	5.7	
	Fiscal Year	1,559.8	1,679.9	1,967.4	1,994.7	1,869.3	1,784.7	1,719.1	1,755.8	1,757.3	1,820.7	1,861.0	1,907.6
	% Change	21.6	7.7	17.1	1.4	(6.3)	(4.5)	(3.7)	2.1	0.1	3.6	2.2	2.5
Net Individual Income Tax	Calendar Year	10,040.0	10,321.7	9,189.3	9,331.1	10,203.8	10,716.0	11,505.7	11,682.0	12,475.1	12,845.5	13,438.5	
	% Change	6.9	2.8	(11.0)	1.5	9.4	5.0	7.4	1.5	6.8	3.0	4.6	
	Fiscal Year	9,787.6	10,114.8	9,481.1	9,088.3	9,944.4	10,612.8	11,340.0	11,253.3	12,328.7	12,555.6	13,052.9	14,105.8
	% Change	5.6	3.3	(6.3)	(4.1)	9.4	6.7	6.9	(0.8)	9.6	1.8	4.0	8.1
Sales and Use Tax	Calendar Year	3,123.8	2,990.8	2,853.0	2,958.0	3,080.6	3,190.9	3,178.0	3,108.9	3,253.5	3,292.3	3,412.5	
	% Change	3.6	(4.3)	(4.6)	3.7	4.1	3.6	(0.4)	(2.2)	4.7	1.2	3.6	
	Fiscal Year	3,049.1	3,075.5	2,903.4	3,082.5	3,012.4	3,121.5	3,219.8	3,066.5	3,235.4	3,295.9	3,357.1	3,461.8
	% Change	8.4	0.9	(5.6)	6.2	(2.3)	3.6	3.1	(4.8)	5.5	1.9	1.9	3.1
Corporate Income Tax	Calendar Year	769.3	738.0	736.7	792.7	809.9	900.9	733.7	820.6	754.8	792.6	897.2	
	% Change	(8.4)	(4.1)	(0.2)	7.6	2.2	11.2	(18.6)	11.8	(8.0)	5.0	13.2	
	Fiscal Year	879.6	807.9	648.0	806.5	822.3	859.9	796.7	757.5	831.9	764.9	827.0	861.9
	% Change	1.4	(8.2)	(19.8)	24.4	2.0	4.6	(7.3)	(4.9)	9.8	(8.0)	8.1	4.2
Wills, Suits, Deeds, Contracts	Calendar Year	531.9	369.5	312.8	288.5	296.8	346.2	364.0	309.7	364.4	390.8	387.6	
	% Change	(13.7)	(30.5)	(15.3)	(7.8)	2.9	16.6	5.1	(14.9)	17.7	7.2	(0.8)	
	Fiscal Year	582.9	456.3	314.3	290.2	291.5	322.1	377.5	310.8	346.3	369.1	394.4	394.9
	% Change	(16.1)	(21.7)	(31.1)	(7.7)	0.4	10.5	17.2	(17.7)	11.4	6.6	6.9	0.1

TABLE B.2 - ANNUAL GENERAL FUND REVENUES
(Millions of Dollars)

		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Insurance Premiums	Calendar Year	220.4	243.6	248.3	254.3	280.9	308.7	339.4	365.4	372.8	366.9
	% Change	1.8	10.5	1.9	2.4	10.5	9.9	9.9	7.7	2.0	(1.6)
	Fiscal Year	219.0	237.0	244.9	251.1	268.1	292.7	333.0	351.3	373.6	373.8
	% Change	0.5	8.2	3.4	2.5	6.8	9.2	13.8	5.5	6.3	0.1
Interest Income	Calendar Year	116.5	125.0	118.3	147.8	111.9	86.9	59.5	69.7	105.4	180.2
	% Change	23.1	7.3	(5.4)	24.9	(24.3)	(22.4)	(31.5)	17.3	51.2	71.0
	Fiscal Year	114.9	105.8	126.1	131.2	133.2	100.4	81.7	61.4	83.9	116.5
	% Change	39.7	(7.9)	19.2	4.0	1.5	(24.6)	(18.6)	(24.8)	36.6	38.9
Alcoholic Beverage Sales	Calendar Year	103.8	107.2	111.9	119.2	123.6	129.0	131.5	139.6	147.0	155.2
	% Change	0.8	3.2	4.4	6.5	3.7	4.3	1.9	6.2	5.3	5.6
	Fiscal Year	103.5	105.5	110.6	117.2	123.0	127.5	128.7	138.0	144.5	153.0
	% Change	(0.9)	1.9	4.8	6.0	4.9	3.6	1.0	7.2	4.7	5.9
All Other Revenues	Calendar Year	429.8	432.6	560.6	484.2	549.3	548.2	596.8	673.1	518.9	567.4
	% Change	8.1	0.6	29.6	(13.6)	13.5	(0.2)	8.9	12.8	(22.9)	9.3
	Fiscal Year	421.5	422.9	489.7	546.4	550.4	513.1	582.9	653.6	574.1	551.6
	% Change	9.9	0.3	15.8	11.6	0.7	(6.8)	13.6	12.1	(12.2)	(3.9)
Total General Fund Revenues	Calendar Year	8,311.0	9,148.7	10,346.2	10,761.3	11,123.6	10,810.9	11,234.2	12,642.8	14,398.7	15,131.3
	% Change	10.3	10.1	13.1	4.0	3.4	(2.8)	3.9	12.5	13.9	5.1
	Fiscal Year	7,949.3	8,773.5	9,702.7	10,788.5	11,105.3	10,679.0	10,867.1	11,917.9	13,687.3	14,834.3
	% Change	8.1	10.4	10.6	11.2	2.9	(3.8)	1.8	9.7	14.8	8.4
ABC Profits	Fiscal Year	23.8	20.7	25.5	30.1	28.1	25.4	14.2	16.8	24.9	30.0
	% Change	(8.5)	(12.9)	23.0	18.2	(6.8)	(9.6)	(44.1)	18.0	48.9	20.4

TABLE B.2 - ANNUAL GENERAL FUND REVENUES
(Millions of Dollars)

		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Insurance Premiums	Calendar Year	398.8	309.2	254.5	267.3	257.4	276.4	272.6	305.6	312.6	341.9	345.4	
	% Change	8.7	(22.5)	(17.7)	5.0	(3.7)	7.4	(1.4)	12.1	2.3	9.4	1.0	
	Fiscal Year	384.9	396.9	255.0	261.9	281.6	252.9	262.2	320.4	300.6	339.1	340.9	337.9
	% Change	3.0	3.1	(35.7)	2.7	7.5	(10.2)	3.7	22.2	(6.2)	12.8	0.5	(0.9)
Interest Income	Calendar Year	213.1	117.6	71.0	75.0	80.2	72.7	66.6	65.4	49.2	55.0	69.6	
	% Change	18.2	(44.8)	(39.6)	5.5	7.0	(9.4)	(8.3)	(1.8)	(24.8)	11.9	26.6	
	Fiscal Year	175.9	189.3	104.2	94.3	81.1	77.2	67.5	74.1	48.7	52.2	55.6	61.4
	% Change	51.1	7.6	(44.9)	(9.5)	(14.0)	(4.9)	(12.5)	9.8	(34.3)	7.1	6.7	10.4
Alcoholic Beverage Sales	Calendar Year	163.1	169.8	173.4	176.5	181.8	189.4	195.9	200.9	210.5	218.6	225.1	
	% Change	5.0	4.1	2.2	1.8	3.0	4.2	3.4	2.6	4.8	3.8	3.0	
	Fiscal Year	161.8	168.9	173.2	175.1	178.9	186.4	195.2	199.2	207.8	217.6	222.4	231.8
	% Change	5.8	4.3	2.6	1.1	2.2	4.2	4.7	2.1	4.3	4.7	2.2	4.3
All Other Revenues	Calendar Year	563.1	488.5	406.3	432.1	423.9	412.4	423.7	437.7	443.8	436.6	433.2	
	% Change	(0.8)	(13.3)	(16.8)	6.4	(1.9)	(2.7)	2.7	3.3	1.4	(1.6)	(0.8)	
	Fiscal Year	543.9	557.4	435.7	420.7	428.1	413.9	425.7	429.6	436.2	445.8	444.9	425.2
	% Change	(1.4)	2.5	(21.8)	(3.4)	1.8	(3.3)	2.9	0.9	1.5	2.2	(0.2)	(4.4)
Total General Fund Revenues	Calendar Year	15,803.1	15,505.0	13,997.0	14,321.2	15,334.3	16,105.0	16,740.2	16,930.7	17,863.9	18,373.3	19,209.0	
	% Change	4.4	(1.9)	(9.7)	2.3	7.1	5.0	3.9	1.1	5.5	2.9	4.5	
	Fiscal Year	15,565.8	15,767.0	14,315.1	14,219.5	15,040.2	15,846.7	16,684.6	16,411.4	17,735.6	18,040.1	18,695.1	19,880.8
	% Change	4.9	1.3	(9.2)	(0.7)	5.8	5.4	5.3	(1.6)	8.1	1.7	3.6	6.3
ABC Profits	Fiscal Year	27.6	37.2	44.2	50.0	50.5	63.8	68.0	72.2	83.3	86.5	110.5	109.5
	% Change	(8.3)	35.1	18.8	13.0	1.0	26.3	6.6	6.2	15.4	3.8	27.7	(0.9)

APPENDIX C
MODELS AND METHODOLOGIES

GENERAL FUND METHODOLOGY

Corporate Income Tax, Gross Receipts

	<u>Fiscal Year</u>	<u>Actual</u>	<u>Fitted</u>	<u>Residual</u>	<u>% Residual</u>
2010	09Q3	203.7	232.4	(28.6)	-14.1%
	09Q4	249.8	255.0	(5.2)	-2.1%
	10Q1	129.0	148.0	(18.9)	-14.7%
	10Q2	379.4	367.3	12.1	3.2%
	Total	961.9	1,002.6	(40.7)	-4.2%
2011	10Q3	227.0	227.5	(0.5)	-0.2%
	10Q4	238.3	264.4	(26.1)	-11.0%
	11Q1	161.8	128.2	33.6	20.8%
	11Q2	390.4	383.0	7.4	1.9%
	Total	1,017.5	1,003.2	14.3	1.4%
2012	11Q3	241.8	224.2	17.5	7.2%
	11Q4	224.1	244.1	(20.0)	-8.9%
	12Q1	184.9	194.2	(9.3)	-5.0%
	12Q2	397.9	414.4	(16.4)	-4.1%
	Total	1,048.8	1,076.9	(28.2)	-2.7%
2013	12Q3	224.8	266.5	(41.7)	-18.6%
	12Q4	273.1	238.5	34.6	12.7%
	13Q1	134.1	181.0	(46.8)	-34.9%
	13Q2	375.1	395.7	(20.6)	-5.5%
	Total	1,007.1	1,081.7	(74.5)	-7.4%
2014	13Q3	242.2	222.5	19.7	8.1%
	13Q4	225.4	275.2	(49.7)	-22.1%
	14Q1	141.3	135.2	6.1	4.3%
	14Q2	356.1	385.0	(29.0)	-8.1%
	Total	965.0	1,017.9	(52.9)	-5.5%
2015	14Q3	256.6	251.3	5.3	2.1%
	14Q4	242.0	229.7	12.3	5.1%
	15Q1	159.4	143.5	15.9	10.0%
	15Q2	350.5	353.8	(3.3)	-0.9%
	Total	1,008.5	978.3	30.2	3.0%
2016	15Q3	233.5	249.3	(15.8)	-6.8%
	15Q4	219.5	228.9	(9.4)	-4.3%
	16Q1	186.3	155.3	31.0	16.7%
	16Q2	334.5	349.6	(15.1)	-4.5%
	Total	973.8	983.0	(9.2)	-0.9%
2017	16Q3	242.4	235.6	6.8	2.8%
	16Q4	232.2	234.2	(2.0)	-0.9%
	17Q1	165.1	196.0	(30.9)	-18.7%
	17Q2	391.3	337.6	53.7	13.7%
	Total	1,031.1	1,003.4	27.6	2.7%
2018	17Q3	272.8	248.3	24.5	9.0%
	17Q4	235.2	223.6	11.5	4.9%
	18Q1	138.1	157.6	(19.5)	-14.1%
	18Q2	404.8	391.2	13.5	3.3%
	Total	1,050.9	1,020.8	30.1	2.9%

Individual Income Tax - Withholding

diffya(with)

$$= 0.00736 * \text{diffya}(\text{ywstran}) + 36.06156$$

(4.34177) (2.38815)

Sum Sq	143635	Std Err	52.5568	LHS Mean	95.7828
R Sq	0.2547	R Bar Sq	0.2261	F 2, 52	8.8874
D.W.(1)	2.2271	D.W.(4)	1.9295		

Quarterly data for 55 periods from 2005Q1 to 2018Q3

diffya Year-over-year difference function
with Withholding tax receipts
ywstran Virginia income from wages and salaries and transfer payments

GENERAL FUND METHODOLOGY

Individual Income Tax - Withholding

	<u>Fiscal Year</u>	<u>Actual</u>	<u>Fitted</u>	<u>Residual</u>	<u>% Residual</u>
2010	09Q3	2,125.0	2,218.7	(93.7)	-4.4%
	09Q4	2,328.6	2,369.8	(41.1)	-1.8%
	10Q1	2,416.4	2,483.1	(66.8)	-2.8%
	10Q2	2,306.1	2,351.3	(45.2)	-2.0%
	Total	9,176.2	9,422.9	(246.7)	-2.7%
2011	10Q3	2,219.1	2,245.7	(26.7)	-1.2%
	10Q4	2,459.9	2,438.6	21.2	0.9%
	11Q1	2,538.5	2,556.1	(17.6)	-0.7%
	11Q2	2,417.6	2,421.8	(4.2)	-0.2%
	Total	9,635.1	9,662.3	(27.2)	-0.3%
2012	11Q3	2,308.0	2,327.4	(19.4)	-0.8%
	11Q4	2,510.9	2,544.5	(33.5)	-1.3%
	12Q1	2,640.7	2,617.8	22.9	0.9%
	12Q2	2,580.0	2,488.6	91.4	3.5%
	Total	10,039.7	9,978.3	61.4	0.6%
2013	12Q3	2,292.0	2,371.2	(79.3)	-3.5%
	12Q4	2,606.4	2,617.9	(11.5)	-0.4%
	13Q1	2,761.1	2,688.3	72.8	2.6%
	13Q2	2,591.9	2,614.4	(22.6)	-0.9%
	Total	10,251.3	10,291.9	(40.5)	-0.4%
2014	13Q3	2,403.1	2,335.2	67.9	2.8%
	13Q4	2,659.9	2,616.5	43.4	1.6%
	14Q1	2,803.7	2,814.3	(10.6)	-0.4%
	14Q2	2,617.5	2,673.8	(56.2)	-2.1%
	Total	10,484.2	10,439.7	44.5	0.4%
2015	14Q3	2,554.4	2,489.8	64.6	2.5%
	14Q4	2,820.0	2,763.6	56.3	2.0%
	15Q1	2,875.3	2,917.1	(41.8)	-1.5%
	15Q2	2,794.7	2,752.2	42.5	1.5%
	Total	11,044.3	10,922.8	121.6	1.1%
2016	15Q3	2,666.5	2,678.7	(12.2)	-0.5%
	15Q4	2,829.2	2,928.8	(99.5)	-3.5%
	16Q1	3,029.1	2,976.5	52.6	1.7%
	16Q2	2,781.4	2,862.8	(81.4)	-2.9%
	Total	11,306.3	11,446.8	(140.6)	-1.2%
2017	16Q3	2,777.0	2,745.4	31.6	1.1%
	16Q4	2,966.4	2,942.7	23.7	0.8%
	17Q1	3,231.3	3,134.3	96.9	3.0%
	17Q2	2,920.7	2,907.6	13.1	0.4%
	Total	11,895.4	11,730.0	165.3	1.4%
2018	17Q3	2,888.1	2,892.8	(4.7)	-0.2%
	17Q4	3,026.9	3,066.2	(39.4)	-1.3%
	18Q1	3,441.1	3,331.4	109.6	3.2%
	18Q2	3,064.5	3,043.0	21.5	0.7%
	Total	12,420.5	12,333.4	87.1	0.7%

GENERAL FUND METHODOLOGY

Individual Income Tax - Estimated Payments

	<u>Fiscal Year</u>	<u>Actual</u>	<u>Fitted</u>	<u>Residual</u>	<u>% Residual</u>
2010	09Q3	281.6	295.3	(13.8)	-4.9%
	09Q4	173.4	191.7	(18.3)	-10.6%
	10Q1	352.3	388.9	(36.7)	-10.4%
	10Q2	444.6	430.8	13.9	3.1%
	Total	1,251.8	1,306.8	(54.9)	-4.4%
2011	10Q3	254.8	273.1	(18.3)	-7.2%
	10Q4	204.8	189.9	14.9	7.3%
	11Q1	351.3	411.8	(60.6)	-17.2%
	11Q2	490.4	478.0	12.4	2.5%
	Total	1,301.3	1,352.8	(51.6)	-4.0%
2012	11Q3	315.5	300.3	15.2	4.8%
	11Q4	226.7	224.0	2.7	1.2%
	12Q1	370.3	406.4	(36.1)	-9.7%
	12Q2	522.6	507.2	15.4	2.9%
	Total	1,435.1	1,437.9	(2.7)	-0.2%
2013	12Q3	299.0	337.0	(38.0)	-12.7%
	12Q4	178.2	271.0	(92.8)	-52.1%
	13Q1	492.6	400.7	91.9	18.7%
	13Q2	593.0	524.9	68.1	11.5%
	Total	1,562.8	1,533.5	29.3	1.9%
2014	13Q3	328.3	344.4	(16.1)	-4.9%
	13Q4	223.2	238.5	(15.2)	-6.8%
	14Q1	453.2	488.6	(35.3)	-7.8%
	14Q2	567.7	612.6	(44.9)	-7.9%
	Total	1,572.5	1,684.1	(111.5)	-7.1%
2015	14Q3	372.7	397.1	(24.4)	-6.6%
	14Q4	317.8	286.1	31.7	10.0%
	15Q1	516.7	517.3	(0.6)	-0.1%
	15Q2	642.8	632.4	10.4	1.6%
	Total	1,850.0	1,833.0	17.1	0.9%
2016	15Q3	398.1	407.4	(9.3)	-2.3%
	15Q4	383.8	315.4	68.4	17.8%
	16Q1	493.9	519.4	(25.5)	-5.2%
	16Q2	646.6	642.0	4.6	0.7%
	Total	1,922.3	1,884.1	38.2	2.0%
2017	16Q3	410.6	422.7	(12.1)	-2.9%
	16Q4	335.7	368.4	(32.7)	-9.7%
	17Q1	581.4	557.0	24.4	4.2%
	17Q2	621.0	686.2	(65.2)	-10.5%
	Total	1,948.7	2,034.4	(85.7)	-4.4%
2018	17Q3	415.5	456.9	(41.4)	-10.0%
	17Q4	643.1	410.2	232.8	36.2%
	18Q1	474.9	616.9	(141.9)	-29.9%
	18Q2	705.9	695.9	10.0	1.4%
	Total	2,239.5	2,180.0	59.5	2.7%

Individual Income Tax – Final Payments

pch(fp)

$$= 1.15911 * \text{pch}(\text{cysp500}) + 1.46393$$

(3.26137) (0.28449)

Sum Sq	6178.5	Std Err	20.2953	LHS Mean	6.3552
R Sq	0.4149	R Bar Sq	0.3759	F 1, 15	10.6365
D.W.(1)	1.8824	D.W.(2)	1.4036		

Annual data for 17 periods from 2001 to 2017

pch	Percent change function
fp	Final payments
cysp500	Standard and Poor's 500 stock index, calendar year

GENERAL FUND METHODOLOGY

Individual Income Tax - Final Payments Percent Growth

<u>Fiscal Year</u>	<u>Actual</u>	<u>Fitted</u>	<u>Residual</u>
2002	(37.8)	(4.3)	(33.5)
2003	(4.3)	(10.1)	5.8
2004	27.9	17.9	9.9
2005	53.0	8.1	44.9
2006	21.0	4.7	16.2
2007	18.6	10.7	7.8
2008	4.5	5.0	(0.6)
2009	(30.0)	(18.6)	(11.4)
2010	(25.1)	16.3	(41.4)
2011	34.0	10.3	23.7
2012	5.2	3.1	2.1
2013	34.9	10.6	24.3
2014	(23.5)	19.7	(43.2)
2015	25.1	9.5	15.6
2016	(3.7)	2.6	(6.3)
2017	(6.8)	8.4	(15.2)
2018	15.3	14.0	1.3

State Sales Tax

diff(sales)

$$= 0.00102 * \text{diff}(\text{yrpicva}) - 0.66085$$

(0.91475) (0.12788)

Sum Sq	45754.6	Std Err	33.4061	LHS Mean	2.7068
R Sq	0.0769	R Bar Sq	0.0319	F 2, 41	1.7080
D.W.(1)	2.2737	D.W.(4)	0.6883		

Quarterly data for 44 periods from 2007Q3 to 2018Q2

diff	Quarter-over-quarter difference function
sales	Sales tax receipts
yrpicva	Virginia personal income

GENERAL FUND METHODOLOGY

State Sales Tax

	<u>Fiscal Year</u>	<u>Actual</u>	<u>Fitted</u>	<u>Residual</u>	<u>% Residual</u>
2010	09Q3	724.7	699.7	25.0	3.5%
	09Q4	724.0	718.4	5.5	0.8%
	10Q1	674.5	728.8	(54.3)	-8.1%
	10Q2	735.5	693.6	41.9	5.7%
	Total	2,858.7	2,840.6	18.1	0.6%
2011	10Q3	774.0	723.4	50.6	6.5%
	10Q4	746.3	767.7	(21.4)	-2.9%
	11Q1	719.7	761.5	(41.8)	-5.8%
	11Q2	776.4	731.4	45.0	5.8%
	Total	3,016.4	2,984.0	32.4	1.1%
2012	11Q3	787.1	765.6	21.5	2.7%
	11Q4	772.0	787.3	(15.3)	-2.0%
	12Q1	768.1	782.3	(14.3)	-1.9%
	12Q2	807.6	773.2	34.4	4.3%
	Total	3,134.8	3,108.5	26.3	0.8%
2013	12Q3	817.9	798.3	19.6	2.4%
	12Q4	777.1	823.4	(46.3)	-6.0%
	13Q1	787.0	781.2	5.7	0.7%
	13Q2	813.1	783.1	30.0	3.7%
	Total	3,195.1	3,186.1	9.1	0.3%
2014	13Q3	791.0	807.0	(16.0)	-2.0%
	13Q4	766.1	799.3	(33.2)	-4.3%
	14Q1	721.1	779.0	(57.8)	-8.0%
	14Q2	794.0	738.8	55.1	6.9%
	Total	3,072.2	3,124.1	(51.9)	-1.7%
2015	14Q3	793.3	779.4	14.0	1.8%
	14Q4	778.5	798.3	(19.8)	-2.5%
	15Q1	764.3	787.5	(23.2)	-3.0%
	15Q2	817.2	774.5	42.7	5.2%
	Total	3,153.3	3,139.6	13.7	0.4%
2016	15Q3	827.1	807.7	19.4	2.3%
	15Q4	831.7	825.7	6.0	0.7%
	16Q1	781.5	830.5	(49.1)	-6.3%
	16Q2	828.3	796.4	32.0	3.9%
	Total	3,268.6	3,260.3	8.2	0.3%
2017	16Q3	841.2	819.0	22.2	2.6%
	16Q4	827.1	843.1	(16.0)	-1.9%
	17Q1	820.0	836.2	(16.1)	-2.0%
	17Q2	848.8	825.3	23.5	2.8%
	Total	3,337.0	3,323.5	13.5	0.4%
2018	17Q3	863.7	845.6	18.1	2.1%
	17Q4	865.2	864.1	1.1	0.1%
	18Q1	832.2	869.9	(37.7)	-4.5%
	18Q2	884.2	846.0	38.2	4.3%
	Total	3,445.3	3,425.6	19.8	0.6%

Recordation Taxes

diff(rec)

$$= - 0.000890 * \text{diff}(\text{mortorigin}) + 0.00624 * \text{diff}(\text{mortrefi}) +$$

(0.85857) (1.17000)

$$0.70555 * \text{diff}(\text{homepriceind}) - 12.1715 * \text{diff}(\text{rtbond30y.1}) -$$

(2.23382) (2.79997)

$$3.29442 * \text{qd1} + 26.7062 * \text{qd2} - 7.13899$$

(1.2403) (10.7939) (4.92044)

Sum Sq	1367.08	Std Err	6.43410	LHS Mean	-0.4171
R Sq	0.8285	R Bar Sq	0.7983	F 6, 34	27.3821
D.W.(1)	1.4478	D.W.(4)	1.6917		

Quarterly data for 41 periods from 2008Q3 to 2018Q3

diff	Quarter-over-quarter difference function
rec	Recordation tax receipts
mortorigin	Total mortgage originations
mortrefi	Total mortgage refinancing
homepriceind	Home price index
rtbond30y.1	Yield on 30-year treasury bond, lagged one quarter
qd1, qd2	Quarterly dummy variables for quarters 1 and 2

GENERAL FUND METHODOLOGY

Recordation Taxes

<u>Fiscal Year</u>		<u>Actual</u>	<u>Fitted</u>	<u>Residual</u>	<u>% Residual</u>
2010	09Q3	80.5	71.3	9.2	11.4%
	09Q4	74.6	72.0	2.7	3.6%
	10Q1	60.1	60.9	(0.8)	-1.3%
	10Q2	75.0	76.0	(1.0)	-1.3%
	Total	290.2	280.1	10.1	3.5%
2011	10Q3	75.7	75.2	0.5	0.7%
	10Q4	77.7	72.9	4.8	6.1%
	11Q1	63.3	59.3	4.0	6.3%
	11Q2	74.7	75.3	(0.6)	-0.8%
	Total	291.5	282.8	8.7	3.0%
2012	11Q3	78.9	71.7	7.3	9.2%
	11Q4	79.8	81.5	(1.7)	-2.1%
	12Q1	73.5	74.5	(1.0)	-1.3%
	12Q2	89.8	92.8	(3.1)	-3.4%
	Total	322.1	320.5	1.6	0.5%
2013	12Q3	90.7	87.6	3.1	3.4%
	12Q4	92.2	87.6	4.6	5.0%
	13Q1	91.3	81.3	10.0	10.9%
	13Q2	103.3	108.7	(5.4)	-5.2%
	Total	377.5	365.2	12.3	3.3%
2014	13Q3	93.2	98.5	(5.3)	-5.6%
	13Q4	76.2	82.2	(6.0)	-7.8%
	14Q1	60.6	67.0	(6.5)	-10.7%
	14Q2	80.8	84.2	(3.5)	-4.3%
	Total	310.8	331.9	(21.2)	-6.8%
2015	14Q3	87.5	79.4	8.1	9.3%
	14Q4	80.9	85.7	(4.8)	-6.0%
	15Q1	76.1	76.6	(0.5)	-0.7%
	15Q2	101.8	102.6	(0.8)	-0.8%
	Total	346.3	344.3	2.0	0.6%
2016	15Q3	96.0	93.0	3.0	3.2%
	15Q4	90.4	91.4	(1.0)	-1.1%
	16Q1	78.7	81.9	(3.2)	-4.0%
	16Q2	104.0	102.1	1.9	1.8%
	Total	369.1	368.3	0.8	0.2%
2017	16Q3	109.6	101.0	8.6	7.8%
	16Q4	98.5	108.8	(10.3)	-10.5%
	17Q1	80.4	82.3	(1.9)	-2.4%
	17Q2	105.9	98.5	7.4	7.0%
	Total	394.4	390.7	3.7	0.9%
2018	17Q3	109.6	101.0	8.6	7.8%
	17Q4	98.5	108.8	(10.3)	-10.5%
	18Q1	80.4	82.3	(1.9)	-2.4%
	18Q2	105.9	98.5	7.4	7.0%
	Total	394.4	390.7	3.7	0.9%

Motor Fuels Tax

gas

$$\begin{aligned}
 &= 0.00056 * \text{cyrpicva} + 0.18651 * \text{xtnemva} + 10.2985 * \text{jpc} \\
 &\quad (0.46380) \quad (1.60528) \quad (0.60269) \\
 &- 9.06373 * \text{jpgdp} - 2.99837 * \text{jpcsvtspub} + 128.430 * \text{season}_2 \\
 &\quad (0.56695) \quad (1.24077) \quad (6.00706) \\
 &+ 22.1218 * \text{season}_3 + 62.0348 * \text{season}_4 + 173.504 \\
 &\quad (1.04228) \quad (2.89750) \quad (0.52976)
 \end{aligned}$$

Sum Sq	665421	Std Err	79.9892	LHS Mean	918.155
R Sq	0.6344	R Bar Sq	0.6063	F 8,104	22.5559
D.W.(1)	2.9675	D.W.(4)	0.3652		

diesel

$$\begin{aligned}
 &= 0.29780 * \text{xtnemva} - 0.00080 * \text{cyrpicva} + 32.5572 * \text{season}_2 \\
 &\quad (10.3955) \quad (6.23568) \quad (4.83294) \\
 &- 2.52496 * \text{season}_3 + 10.7409 * \text{season}_4 - 552.355 \\
 &\quad (0.37809) \quad (1.59427) \quad (9.13996)
 \end{aligned}$$

Sum Sq	67971.9	Std Err	25.2042	LHS Mean	237.336
R Sq	0.7879	R Bar Sq	0.7779	F 5,107	79.4757
D.W.(1)	1.7562	D.W.(4)	0.4817		

GAS	Taxable gallons of gasoline
PDCCENGAS	Gasoline and oil implicit price deflator
PDCCE	Consumer expenditures implicit price deflator
CYRPICVA	Virginia real personal income
SEASON_2	Dummy variable second quarter
SEASON_3	Dummy variable third quarter
SEASON_4	Dummy variable fourth quarter
DIESEL	Taxable gallons of diesel
GDP96	Real gross domestic product
PIRPP	PPI, refined petroleum products

NON-GENERAL FUND METHODOLOGY

Gasoline Consumption

	<u>Fiscal Year</u>	<u>Actual</u>	<u>Fitted</u>	<u>Residual</u>	<u>% Residual</u>
2009	08Q3	1,037.1	965.1	72.0	6.9%
	08Q4	986.9	989.4	(2.5)	-0.3%
	09Q1	937.4	924.3	13.0	1.4%
	09Q2	992.5	1,055.7	(63.2)	-6.4%
	Total	3,953.9	3,934.5	19.4	0.5%
2010	09Q3	1,010.7	945.5	65.1	6.4%
	09Q4	935.7	971.2	(35.5)	-3.8%
	10Q1	955.3	902.3	53.1	5.6%
	10Q2	1,082.9	1,036.5	46.4	4.3%
	Total	3,984.6	3,855.5	129.1	3.2%
2011	10Q3	841.3	939.0	(97.7)	-11.6%
	10Q4	1,021.0	974.3	46.8	4.6%
	11Q1	927.3	905.2	22.1	2.4%
	11Q2	1,144.6	1,035.1	109.5	9.6%
	Total	3,934.3	3,853.5	80.8	2.1%
2012	11Q3	802.7	940.1	(137.4)	-17.1%
	11Q4	944.3	970.4	(26.1)	-2.8%
	12Q1	901.8	910.6	(8.7)	-1.0%
	12Q2	1,246.4	1,036.8	209.6	16.8%
	Total	3,895.3	3,857.8	37.5	1.0%
2013	12Q3	706.8	943.8	(236.9)	-33.5%
	12Q4	1,022.5	981.9	40.6	4.0%
	13Q1	904.7	921.2	(16.5)	-1.8%
	13Q2	1,153.5	1,050.6	102.9	8.9%
	Total	3,787.5	3,897.5	(109.9)	-2.9%
2014	13Q3	737.9	947.6	(209.7)	-28.4%
	13Q4	1,023.3	978.5	44.9	4.4%
	14Q1	977.4	923.4	54.0	5.5%
	14Q2	1,129.4	1,052.4	77.0	6.8%
	Total	3,868.0	3,901.8	(33.8)	-0.9%
2015	14Q3	856.3	953.3	(97.0)	-11.3%
	14Q4	989.3	988.5	0.7	0.1%
	15Q1	914.5	935.3	(20.8)	-2.3%
	15Q2	1,241.9	1,073.2	168.8	13.6%
	Total	4,002.0	3,950.4	51.7	1.3%
2016	15Q3	796.4	982.0	(185.6)	-23.3%
	15Q4	1,038.5	1,022.2	16.3	1.6%
	16Q1	959.3	960.4	(1.2)	-0.1%
	16Q2	1,205.6	1,093.8	111.8	9.3%
	Total	3,999.8	4,058.5	(58.7)	-1.5%
2017	16Q3	824.9	997.1	(172.2)	-20.9%
	16Q4	1,056.9	1,033.4	23.5	2.2%
	17Q1	947.0	975.9	(28.9)	-3.1%
	17Q2	1,292.9	1,105.0	187.8	14.5%
	Total	4,121.7	4,111.4	10.2	0.2%
2018	17Q3	827.5	1,013.4	(185.9)	-22.5%
	17Q4	1,057.0	1,043.0	14.0	1.3%
	18Q1	963.3	998.9	(35.6)	-3.7%
	18Q2	1,263.8	1,127.6	136.2	10.8%
	Total	4,111.7	4,183.0	(71.3)	-1.7%

NON-GENERAL FUND METHODOLOGY

Diesel Fuel Consumption

	<u>Fiscal Year</u>	<u>Actual</u>	<u>Fitted</u>	<u>Residual</u>	<u>% Residual</u>
2009	08Q3	290.3	271.0	19.2	6.6%
	08Q4	264.6	272.1	(7.5)	-2.8%
	09Q1	231.6	250.9	(19.3)	-8.3%
	09Q2	247.9	270.1	(22.2)	-9.0%
	Total	1,034.3	1,064.2	(29.8)	-2.9%
2010	09Q3	252.3	232.5	19.9	7.9%
	09Q4	232.3	244.1	(11.8)	-5.1%
	10Q1	249.6	224.7	24.9	10.0%
	10Q2	278.3	265.5	12.8	4.6%
	Total	1,012.5	966.8	45.7	4.5%
2011	10Q3	217.2	229.1	(11.9)	-5.5%
	10Q4	259.2	242.1	17.1	6.6%
	11Q1	237.6	230.0	7.6	3.2%
	11Q2	299.8	265.2	34.7	11.6%
	Total	1,013.8	966.3	47.5	4.7%
2012	11Q3	184.8	233.8	(49.0)	-26.5%
	11Q4	257.0	246.7	10.3	4.0%
	12Q1	235.3	236.9	(1.6)	-0.7%
	12Q2	321.3	267.8	53.5	16.6%
	Total	998.3	985.2	13.1	1.3%
2013	12Q3	191.6	237.7	(46.1)	-24.1%
	12Q4	261.7	249.3	12.4	4.7%
	13Q1	240.4	252.8	(12.4)	-5.2%
	13Q2	323.7	282.2	41.6	12.8%
	Total	1,017.5	1,022.0	(4.5)	-0.4%
2014	13Q3	204.7	251.5	(46.8)	-22.9%
	13Q4	260.1	262.5	(2.4)	-0.9%
	14Q1	257.0	247.4	9.6	3.7%
	14Q2	307.9	283.2	24.6	8.0%
	Total	1,029.7	1,044.7	(15.0)	-1.5%
2015	14Q3	202.4	248.5	(46.0)	-22.7%
	14Q4	266.5	257.5	9.0	3.4%
	15Q1	243.3	247.0	(3.7)	-1.5%
	15Q2	319.4	284.3	35.1	11.0%
	Total	1,031.7	1,037.3	(5.7)	-0.5%
2016	15Q3	210.4	258.5	(48.0)	-22.8%
	15Q4	257.7	277.0	(19.3)	-7.5%
	16Q1	238.9	267.5	(28.7)	-12.0%
	16Q2	291.1	302.0	(10.9)	-3.7%
	Total	998.1	1,105.0	(106.9)	-10.7%
2017	16Q3	229.6	271.1	(41.6)	-18.1%
	16Q4	263.7	282.9	(19.1)	-7.3%
	17Q1	254.0	274.7	(20.7)	-8.1%
	17Q2	328.1	307.7	20.4	6.2%
	Total	1,075.4	1,136.3	(61.0)	-5.7%
2018	17Q3	200.4	274.4	(74.0)	-36.9%
	17Q4	270.8	287.8	(17.0)	-6.3%
	18Q1	258.8	287.1	(28.3)	-10.9%
	18Q2	330.4	323.6	6.8	2.0%
	Total	1,060.4	1,172.9	(112.5)	-10.6%

NON-GENERAL FUND METHODOLOGY

Motor Vehicle Sales and Use Tax

log(ttcarsq)

$$\begin{aligned} &= 1.70288 * \text{dlogya}(\text{pdcgdp}) \\ &\quad (1.27297) \\ &+ 1.54397 * \text{movavg}(2, \text{dlogya}(\text{xtnemva}.4)) \\ &\quad (3.33877) \\ &+ 0.00001 * \text{diffya}(\text{yrpicva}) + 0.09823 * \text{season}_2 \\ &\quad (4.70169) \quad (4.84640) \\ &+ 0.08822 * \text{season}_3 - 0.09680 * \text{season}_4 + 5.78058 \\ &\quad (4.35345) \quad (4.73294) \quad (213.137) \end{aligned}$$

Sum Sq	0.5382	Std Err	0.0737	LHS Mean	5.9204
R Sq	0.6289	R Bar Sq	0.6064	F 6, 99	27.9624
D.W.(1)	0.3936	D.W.(4)	0.8791		

newcar

$$\begin{aligned} &= 0.00972 * \text{suvlv} + 0.04814 * \text{season}_2 + 0.01912 * \text{season}_3 \\ &\quad (2.55983) \quad (2.54874) \quad (1.02374) \\ &- 0.06706 \\ &\quad (1.13820) \end{aligned}$$

Sum Sq	0.7260	Std Err	0.0816	LHS Mean	0.0984
R Sq	0.1080	R Bar Sq	0.0834	F 3,109	4.3979
D.W.(1)	2.0347	D.W.(4)	1.0642		

TTCARSQ	Total taxable titles
PDIGDP	GDP price deflator
XTNEMVA	Virginia non-agricultural employment
YRPICVA	Virginia real personal income
SEASON_2	Dummy variable second quarter
SEASON_3	Dummy variable third quarter
SEASON_4	Dummy variable fourth quarter
NEWCAR	New taxable titles
SUVLV	U.S. new light vehicle sales
RMCLV	Rate on commercial bank loans for new vehicles

NON-GENERAL FUND METHODOLOGY

New Taxable Titles (in thousands)

	<u>Fiscal Year</u>	<u>Actual</u>	<u>Fitted</u>	<u>Residual</u>	<u>% Residual</u>
2009	08Q3	91.8	96.4	(4.6)	-5.1%
	08Q4	57.2	66.5	(9.3)	-16.3%
	09Q1	55.8	68.8	(13.1)	-23.4%
	09Q2	68.8	78.7	(10.0)	-14.5%
	Total	273.5	310.5	(37.0)	-13.5%
2010	09Q3	87.9	86.8	1.1	1.3%
	09Q4	55.7	61.3	(5.6)	-10.1%
	10Q1	59.9	67.8	(7.9)	-13.3%
	10Q2	81.5	88.0	(6.5)	-7.9%
	Total	284.9	303.8	(18.9)	-6.6%
2011	10Q3	79.9	93.7	(13.8)	-17.3%
	10Q4	67.2	76.2	(9.0)	-13.3%
	11Q1	76.0	85.2	(9.2)	-12.2%
	11Q2	85.8	95.8	(9.9)	-11.5%
	Total	308.9	350.8	(41.9)	-13.6%
2012	11Q3	83.2	96.6	(13.5)	-16.2%
	11Q4	74.8	80.3	(5.5)	-7.4%
	12Q1	81.6	89.0	(7.4)	-9.0%
	12Q2	95.4	96.8	(1.4)	-1.5%
	Total	335.0	362.8	(27.8)	-8.3%
2013	12Q3	95.1	99.5	(4.3)	-4.6%
	12Q4	81.6	80.7	0.9	1.0%
	13Q1	86.8	83.8	3.0	3.4%
	13Q2	99.1	97.6	1.5	1.5%
	Total	362.6	361.6	1.0	0.3%
2014	13Q3	99.5	97.1	2.4	2.4%
	13Q4	81.1	73.7	7.4	9.1%
	14Q1	81.4	74.5	6.9	8.5%
	14Q2	90.5	93.8	(3.3)	-3.6%
	Total	352.5	339.1	13.4	3.8%
2015	14Q3	102.3	99.6	2.7	2.6%
	14Q4	84.6	84.6	(0.0)	0.0%
	15Q1	83.9	83.7	0.2	0.2%
	15Q2	103.8	105.3	(1.5)	-1.5%
	Total	374.6	373.3	1.4	0.4%
2016	15Q3	109.5	109.5	(0.0)	0.0%
	15Q4	91.6	89.3	2.4	2.6%
	16Q1	88.6	88.3	0.3	0.3%
	16Q2	101.4	101.3	0.0	0.0%
	Total	391.0	388.4	2.6	0.7%
2017	16Q3	108.2	104.6	3.5	3.3%
	16Q4	92.3	86.5	5.8	6.3%
	17Q1	92.0	88.4	3.6	3.9%
	17Q2	98.4	102.1	(3.7)	-3.8%
	Total	390.9	381.6	9.3	2.4%
2018	17Q3	103.5	107.0	(3.5)	-3.3%
	17Q4	88.7	88.5	0.2	0.2%
	18Q1	87.7	88.2	(0.5)	-0.5%
	18Q2	97.8	104.9	(7.1)	-7.2%
	Total	377.7	388.5	(10.8)	-2.9%

NON-GENERAL FUND METHODOLOGY

Used Taxable Titles (in thousands)

	<u>Fiscal Year</u>	<u>Actual</u>	<u>Fitted</u>	<u>Residual</u>	<u>% Residual</u>
2009	08Q3	278.0	299.7	(21.7)	-7.8%
	08Q4	212.2	254.3	(42.1)	-19.9%
	09Q1	255.8	256.2	(0.4)	-0.2%
	09Q2	271.2	268.2	2.9	1.1%
	Total	1,017.2	1,078.5	(61.3)	-6.0%
2010	09Q3	277.1	255.2	21.8	7.9%
	09Q4	219.5	226.6	(7.1)	-3.2%
	10Q1	266.5	269.0	(2.5)	-0.9%
	10Q2	294.8	283.2	11.6	3.9%
	Total	1,057.9	1,034.1	23.8	2.2%
2011	10Q3	289.2	281.0	8.2	2.8%
	10Q4	237.9	240.2	(2.3)	-1.0%
	11Q1	289.1	277.0	12.1	4.2%
	11Q2	289.8	309.6	(19.7)	-6.8%
	Total	1,106.0	1,107.8	(1.7)	-0.2%
2012	11Q3	276.8	317.4	(40.6)	-14.7%
	11Q4	237.4	261.2	(23.8)	-10.0%
	12Q1	296.0	287.8	8.2	2.8%
	12Q2	285.8	315.5	(29.7)	-10.4%
	Total	1,096.0	1,181.9	(85.9)	-7.8%
2013	12Q3	281.8	298.4	(16.6)	-5.9%
	12Q4	237.1	267.4	(30.4)	-12.8%
	13Q1	280.8	258.6	22.2	7.9%
	13Q2	305.5	275.2	30.3	9.9%
	Total	1,105.1	1,099.6	5.5	0.5%
2014	13Q3	290.0	270.7	19.3	6.7%
	13Q4	241.6	220.0	21.6	8.9%
	14Q1	271.0	286.7	(15.7)	-5.8%
	14Q2	307.7	314.3	(6.7)	-2.2%
	Total	1,110.3	1,091.8	18.5	1.7%
2015	14Q3	289.1	313.1	(24.0)	-8.3%
	14Q4	250.1	257.7	(7.6)	-3.0%
	15Q1	271.6	283.8	(12.2)	-4.5%
	15Q2	306.8	305.5	1.4	0.4%
	Total	1,117.6	1,160.0	(42.5)	-3.8%
2016	15Q3	297.5	296.9	0.6	0.2%
	15Q4	257.4	239.4	18.0	7.0%
	16Q1	291.0	264.9	26.1	9.0%
	16Q2	309.5	279.8	29.7	9.6%
	Total	1,155.4	1,081.0	74.4	6.4%
2017	16Q3	304.0	274.8	29.2	9.6%
	16Q4	266.9	244.7	22.2	8.3%
	17Q1	305.4	291.3	14.0	4.6%
	17Q2	317.8	313.1	4.7	1.5%
	Total	1,194.1	1,123.9	70.2	5.9%
2018	17Q3	304.6	305.2	(0.6)	-0.2%
	17Q4	261.4	248.7	12.6	4.8%
	18Q1	290.8	283.8	7.0	2.4%
	18Q2	317.2	315.0	2.1	0.7%
	Total	1,173.9	1,152.8	21.1	1.8%

Motor Vehicle License Revenues

vehreg1

$$= 0.87798 * \text{vehreg1}[-4] + 0.13016 * \text{vehreg2}[-8]$$

(18.8504) (1.16836)

$$+ 53045.0 * \text{origytf} + 119159$$

(1.83657) (2.55485)

Sum Sq	3E+11	Std Err	56030.4	LHS Mean	1208400
R Sq	0.8433	R Bar Sq	0.8389	F 3,107	191.899
D.W.(1)	1.8800	D.W.(4)	2.3380		

vehreg2

$$= 1.06521 * (\text{vehreg2.8} * \text{renew}) + 3660.11 * \text{qd2} + 36433.9$$

(22.8727) (0.67721) (3.96564)

Sum Sq	6E+10	Std Err	24301.3	LHS Mean	244228
R Sq	0.8354	R Bar Sq	0.8324	F 2,108	274.106
D.W.(1)	0.7706	D.W.(4)	1.4149		

VEHREG1	One year registrations
VEHREG2	Two year registrations
RENEW2	Percent of two year renewals who maintain the two year interval
QD2	Dummy variable second quarter

NON-GENERAL FUND METHODOLOGY

One Year Registrations

	<u>Fiscal Year</u>	<u>Actual</u>	<u>Fitted</u>	<u>Residual</u>	<u>% Residual</u>
2009	08Q3	1,362,010	1,395,203	(33,193)	-2.4%
	08Q4	1,061,494	1,232,310	(170,816)	-16.1%
	09Q1	1,268,629	1,306,979	(38,350)	-3.0%
	09Q2	1,387,221	1,376,655	10,566	0.8%
	Total	5,079,354	5,311,147	(231,793)	-4.6%
2010	09Q3	1,278,480	1,351,622	(73,142)	-5.7%
	09Q4	1,047,572	1,082,229	(34,657)	-3.3%
	10Q1	1,215,359	1,264,970	(49,611)	-4.1%
	10Q2	1,318,585	1,373,479	(54,894)	-4.2%
	Total	4,859,996	5,072,301	(212,305)	-4.4%
2011	10Q3	1,339,471	1,283,591	55,880	4.2%
	10Q4	1,072,468	1,070,463	2,005	0.2%
	11Q1	1,241,276	1,222,824	18,452	1.5%
	11Q2	1,287,951	1,316,788	(28,837)	-2.2%
	Total	4,941,166	4,893,666	47,500	1.0%
2012	11Q3	1,320,807	1,331,804	(10,997)	-0.8%
	11Q4	1,054,684	1,090,324	(35,640)	-3.4%
	12Q1	1,235,555	1,242,969	(7,414)	-0.6%
	12Q2	1,251,833	1,289,240	(37,407)	-3.0%
	Total	4,862,879	4,954,335	(91,456)	-1.9%
2013	12Q3	1,330,752	1,319,235	11,517	0.9%
	12Q4	1,059,221	1,076,947	(17,726)	-1.7%
	13Q1	1,207,727	1,240,237	(32,510)	-2.7%
	13Q2	1,370,117	1,256,413	113,704	8.3%
	Total	4,967,817	4,892,833	74,984	1.5%
2014	13Q3	1,286,444	1,326,929	(40,485)	-3.1%
	13Q4	1,070,701	1,080,098	(9,397)	-0.9%
	14Q1	1,177,663	1,217,466	(39,803)	-3.4%
	14Q2	1,324,308	1,361,155	(36,847)	-2.8%
	Total	4,859,116	4,985,648	(126,532)	-2.6%
2015	14Q3	1,303,376	1,292,507	10,869	0.8%
	14Q4	1,043,487	1,092,698	(49,211)	-4.7%
	15Q1	1,125,800	1,191,069	(65,269)	-5.8%
	15Q2	1,353,553	1,325,423	28,130	2.1%
	Total	4,826,216	4,901,697	(75,481)	-1.6%
2016	15Q3	1,310,587	1,304,309	6,278	0.5%
	15Q4	1,091,163	1,069,224	21,939	2.0%
	16Q1	1,203,707	1,144,915	58,792	4.9%
	16Q2	1,305,838	1,350,831	(44,993)	-3.4%
	Total	4,911,295	4,869,279	42,016	0.9%
2017	16Q3	1,284,089	1,313,719	(29,630)	-2.3%
	16Q4	1,065,690	1,111,200	(45,510)	-4.3%
	17Q1	1,194,429	1,211,818	(17,389)	-1.5%
	17Q2	1,302,104	1,310,788	(8,684)	-0.7%
	Total	4,846,312	4,947,525	(101,213)	-2.1%
2018	17Q3	1,242,320	1,290,028	(47,708)	-3.8%
	17Q4	1,041,436	1,090,542	(49,106)	-4.7%
	18Q1	1,199,940	1,208,250	(8,310)	-0.7%
	18Q2	1,266,694	1,306,669	(39,975)	-3.2%
	Total	4,750,390	4,895,490	(145,100)	-3.1%

NON-GENERAL FUND METHODOLOGY

Two Year Registrations

	<u>Fiscal Year</u>	<u>Actual</u>	<u>Fitted</u>	<u>Residual</u>	<u>% Residual</u>
2009	08Q3	315,988	305,194	10,794	3.4%
	08Q4	238,209	253,903	(15,694)	-6.6%
	09Q1	276,699	279,870	(3,171)	-1.1%
	09Q2	302,018	287,505	14,513	4.8%
	Total	1,132,914	1,126,472	6,442	0.6%
2010	09Q3	278,398	287,116	(8,718)	-3.1%
	09Q4	224,169	248,322	(24,153)	-10.8%
	10Q1	258,263	256,320	1,943	0.8%
	10Q2	296,929	290,523	6,406	2.2%
	Total	1,057,759	1,082,281	(24,522)	-2.3%
2011	10Q3	305,619	319,962	(14,343)	-4.7%
	10Q4	240,029	251,069	(11,040)	-4.6%
	11Q1	274,668	285,161	(10,493)	-3.8%
	11Q2	288,437	312,476	(24,039)	-8.3%
	Total	1,108,753	1,168,668	(59,915)	-5.4%
2012	11Q3	298,282	286,666	11,616	3.9%
	11Q4	234,104	238,633	(4,529)	-1.9%
	12Q1	286,257	268,832	17,425	6.1%
	12Q2	296,383	307,968	(11,585)	-3.9%
	Total	1,115,026	1,102,099	12,927	1.2%
2013	12Q3	329,923	310,777	19,146	5.8%
	12Q4	252,382	252,681	(299)	-0.1%
	13Q1	285,852	283,362	2,490	0.9%
	13Q2	328,063	300,446	27,617	8.4%
	Total	1,196,220	1,147,267	48,953	4.1%
2014	13Q3	308,108	304,279	3,829	1.2%
	13Q4	255,044	247,433	7,611	3.0%
	14Q1	280,728	293,627	(12,899)	-4.6%
	14Q2	326,511	307,485	19,026	5.8%
	Total	1,170,391	1,152,824	17,567	1.5%
2015	14Q3	330,347	332,305	(1,958)	-0.6%
	14Q4	256,512	263,623	(7,111)	-2.8%
	15Q1	270,965	293,269	(22,304)	-8.2%
	15Q2	339,195	335,545	3,650	1.1%
	Total	1,197,019	1,224,741	(27,722)	-2.3%
2016	15Q3	326,940	312,982	13,958	4.3%
	15Q4	268,453	265,980	2,473	0.9%
	16Q1	303,775	288,730	15,045	5.0%
	16Q2	333,097	334,171	(1,074)	-0.3%
	Total	1,232,265	1,201,863	30,402	2.5%
2017	16Q3	344,522	332,680	11,842	3.4%
	16Q4	284,256	267,281	16,975	6.0%
	17Q1	314,861	280,083	34,778	11.0%
	17Q2	345,999	345,406	593	0.2%
	Total	1,289,638	1,225,449	64,189	5.0%
2018	17Q3	328,067	329,663	(1,596)	-0.5%
	17Q4	310,698	277,858	32,840	10.6%
	18Q1	372,289	309,144	63,145	17.0%
	18Q2	402,900	340,004	62,896	15.6%
	Total	1,413,954	1,256,668	157,286	11.1%

NON-GENERAL FUND METHODOLOGY

ABC Revenue Estimating Methodology

Distilled spirit sales revenues are a function of the price of product and quantity sold. Both are forecasted using separate models with quarterly data from 1981 through the present. The price of distilled spirits is a function of the cost of product and the appropriate state and federal taxes and mark-ups. Sales estimates serve as the basis for the development of pro forma profit and loss statements. Sales performance can be significantly influenced by changes in consumer behavior (primarily during the holiday period) and severe weather that are both impossible to accurately forecast. Expenses are estimated based on anticipated budget requirements during the forecasting period. Variations in anticipated expenses are often the source of forecasting error, particularly in the later years of the forecast.

Average Price of Distilled Spirits

The average sales price per gallon of distilled spirits sold was calculated for each quarter. This was adjusted to account for changes in mark-up, state taxes, and the Federal Excise Tax on distilled spirits. The resulting base price was forecasted using an ARIMA model that was found to fit the data better than previous regression-based forecasting methods.

Statistical Results:

Mean Squared Error = .04

$R^2 = 98.1\%$

Quantity of Liquor Demanded

Again, a variety of modeling techniques and data were evaluated to forecast the demand for distilled spirits. The Winter's Multiplicative exponential smoothing method provided the best fit for the data.

Statistical Results:

Mean Squared Error = .001

$R^2 = 98.7\%$