

ARIZONA HIGHWAY USER REVENUE FUND
Forecasting Process & Results
FY 2015-2024



Financial Management Services
September 2014

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ARIZONA HIGHWAY USER REVENUE FUND

OFFICIAL FORECAST UPDATE

RISK ANALYSIS OF EXPECTED VALUES

Introduction

This document presents the forecast of expected values for the Arizona Highway User Revenue Fund for the period FY 2015-2024, as prepared by the Arizona Department of Transportation.

Background

The State of Arizona taxes motor fuels and collects a variety of fees relating to the registration and operation of motor vehicles in the state. These collections include gasoline and use fuel taxes, motor carrier fees, vehicle license taxes, motor vehicle registration fees, and other miscellaneous fees. These revenues are deposited in the Arizona Highway User Revenue Fund (HURF) and are then distributed to the cities, towns and counties of the State and to the State Highway Fund, which is administered by the Department. These taxes and fees represent a source of revenues available to the state for highway related expenses.

Since 1986, the Department has estimated Highway Revenues using a comprehensive regression-based econometric model. In 1989, the model was updated by Dr. Alberta Charney of the University of Arizona. The model relied on the estimates of certain “independent variables” to predict future tax revenues. Any variability between estimated and actual values could lead to variances in the tax forecast. In order to deal with this variability, the Department introduced the Risk Analysis Process (RAP) in 1992. The RAP relies upon probability analysis and the independent evaluation of the model’s variables by an expert panel of economists. This results in a series of forecasts with specified probabilities of occurrence, rather than a single or “best guess” estimate.

In 1997, Hickling Lewis Brod Inc. (HLB), working in conjunction with Dr. Dennis Hoffman of Arizona State University, developed a new forecasting model to incorporate certain economic data generated over the past ten years and evaluate the inclusion of independent variables absent from the 1989 model, to enhance the model’s forecasting accuracy. The new model also took into consideration 1997 legislation which eliminated the weight distance tax on motor carriers, increased weight and use fees for use class vehicles, and changed the point of taxation on fuel.

In September 2000 and 2003, HLB reviewed the model and updated the equations. The independent variables contained in the model in 2003 included Arizona Real Income Growth Per Capita, Population Growth, Wage & Salary Employment Growth and Fleet Fuel Efficiency.

In 2005, HDR\HLB developed a new forecasting model to incorporate additional economic data that would enhance the model’s forecasting accuracy. The Arizona Real Gross Domestic Product Growth independent variable was added to the model to incorporate the impact of the Arizona economy on the commercial registration activities.

In September 2008, HDR\HLB reviewed the forecasting model and added the Arizona Real Gas Price Growth independent variable to improve the model’s forecasting accuracy for changes in Arizona gasoline consumption. In September 2009, HDR\HLB reviewed the forecasting model and added

the West Coast No. 2 Real Diesel Price Growth independent variable to improve the model's forecasting accuracy for changes in Arizona use fuel (diesel) consumption. In September 2011, the income, gross domestic product, gas price and diesel price variables were converted to nominal dollars at the request of the panel members from the August 2010 RAP panel meeting. The September 2011 RAP panel recommended the Arizona nominal Gross Domestic Product independent variable be eliminated from the model. The current model includes:

1. Arizona nominal personal income
2. Arizona population
3. Arizona non-farm employment
4. Arizona fleet fuel efficiency (Not part of RAP Process)
5. Arizona nominal gas price
6. West Coast No. 2 nominal diesel price

Risk Analysis Panel

The Risk Analysis Process relies heavily on the judgments of an expert panel of economic and financial participants to provide information critical to the forecasting process. In August 2014, a panel of eleven economic and finance experts representing public, private, and academic sectors submitted their individual estimates of the model's independent variables and comments on the future economic outlook. The information gathered from the panelists was input into the model to produce a series of forecasts with associated probabilities of occurrence. The panelists' inputs are reflected in the attached tables at the back of this report.

Model Results

This year's panel inputs produced a mean forecast of \$15,342.4 million for the period FY 2015-2024 with a compound growth rate of 3.6 percent.

The Department's Official Forecast for FY 2015-2024 amounts to \$14,866.4 million with a compound growth rate of 3.4 percent. The Official Forecast incorporates the 50 percent confidence interval for all revenue categories. The FY 2015 forecast of \$1,270.6 million was developed in July 2014 by ADOT staff using time-series techniques, historical and projected growth rates, and recent legislative changes.

FY 2015 Official Forecast (Dollars in Millions)			
<u>Fiscal Year</u>	<u>Mean Forecast</u>	<u>Official Forecast</u>	<u>Confidence Level</u>
2015	\$1,294.8	\$1,270.6	50%
2016	1,350.9	1,316.8	50%
2017	1,401.6	1,363.2	50%
2018	1,456.9	1,411.0	50%
2019	1,508.7	1,459.4	50%
2020	1,560.2	1,510.4	50%
2021	1,610.5	1,557.1	50%
2022	1,662.4	1,607.7	50%
2023	1,718.4	1,659.2	50%
2024	<u>1,777.9</u>	<u>1,711.0</u>	50%
Total	\$15,342.4	\$14,866.4	
Ave. CGR	3.6%	3.4%	

For comparison purposes, the November 2013 Official Forecast and the September 2014 Official Forecast are shown below:

FY 2015-2024 Comparative Forecast			
(Dollars in Millions)			
Fiscal	Nov. 13	Sep. 14	
Year	Official	Official	
	Forecast	Forecast	Difference
2015	\$1,255.4	\$1,270.6	\$15.2
2016	1,302.3	1,316.8	14.5
2017	1,351.8	1,363.2	11.4
2018	1,400.0	1,411.0	11.0
2019	1,448.9	1,459.4	10.5
2020	1,499.0	1,510.4	11.4
2021	1,545.7	1,557.1	11.4
2022	1,596.3	1,607.7	11.4
2023	1,647.6	1,659.2	11.6
2024	<u>1,698.6</u>	<u>1,711.0</u>	<u>12.4</u>
Total	\$14,745.7	\$14,866.4	\$120.7
Ave. CGR	3.4%	3.4%	

Summary

The Department's Official Forecast for FY 2015-2024 totals \$14,866.4 million, an increase of \$120.7 million from the November 2013 Official Forecast. The Risk Analysis Process panel members were again pessimistic about the Arizona economy in that they see only slow growth going forward with no expected sharp rebound. In addition, there was concern that employment, population and personal income growth will not return to levels experienced before the Great Recession. The main reason for the increase in the September 2014 revenue forecast over the November 2013 revenue forecast is stronger than expected FY 2014 revenues which set a higher revenue base for the FY 2015 forecast and beyond.

Supplementary Information

The remaining pages of this report present supplementary information on the detailed results of the Risk Analysis Process, the Department's model and the values of the independent variables forecast by the expert panel. While the Official Forecast period is FY 2015-2024 panel inputs were requested for FY 2015-2019, 2024, 2029 and 2034. Data displayed for other than the requested years has been extrapolated.

HURF OFFICIAL REVENUE FORECAST
With Category Detail and Confidence Interval By Fiscal Year
(Current Dollars in Millions)

Fiscal Year Percentile	2014 Actual	2015 N/A	2016 50%	2017 50%	2018 50%	2019 50%	2020 50%	2021 50%	2022 50%	2023 50%	2024 50%
Gasoline Tax	\$457.4	\$460.3	\$473.8	\$484.0	\$493.5	\$502.4	\$512.1	\$519.2	\$526.1	\$534.7	\$543.1
Use Fuel Tax	176.4	177.4	184.8	190.2	196.1	202.4	208.6	214.5	221.0	227.7	234.1
Motor Carrier Fee	38.8	39.4	41.5	43.0	44.7	46.4	48.0	49.5	51.3	52.9	54.7
Vehicle License Tax	348.5	370.6	384.6	407.0	430.2	455.0	481.8	507.7	536.4	564.3	592.1
Registration	163.7	165.8	171.9	177.0	182.5	187.4	192.2	196.6	201.5	206.3	211.6
Other	56.5	57.1	60.2	62.0	64.0	65.8	67.7	69.6	71.4	73.3	75.4
Total	\$1,241.3	\$1,270.6	\$1,316.8	\$1,363.2	\$1,411.0	\$1,459.4	\$1,510.4	\$1,557.1	\$1,607.7	\$1,659.2	\$1,711.0

HURF TOTAL TAX REVENUE RISK ANALYSIS RESULTS
(Current Dollars in Millions)

Fiscal Year	Mean	10%	20%	30%	40%	50%	60%	70%	80%	90%
2015	\$1,294.8	\$1,560.4	\$1,458.2	\$1,378.2	\$1,334.2	\$1,270.6	\$1,217.1	\$1,168.1	\$1,116.3	\$1,053.7
2016	1,350.9	1,662.3	1,537.0	1,447.9	1,388.8	1,316.8	1,258.3	1,203.6	1,143.5	1,069.3
2017	1,401.6	1,742.8	1,606.8	1,509.1	1,446.9	1,363.2	1,297.7	1,236.2	1,174.1	1,088.6
2018	1,456.9	1,830.5	1,675.6	1,570.7	1,486.6	1,411.0	1,342.5	1,279.5	1,209.4	1,119.8
2019	1,508.7	1,906.2	1,742.2	1,632.4	1,539.0	1,459.4	1,384.5	1,318.6	1,242.0	1,146.7
2020	1,560.2	1,984.4	1,813.5	1,692.6	1,592.8	1,510.4	1,428.1	1,355.7	1,277.2	1,178.0
2021	1,610.5	2,054.2	1,876.5	1,747.2	1,643.0	1,557.1	1,472.7	1,394.2	1,308.4	1,209.8
2022	1,662.4	2,126.8	1,938.6	1,806.5	1,713.8	1,607.7	1,514.8	1,436.5	1,342.5	1,237.8
2023	1,718.4	2,208.9	2,010.4	1,870.6	1,751.5	1,659.2	1,558.8	1,480.0	1,379.3	1,272.2
2024	1,777.9	2,292.2	2,084.1	1,933.6	1,811.7	1,711.0	1,613.4	1,526.8	1,427.7	1,308.1
Total	\$15,342.4	\$19,368.7	\$17,743.0	\$16,588.7	\$15,708.3	\$14,866.4	\$14,088.0	\$13,399.4	\$12,620.3	\$11,684.0

HURF OFFICIAL REVENUE FORECAST DISTRIBUTION
(Current Dollars in Millions)

Fiscal Year	HURF	DPS/ ESP /1	Net HURF	DPS Parity Comp. Fund /2	ADOT 50.5%/1,3	Cities/Towns 27.5%/1	Cities +300K 3%/1	Counties 19%/1
2015	\$1,270.6	\$120.9	\$1,149.7	(\$2.8)	\$576.9	\$330.6	\$36.1	\$228.4
2016	1,316.8	41.0	1,275.8	(2.9)	640.5	365.3	39.8	252.4
2017	1,363.2	71.0	1,292.2	(3.1)	652.6	384.2	41.9	265.5
2018	1,411.0	11.0	1,400.0	(3.3)	698.8	385.0	42.0	266.0
2019	1,459.4	11.0	1,448.4	(3.5)	723.1	398.3	43.5	275.2
2020	1,510.4	11.0	1,499.4	(3.7)	748.6	412.3	45.0	284.9
2021	1,557.1	11.0	1,546.1	(3.9)	772.0	425.2	46.4	293.8
2022	1,607.7	11.0	1,596.7	(4.1)	797.3	439.1	47.9	303.4
2023	1,659.2	11.0	1,648.2	(4.3)	823.1	453.3	49.4	313.2
2024	1,711.0	11.0	1,700.0	(4.5)	849.1	467.5	51.0	323.0
Total	\$14,866.4	\$309.9	\$14,556.5	(\$36.1)	\$7,282.1	\$4,060.8	\$443.0	\$2,805.6

NOTES:

FY 2015 HURF estimate based on July 2014 Forecast.

FY 2016-2024 HURF estimate based on September 2014 Official Forecast.

/1. The DPS/ESP includes \$1 million for Economic Strength Project (ESP) each year.

The DPS transfer in FY 2015 is \$89.255 million per Laws 2014, 2nd Regular Session, Chapter 18, (HB 2703) and \$10 million each year thereafter, which is subject to change.

In addition, Laws 2014, 2nd Regular Session, Chapter 9 (SB 1487) appropriated \$30 million in FY 2015 and FY 2016 and \$60 million in FY 2017 to cities, towns and counties. A portion of these monies are distributed to the state highway fund for projects in Maricopa and Pima counties (Counties over 800,000). The distribution of SB 1487 appropriations are included in the columns ADOT 50.5%, Cities/Towns 27.5%, Cities over 300,000 3% and Counties 19%.

FY 2015 also includes a \$651,800 appropriation to MVD for the registration compliance program/3rd Party programs.
/2. Per Laws 2005, Chapter 306 (SB 1119), 1.51 percent of the state highway fund share of HURF VLT is transferred to the DPS Parity Compensation Fund.

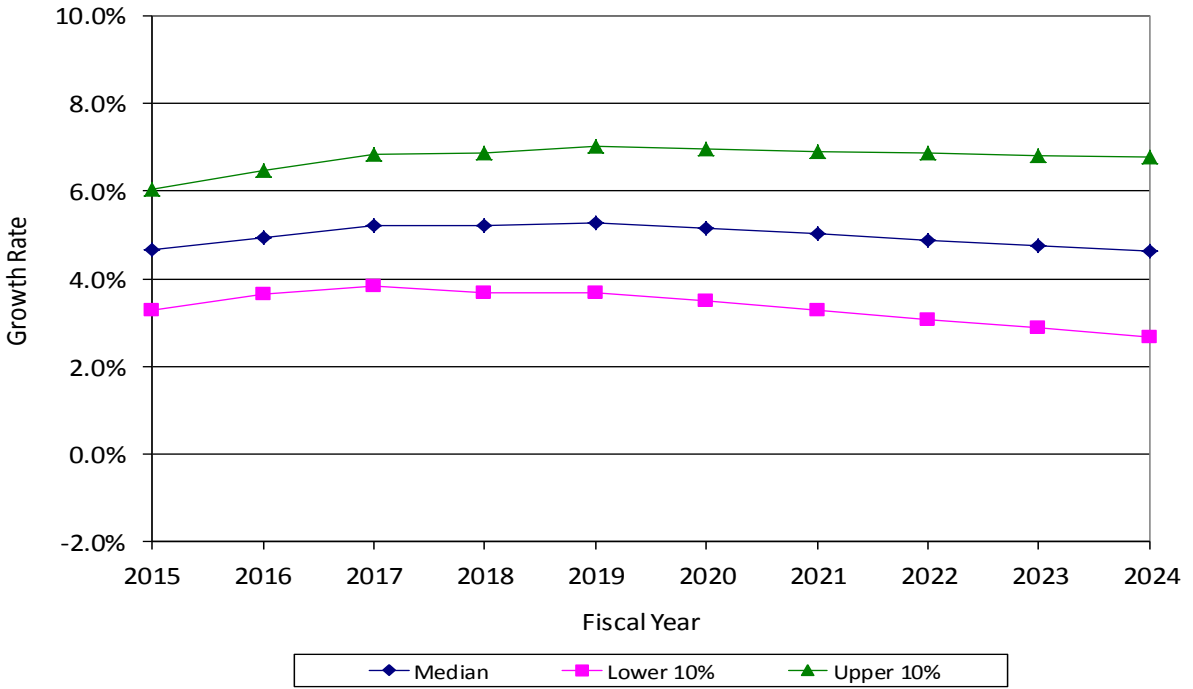
/3 Net of the DPS Parity Compensation Fund transfer and includes transfers per Laws 2011. 1st Regular Session, Chapter 28 (SB 1616) which transfers the state highway fund share of HURF VLT difference between the two-year registration and the five-year registration to the state general fund. Laws 2010, 7th Special Session, Chapter 12, (HB 2012) an amount equal to 90 percent of the fees collected under 28-4802 (A) and 60 percent of the fees collected under 28-4802 (B) shall be transferred from the state highway fund share of HURF VLT to the state general fund.

PANELIST DATA VALUES

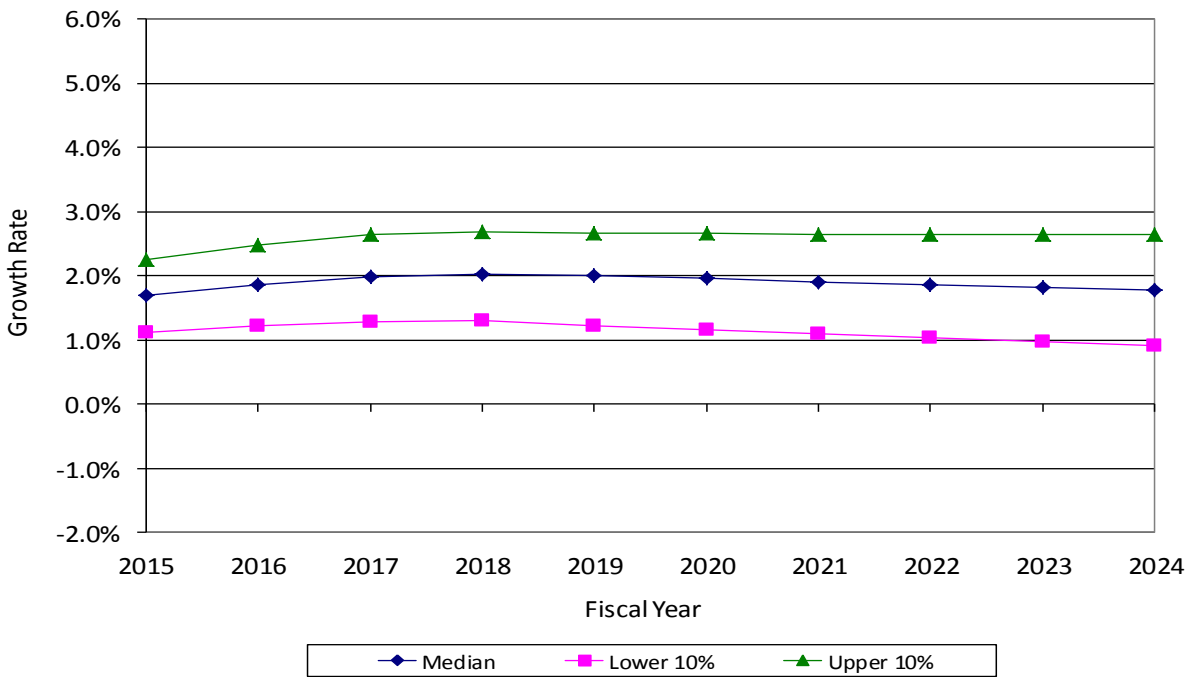
	AZ Nominal Income Growth	Arizona Population Growth	Arizona Non-Farm Employ. Growth	AZ Nominal Gas Price Growth	West Coast Nominal Diesel Price Growth
FY 2015					
Median	4.66%	1.69%	2.22%	-0.33%	-0.13%
Lower 10%	3.30%	1.11%	1.18%	-8.61%	-8.87%
Upper 10%	6.04%	2.26%	3.27%	6.59%	7.08%
FY 2016					
Median	4.93%	1.87%	2.35%	0.98%	1.24%
Lower 10%	3.66%	1.22%	1.29%	-7.75%	-7.83%
Upper 10%	6.49%	2.48%	3.52%	8.13%	8.74%
FY 2017					
Median	5.21%	1.99%	2.57%	1.86%	2.17%
Lower 10%	3.85%	1.28%	1.41%	-7.49%	-7.42%
Upper 10%	6.86%	2.65%	3.93%	10.02%	10.80%
FY 2018					
Median	5.20%	2.03%	2.68%	2.80%	3.02%
Lower 10%	3.68%	1.30%	1.35%	-7.29%	-6.86%
Upper 10%	6.89%	2.69%	4.23%	11.54%	12.23%
FY 2019					
Median	5.29%	2.00%	2.69%	2.96%	3.42%
Lower 10%	3.69%	1.22%	1.16%	-7.44%	-6.93%
Upper 10%	7.01%	2.66%	4.20%	12.51%	13.32%
FY 2024					
Median	4.62%	1.78%	2.42%	2.64%	3.24%
Lower 10%	2.68%	0.91%	0.80%	-9.88%	-9.23%
Upper 10%	6.77%	2.64%	4.17%	13.83%	14.31%
FY 2029					
Median	4.32%	1.65%	2.23%	2.43%	3.17%
Lower 10%	2.31%	0.73%	0.32%	-11.00%	-11.12%
Upper 10%	6.59%	2.62%	4.17%	15.25%	16.06%
FY 2034					
Median	4.22%	1.57%	2.07%	2.24%	3.17%
Lower 10%	1.93%	0.57%	-0.10%	-12.55%	-12.61%
Upper 10%	6.68%	2.55%	4.16%	16.80%	17.03%

All data in the above table are percentage growth rates.

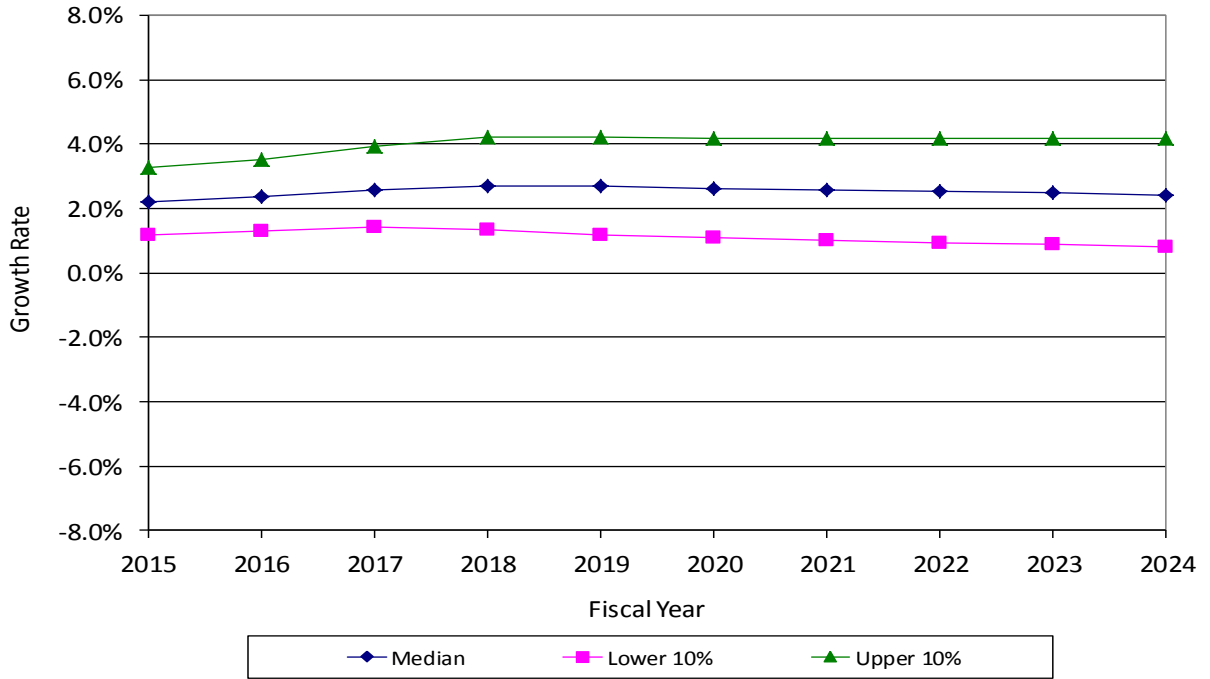
Arizona Nominal Personal Income Growth



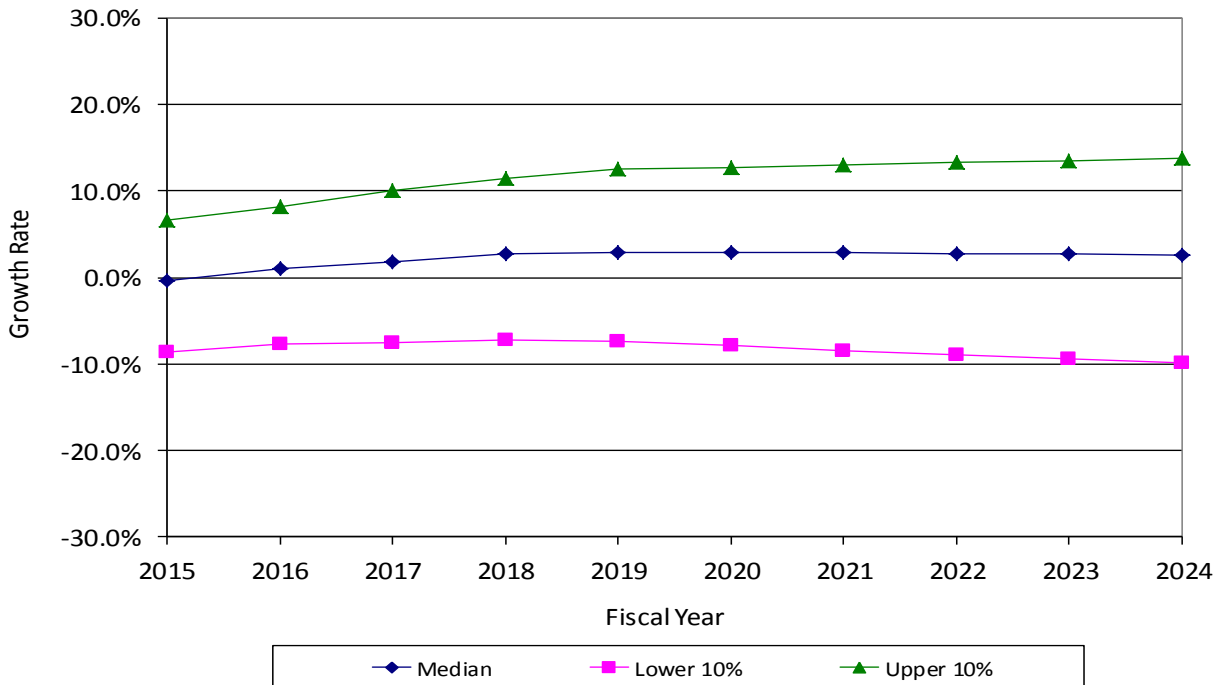
Arizona Population Growth



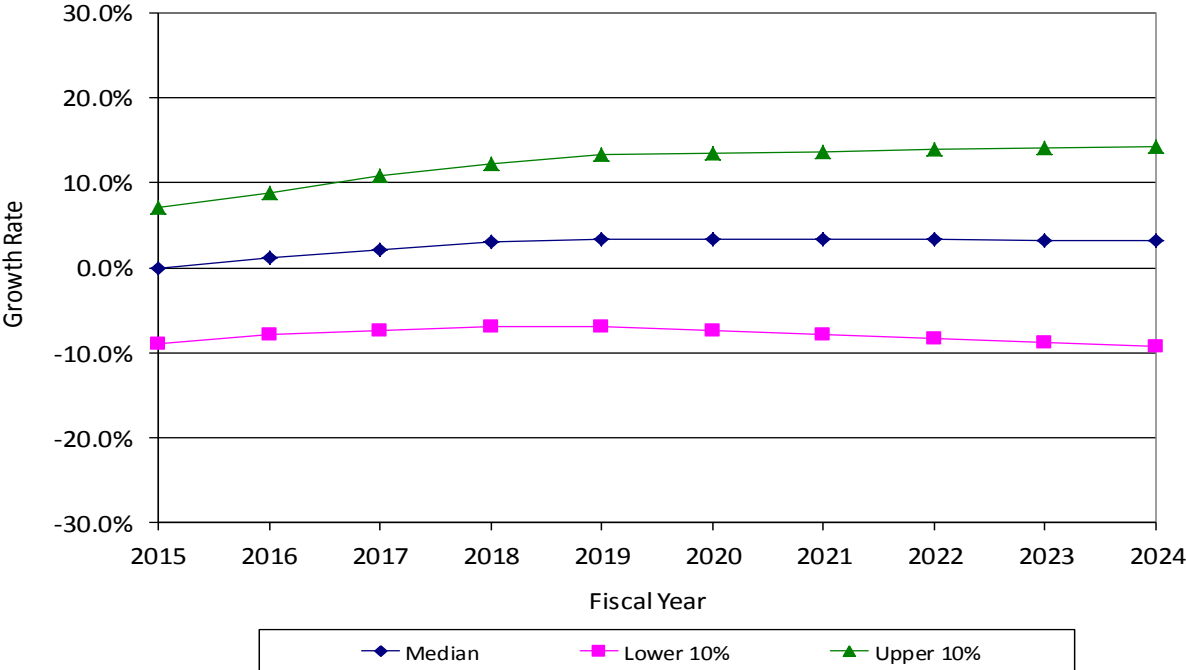
Arizona Non-Farm Employment Growth



Arizona Nominal Gas Price Growth



West Coast No. 2 Nominal Diesel Price Growth



Arizona Nominal Personal Income Growth

	2015	2016	2017	2018	2019	2025	2029	2034	
Panelist 1									
Median	5.2%	5.9%	6.1%	5.5%	5.9%	5.8%	5.0%	5.5%	
Lower 10%	3.0%	3.6%	3.9%	2.9%	3.0%	2.9%	3.0%	2.5%	
Upper 10%	6.6%	7.1%	7.5%	7.3%	7.5%	7.2%	6.5%	7.5%	
Panelist 2									
Median	4.8%	5.0%	5.5%	5.8%	6.0%	4.9%	4.8%	4.7%	
Lower 10%	3.7%	4.0%	4.2%	4.3%	4.4%	3.5%	3.2%	3.0%	
Upper 10%	5.5%	6.0%	6.2%	6.5%	6.3%	5.8%	5.5%	5.5%	
Panelist 3									
Median	5.2%	5.6%	6.3%	6.0%	5.7%	4.8%	4.8%	4.8%	
Lower 10%	3.6%	4.0%	4.7%	4.4%	4.1%	1.3%	1.3%	1.3%	
Upper 10%	6.8%	7.2%	7.9%	7.6%	7.3%	8.3%	8.3%	8.3%	
Panelist 4									
Median	4.5%	4.7%	5.1%	5.5%	5.5%	5.0%	4.2%	4.0%	
Lower 10%	4.0%	4.6%	4.8%	4.8%	4.6%	2.9%	2.3%	1.9%	
Upper 10%	5.2%	5.5%	6.5%	6.0%	6.5%	6.0%	6.0%	6.5%	
Panelist 5									
Median	5.0%	5.5%	6.0%	6.1%	5.8%	4.8%	4.8%	4.8%	
Lower 10%	3.2%	3.2%	3.0%	2.9%	2.8%	2.5%	0.8%	0.0%	
Upper 10%	6.5%	7.0%	7.5%	7.7%	7.8%	7.9%	8.0%	8.2%	
Panelist 6									
Median	4.0%	4.0%	3.5%	3.0%	4.0%	4.0%	3.5%	3.0%	
Lower 10%	3.5%	3.5%	3.0%	2.5%	3.5%	3.5%	3.0%	2.5%	
Upper 10%	6.0%	6.0%	5.5%	5.0%	6.0%	6.0%	5.5%	5.0%	
Panelist 7									
Median	5.2%	5.6%	6.2%	6.2%	5.9%	5.0%	4.6%	4.5%	
Lower 10%	3.9%	4.1%	4.4%	4.5%	4.4%	2.5%	2.5%	2.0%	
Upper 10%	6.5%	6.7%	6.9%	6.9%	6.8%	6.5%	6.3%	6.3%	
Panelist 8									
Median	3.6%	2.7%	1.8%	1.9%	1.9%	1.7%	1.7%	1.7%	
Lower 10%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	
Upper 10%	5.6%	5.7%	5.8%	6.2%	6.2%	6.0%	6.0%	6.0%	
Panelist 9									
Median	5.1%	5.5%	6.0%	6.0%	6.0%	4.9%	4.8%	4.7%	
Lower 10%	3.7%	4.4%	4.7%	4.7%	4.4%	3.2%	2.7%	2.1%	
Upper 10%	6.5%	7.2%	7.5%	7.5%	7.0%	6.6%	6.9%	7.3%	
Panelist 10									
Median	4.5%	5.0%	5.5%	6.0%	6.5%	6.0%	5.5%	5.0%	
Lower 10%	3.8%	4.2%	4.5%	4.6%	4.7%	4.0%	3.5%	3.0%	
Upper 10%	5.5%	6.5%	7.0%	8.0%	9.0%	8.0%	7.5%	7.0%	
Panelist 11									
Median	4.1%	4.8%	5.4%	5.3%	5.0%	3.9%	3.8%	3.7%	
Lower 10%	2.4%	3.1%	3.7%	3.5%	3.2%	1.7%	1.6%	1.5%	
Upper 10%	5.8%	6.5%	7.1%	7.1%	6.8%	6.1%	6.0%	5.9%	

All data in the above table are percentage growth rates.

Arizona Population Growth

	2015	2016	2017	2018	2019	2024	2029	2034
Panelist 1								
Median	1.9%	2.1%	2.4%	2.5%	2.5%	2.2%	2.2%	2.3%
Lower 10%	1.0%	1.3%	1.2%	1.3%	1.3%	1.4%	1.6%	1.5%
Upper 10%	2.8%	3.0%	3.1%	3.3%	3.3%	3.7%	3.8%	3.9%
Panelist 2								
Median	1.9%	2.0%	2.2%	2.3%	2.2%	2.0%	1.8%	1.8%
Lower 10%	1.4%	1.4%	1.5%	1.6%	1.6%	1.4%	1.2%	1.0%
Upper 10%	2.2%	2.4%	2.5%	2.6%	2.5%	2.4%	2.4%	2.2%
Panelist 3								
Median	1.8%	1.9%	2.0%	1.9%	1.9%	1.7%	1.6%	1.5%
Lower 10%	1.0%	1.0%	1.0%	0.9%	0.9%	0.5%	0.4%	0.3%
Upper 10%	2.6%	2.8%	3.0%	2.9%	2.7%	2.9%	2.8%	2.7%
Panelist 4								
Median	1.3%	1.7%	1.7%	1.8%	1.9%	2.0%	1.7%	1.5%
Lower 10%	0.7%	1.2%	1.2%	1.5%	1.5%	0.7%	0.3%	0.2%
Upper 10%	1.9%	2.4%	2.6%	2.7%	2.7%	2.8%	2.7%	2.5%
Panelist 5								
Median	1.5%	1.8%	2.0%	2.0%	2.0%	1.6%	1.5%	1.5%
Lower 10%	0.9%	0.9%	1.3%	1.2%	1.0%	0.7%	0.5%	0.2%
Upper 10%	2.1%	2.3%	2.8%	2.9%	3.0%	3.1%	3.3%	3.3%
Panelist 6								
Median	1.4%	1.6%	1.7%	1.7%	1.7%	1.2%	1.0%	0.6%
Lower 10%	1.2%	1.2%	1.2%	1.2%	1.2%	0.7%	0.4%	0.0%
Upper 10%	1.6%	2.0%	2.2%	2.2%	2.2%	1.7%	1.6%	1.2%
Panelist 7								
Median	1.6%	1.7%	1.8%	1.9%	1.9%	1.7%	1.5%	1.5%
Lower 10%	1.3%	1.4%	1.5%	1.5%	1.3%	0.9%	0.5%	0.3%
Upper 10%	2.1%	2.3%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Panelist 8								
Median	2.1%	2.0%	2.0%	2.0%	1.9%	2.0%	2.0%	2.0%
Lower 10%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%	0.8%
Upper 10%	3.3%	3.3%	3.2%	3.1%	3.1%	3.1%	3.1%	3.1%
Panelist 9								
Median	1.8%	2.0%	2.2%	2.3%	2.0%	1.7%	1.6%	1.5%
Lower 10%	1.3%	1.5%	1.6%	1.6%	1.4%	0.8%	0.5%	0.2%
Upper 10%	2.3%	2.5%	2.6%	2.6%	2.6%	2.6%	2.7%	2.8%
Panelist 10								
Median	1.6%	1.7%	1.8%	1.9%	2.0%	1.8%	1.7%	1.6%
Lower 10%	1.3%	1.3%	1.3%	1.2%	1.1%	0.9%	0.7%	0.7%
Upper 10%	1.9%	2.0%	2.1%	2.2%	2.3%	2.2%	2.1%	2.0%
Panelist 11								
Median	1.8%	2.0%	2.1%	2.1%	2.0%	1.7%	1.6%	1.5%
Lower 10%	1.3%	1.5%	1.6%	1.5%	1.4%	1.3%	1.1%	1.0%
Upper 10%	2.1%	2.4%	2.6%	2.5%	2.4%	2.1%	1.9%	1.8%

All data in the above table are percentage growth rates.

Arizona Non-Farm Employment Growth

	2015	2016	2017	2018	2019	2024	2029	2034
Panelist 1								
Median	2.2%	2.4%	2.5%	3.0%	3.0%	2.5%	2.2%	2.0%
Lower 10%	0.6%	0.8%	1.0%	1.2%	1.4%	0.6%	-0.1%	-0.6%
Upper 10%	2.9%	3.4%	4.1%	4.4%	4.6%	4.4%	4.5%	4.6%
Panelist 2								
Median	2.2%	2.7%	3.0%	3.2%	3.0%	2.7%	2.5%	2.2%
Lower 10%	1.5%	1.5%	1.4%	1.8%	1.9%	2.0%	1.8%	1.7%
Upper 10%	2.8%	3.3%	3.8%	3.8%	3.8%	3.5%	3.5%	3.5%
Panelist 3								
Median	2.3%	2.4%	2.9%	2.9%	2.5%	2.3%	2.2%	2.1%
Lower 10%	0.8%	0.9%	1.4%	1.4%	1.0%	0.8%	0.7%	0.6%
Upper 10%	3.9%	4.0%	4.5%	4.5%	4.1%	3.9%	3.8%	3.7%
Panelist 4								
Median	2.5%	2.6%	2.9%	3.2%	3.2%	2.5%	2.3%	2.0%
Lower 10%	1.1%	1.7%	1.9%	2.2%	1.8%	0.4%	-0.2%	-0.8%
Upper 10%	3.0%	3.5%	4.5%	5.0%	4.6%	4.6%	4.8%	4.8%
Panelist 5								
Median	2.2%	2.5%	3.0%	3.2%	3.2%	2.5%	2.5%	2.5%
Lower 10%	1.3%	1.2%	1.4%	1.2%	1.0%	0.5%	-0.5%	-2.0%
Upper 10%	3.2%	3.5%	4.2%	5.0%	5.2%	5.4%	5.5%	5.7%
Panelist 6								
Median	2.2%	2.3%	2.0%	1.5%	2.0%	2.3%	2.0%	1.8%
Lower 10%	2.0%	2.0%	1.7%	1.1%	1.5%	1.8%	1.0%	0.8%
Upper 10%	2.5%	2.6%	2.8%	2.8%	2.8%	2.8%	3.0%	2.8%
Panelist 7								
Median	2.2%	2.5%	3.1%	3.0%	3.0%	2.5%	2.0%	1.8%
Lower 10%	1.5%	1.7%	1.7%	1.5%	0.0%	0.0%	-0.5%	-0.5%
Upper 10%	3.0%	3.5%	4.2%	4.5%	4.2%	4.2%	4.2%	4.2%
Panelist 8								
Median	1.7%	1.2%	0.9%	1.1%	1.3%	1.6%	1.6%	1.6%
Lower 10%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Upper 10%	5.0%	4.5%	3.7%	3.9%	4.1%	4.4%	4.4%	4.4%
Panelist 9								
Median	2.2%	2.5%	3.0%	3.2%	3.0%	2.5%	2.2%	2.0%
Lower 10%	1.5%	1.7%	2.2%	1.7%	1.4%	0.6%	-0.1%	-0.6%
Upper 10%	3.2%	3.7%	4.2%	4.9%	4.6%	4.4%	4.5%	4.6%
Panelist 10								
Median	2.3%	2.5%	2.7%	2.9%	3.1%	3.0%	2.9%	2.8%
Lower 10%	1.8%	1.9%	2.0%	2.0%	2.0%	1.8%	1.0%	0.0%
Upper 10%	2.6%	3.1%	3.6%	4.1%	4.5%	4.3%	4.0%	3.8%
Panelist 11								
Median	2.4%	2.3%	2.3%	2.3%	2.3%	2.2%	2.1%	2.0%
Lower 10%	1.0%	0.8%	0.8%	0.7%	0.7%	0.5%	0.4%	0.3%
Upper 10%	3.9%	3.7%	3.7%	3.8%	3.8%	4.0%	3.9%	3.8%

All data in the above table are percentage growth rates.

Arizona Nominal Gas Price Growth

	2015	2016	2017	2018	2019	2024	2029	2034
Panelist 1								
Median	-4.1%	-0.2%	2.4%	2.6%	3.3%	1.8%	2.5%	1.9%
Lower 10%	-10.3%	-9.1%	-6.5%	-6.3%	-6.6%	-10.2%	-11.7%	-14.4%
Upper 10%	2.1%	8.7%	11.3%	11.5%	13.2%	13.8%	16.7%	18.2%
Panelist 2								
Median	-3.5%	-1.5%	-1.0%	1.0%	1.5%	2.0%	2.2%	2.5%
Lower 10%	-5.0%	-3.0%	-3.0%	-2.0%	0.0%	0.0%	0.0%	0.0%
Upper 10%	1.0%	1.0%	1.0%	2.0%	3.0%	3.5%	3.5%	3.5%
Panelist 3								
Median	-0.5%	0.0%	1.0%	2.6%	2.6%	2.0%	1.5%	1.7%
Lower 10%	-7.5%	-7.0%	-6.0%	-6.5%	-6.5%	-11.5%	-14.0%	-15.9%
Upper 10%	6.5%	7.0%	8.0%	11.7%	11.7%	15.5%	17.0%	19.3%
Panelist 4								
Median	-6.4%	-4.1%	-1.5%	2.4%	2.6%	2.0%	1.5%	1.7%
Lower 10%	-12.6%	-10.3%	-9.1%	-6.5%	-6.3%	-11.4%	-14.1%	-16.1%
Upper 10%	-0.2%	2.1%	8.7%	11.3%	11.5%	12.0%	15.0%	20.0%
Panelist 5								
Median	1.1%	1.5%	1.6%	1.8%	2.0%	2.0%	2.0%	2.0%
Lower 10%	-6.5%	-5.5%	-6.0%	-5.5%	-6.0%	-11.0%	-12.0%	-16.0%
Upper 10%	4.0%	5.0%	6.5%	8.0%	10.0%	15.0%	17.0%	20.0%
Panelist 6								
Median	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Lower 10%	-20.0%	-20.0%	-20.0%	-20.0%	-20.0%	-20.0%	-20.0%	-20.0%
Upper 10%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Panelist 7								
Median	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Lower 10%	-10.0%	-10.0%	-10.0%	-10.0%	-10.0%	-10.0%	-10.0%	-10.0%
Upper 10%	5.0%	6.0%	7.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Panelist 8								
Median	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Lower 10%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Upper 10%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Panelist 9								
Median	0.0%	2.0%	3.0%	2.5%	2.5%	2.5%	2.5%	2.5%
Lower 10%	-9.9%	-7.2%	-6.8%	-6.2%	-6.6%	-10.2%	-11.7%	-14.4%
Upper 10%	5.0%	7.0%	10.0%	10.8%	13.2%	13.8%	16.7%	18.2%
Panelist 10								
Median	0.0%	2.0%	3.0%	5.0%	5.0%	4.0%	2.0%	0.0%
Lower 10%	-3.0%	-4.0%	-5.0%	-6.0%	-7.0%	-7.0%	-7.0%	-7.0%
Upper 10%	2.0%	4.0%	6.0%	7.0%	8.0%	8.0%	8.0%	8.0%
Panelist 11								
Median	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%
Lower 10%	-1.4%	-1.4%	-2.5%	-3.9%	-5.3%	-7.5%	-9.6%	-11.7%
Upper 10%	10.5%	10.5%	11.7%	13.1%	14.5%	16.6%	18.7%	20.9%

All data in the above table are percentage growth rates.

West Coast No. 2 Nominal Gas Price Growth

	2015	2016	2017	2018	2019	2024	2029	2034	
Panelist 1									
Median	-4.1%	-0.2%	2.4%	2.6%	3.3%	1.8%	2.5%	1.9%	
Lower 10%	-10.3%	-9.3%	-6.7%	-6.5%	-6.6%	-10.4%	-12.0%	-14.9%	
Upper 10%	2.1%	8.9%	11.5%	11.7%	13.2%	14.0%	17.0%	18.7%	
Panelist 2									
Median	-3.5%	-1.5%	-1.0%	1.0%	1.5%	2.0%	2.2%	2.5%	
Lower 10%	-5.0%	-3.0%	-3.0%	-2.0%	0.0%	0.0%	0.0%	0.0%	
Upper 10%	1.0%	1.0%	1.0%	2.0%	3.0%	3.5%	3.5%	3.5%	
Panelist 3									
Median	-0.5%	0.0%	1.0%	2.6%	2.6%	2.0%	1.5%	1.7%	
Lower 10%	-7.5%	-7.0%	-6.0%	-6.5%	-6.5%	-11.5%	-14.0%	-15.9%	
Upper 10%	6.5%	7.0%	8.0%	11.7%	11.7%	15.5%	17.0%	19.3%	
Panelist 4									
Median	-7.0%	-4.1%	-2.0%	2.0%	2.6%	2.5%	1.5%	1.7%	
Lower 10%	-12.6%	-10.3%	-9.1%	-6.5%	-6.3%	-10.0%	-15.0%	-15.0%	
Upper 10%	-0.2%	2.1%	8.7%	11.3%	11.5%	12.0%	15.0%	15.0%	
Panelist 5									
Median	1.1%	1.5%	1.6%	1.8%	2.0%	2.0%	2.0%	2.0%	
Lower 10%	-9.0%	-8.0%	-8.2%	-7.5%	-8.5%	-11.0%	-15.0%	-18.0%	
Upper 10%	4.5%	6.5%	9.0%	10.0%	12.5%	15.0%	20.0%	22.0%	
Panelist 6									
Median	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	
Lower 10%	-20.0%	-20.0%	-20.0%	-20.0%	-20.0%	-20.0%	-20.0%	-20.0%	
Upper 10%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	
Panelist 7									
Median	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	
Lower 10%	-10.0%	-10.0%	-10.0%	-10.0%	-10.0%	-10.0%	-10.0%	-10.0%	
Upper 10%	5.0%	6.0%	7.0%	10.0%	10.0%	10.0%	10.0%	10.0%	
Panelist 8									
Median	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Lower 10%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Upper 10%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Panelist 9									
Median	0.0%	2.0%	3.0%	2.5%	2.5%	2.5%	2.5%	2.5%	
Lower 10%	-9.9%	-7.2%	-6.8%	-6.2%	-6.6%	-10.2%	-11.7%	-14.4%	
Upper 10%	5.0%	7.0%	10.0%	10.8%	13.2%	13.8%	16.7%	18.2%	
Panelist 10									
Median	0.0%	2.0%	4.0%	5.0%	7.0%	7.0%	7.0%	7.0%	
Lower 10%	-5.0%	-4.0%	-4.0%	-3.0%	-2.0%	-4.0%	-6.0%	-8.0%	
Upper 10%	3.0%	5.0%	8.0%	10.0%	11.0%	10.0%	10.0%	10.0%	
Panelist 11									
Median	7.2%	7.2%	7.2%	7.2%	7.2%	7.1%	7.0%	6.9%	
Lower 10%	0.5%	0.4%	-0.4%	-0.5%	-2.8%	-5.2%	-7.6%	-9.9%	
Upper 10%	14.0%	14.0%	14.8%	14.8%	17.1%	19.3%	21.5%	23.7%	

All data in the above table are percentage growth rates.

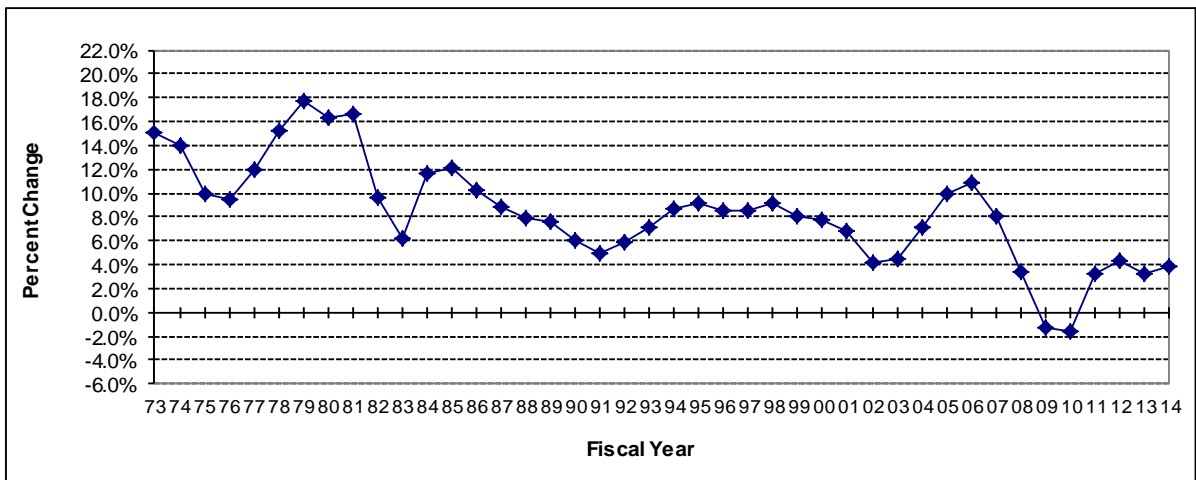
HISTORICAL DATA
ARIZONA NOMINAL PERSONAL INCOME GROWTH
(Annual Percent Change)

HISTORICAL DATA BY FISCAL YEAR (July 1 through June 30)

1970		1980	16.4%	1990	6.1%	2000	7.8%	2010	-1.6%
1971		1981	16.7%	1991	4.9%	2001	6.9%	2011	3.2%
1972		1982	9.6%	1992	5.9%	2002	4.2%	2012	4.4%
1973	15.1%	1983	6.2%	1993	7.2%	2003	4.5%	2013	3.2%
1974	14.0%	1984	11.7%	1994	8.7%	2004	7.2%	2014 *	3.8%
1975	10.0%	1985	12.1%	1995	9.2%	2005	9.9%	2015	
1976	9.5%	1986	10.3%	1996	8.6%	2006	10.8%	2016	
1977	11.9%	1987	8.9%	1997	8.5%	2007	8.0%	2017	
1978	15.3%	1988	7.9%	1998	9.2%	2008	3.4%	2018	
1979	17.8%	1989	7.6%	1999	8.0%	2009	-1.3%	2019	

BEA for FY 1973-2013, Western Blue Chip, June 2014 for FY 2014* and FY 2015, and ADOT staff for FY 2016-34.

HISTORICAL DATA - GRAPHED



HISTORICAL DATA - ANALYSIS

Period	Historical		Mean	Std. Dev.	80% Range	
	Min.	Max.			Lower	Upper
5 Years	-1.6%	4.4%	2.6%	2.4%	0.3%	4.2%
10 Years	-1.6%	10.8%	4.4%	4.2%	-1.3%	10.0%
Full Period	-1.6%	17.8%	8.4%	4.4%	3.4%	15.0%

**HISTORICAL DATA
ARIZONA POPULATION GROWTH
(Annual Percent Change)**

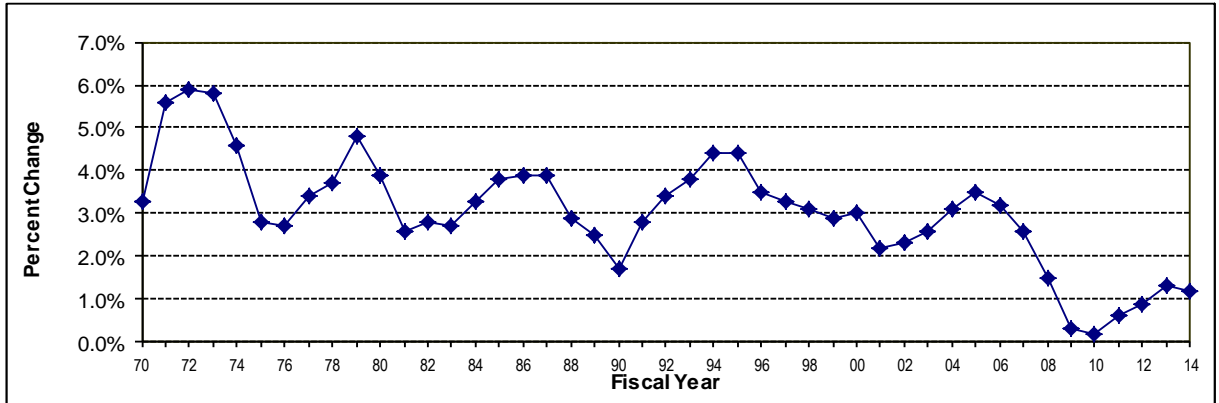
HISTORICAL DATA BY FISCAL YEAR (July 1 through June 30)

1970	3.3%	1980	3.9%	1990	1.7%	2000	3.0%	2010	0.2%
1971	5.6%	1981	2.6%	1991	2.8%	2001	2.2%	2011	0.6%
1972	5.9%	1982	2.8%	1992	3.4%	2002	2.3%	2012	0.9%
1973	5.8%	1983	2.7%	1993	3.8%	2003	2.6%	2013	1.3%
1974	4.6%	1984	3.3%	1994	4.4%	2004	3.1%	2014 *	1.2%
1975	2.8%	1985	3.8%	1995	4.4%	2005	3.5%	2015	
1976	2.7%	1986	3.9%	1996	3.5%	2006	3.2%	2016	
1977	3.4%	1987	3.9%	1997	3.3%	2007	2.6%	2017	
1978	3.7%	1988	2.9%	1998	3.1%	2008	1.5%	2018	
1979	4.8%	1989	2.5%	1999	2.9%	2009	0.3%	2019	

Census Bureau FY 1970-2000. FY 2001-2034 from ADOA Office of Employment and Population Statistics.

* FY 2014 Estimated.

HISTORICAL DATA - GRAPHED



HISTORICAL DATA - ANALYSIS

Period	Historical		Mean	Std. Dev.	80% Range	
	Min.	Max.			Lower	Upper
5 Years	0.2%	1.3%	0.8%	0.5%	0.4%	1.3%
10 Years	0.2%	3.5%	1.5%	1.2%	0.3%	3.2%
Full Period	0.2%	5.9%	3.0%	1.3%	1.2%	4.5%

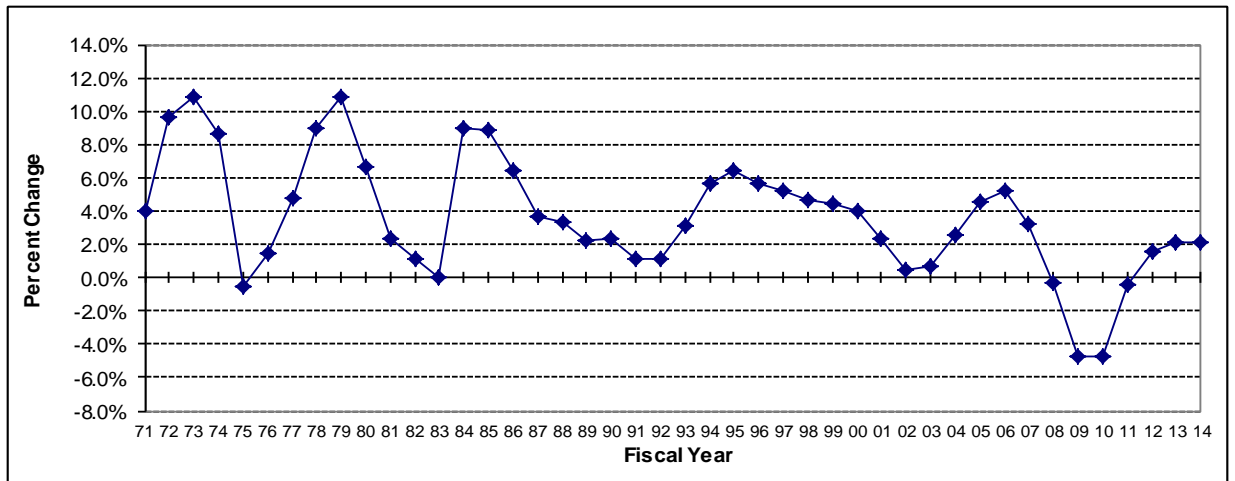
HISTORICAL DATA
ARIZONA TOTAL NON-FARM EMPLOYMENT GROWTH
(Annual Percent Change)

HISTORICAL DATA BY FISCAL YEAR (July 1 through June 30)

1970		1980	6.6%	1990	2.3%	2000	4.0%	2010	-4.7%
1971	4.0%	1981	2.3%	1991	1.1%	2001	2.3%	2011	-0.4%
1972	9.6%	1982	1.1%	1992	1.1%	2002	0.5%	2012	1.6%
1973	10.9%	1983	0.0%	1993	3.1%	2003	0.7%	2013	2.1%
1974	8.6%	1984	9.0%	1994	5.7%	2004	2.6%	2014*	2.1%
1975	-0.5%	1985	8.9%	1995	6.4%	2005	4.6%	2015	
1976	1.4%	1986	6.4%	1996	5.7%	2006	5.2%	2016	
1977	4.8%	1987	3.7%	1997	5.2%	2007	3.2%	2017	
1978	9.0%	1988	3.3%	1998	4.7%	2008	-0.3%	2018	
1979	10.9%	1989	2.2%	1999	4.4%	2009	-4.7%	2019	

Bureau of Labor Statistics for FY 1971-2013, ADOA, Office of Employment & Population Statistics, Employment Forecast Report, on May 1, 2014 for estimates in 2014* and 2015 and ADOT staff estimates for FY 2016-2034.

HISTORICAL DATA - GRAPHED



HISTORICAL DATA - ANALYSIS

Period	Historical		Mean	Std. Dev.	80% Range	
	Min.	Max.			Lower	Upper
5 Years	-4.7%	2.1%	0.1%	2.9%	-3.0%	2.1%
10 Years	-4.7%	5.2%	0.9%	3.4%	-4.7%	4.7%
Full Period	-4.7%	10.9%	3.7%	3.6%	-0.2%	9.0%

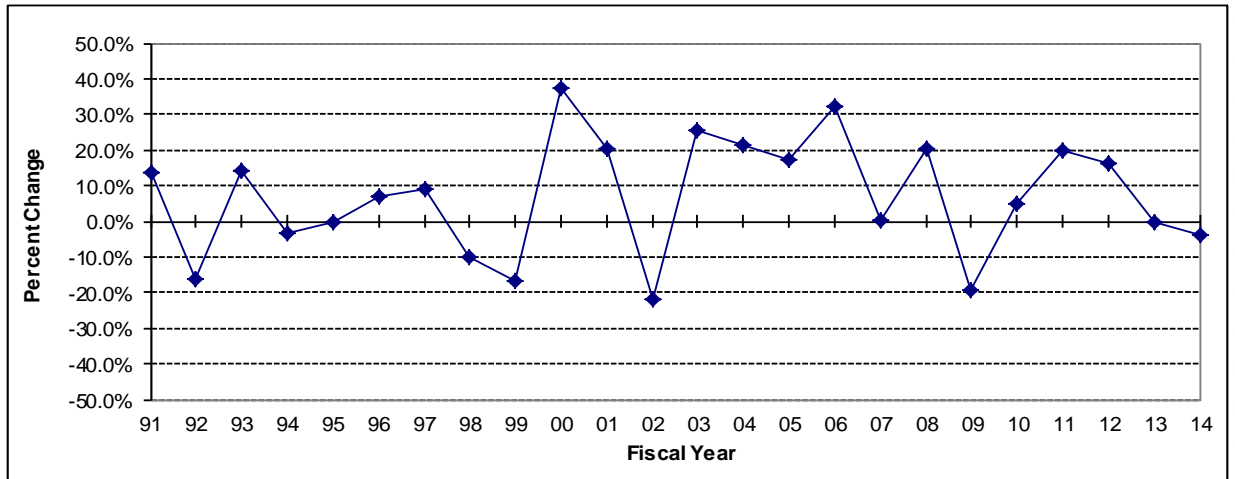
HISTORICAL DATA
ARIZONA NOMINAL GAS PRICE GROWTH
(Annual Percent Change)

HISTORICAL DATA BY FISCAL YEAR (July 1 through June 30)

1970	1980	1990	2000	37.2%	2010	4.7%	
1971	1981	1991	13.8%	2001	20.1%	2011	20.1%
1972	1982	1992	-16.0%	2002	-21.9%	2012	16.1%
1973	1983	1993	14.2%	2003	25.4%	2013	-0.5%
1974	1984	1994	-3.3%	2004	21.6%	2014	-3.9%
1975	1985	1995	-0.5%	2005	17.4%	2015	
1976	1986	1996	7.2%	2006	32.1%	2016	
1977	1987	1997	9.0%	2007	0.5%	2017	
1978	1988	1998	-10.3%	2008	20.2%	2018	
1979	1989	1999	-16.8%	2009	-19.3%	2019	

U.S. Department of Energy (EIA Administration) for FY 1985-2011, AAA Arizona for FY 2012-2014 and Global Insight, 1st Quarter 2014, Trend Forecast report for FY 2015-34

HISTORICAL DATA - GRAPHED



HISTORICAL DATA - ANALYSIS

Period	Historical		Mean	Std. Dev.	80% Range	
	Min.	Max.			Lower	Upper
5 Years	-3.9%	20.1%	7.3%	10.4%	-2.5%	18.5%
10 Years	-19.3%	32.1%	8.7%	15.1%	-5.4%	21.4%
Full Period	-21.9%	37.2%	7.0%	16.4%	-16.6%	24.3%

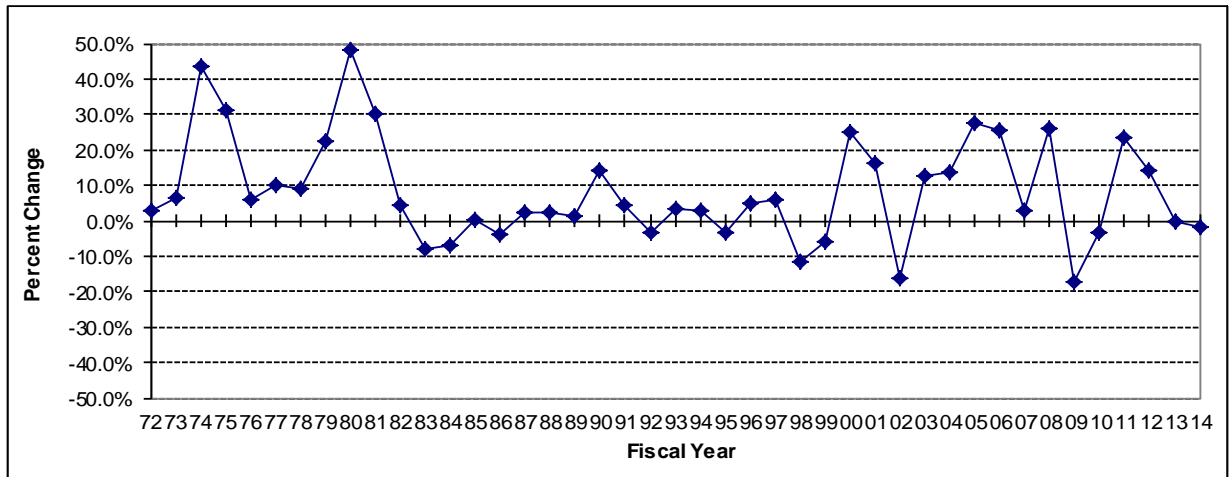
HISTORICAL DATA
WEST COAST NO. 2 NOMINAL DIESEL PRICE GROWTH
(Annual Percent Change)

HISTORICAL DATA BY FISCAL YEAR (July 1 through June 30)

1970		1980	48.1%	1990	14.2%	2000	25.0%	2010	-3.4%
1971		1981	30.2%	1991	4.6%	2001	16.4%	2011	23.5%
1972	2.7%	1982	4.3%	1992	-3.2%	2002	-16.4%	2012	14.2%
1973	6.4%	1983	-8.0%	1993	3.1%	2003	12.4%	2013	0.0%
1974	43.3%	1984	-6.8%	1994	2.7%	2004	13.6%	2014	-2.0%
1975	31.4%	1985	0.1%	1995	-3.4%	2005	27.8%	2015	
1976	5.8%	1986	-4.0%	1996	4.9%	2006	25.5%	2016	
1977	10.0%	1987	2.1%	1997	5.8%	2007	2.7%	2017	
1978	9.1%	1988	2.3%	1998	-11.8%	2008	25.8%	2018	
1979	22.4%	1989	1.2%	1999	-5.9%	2009	-17.2%	2019	

U.S. Department of Energy (EIA Administration) for FY 1972-2014 and Global Insight, 1st Quarter 2014, Trend Forecast report for FY 2015-34

HISTORICAL DATA - GRAPHED



HISTORICAL DATA - ANALYSIS

Period	Historical		Mean	Std. Dev.	80% Range	
	Min.	Max.			Lower	Upper
5 Years	-3.4%	23.5%	6.5%	11.8%	-2.8%	19.8%
10 Years	-17.2%	27.8%	9.7%	15.7%	-4.8%	26.0%
Full Period	-17.2%	48.1%	8.4%	14.8%	-6.6%	27.4%