

STATE OF OREGON

# ANNUAL FORECAST QUALITY REPORT

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**DHS/OHA, Office of Forecasting, Research and Analysis**  
**June 2017**



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# Introduction

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The Office of Forecasting, Research, and Analysis (OFRA) produces two caseload forecasts each year, one in the spring and one in the fall. The purpose of these forecasts is to estimate the number of clients anticipated to access DHS/OHA services in order to budget accurately, inform program management, and support oversight. This annual report analyzes the quality of the historical forecasts by program and provides information about consistency, trends and areas for improvement. This information should be useful to individuals who use the caseload forecasts and want to know how reliable they have been in the past. It also provides feedback to the forecasters themselves about how accurate they have been and where adjustments may be appropriate.

## FORECAST QUALITY MEASURES

This report uses two indicators of forecast quality: **statistical bias** and **accuracy**. Other desirable characteristics of forecast quality such as the **efficiency** with which a forecaster uses available information are harder to assess.

**Statistical bias** indicates the tendency of a forecast to over- or under-estimate real outcomes. To measure statistical bias, OFRA uses the *Mean Percentage Error (MPE)* - the arithmetic average of the forecasting errors. A small MPE can be produced by either small errors or errors (even large ones) which are offset by errors in the opposite direction. MPE imperfectly measures the quality of a forecast. However, for budgeting purposes, MPE is probably the best measure of quality since what matters is total spending over time, and savings from one month are frequently used to offset excess costs in another month.

The **accuracy** of a forecast is the degree to which its values are narrowly dispersed around actual outcomes. Narrower dispersion indicates greater accuracy. To measure accuracy OFRA uses the *Mean Absolute Percentage Error (MAPE)* – the average of the forecasting errors without regard to arithmetic sign. It does not allow underestimates and overestimates to offset each other. From a technical perspective, MAPE is usually considered a better measure of quality than MPE. Another commonly used measure of accuracy is *Root Mean Square Error (RMSE)*. Similar to MAPE, it also shows the size of the error without regard to arithmetic sign, but it gives greater weight to larger errors. Due to very small difference between the two measures of accuracy, in this report the preference is given to MAPE.

Both quality measures (MPE and MAPE) are calculated for 12 sequential forecast cycles (Spring 2011 through Fall 2016) for the first 6, 12, and 24 months of each forecast. Theoretically, and in practice, the quality of a forecast diminishes the further out the forecast projects. In an environment of changing policies and economic uncertainty it is hard to produce precise long-

term forecasts. To address this challenge, OFRA produces a new forecast twice each year - in spring and in fall. Each forecast produces caseload estimates on a month-by-month basis for the remainder of the current biennium and the full upcoming biennium.

## **PROGRAM SERVICES COVERED BY THIS REPORT**

Although OFRA prepares forecasts for seven major program areas and over 50 separate caseload categories, this report focuses only on caseload categories that meet the following criteria:

1. Has more than 5,000 participants or is a major service category;
2. Enrollment is not limited by the agency (e.g. programs that have a maximum caseload capacity or a waiting list to get into the program such as Employment Related Daycare, JOBS, and Vocational Rehabilitation are not included);
3. Has historical data with a long enough time series to produce reliable forecasts and historical actuals that do not change frequently (e.g., the Mandated Mental Health programs).

Based on the rules listed above, this report analyzes the quality of caseload forecasts for the following programs and caseload categories:

- Aging and People with Disabilities (APD)
  - Nursing Facility Care (NFC)
  - Community Based Care (CBC)
  - In-Home Care (IHC)
- Child Welfare (CW)
  - Adoption Assistance
  - Foster Care
  - Guardianship Assistance
- Intellectual/Developmental Disabilities (I/DD)
  - Case Management
  - Adult Brokerage
- Health Systems - Medicaid (HSM)
  - ACA Adults
  - Parent/Caretaker Relative (PCR)
  - Pregnant Women
  - Children's Medicaid
  - Children's Health Insurance Program (CHIP)
  - Aid to Blind and Disabled (ABAD)
  - Old Age Assistance (OAA)
  - Foster/Substitute Care & Adoption Assistance (FSCAA)
  - Qualified Medicare Beneficiary (QMB)
  - Citizen/Alien-Waived Emergent Medical (CAWEM)

- Self Sufficiency Programs (SSP)
  - Supplemental Nutrition Assistance Program (SNAP)
  - Temporary Assistance for Needy Families (TANF)

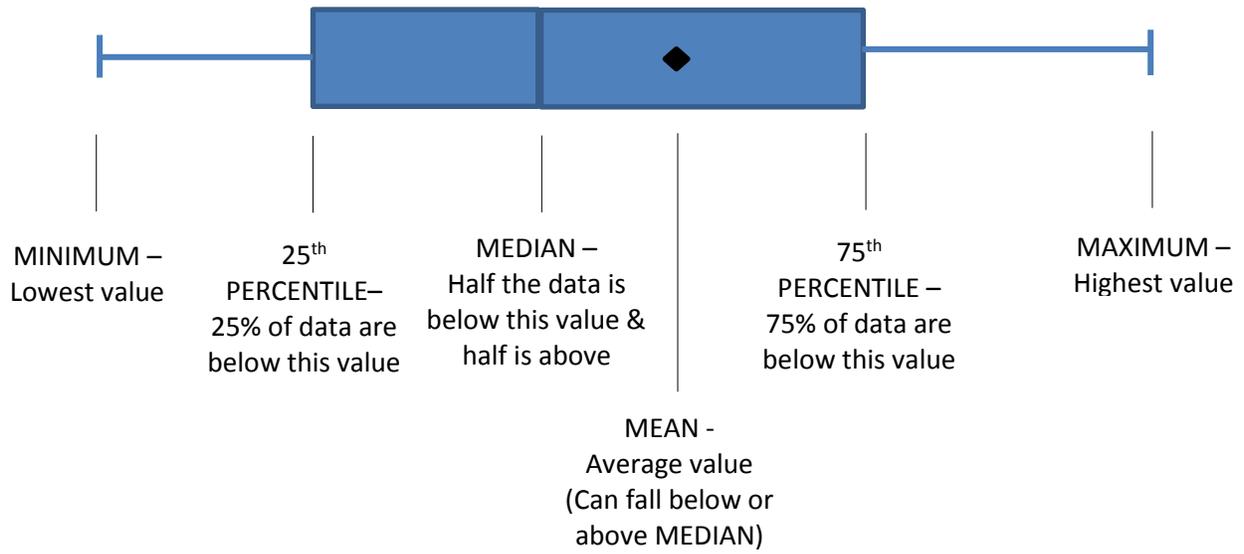
## **BACKGROUND**

Forecasts are developed using a combination of time-series techniques, input-output deterministic models, and expert consensus. Most forecasts are produced using custom software created by Looking Glass Analytics (LGAN) based on an analytical model developed by Willamette University. The LGAN model is based on the statistical technique of survival probability and the concept that clients start service in a given program by virtue of being a new client or by transitioning from another service. The model simulates the movement of clients or client groups such as families or households in and out of services. There are certain risk factors to the forecasts, such as:

- Demographics
- Economy
- Policy/Law changes
- Revisions to historical data
- Small sample size

Demographic changes have a long-term and relatively predictable influence on caseloads. When the economy is more volatile or economic trends change, forecast inaccuracies generally increase. The most immediate and dramatic effects often come from policy changes that alter the pool of eligible clients or the duration of their program eligibility/participation. Policy/Law changes are incorporated into the numerical forecast only when the new policy or law has been approved and sufficient data exists to confidently quantify the impact. Frequently the impact of these various changes cannot be quantified, in which case they are considered “risks” to the forecast accuracy. Major “risks” are discussed in the forecast publication. Statistical error in forecasts is higher for programs that serve a small number of clients, or for relatively new programs that don’t have enough historical data on which to base the forecast. In some cases, what appear to be forecast inaccuracies are actually the result of post-forecast revisions to historical data. This happens when a major data problem is identified and fixed retroactively or other shifts in time series occur due to the addition/subtraction of additional service codes.

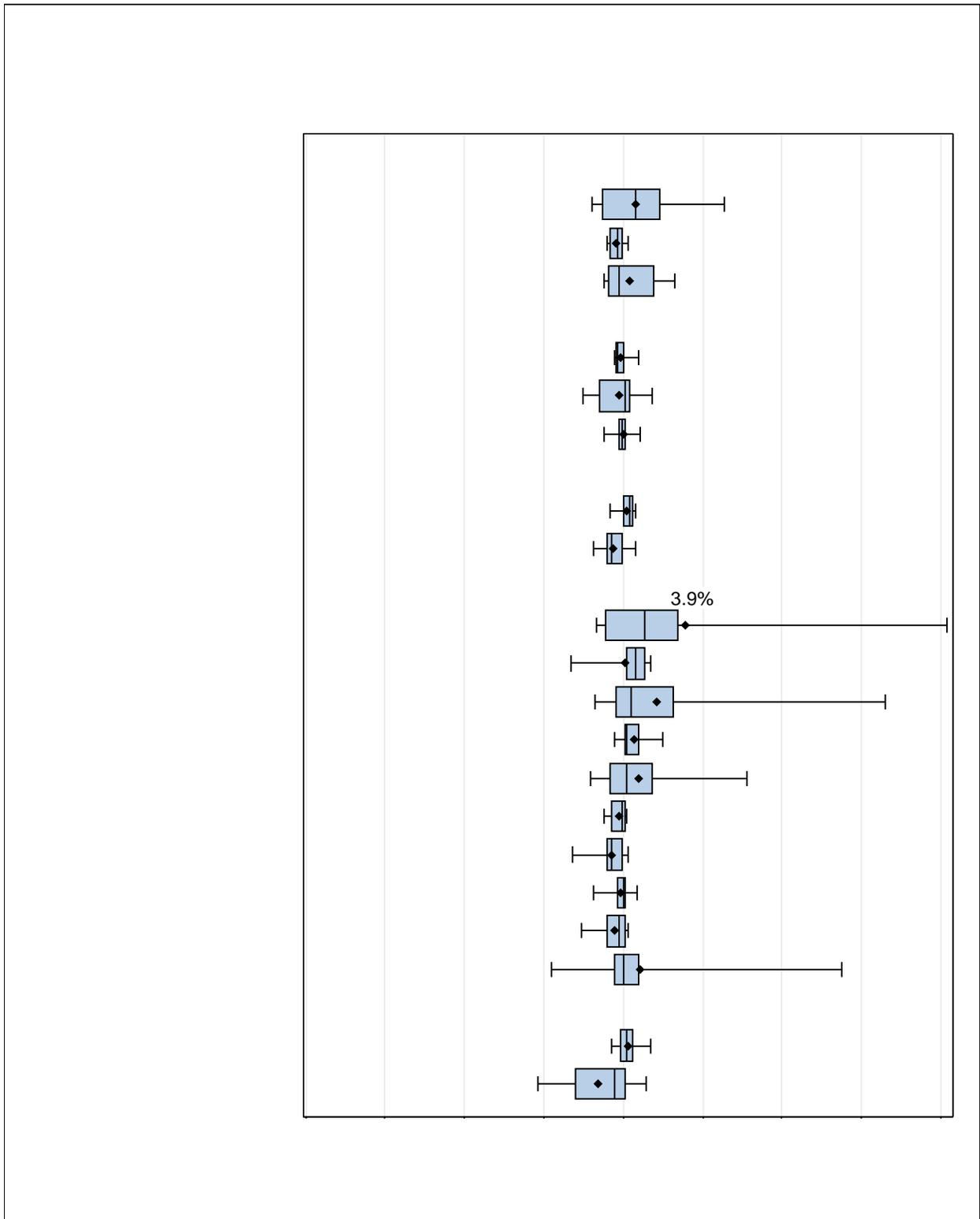
How to interpret Box Plots



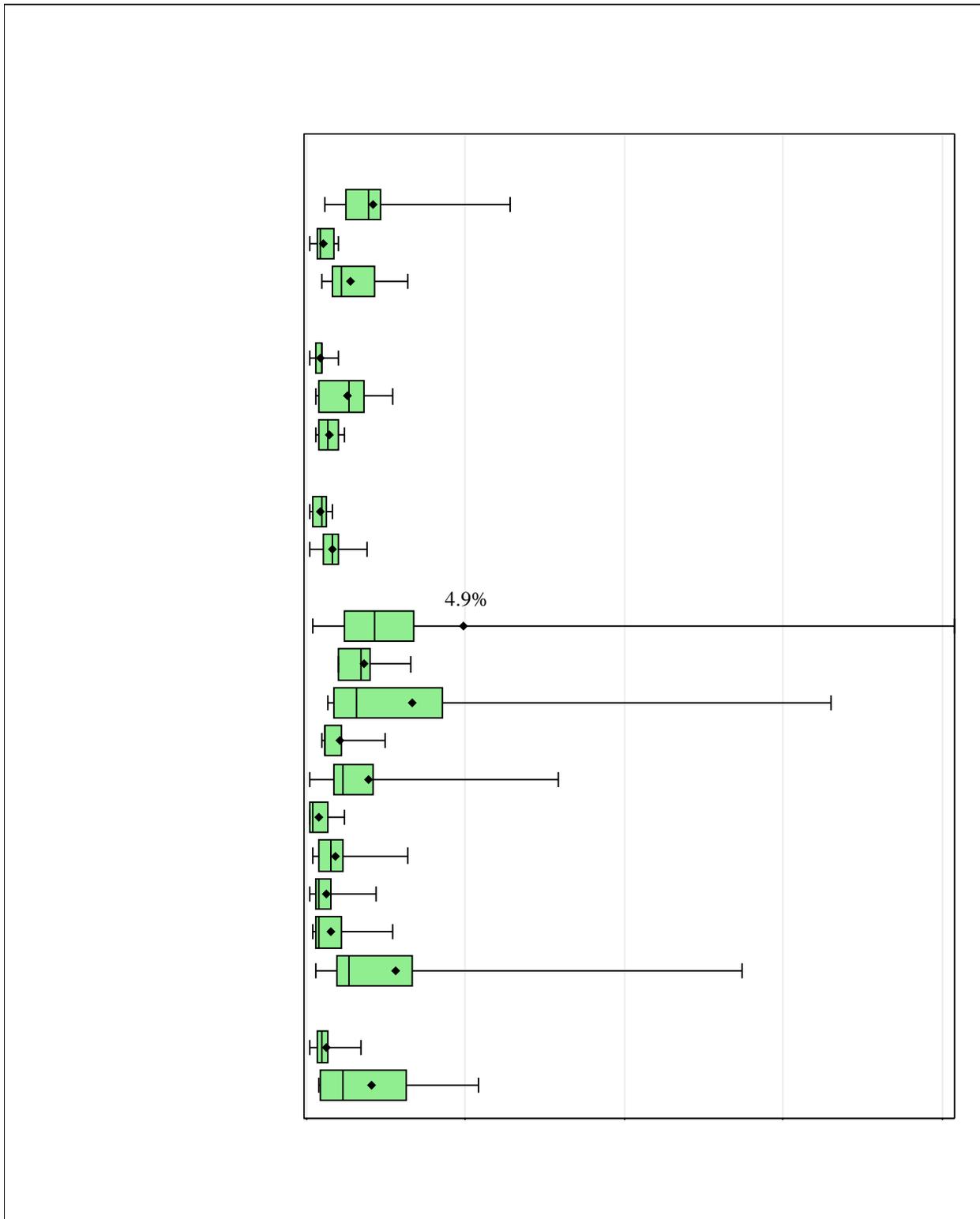
# Summary

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- Overall, the 6-months forecasts were fairly unbiased (Box Plot I) and accurate (Box Plot II). Average MPE varied from -1.6% to 3.9%, and average MAPE varied from 0.4% to 4.9%. With few exceptions, forecast errors were under 5%.
  
- For all program areas, big policy changes, economic disruptions, or data challenges have a great impact on forecast quality. Three major events influenced the accuracy of 2011-2016 forecasts:
  - The introduction of the Affordable Care Act in 2014 created volatility in a number of Medicaid and Aging and People with Disability Caseloads.
  - The Centers for Medicare and Medicaid Services approval of Oregon Waiver requests delayed many of the scheduled redeterminations in 2013-2015.
  - The implementation of TANF Reinvestment in 2016.
  
- The accuracy of the Forecast diminishes over time, resulting in increased variances between the Forecast and the actual enrollment the farther out from the Forecast publication. This is one of the primary reasons that we revise the forecast twice a year.



Note: There are no forecasts for Child Welfare for Spring 2012 and Fall 2012. The forecasting series for Children's Medicaid and Parent/Caretaker Relative start with Fall 2014. The series for ACA Adults start with Spring 2014.



Note: There are no forecasts for Child Welfare for Spring 2012 and Fall 2012. The forecasting series for Children's Medicaid and Parent/Caretaker Relative start with Fall 2014. The series for ACA Adults start with Spring 2014.

# Aging and People with Disabilities (APD)

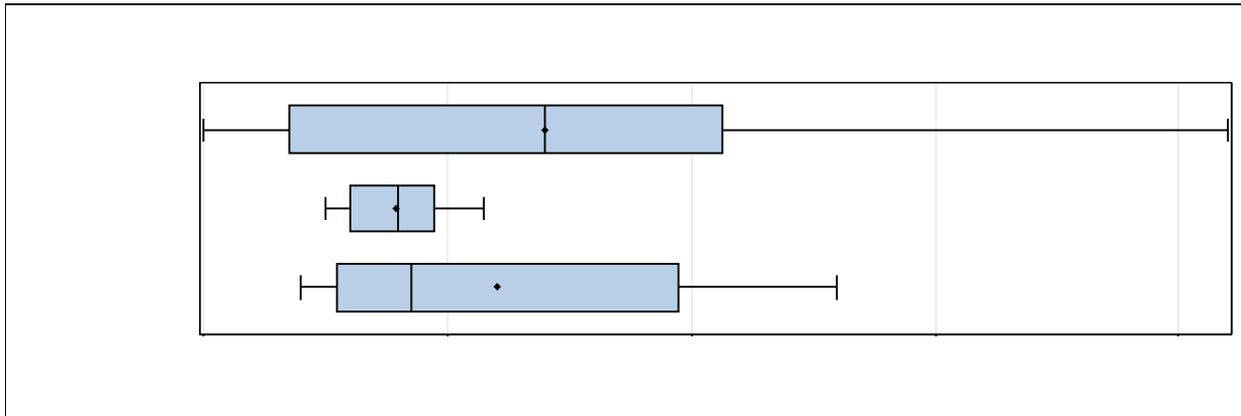
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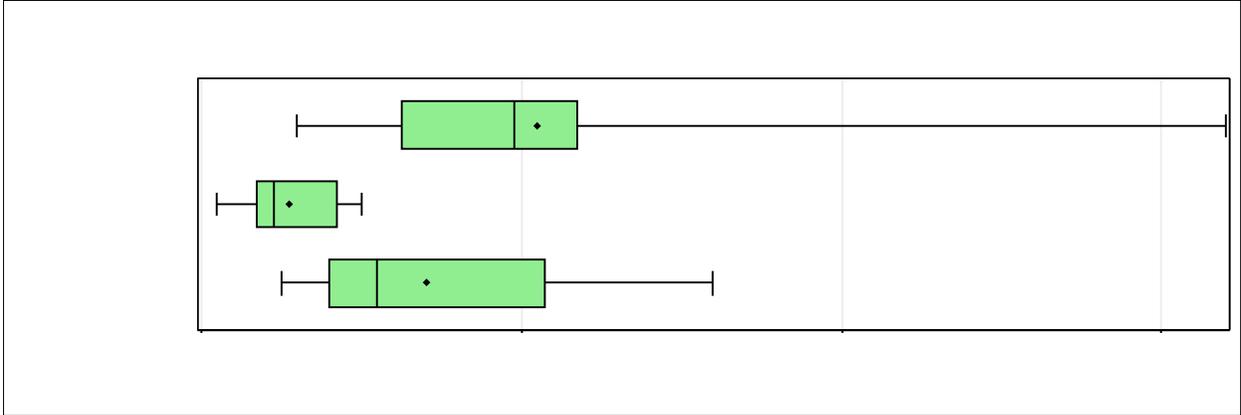
The Aging and People with Disabilities (APD) caseload forecast includes 18 Long-Term Care (LTC) service categories grouped into three broad categories: Nursing Facility Care, Community-Based Care, and In-Home Care. Within Nursing Facility Care, the largest service category is Basic Nursing Facility; for Community-Based Care the largest service categories are Assisted Living and Commercial Adult Foster Care; and for In-Home Care, the largest service category is In-Home Hourly. Due to the small caseload size for many of the individual service categories, only totals for Nursing Facility Care, Community-Based Care, and In-Home Care are included in this report.

## Forecast Quality

### Overall

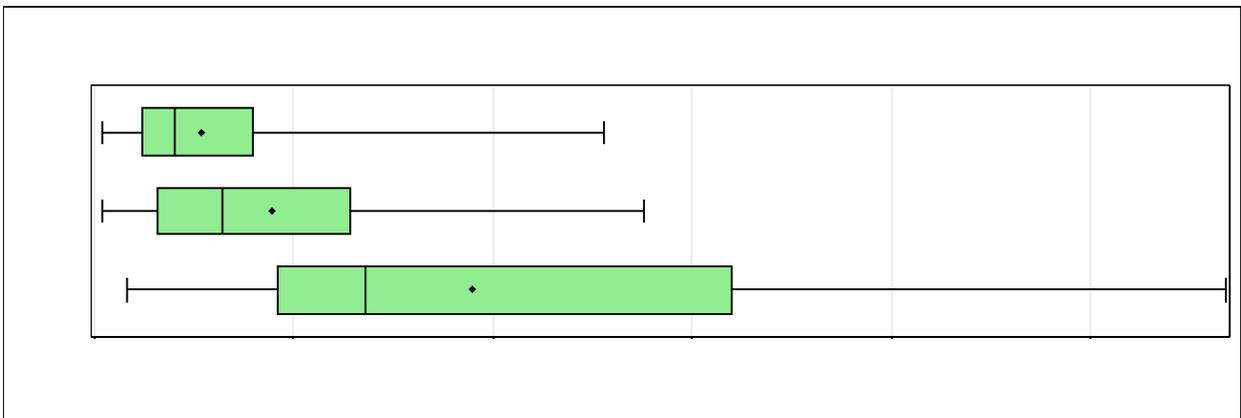
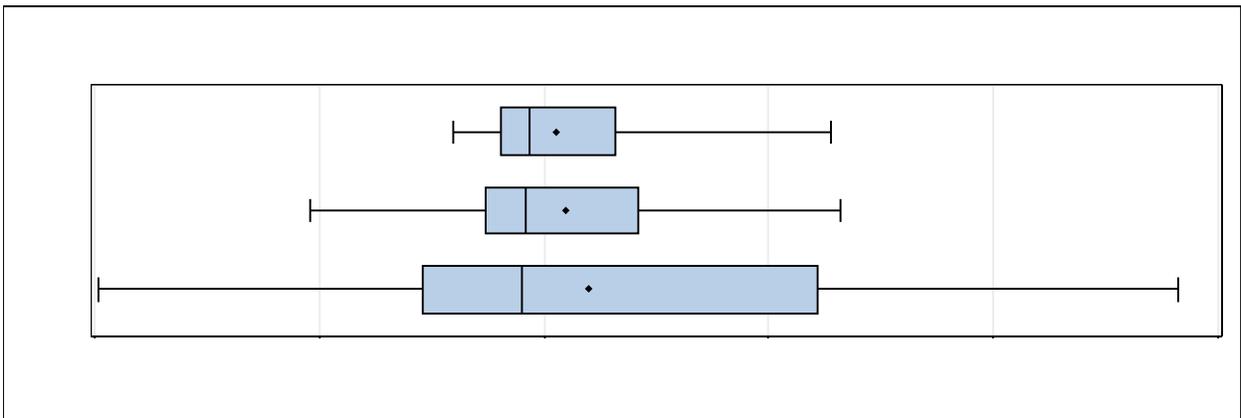
Over the course of 12 forecasts, the average 6-month forecast MPEs for Nursing Facility Care (NFC), Community-Based Care (CBC), and In-Home Care (IHC) are 0.8%, -0.4%, and 0.4% respectively (Box Plot 1.1). The accuracy of 6-month forecasts is highest for CBC with its average MAPE at 0.5%, followed by IHC with an average of 1.4%, and NFC at 2.1% (Box Plot 1.2).





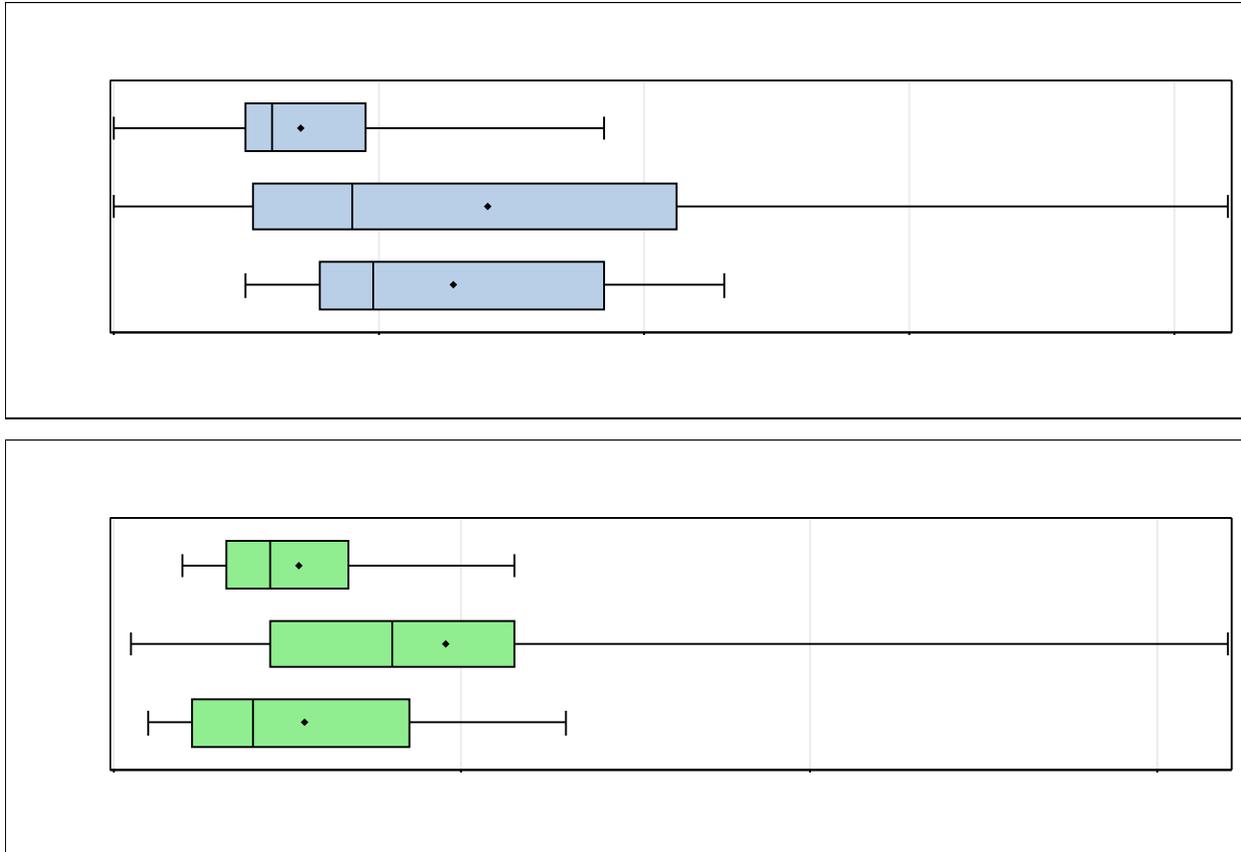
### Elapsed Time since Forecast was Issued

As expected, forecast quality is lower in the long term. Higher error variation is observed for both quality measures (MPE and MAPE) as prediction time period increases from 6 to 12 months and from 12 to 24 months (Box Plots 1.3 and 1.4).



### Quality of Different Forecast Cycles

2013-14 cycle quality was impacted from the exclusion of Hospice caseloads from the Nursing Facility Care forecast in Fall 2013. Additionally, implementation of K Plan<sup>1</sup> and policy changes targeted to increase the attractiveness of In-Home Care relative to more expensive forms of care also had an impact during that time. Quality of forecasts for 2015-16 cycle has improved but there are still some data settlement impacts from 2013 changes.



More detailed information for each individual APD program can be found in Appendix A1-A3.

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<sup>1</sup> K-Plan was implemented in late 2013 and it changed the eligibility requirements for Long Term Care. Before clients had to meet four criteria: 1) be assessed as needing help with activities of daily living, 2) be over 65 or have an official determination of disability, 3) have income below 300% of SSI (roughly 225% FPL), and 4) have very limited assets. Under K-plan, clients only need to meet two criteria: 1) be assessed as needing help with activities of daily living and 2) be eligible for a Medical Assistance Program (Medicaid).

# Child Welfare (CW)

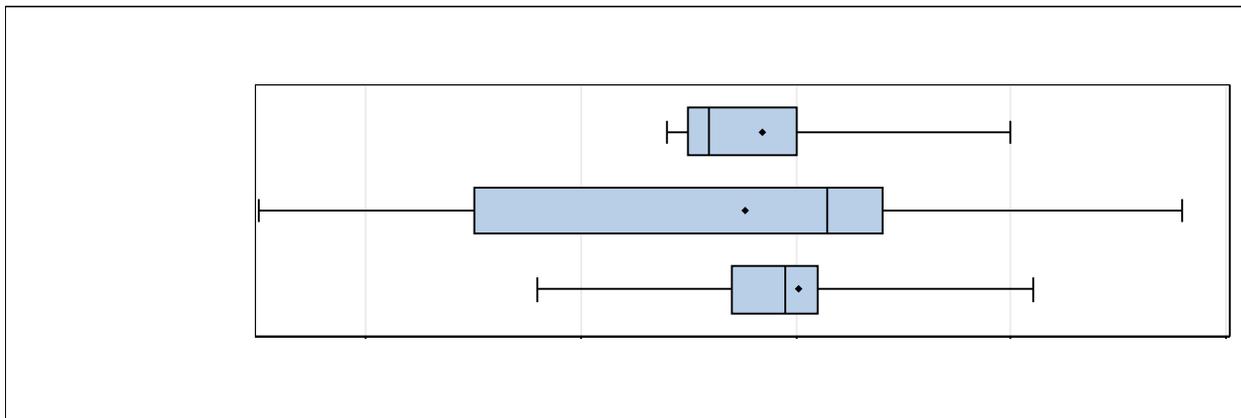
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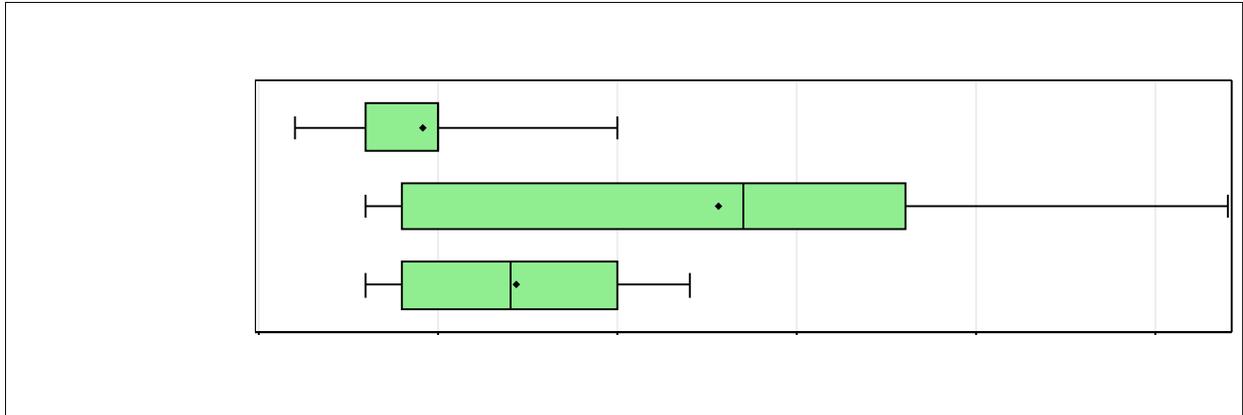
The Child Welfare caseload forecast includes 4 service categories: Adoption Assistance, Guardianship Assistance, Foster Care, and Child In-Home. DHS implemented a new Child Welfare computer system (OR-KIDS) in August 2011. The Spring 2013 forecast is the first edition based on OR-KIDS data. No forecasts were done in Spring 2012 and Fall 2012 due to data problems caused by the system conversion. Child In-Home category is excluded from this report.

## Forecast Quality

### Overall

The overall quality of Child Welfare forecasts is very high. The average 6-month forecast MPEs for Adoption Assistance, Foster Care, and Guardianship Assistance are -0.2%, -0.2%, and -0.0% respectively (Box Plot 2.1). The accuracy of 6-month forecasts is highest for Adoption Assistance with its average MAPE at 0.5%, followed by Guardianship Assistance with an average of 0.7%, and Foster Care at 1.3% (Box Plot 2.2).

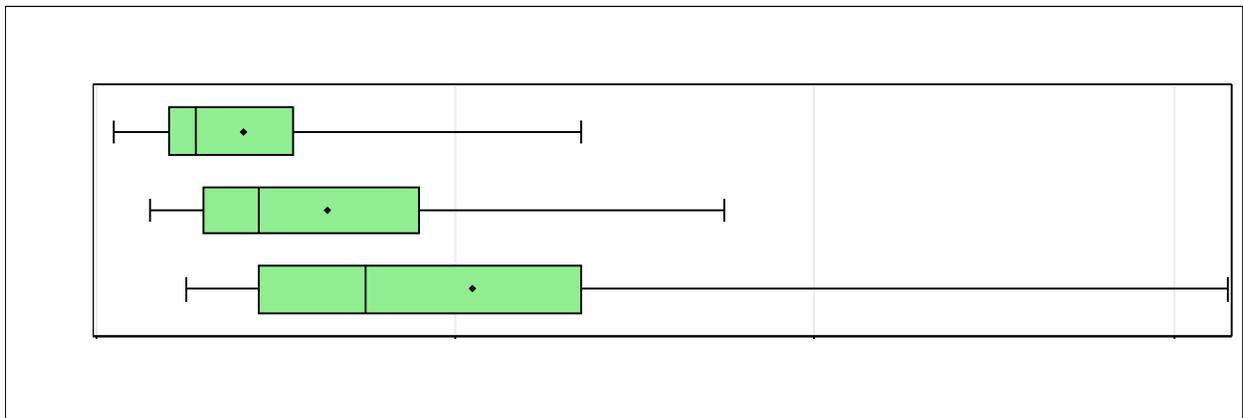
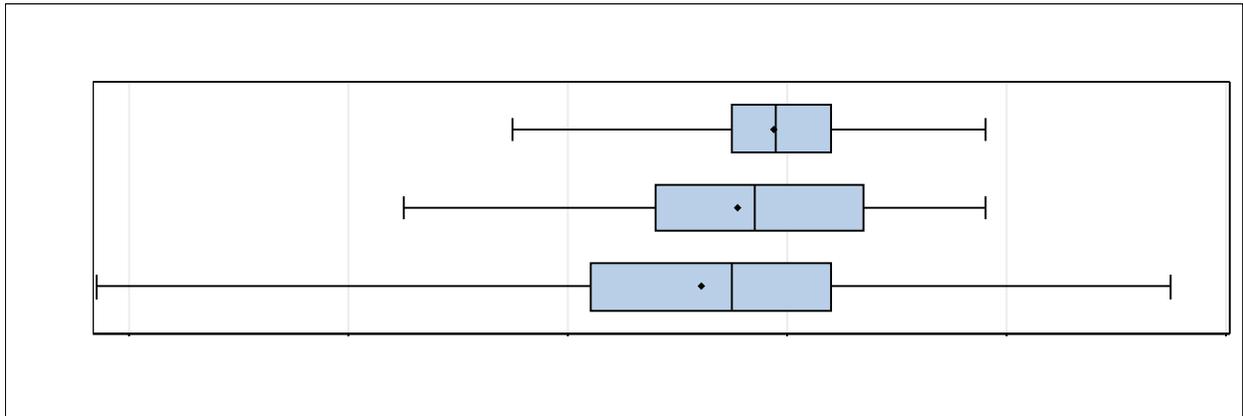




Note: There are no forecasts for Spring and Fall 2012.

### Time Elapsed since Forecast was Issued

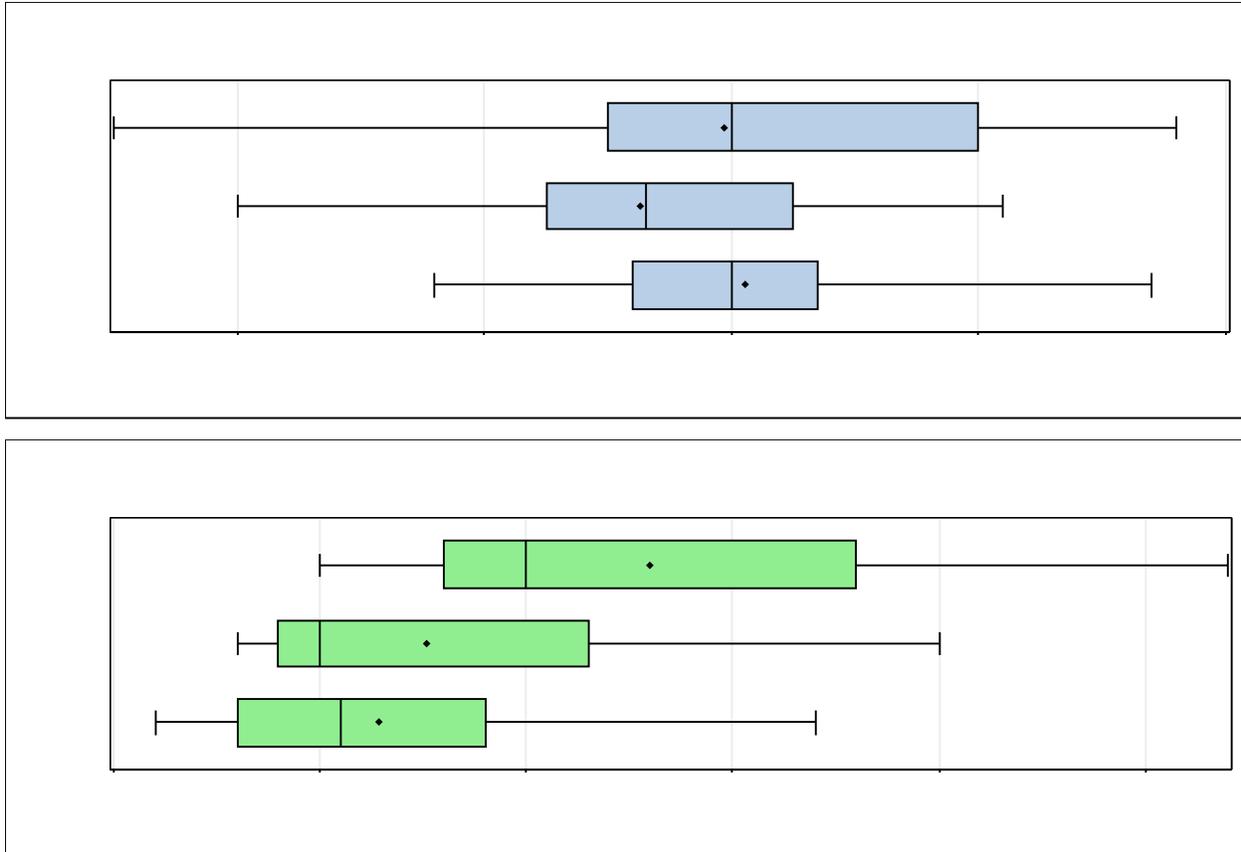
As expected, forecast quality is lower in the long term. Higher error variation is observed for both quality measures (MPE and MAPE) as prediction time period increases from 6 to 12 months and from 12 to 24 months (Box Plots 2.3 and 2.4).



Note: There are no forecasts for Spring and Fall 2012.

### Quality of Different Forecast Cycles

The quality of 6-month forecasts has improved over time (Box Plots 2.5 and 2.6).



Note: There are no forecasts for Spring and Fall 2012.

The individual forecast error reports for Adoption Assistance and Foster Care programs can be found in Appendix B1-B2.

# Intellectual/Developmental Disabilities (I/DD)

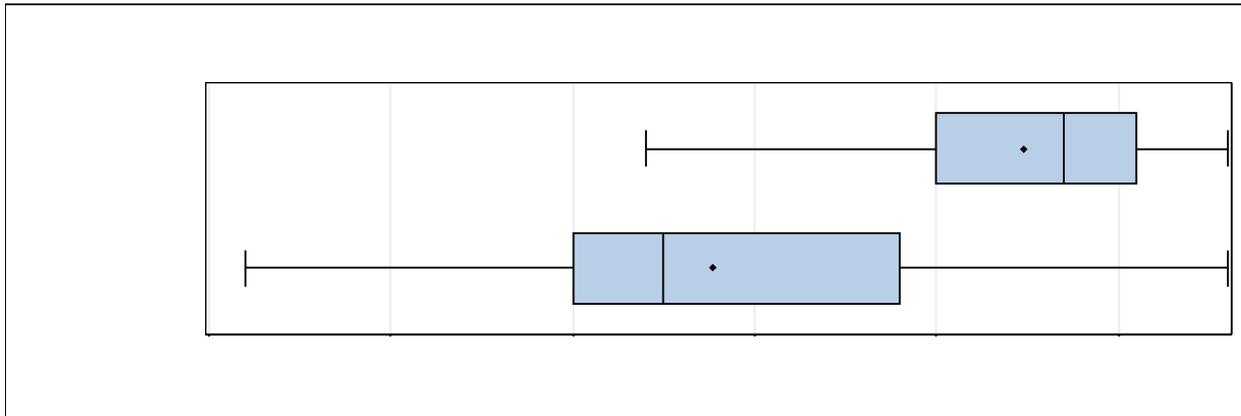
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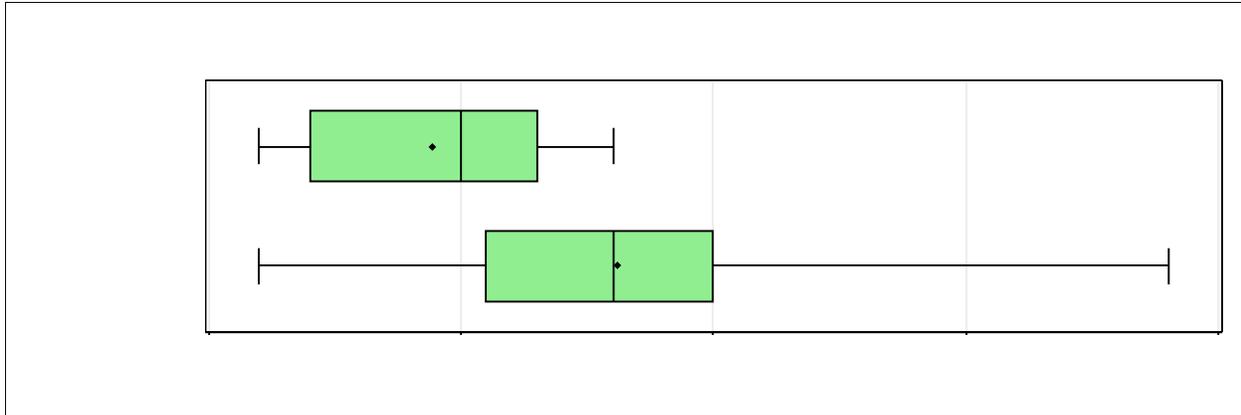
The Intellectual/Developmental Disabilities (I/DD) caseload forecast includes Case Management (delivered to all individuals with intellectual or developmental disabilities) and 14 service categories that fall into three broad groups: adult services, child services, and other services. Most of the service categories are quite small, so only the Case Management and Adult Brokerage categories met the size criteria for inclusion in this report.

## Forecast Quality

### Overall

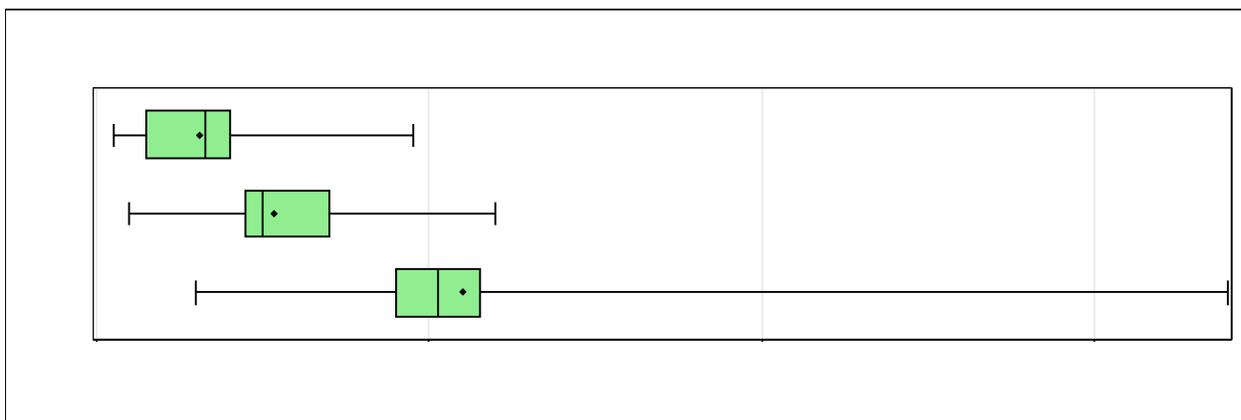
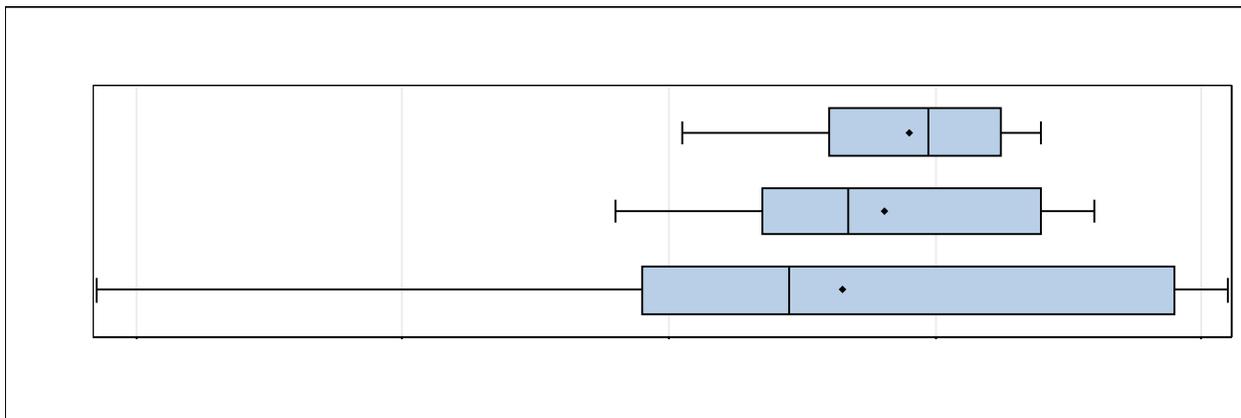
The overall quality of I/DD forecasts is high. The forecasts are unbiased: 6-month average MPEs for Case Management and Adult Brokerage are 0.3% and -0.6% respectively (Box Plot 3.1). They are also very accurate: average 6-month MAPEs for Case Management and Adult Brokerage are 0.4% and 0.8% respectively; all of the 6-month MAPEs are below 2% (Box Plot 3.2).





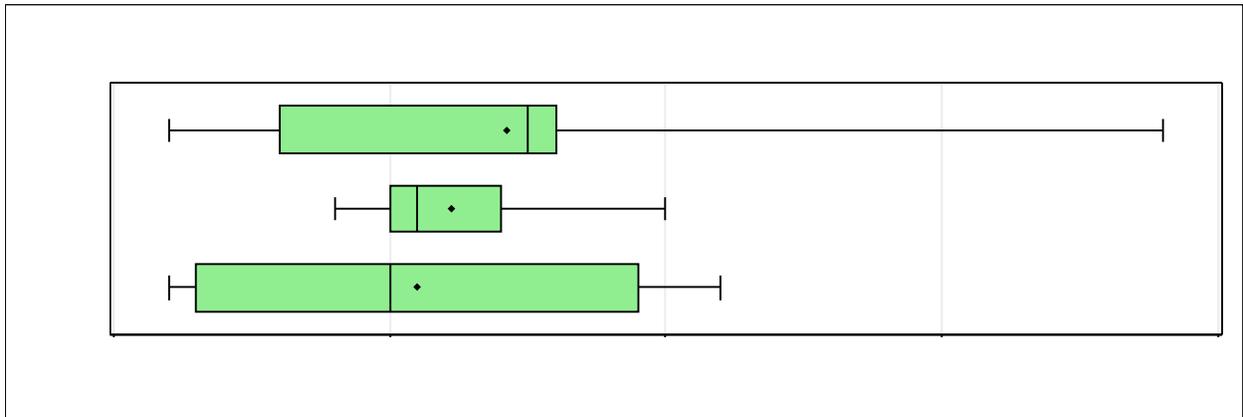
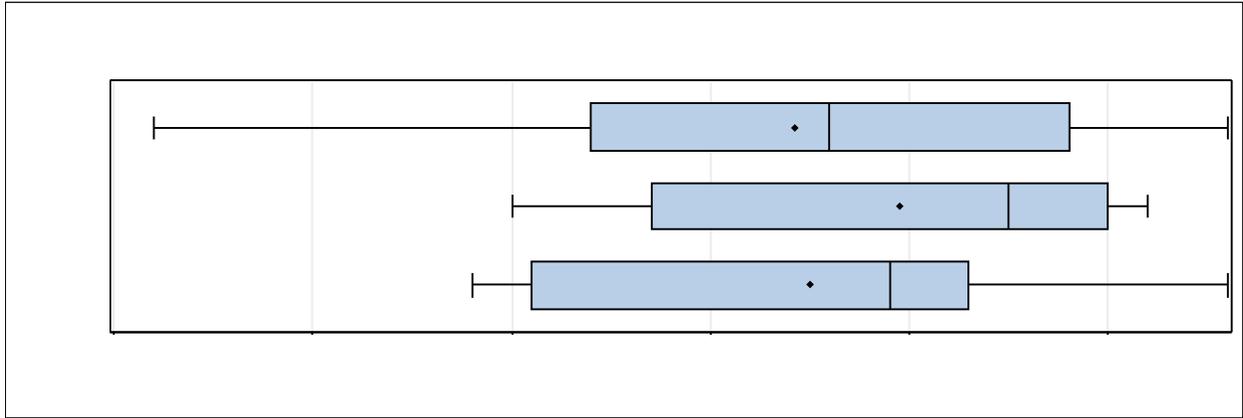
### Time Elapsed since Forecast was Issued

Forecast quality is less accurate in the long term. Higher error variation is observed for both quality measures (MPE and MAPE) as prediction time period increases from 6 to 12 months and from 12 to 24 months (Box Plots 3.3 and 3.4). Long term forecasts are biased towards being over-forecast (the actuals are lower than the forecast). The 12-month forecasts are still relatively high quality, with all errors under 3% and small negative bias. The 24-month forecasts are less accurate and have greater negative bias.



### Quality of Different Forecast Cycles

The quality of 6-month forecasts is good for all forecasting cycles, with errors not exceeding 2% (Box Plots 3.5 and 3.6).



The individual forecast error reports for Case Management and Adult Brokerage programs can be found in Appendix C1-C2.

# Health Systems - Medicaid (HSM)

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Health Systems - Medicaid (HSM) caseloads fall into two broad groups: OHP Plus and Other. OHP Plus includes the following eight categories: ACA Adults, Parent/Caretaker Relative (PCR), Pregnant Women, Children's Medicaid, Children's Health Insurance Program (CHIP), Aid to the Blind and Aid to the Disabled (ABAD), Old Age Assistance (OAA), and Foster/Substitute Care and Adoption Assistance (FSCAA). Other contains three categories: Qualified Medicare Beneficiaries (QMB), Citizen/Alien-Waived Emergent Medical (CAWEM), and the Breast and Cervical Cancer Program. The Breast and Cervical Cancer program is too small for inclusion in this report. The forecasting series for Children's Medicaid and Parent/Caretaker Relative start with Fall 2014. The series for ACA Adults start with Spring 2014.

## Forecast Quality

### Overall

The overall quality of HSM forecasts has been impacted by two major factors:

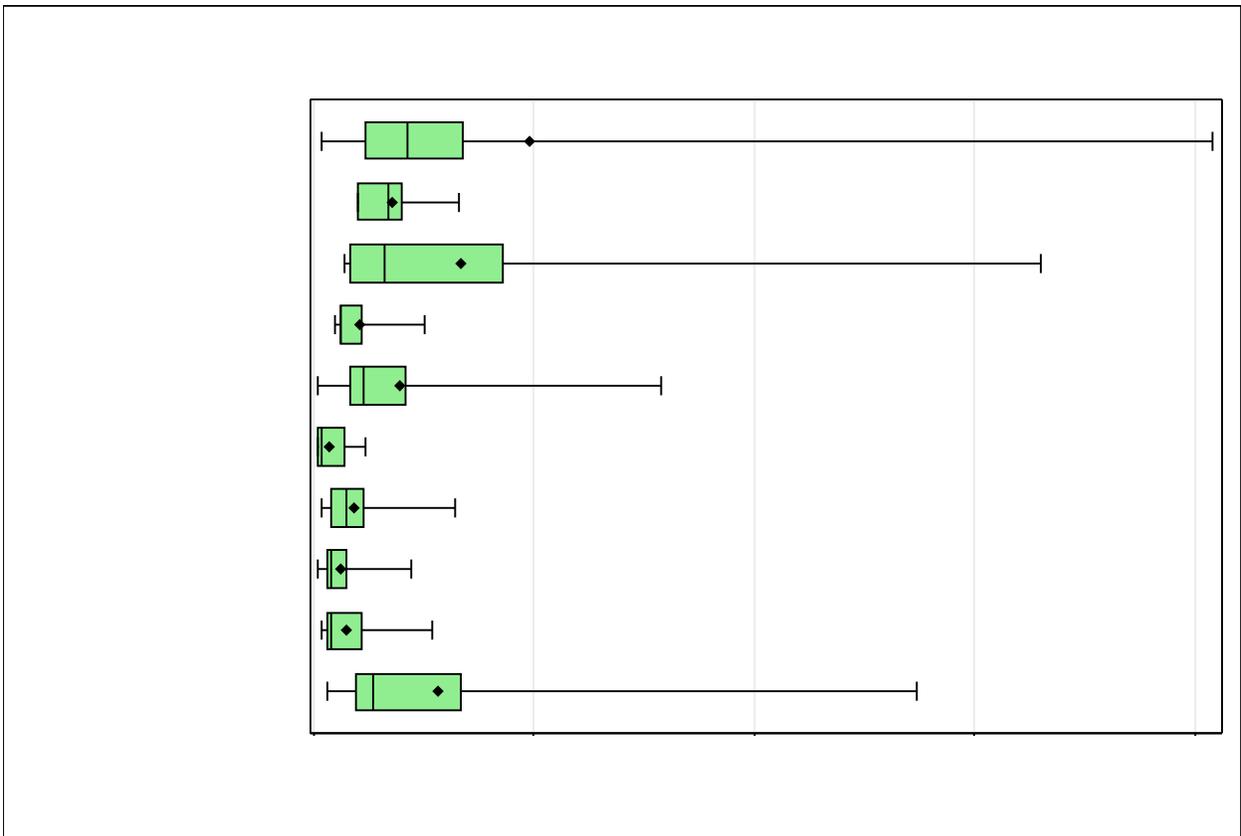
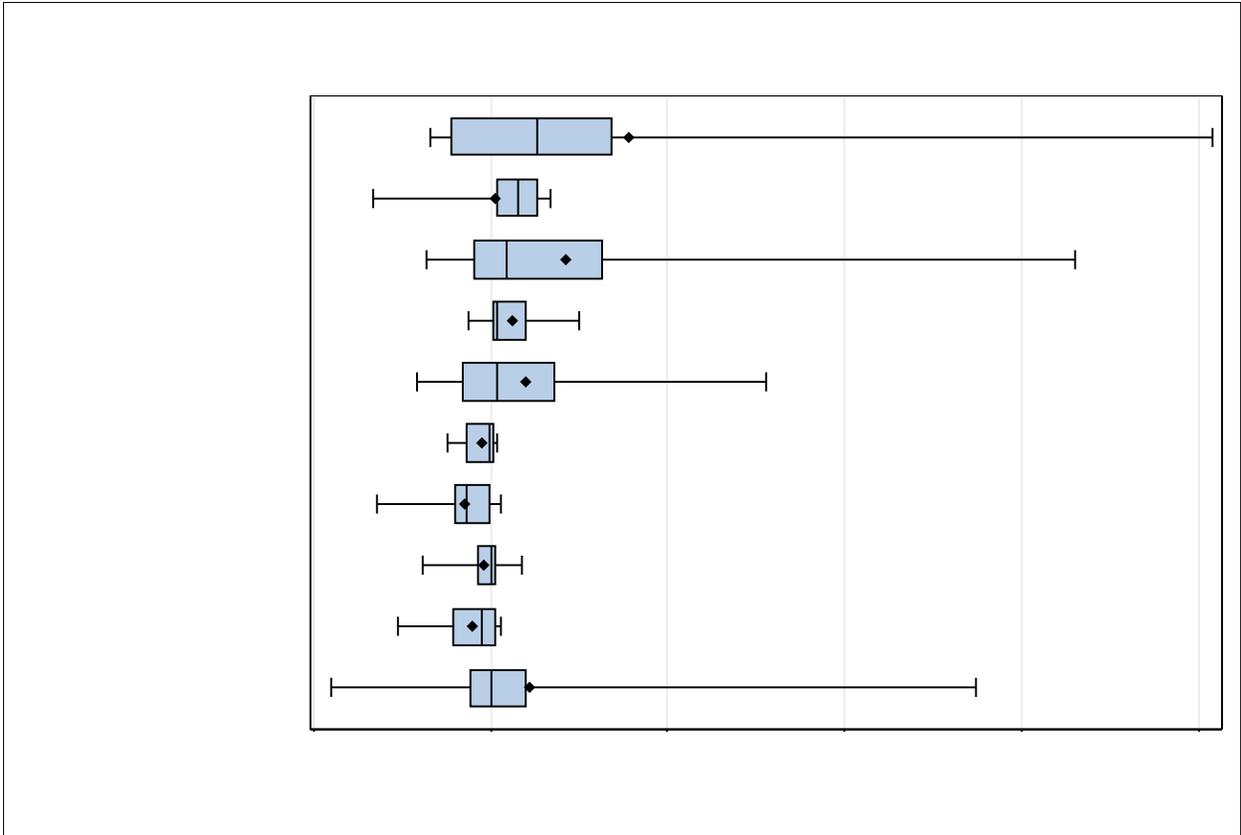
- The implementation of the Affordable Care Act (ACA)<sup>2</sup> reform in January 2014
- Centers for Medicare & Medicaid Services (CMS) approved waivers to delay redeterminations in 2013-15.

The delay in redeterminations resulted in caseload accumulation and higher than expected actuals. In 2016 the redeterminations were resumed and caseloads are back to more predictable patterns.

Over the course of 12 forecasts, the average 6-month forecast MPEs are: 3.9% for ACA Adults, 0.1% for PCR, 2.1% for Pregnant Women, 0.6% for Children's Medicaid, 1.0% for CHIP, -0.3% for ABAD, -0.7% for OAA, -0.2% for FSCAA, -0.5% for QMB, and 1.1% for CAWEM (Box Plot 4.1). The average 6-month forecast MAPEs are: 4.9% for ACA Adults, 1.8% for PCR, 3.3% for Pregnant Women, 1.1% for Children's Medicaid, 2.0% for CHIP, 0.4% for ABAD, 0.9% for OAA, 0.6% for FSCAA, 0.7% for QMB, and 2.8% for CAWEM (Box Plot 4.2).

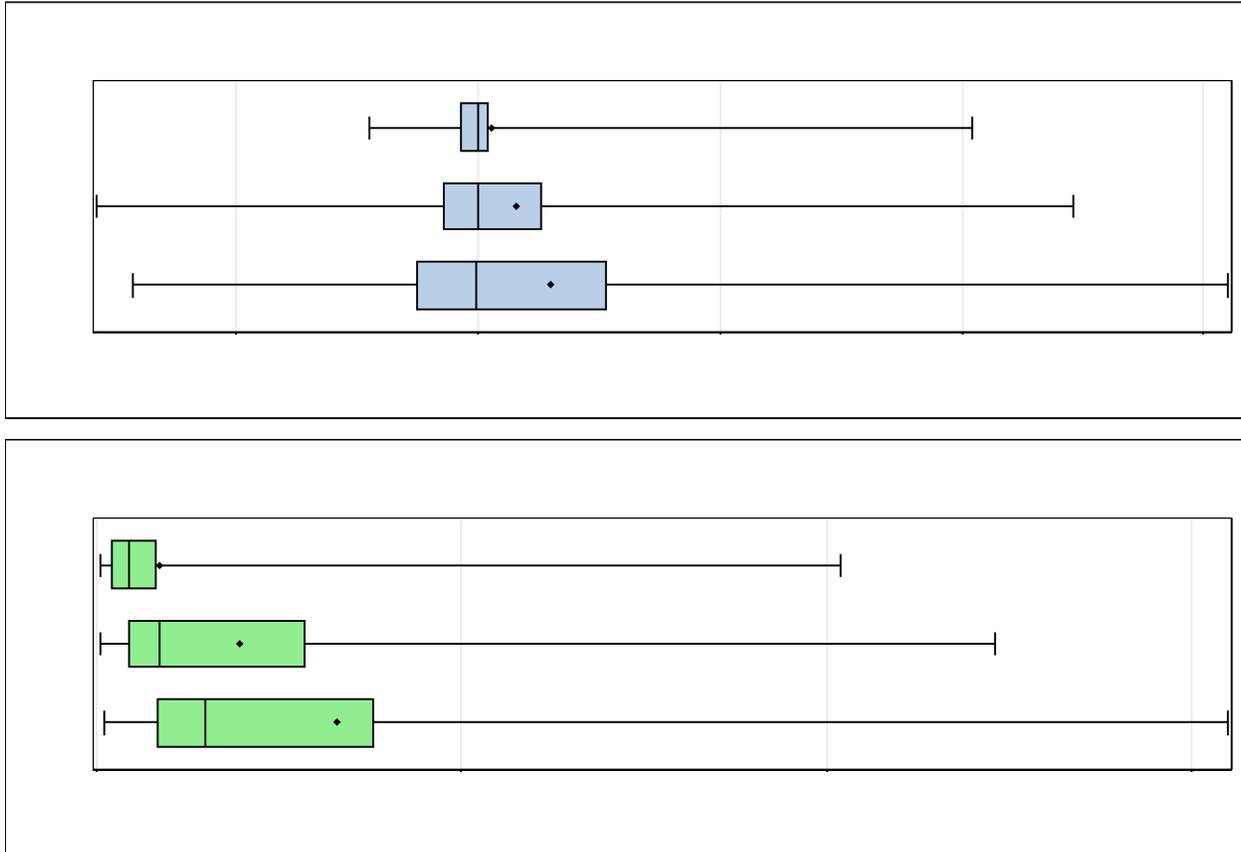
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<sup>2</sup> Under ACA reform the Medicaid eligibility expanded to adults with family incomes under 138% FPL. Previously, in Oregon, adults under 100% FPL qualified for medical coverage under a STANDARD program, but not everyone who met the criteria got coverage – lottery determined who received the coverage from the reservation list. ACA reform also expanded the eligibility for CAWEM program (this program provides emergent medical coverage to clients who meet the income eligibility for Medicaid coverage but don't have the required residency/citizenship status).



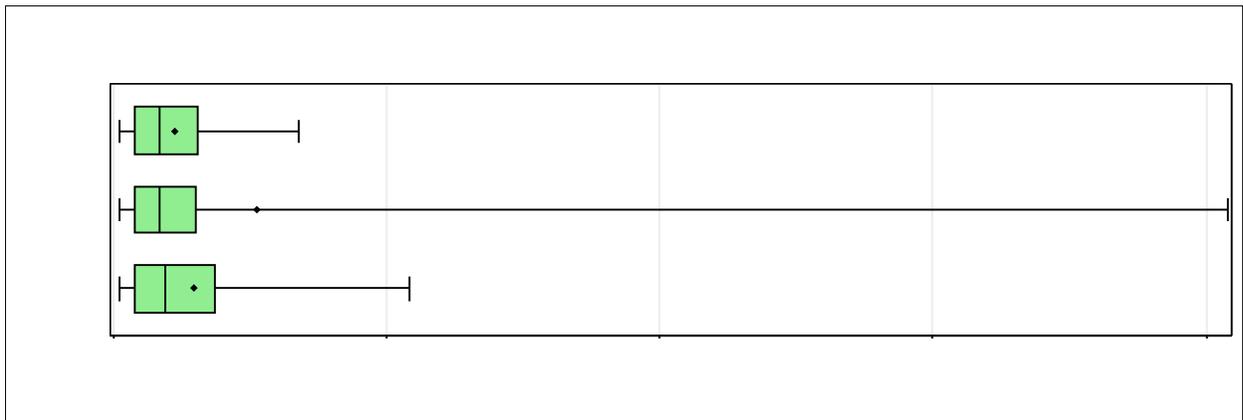
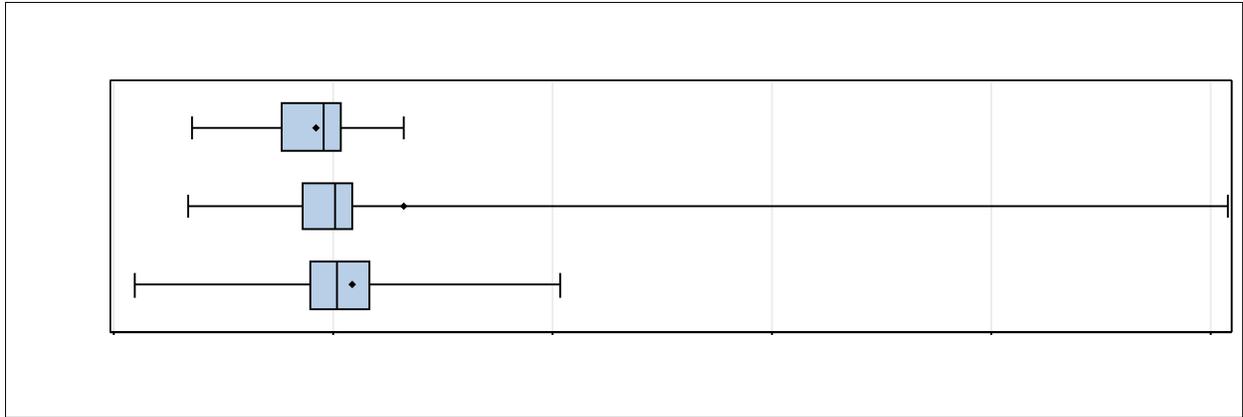
### Time Elapsed since Forecast was Issued

As expected, 12-month and 24-month forecasts are less accurate. Higher error variation is observed for both quality measures (MPE and MAPE) as the prediction time increases (Box Plots 4.3 and 4.4).



### Quality of Different Forecast Cycles

Large errors in 2013-14 cycle compared to 2011-12 and 2015-16 cycles is due to implementation of Affordable Care Act in Jan of 2014 (Box Plots 4.5 and 4.6).



The individual forecast error reports for HSM programs can be found in Appendix D1-D10.

# Self Sufficiency Programs (SSP)

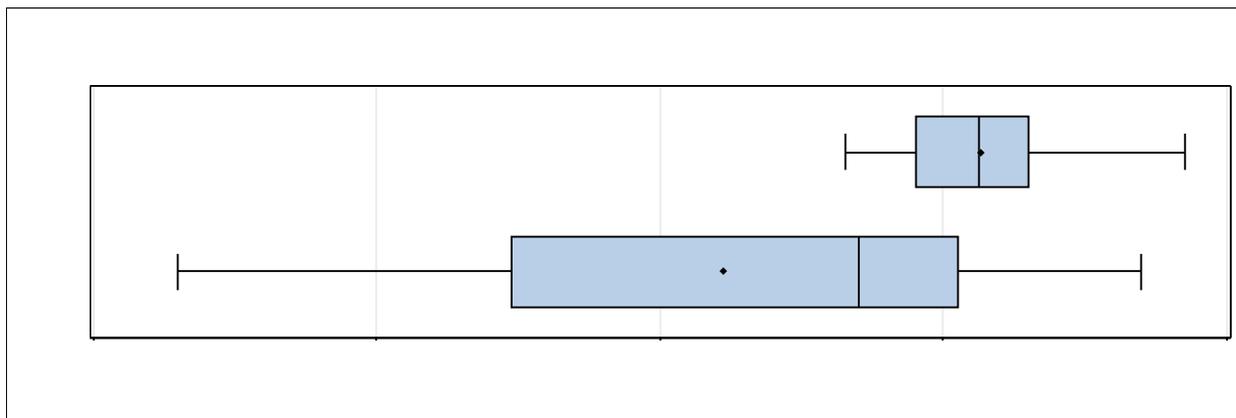
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The Self-Sufficiency (SSP) caseload forecast covers five program areas: Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF), Employment Related Daycare (ERDC), Temporary Assistance for Domestic Violence Survivors (TADVS), and Pre-SSI. Only SNAP and TANF met all of the selection criteria and are included in the report. The ERDC program has a caseload ceiling and is currently not forecast and the TADVS and Pre-SSI programs are too small. Self-Sufficiency caseloads are measured by both number of clients and number of cases. For SNAP a case means a household; for TANF a case means a family.

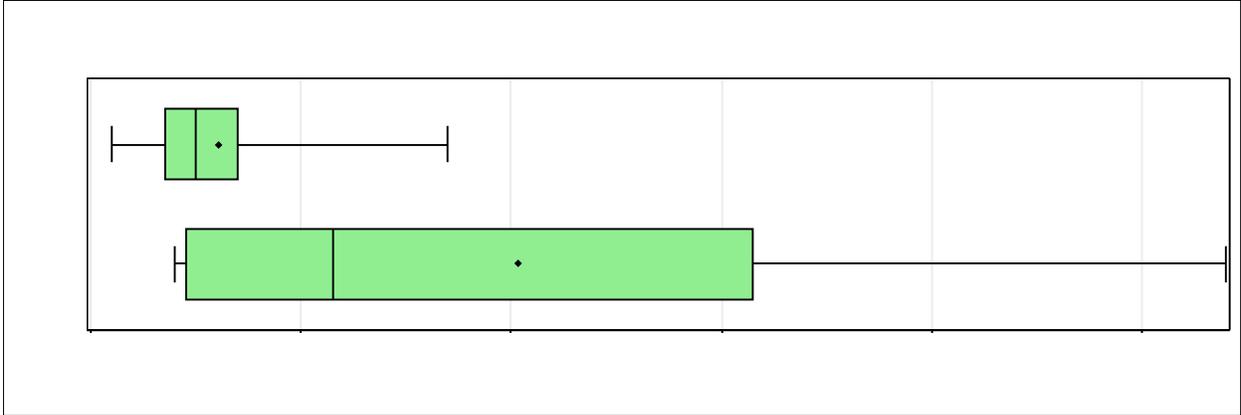
## Forecast Quality

### Overall

Over the course of 12 forecasts, the average 6-month forecast MPEs for SNAP and TANF are 0.3% and -1.5% respectively (Box Plot 5.1). The accuracy of 6-month forecasts has been really good for SNAP, with average MAPE of 0.6%. The accuracy of 6-month TANF forecasts has been impacted by anticipated policy changes relating to TANF Reinvestment<sup>3</sup> that did not materialize. The average MAPE for TANF is 2.0% (Box Plot 5.2).

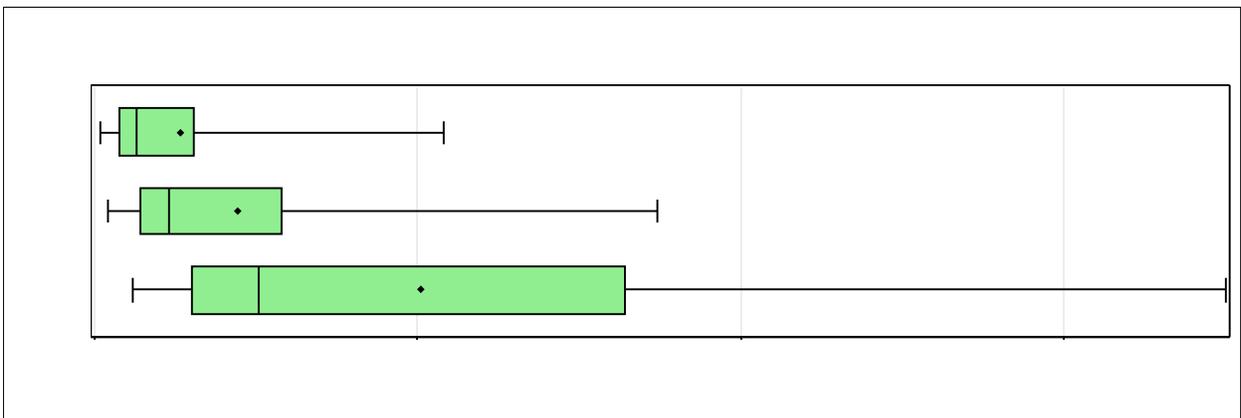
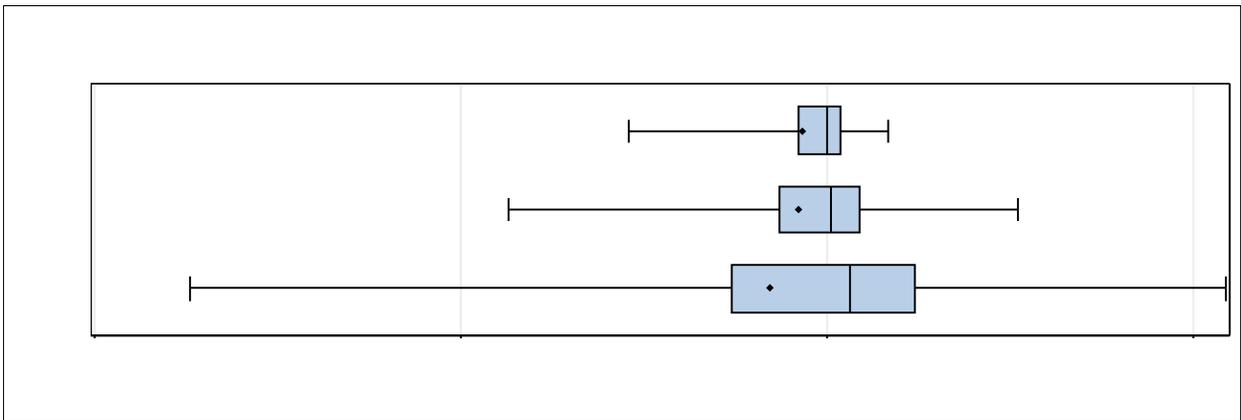


<sup>3</sup> The 2015 Legislature passed House Bill 3535 and House Bill 5026 and taken together, these two acts provide the statutory authority and funding to modify TANF in order to provide better opportunities for families to successfully transition out of the program. This set of policy changes are commonly called “TANF Reinvestment.” These reforms began in May 2016. The elements of TANF Reinvestment that were expected to impact caseloads included: an increase in the income limit for existing TANF households, expanding the definition of a caretaker relative, the elimination of deprivation as an eligibility requirement, and the creation of a post-TANF Employment Payment (TANF-EP) which provides a cash payment for three months to TANF households exiting TANF due to employment.



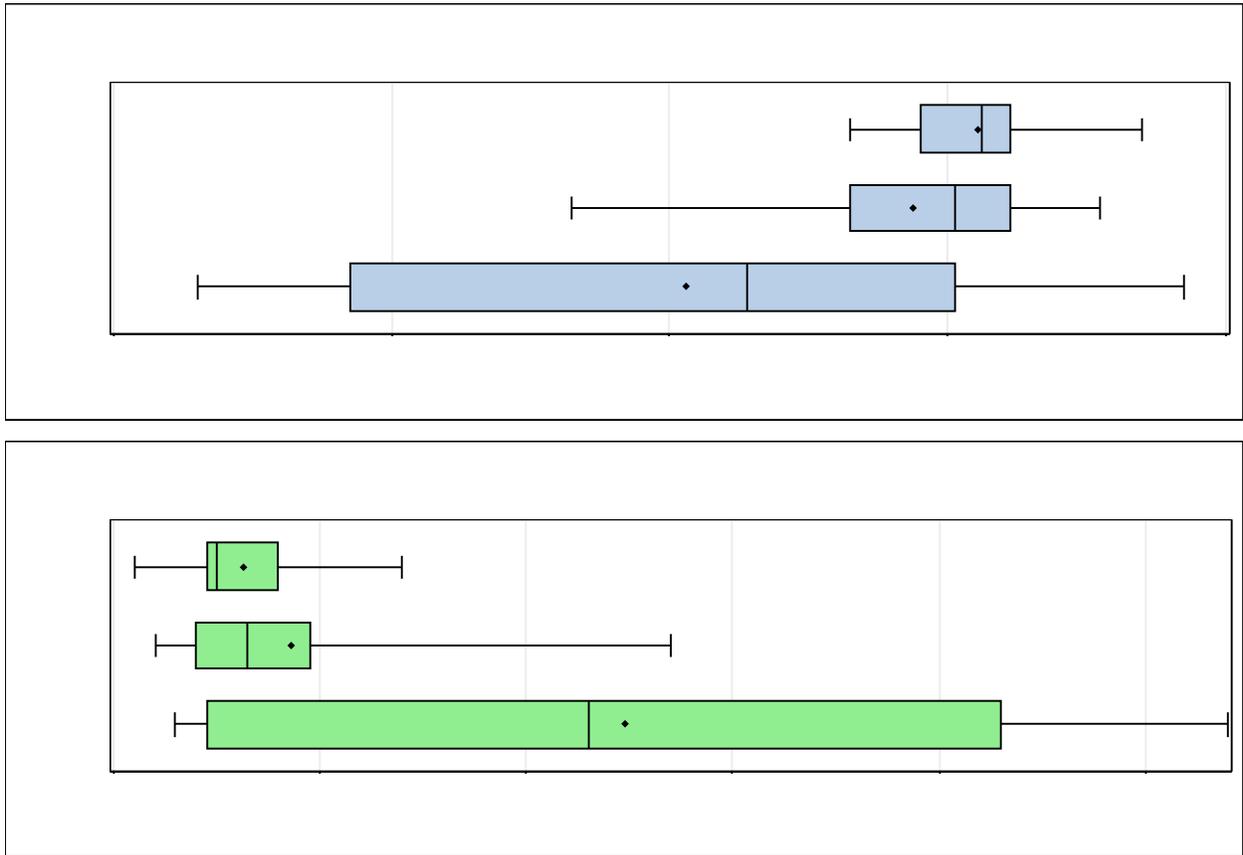
### Elapsed Time since Forecast was Issued

As expected 12 and 24-month forecasts are less accurate than 6-month forecasts. Higher error variation is observed for both quality measures, MPE and MAPE, as prediction time increases (Box Plots 5.3 and 5.4). The average MPEs for 6, 12, and 24-month forecasts are -0.6%, -0.7%, and -1.6% respectively and the average MAPEs for 6, 12, and 24-month forecasts are 1.3%, 2.2%, and 5.0% respectively.



### Quality of Different Forecast Cycles

The forecast quality has declined in 2015-16 forecasting cycle. As mentioned above, this is due to TANF Reinvestment reform. The reform was expected to increase caseloads by reducing the rate of exit, however, none of the expected caseload impacts have been detected. Instead, TANF had continued to decline in the same pattern as before implementation. (Box Plots 5.5 and 5.6).



The individual forecast error reports for SNAP and TANF programs can be found in Appendix E1-E2.

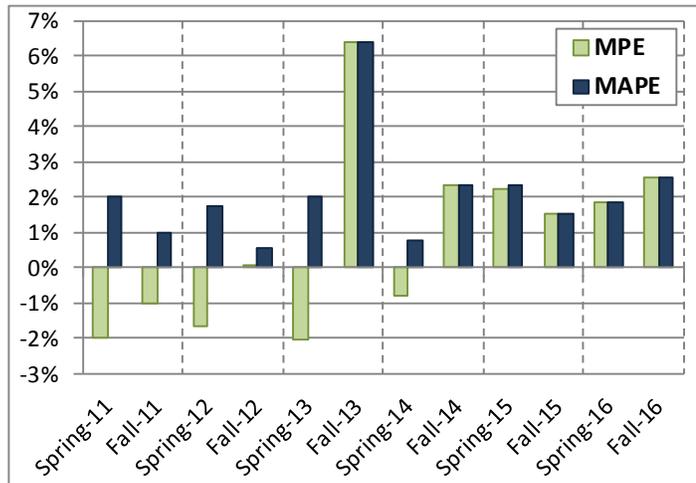
# APPENDICES

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## Appendix A1: Aging and People with Disabilities Programs, Nursing Facility Care

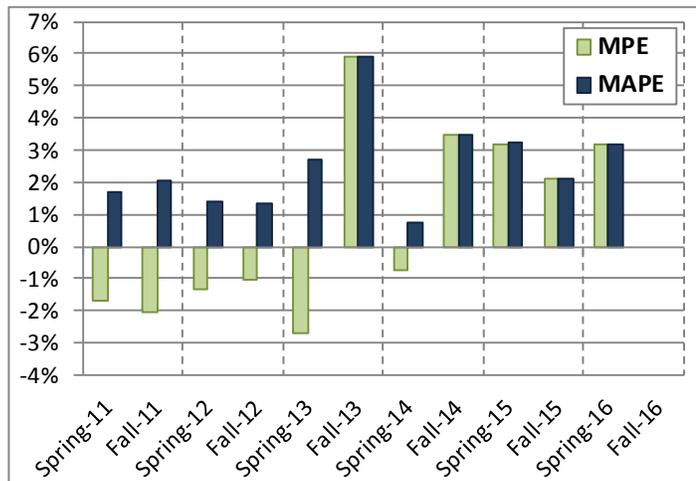
### Quality of the first 6-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	4,616	4,708	-2.0%	2.0%
Fall-11	4,553	4,598	-1.0%	1.0%
Spring-12	4,460	4,533	-1.6%	1.7%
Fall-12	4,477	4,474	0.1%	0.6%
Spring-13	4,412	4,500	-2.0%	2.0%
Fall-13	4,388	4,108	6.4%	6.4%
Spring-14	4,327	4,361	-0.8%	0.8%
Fall-14	4,269	4,170	2.3%	2.4%
Spring-15	4,287	4,191	2.2%	2.3%
Fall-15	4,303	4,237	1.5%	1.5%
Spring-16	4,297	4,217	1.9%	1.9%
Fall-16	4,348	4,237	2.6%	2.6%



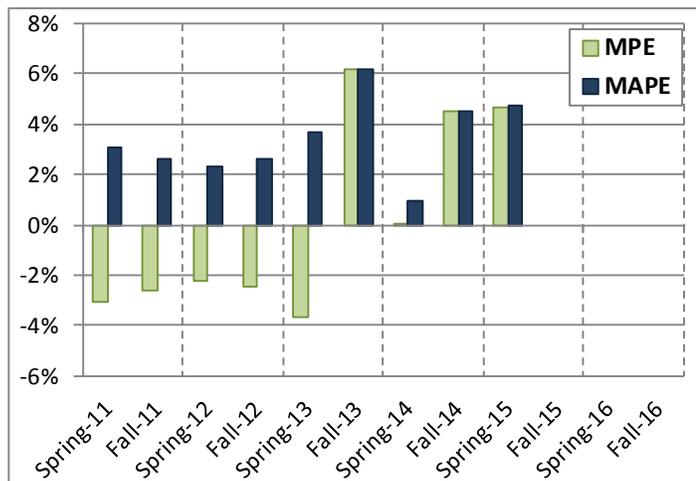
### Quality of the first 12-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	4,601	4,678	-1.7%	1.7%
Fall-11	4,497	4,587	-2.0%	2.0%
Spring-12	4,468	4,527	-1.3%	1.4%
Fall-12	4,433	4,478	-1.0%	1.4%
Spring-13	4,380	4,498	-2.7%	2.7%
Fall-13	4,341	4,084	5.9%	5.9%
Spring-14	4,298	4,331	-0.8%	0.8%
Fall-14	4,278	4,130	3.5%	3.5%
Spring-15	4,290	4,153	3.2%	3.2%
Fall-15	4,305	4,214	2.1%	2.1%
Spring-16	4,320	4,181	3.2%	3.2%
Fall-16	N/A	N/A	N/A	N/A



### Quality of the first 24-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	4,539	4,678	-3.1%	3.1%
Fall-11	4,454	4,568	-2.6%	2.6%
Spring-12	4,422	4,520	-2.2%	2.3%
Fall-12	4,382	4,486	-2.4%	2.6%
Spring-13	4,339	4,496	-3.6%	3.6%
Fall-13	4,309	4,044	6.1%	6.1%
Spring-14	4,294	4,293	0.0%	0.9%
Fall-14	4,282	4,089	4.5%	4.5%
Spring-15	4,302	4,100	4.7%	4.7%
Fall-15	N/A	N/A	N/A	N/A
Spring-16	N/A	N/A	N/A	N/A
Fall-16	N/A	N/A	N/A	N/A

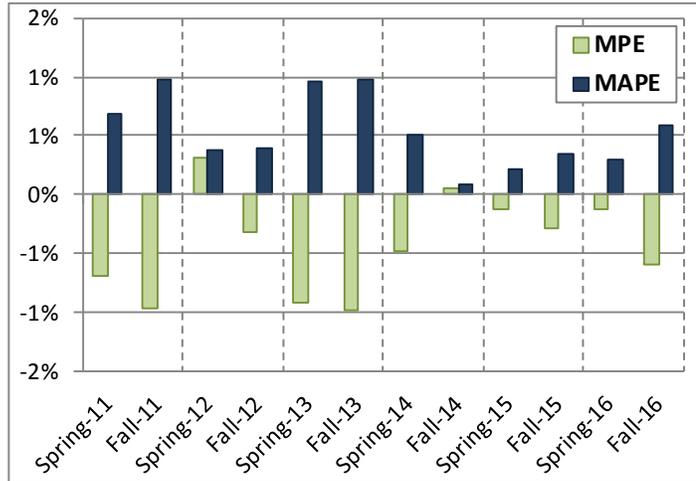


N/A – Insufficient time has elapsed since the forecast was made to be evaluated.

## Appendix A2: Aging and People with Disabilities Programs, Community Based Care

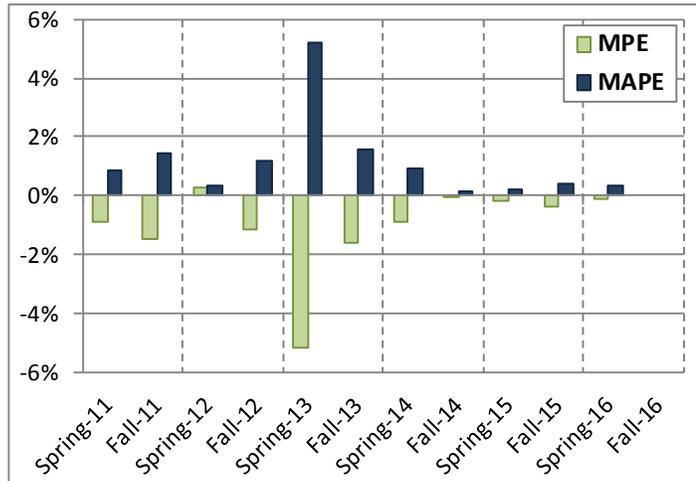
### Quality of the first 6-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	12,217	12,302	-0.7%	0.7%
Fall-11	12,446	12,566	-1.0%	1.0%
Spring-12	12,542	12,502	0.3%	0.4%
Fall-12	12,707	12,748	-0.3%	0.4%
Spring-13	12,682	12,797	-0.9%	1.0%
Fall-13	11,438	11,550	-1.0%	1.0%
Spring-14	11,451	11,506	-0.5%	0.5%
Fall-14	11,528	11,522	0.1%	0.1%
Spring-15	11,610	11,625	-0.1%	0.2%
Fall-15	11,696	11,729	-0.3%	0.4%
Spring-16	11,732	11,747	-0.1%	0.3%
Fall-16	11,845	11,915	-0.6%	0.6%



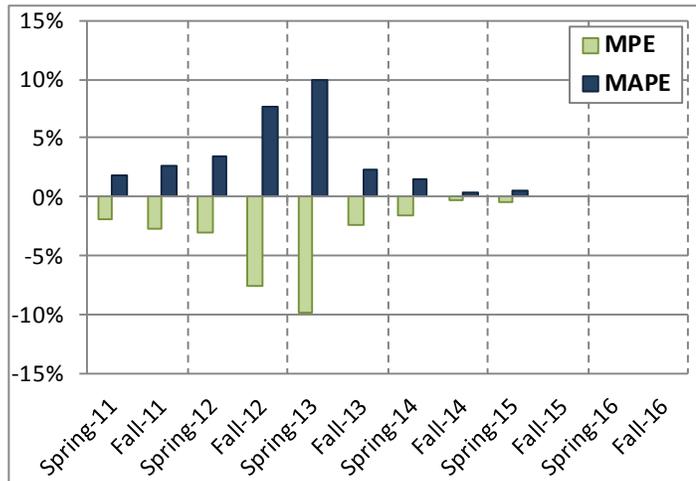
### Quality of the first 12-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	12,320	12,428	-0.9%	0.9%
Fall-11	12,513	12,696	-1.5%	1.5%
Spring-12	12,624	12,587	0.3%	0.3%
Fall-12	12,694	12,835	-1.1%	1.2%
Spring-13	12,275	12,875	-5.2%	5.2%
Fall-13	11,453	11,634	-1.6%	1.6%
Spring-14	11,490	11,591	-0.9%	0.9%
Fall-14	11,569	11,570	0.0%	0.1%
Spring-15	11,656	11,673	-0.1%	0.2%
Fall-15	11,731	11,774	-0.4%	0.4%
Spring-16	11,789	11,806	-0.1%	0.3%
Fall-16	N/A	N/A	N/A	N/A



### Quality of the first 24-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	12,445	12,678	-1.9%	1.9%
Fall-11	12,605	12,946	-2.7%	2.7%
Spring-12	12,395	12,749	-3.1%	3.4%
Fall-12	12,125	13,007	-7.6%	7.7%
Spring-13	11,882	13,022	-9.9%	9.9%
Fall-13	11,527	11,794	-2.3%	2.3%
Spring-14	11,573	11,753	-1.6%	1.6%
Fall-14	11,638	11,672	-0.3%	0.4%
Spring-15	11,717	11,774	-0.5%	0.5%
Fall-15	N/A	N/A	N/A	N/A
Spring-16	N/A	N/A	N/A	N/A
Fall-16	N/A	N/A	N/A	N/A

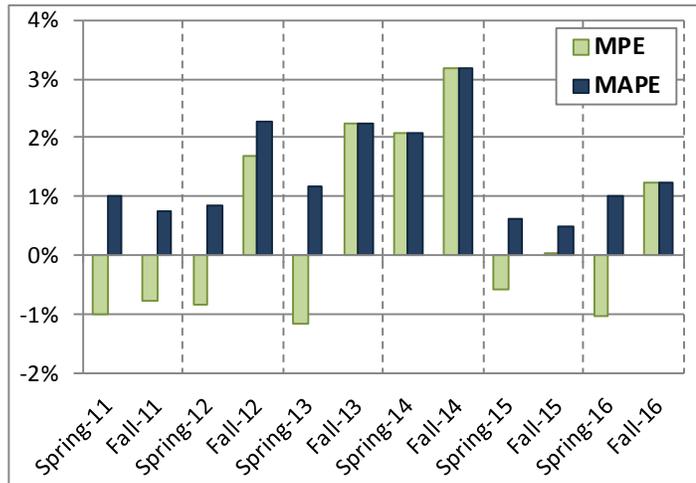


N/A – Insufficient time has elapsed since the forecast was made to be evaluated.

## Appendix A3: Aging and People with Disabilities Programs, In-Home Care

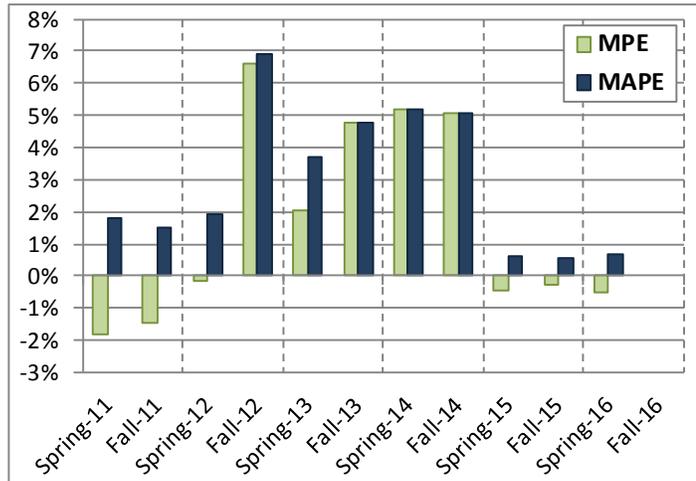
### Quality of the first 6-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	11,017	11,127	-1.0%	1.0%
Fall-11	10,906	10,988	-0.8%	0.8%
Spring-12	10,837	10,928	-0.8%	0.8%
Fall-12	11,021	10,811	1.7%	2.3%
Spring-13	12,210	12,352	-1.2%	1.2%
Fall-13	13,611	13,304	2.2%	2.2%
Spring-14	14,087	13,788	2.1%	2.1%
Fall-14	15,169	14,682	3.2%	3.2%
Spring-15	16,052	16,142	-0.6%	0.6%
Fall-15	17,180	17,174	0.0%	0.5%
Spring-16	17,628	17,807	-1.0%	1.0%
Fall-16	18,283	18,060	1.2%	1.2%



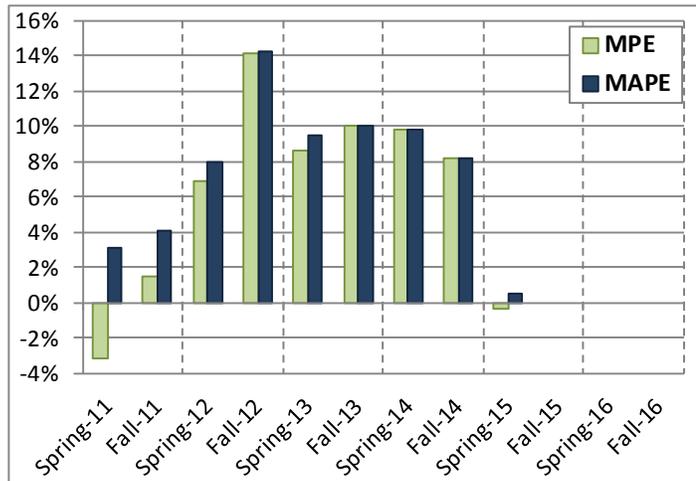
### Quality of the first 12-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	10,970	11,167	-1.8%	1.8%
Fall-11	10,869	11,030	-1.5%	1.5%
Spring-12	10,929	10,935	-0.2%	1.9%
Fall-12	11,610	10,803	6.6%	6.9%
Spring-13	12,645	12,359	2.0%	3.7%
Fall-13	14,014	13,335	4.8%	4.8%
Spring-14	14,628	13,850	5.2%	5.2%
Fall-14	15,610	14,807	5.1%	5.1%
Spring-15	16,466	16,537	-0.4%	0.6%
Fall-15	17,460	17,512	-0.3%	0.6%
Spring-16	18,006	18,092	-0.5%	0.7%
Fall-16	N/A	N/A	N/A	N/A



### Quality of the first 24-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	10,902	11,241	-3.1%	3.1%
Fall-11	11,296	11,098	1.5%	4.1%
Spring-12	11,851	10,945	6.9%	8.0%
Fall-12	12,702	10,798	14.1%	14.2%
Spring-13	13,637	12,371	8.6%	9.4%
Fall-13	14,962	13,394	10.1%	10.1%
Spring-14	15,547	13,962	9.8%	9.8%
Fall-14	16,410	15,035	8.2%	8.2%
Spring-15	17,189	17,241	-0.3%	0.6%
Fall-15	N/A	N/A	N/A	N/A
Spring-16	N/A	N/A	N/A	N/A
Fall-16	N/A	N/A	N/A	N/A

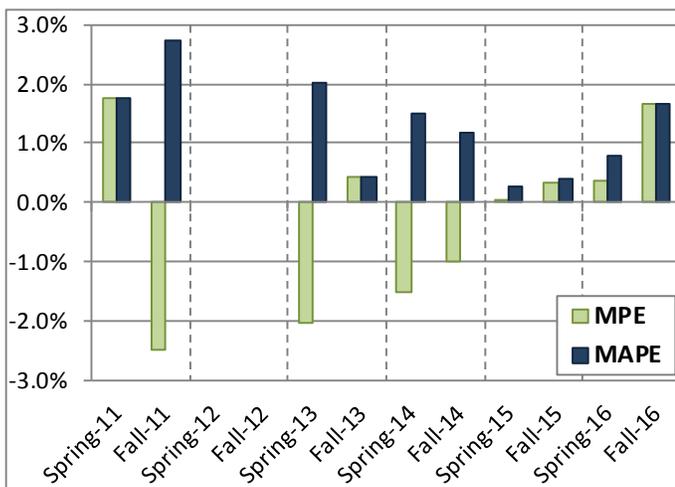


N/A – Insufficient time has elapsed since the forecast was made to be evaluated.

## Appendix B1: Child Welfare Programs, Foster Care

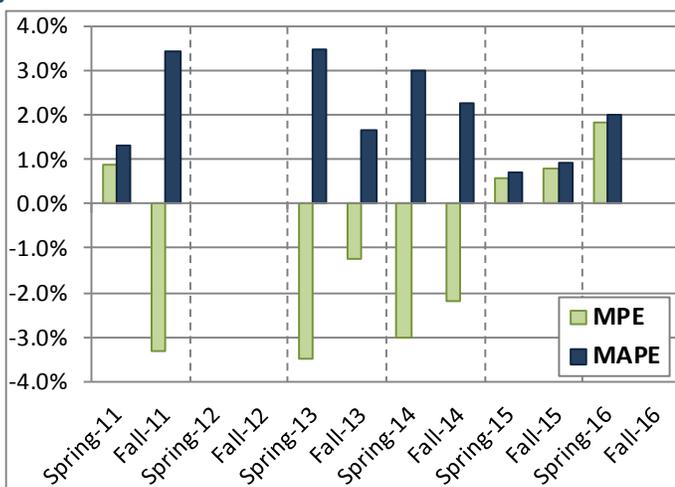
### Quality of the first 6-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	8,374	8,227	1.8%	1.8%
Fall-11	8,095	8,294	-2.5%	2.7%
Spring-12	N/F	N/F	N/F	N/F
Fall-12	N/F	N/F	N/F	N/F
Spring-13	7,773	7,929	-2.0%	2.0%
Fall-13	7,500	7,468	0.4%	0.4%
Spring-14	7,327	7,437	-1.5%	1.5%
Fall-14	7,165	7,237	-1.0%	1.2%
Spring-15	7,033	7,033	0.0%	0.3%
Fall-15	7,039	7,014	0.3%	0.4%
Spring-16	7,039	7,012	0.4%	0.8%
Fall-16	7,212	7,093	1.7%	1.7%



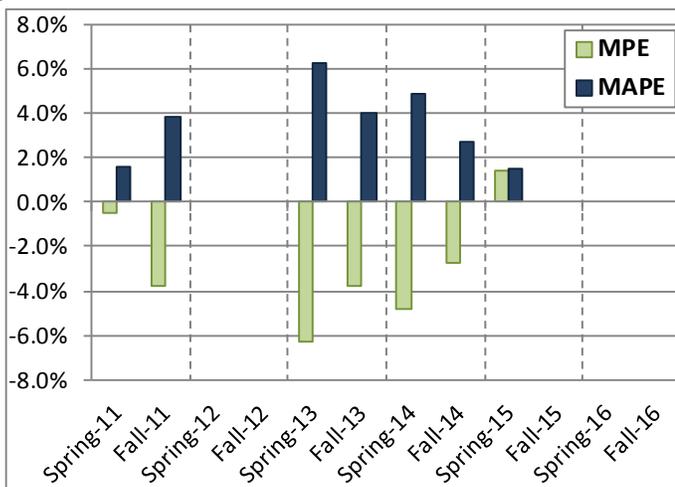
### Quality of the first 12-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	8,265	8,190	0.9%	1.3%
Fall-11	8,014	8,278	-3.3%	3.4%
Spring-12	N/F	N/F	N/F	N/F
Fall-12	N/F	N/F	N/F	N/F
Spring-13	7,652	7,916	-3.5%	3.5%
Fall-13	7,380	7,469	-1.2%	1.7%
Spring-14	7,236	7,452	-3.0%	3.0%
Fall-14	7,099	7,253	-2.2%	2.3%
Spring-15	7,039	7,000	0.6%	0.7%
Fall-15	7,052	6,995	0.8%	0.9%
Spring-16	7,126	6,995	1.8%	2.0%
Fall-16	N/A	N/A	N/A	N/A



### Quality of the first 24-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	8,114	8,148	-0.5%	1.6%
Fall-11	7,950	8,245	-3.7%	3.8%
Spring-12	N/F	N/F	N/F	N/F
Fall-12	N/F	N/F	N/F	N/F
Spring-13	7,444	7,903	-6.3%	6.3%
Fall-13	7,218	7,482	-3.7%	4.0%
Spring-14	7,133	7,474	-4.8%	4.8%
Fall-14	7,071	7,260	-2.7%	2.7%
Spring-15	7,082	6,984	1.4%	1.5%
Fall-15	N/A	N/A	N/A	N/A
Spring-16	N/A	N/A	N/A	N/A
Fall-16	N/A	N/A	N/A	N/A



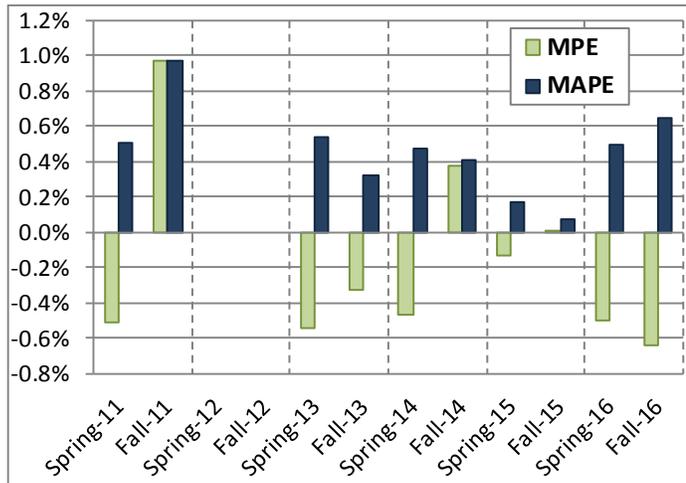
N/A – Insufficient time has elapsed since the forecast was made to be evaluated.

N/F - Forecast not available or was not done due to data issues.

## Appendix B2: Child Welfare Programs, Adoption Assistance

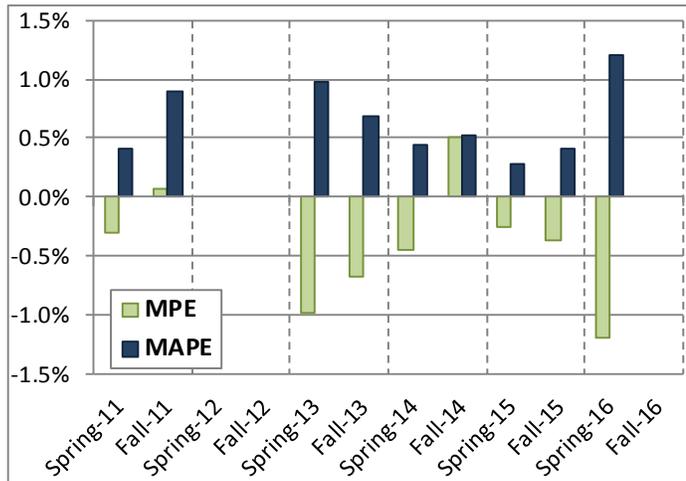
### Quality of the first 6-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	10,742	10,797	-0.5%	0.5%
Fall-11	10,921	10,815	1.0%	1.0%
Spring-12	N/F	N/F	N/F	N/F
Fall-12	N/F	N/F	N/F	N/F
Spring-13	11,035	11,094	-0.5%	0.5%
Fall-13	11,081	11,117	-0.3%	0.3%
Spring-14	11,083	11,136	-0.5%	0.5%
Fall-14	11,136	11,094	0.4%	0.4%
Spring-15	11,191	11,206	-0.1%	0.2%
Fall-15	11,209	11,208	0.0%	0.1%
Spring-16	11,170	11,225	-0.5%	0.5%
Fall-16	11,037	11,108	-0.6%	0.6%



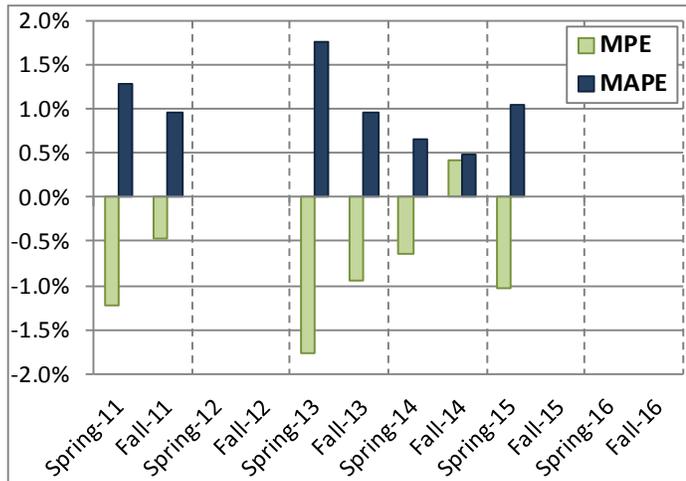
### Quality of the first 12-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	10,822	10,855	-0.3%	0.4%
Fall-11	10,893	10,884	0.1%	0.9%
Spring-12	N/F	N/F	N/F	N/F
Fall-12	N/F	N/F	N/F	N/F
Spring-13	11,052	11,160	-1.0%	1.0%
Fall-13	11,087	11,162	-0.7%	0.7%
Spring-14	11,120	11,169	-0.4%	0.4%
Fall-14	11,164	11,106	0.5%	0.5%
Spring-15	11,198	11,226	-0.3%	0.3%
Fall-15	11,180	11,221	-0.4%	0.4%
Spring-16	11,104	11,236	-1.2%	1.2%
Fall-16	N/A	N/A	N/A	N/A



### Quality of the first 24-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	10,855	10,988	-1.2%	1.3%
Fall-11	10,937	10,988	-0.5%	1.0%
Spring-12	N/F	N/F	N/F	N/F
Fall-12	N/F	N/F	N/F	N/F
Spring-13	11,086	11,281	-1.8%	1.8%
Fall-13	11,137	11,243	-0.9%	0.9%
Spring-14	11,160	11,232	-0.6%	0.6%
Fall-14	11,176	11,129	0.4%	0.5%
Spring-15	11,151	11,266	-1.0%	1.0%
Fall-15	N/A	N/A	N/A	N/A
Spring-16	N/A	N/A	N/A	N/A
Fall-16	N/A	N/A	N/A	N/A



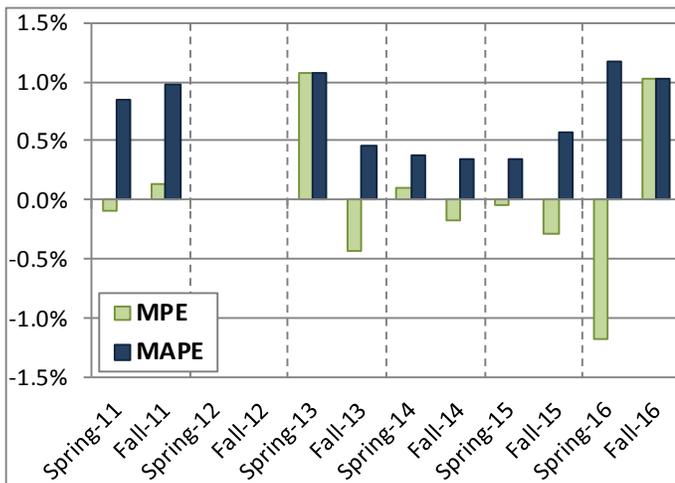
N/A – Insufficient time has elapsed since the forecast was made to be evaluated.

N/F - Forecast not available or was not done due to data issues.

### Appendix B3: Child Welfare Programs, Guardianship Assistance

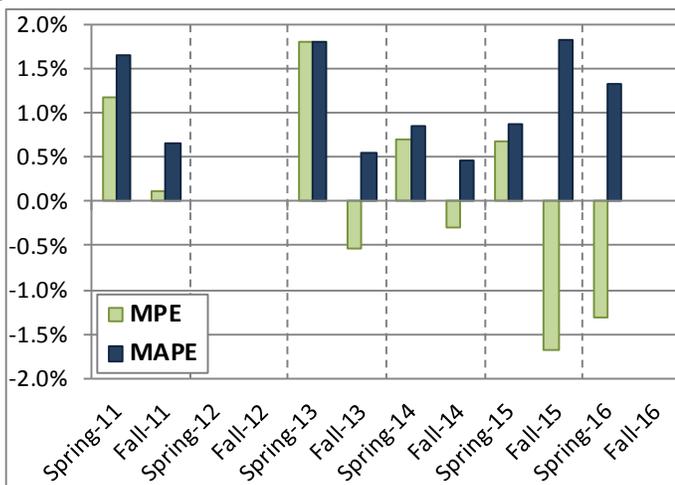
#### Quality of the first 6-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	1,049	1,050	-0.1%	0.8%
Fall-11	1,095	1,093	0.1%	1.0%
Spring-12	N/F	N/F	N/F	N/F
Fall-12	N/F	N/F	N/F	N/F
Spring-13	1,232	1,218	1.1%	1.1%
Fall-13	1,308	1,314	-0.4%	0.5%
Spring-14	1,336	1,335	0.1%	0.4%
Fall-14	1,384	1,387	-0.2%	0.3%
Spring-15	1,427	1,427	0.0%	0.3%
Fall-15	1,507	1,511	-0.3%	0.6%
Spring-16	1,523	1,541	-1.2%	1.2%
Fall-16	1,563	1,547	1.0%	1.0%



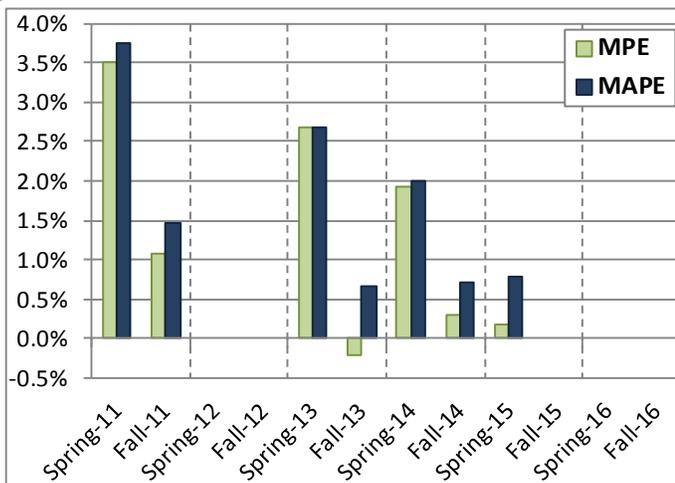
#### Quality of the first 12-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	1,068	1,055	1.2%	1.6%
Fall-11	1,111	1,109	0.1%	0.7%
Spring-12	N/F	N/F	N/F	N/F
Fall-12	N/F	N/F	N/F	N/F
Spring-13	1,262	1,239	1.8%	1.8%
Fall-13	1,331	1,338	-0.5%	0.6%
Spring-14	1,364	1,354	0.7%	0.8%
Fall-14	1,405	1,409	-0.3%	0.5%
Spring-15	1,463	1,453	0.7%	0.9%
Fall-15	1,516	1,542	-1.7%	1.8%
Spring-16	1,543	1,564	-1.3%	1.3%
Fall-16	N/A	N/A	N/A	N/A



#### Quality of the first 24-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	1,105	1,065	3.5%	3.7%
Fall-11	1,156	1,142	1.1%	1.5%
Spring-12	N/F	N/F	N/F	N/F
Fall-12	N/F	N/F	N/F	N/F
Spring-13	1,313	1,277	2.7%	2.7%
Fall-13	1,382	1,385	-0.2%	0.7%
Spring-14	1,418	1,389	1.9%	2.0%
Fall-14	1,458	1,454	0.3%	0.7%
Spring-15	1,503	1,500	0.2%	0.8%
Fall-15	N/A	N/A	N/A	N/A
Spring-16	N/A	N/A	N/A	N/A
Fall-16	N/A	N/A	N/A	N/A



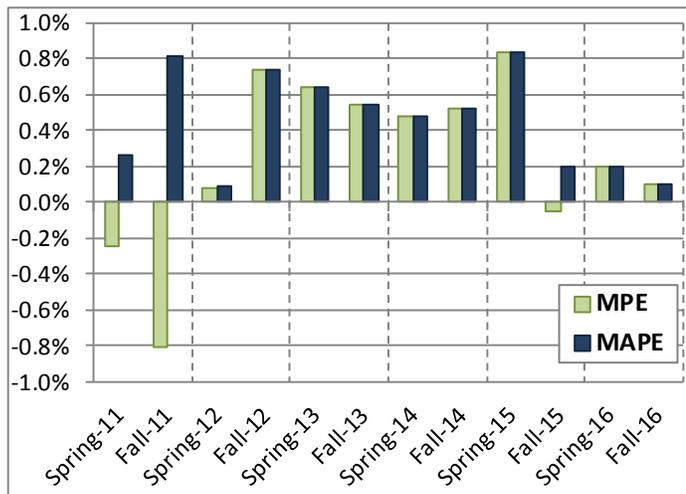
N/A – Insufficient time has elapsed since the forecast was made to be evaluated.

N/F - Forecast not available or was not done due to data issues.

## Appendix C1: Intellectual/Developmental Disabilities Programs, Case Management

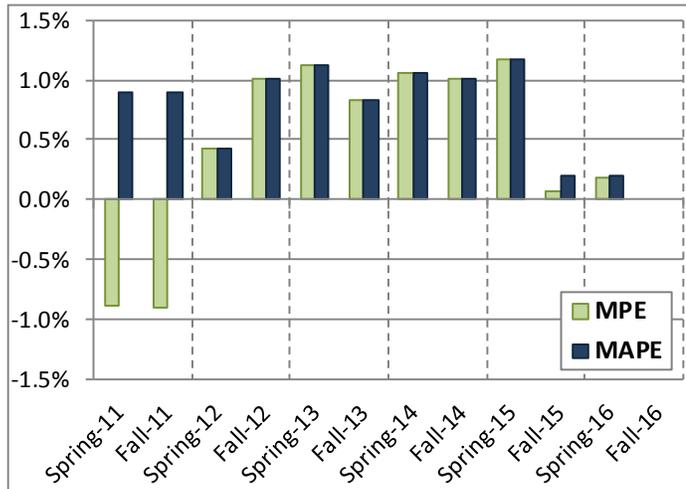
### Quality of the first 6-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	19,464	19,512	-0.2%	0.3%
Fall-11	19,744	19,905	-0.8%	0.8%
Spring-12	20,004	19,988	0.1%	0.1%
Fall-12	20,472	20,321	0.7%	0.7%
Spring-13	20,840	20,706	0.6%	0.6%
Fall-13	21,538	21,422	0.5%	0.5%
Spring-14	21,972	21,867	0.5%	0.5%
Fall-14	22,530	22,413	0.5%	0.5%
Spring-15	23,237	23,044	0.8%	0.8%
Fall-15	24,165	24,177	-0.1%	0.2%
Spring-16	24,848	24,800	0.2%	0.2%
Fall-16	25,471	25,446	0.1%	0.1%



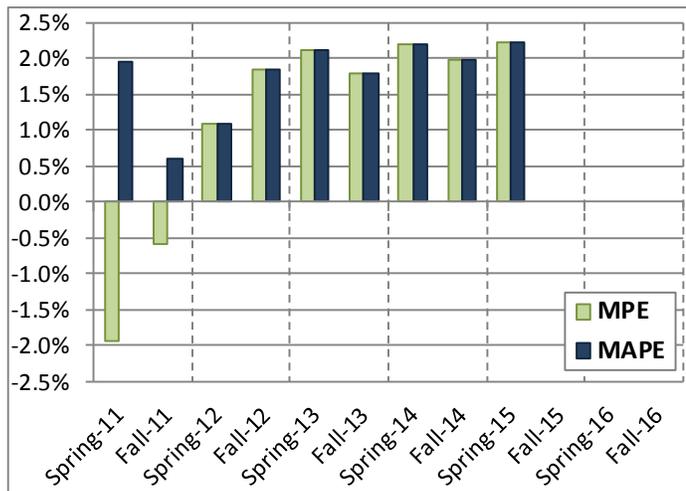
### Quality of the first 12-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	19,556	19,730	-0.9%	0.9%
Fall-11	19,909	20,088	-0.9%	0.9%
Spring-12	20,238	20,151	0.4%	0.4%
Fall-12	20,692	20,481	1.0%	1.0%
Spring-13	21,098	20,859	1.1%	1.1%
Fall-13	21,811	21,629	0.8%	0.8%
Spring-14	22,309	22,071	1.1%	1.1%
Fall-14	22,884	22,652	1.0%	1.0%
Spring-15	23,562	23,283	1.2%	1.2%
Fall-15	24,568	24,550	0.1%	0.2%
Spring-16	25,216	25,169	0.2%	0.2%
Fall-16	N/A	N/A	N/A	N/A



### Quality of the first 24-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	19,826	20,214	-1.9%	1.9%
Fall-11	20,339	20,454	-0.6%	0.6%
Spring-12	20,709	20,478	1.1%	1.1%
Fall-12	21,201	20,807	1.8%	1.8%
Spring-13	21,649	21,186	2.1%	2.1%
Fall-13	22,455	22,045	1.8%	1.8%
Spring-14	22,994	22,479	2.2%	2.2%
Fall-14	23,594	23,119	2.0%	2.0%
Spring-15	24,329	24,109	2.2%	2.2%
Fall-15	N/A	N/A	N/A	N/A
Spring-16	N/A	N/A	N/A	N/A
Fall-16	N/A	N/A	N/A	N/A

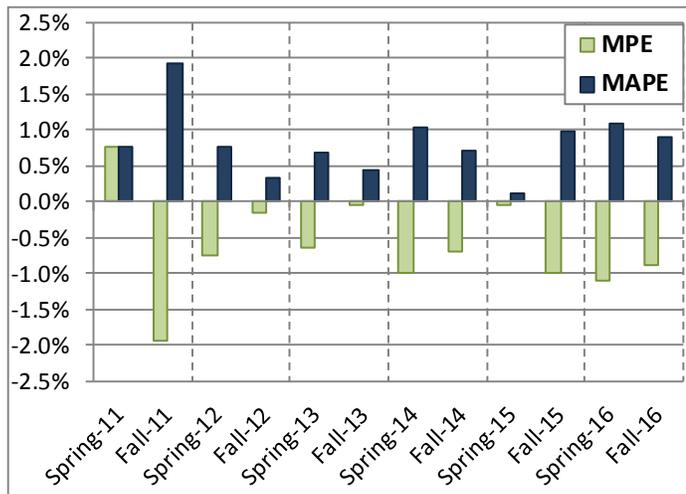


N/A – Insufficient time has elapsed since the forecast was made to be evaluated.

## Appendix C2: Intellectual/Developmental Disabilities Programs, Brokerage (Adult)

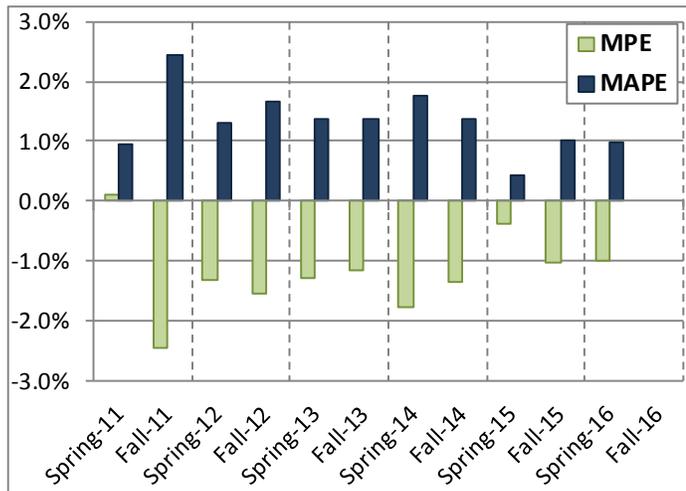
### Quality of the first 6-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	7,369	7,312	0.8%	0.8%
Fall-11	7,331	7,473	-1.9%	1.9%
Spring-12	7,127	7,181	-0.8%	0.8%
Fall-12	7,234	7,246	-0.2%	0.3%
Spring-13	7,280	7,327	-0.6%	0.7%
Fall-13	7,490	7,493	0.0%	0.4%
Spring-14	7,632	7,707	-1.0%	1.0%
Fall-14	7,619	7,673	-0.7%	0.7%
Spring-15	7,602	7,605	0.0%	0.1%
Fall-15	7,561	7,635	-1.0%	1.0%
Spring-16	7,581	7,664	-1.1%	1.1%
Fall-16	7,628	7,696	-0.9%	0.9%



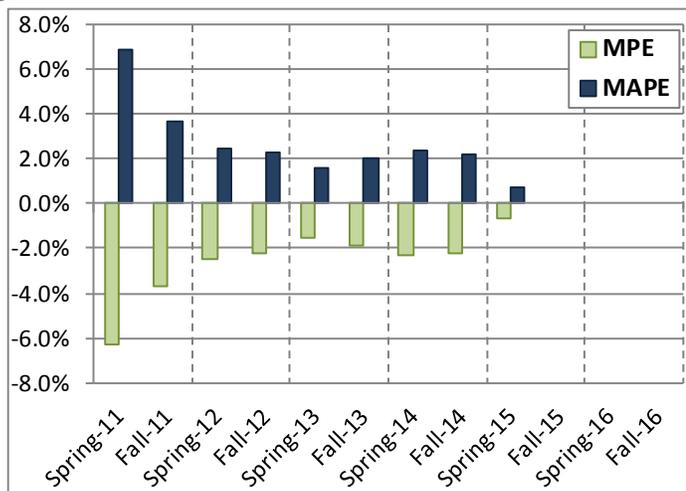
### Quality of the first 12-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	7,492	7,486	0.1%	1.0%
Fall-11	7,238	7,415	-2.4%	2.4%
Spring-12	7,180	7,275	-1.3%	1.3%
Fall-12	7,258	7,371	-1.6%	1.6%
Spring-13	7,327	7,421	-1.3%	1.4%
Fall-13	7,560	7,649	-1.2%	1.4%
Spring-14	7,622	7,756	-1.8%	1.8%
Fall-14	7,611	7,714	-1.4%	1.4%
Spring-15	7,586	7,615	-0.4%	0.4%
Fall-15	7,576	7,652	-1.0%	1.0%
Spring-16	7,608	7,683	-1.0%	1.0%
Fall-16	N/A	N/A	N/A	N/A



### Quality of the first 24-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	7,318	7,770	-6.3%	6.8%
Fall-11	7,252	7,516	-3.6%	3.6%
Spring-12	7,268	7,448	-2.5%	2.5%
Fall-12	7,394	7,559	-2.2%	2.3%
Spring-13	7,475	7,590	-1.5%	1.6%
Fall-13	7,582	7,727	-1.9%	2.0%
Spring-14	7,603	7,780	-2.3%	2.3%
Fall-14	7,591	7,760	-2.2%	2.2%
Spring-15	7,593	7,671	-0.7%	0.7%
Fall-15	N/A	N/A	N/A	N/A
Spring-16	N/A	N/A	N/A	N/A
Fall-16	N/A	N/A	N/A	N/A

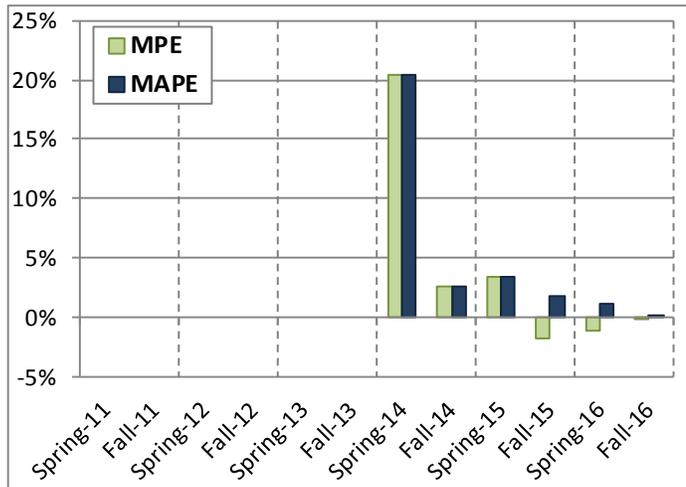


N/A – Insufficient time has elapsed since the forecast was made to be evaluated.

## Appendix D1: Medical Assistance Programs, ACA Adults

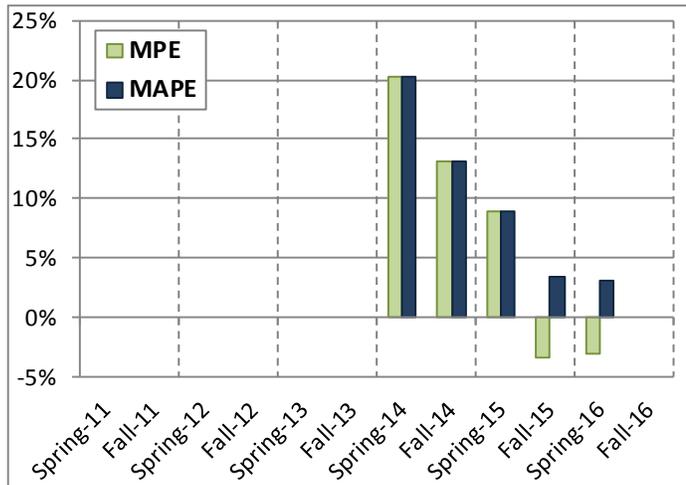
### Quality of the first 6-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	N/F	N/F	N/F	N/F
Fall-11	N/F	N/F	N/F	N/F
Spring-12	N/F	N/F	N/F	N/F
Fall-12	N/F	N/F	N/F	N/F
Spring-13	N/F	N/F	N/F	N/F
Fall-13	N/A	N/A	N/A	N/A
Spring-14	329,520	262,315	20.4%	20.4%
Fall-14	353,935	344,638	2.6%	2.6%
Spring-15	420,268	405,593	3.4%	3.4%
Fall-15	432,274	439,716	-1.7%	1.7%
Spring-16	439,400	444,309	-1.1%	1.2%
Fall-16	407,370	407,467	0.0%	0.2%



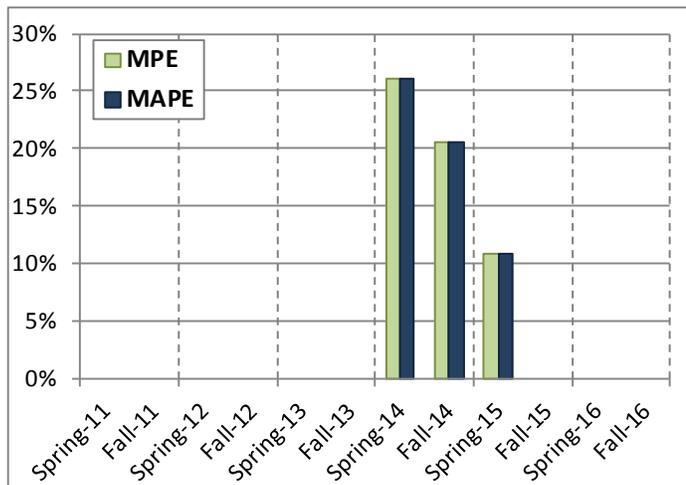
### Quality of the first 12-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	N/F	N/F	N/F	N/F
Fall-11	N/F	N/F	N/F	N/F
Spring-12	N/F	N/F	N/F	N/F
Fall-12	N/F	N/F	N/F	N/F
Spring-13	N/F	N/F	N/F	N/F
Fall-13	N/A	N/A	N/A	N/A
Spring-14	346,079	275,746	20.3%	20.3%
Fall-14	387,101	331,986	13.1%	13.2%
Spring-15	427,117	388,654	8.9%	8.9%
Fall-15	434,825	449,930	-3.4%	3.4%
Spring-16	419,610	432,238	-3.1%	3.2%
Fall-16	N/A	N/A	N/A	N/A



### Quality of the first 24-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	N/F	N/F	N/F	N/F
Fall-11	N/F	N/F	N/F	N/F
Spring-12	N/F	N/F	N/F	N/F
Fall-12	N/F	N/F	N/F	N/F
Spring-13	N/F	N/F	N/F	N/F
Fall-13	N/A	N/A	N/A	N/A
Spring-14	390,471	286,466	26.0%	26.0%
Fall-14	411,776	323,493	20.5%	20.5%
Spring-15	425,134	378,429	10.8%	10.8%
Fall-15	N/A	N/A	N/A	N/A
Spring-16	N/A	N/A	N/A	N/A
Fall-16	N/A	N/A	N/A	N/A



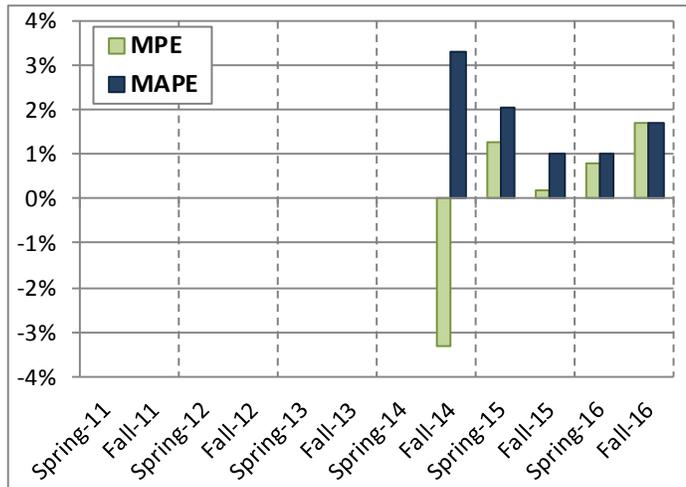
N/A – Cannot be evaluated because not all of the months in the time span have values.

N/F - Forecast not available or was not done due to data issues.

## Appendix D2: Medical Assistance Programs, Parent/Caretaker Relative

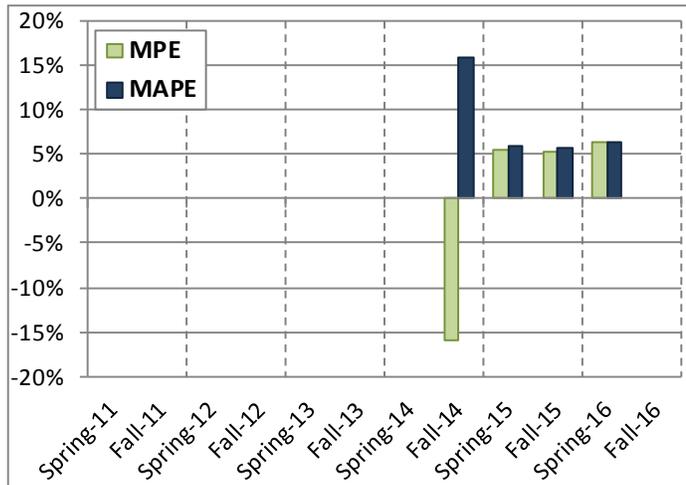
### Quality of the first 6-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	N/F	N/F	N/F	N/F
Fall-11	N/F	N/F	N/F	N/F
Spring-12	N/F	N/F	N/F	N/F
Fall-12	N/F	N/F	N/F	N/F
Spring-13	N/F	N/F	N/F	N/F
Fall-13	N/F	N/F	N/F	N/F
Spring-14	N/F	N/F	N/F	N/F
Fall-14	77,756	80,325	-3.3%	3.3%
Spring-15	58,455	57,710	1.3%	2.0%
Fall-15	61,132	60,997	0.2%	1.0%
Spring-16	67,305	66,738	0.8%	1.0%
Fall-16	74,771	73,471	1.7%	1.7%



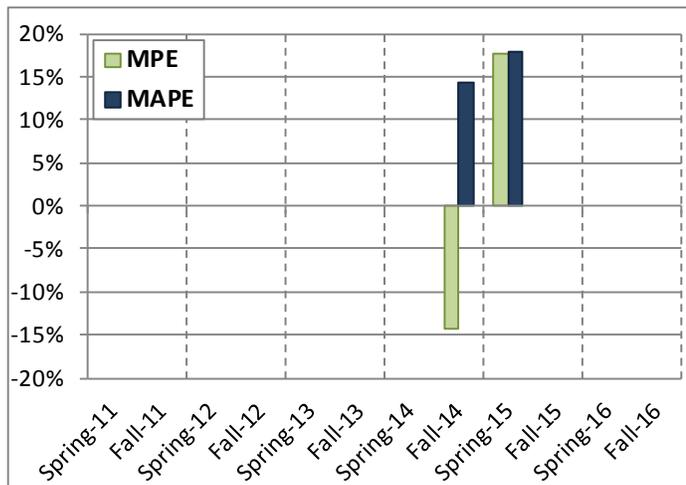
### Quality of the first 12-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	N/F	N/F	N/F	N/F
Fall-11	N/F	N/F	N/F	N/F
Spring-12	N/F	N/F	N/F	N/F
Fall-12	N/F	N/F	N/F	N/F
Spring-13	N/F	N/F	N/F	N/F
Fall-13	N/F	N/F	N/F	N/F
Spring-14	N/F	N/F	N/F	N/F
Fall-14	68,105	77,610	-15.8%	15.8%
Spring-15	59,084	55,792	5.4%	5.9%
Fall-15	65,123	61,333	5.3%	5.7%
Spring-16	71,469	66,762	6.2%	6.3%
Fall-16	N/A	N/A	N/A	N/A



### Quality of the first 24-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	N/F	N/F	N/F	N/F
Fall-11	N/F	N/F	N/F	N/F
Spring-12	N/F	N/F	N/F	N/F
Fall-12	N/F	N/F	N/F	N/F
Spring-13	N/F	N/F	N/F	N/F
Fall-13	N/F	N/F	N/F	N/F
Spring-14	N/F	N/F	N/F	N/F
Fall-14	65,393	74,008	-14.3%	14.3%
Spring-15	64,646	52,371	17.6%	17.9%
Fall-15	N/A	N/A	N/A	N/A
Spring-16	N/A	N/A	N/A	N/A
Fall-16	N/A	N/A	N/A	N/A



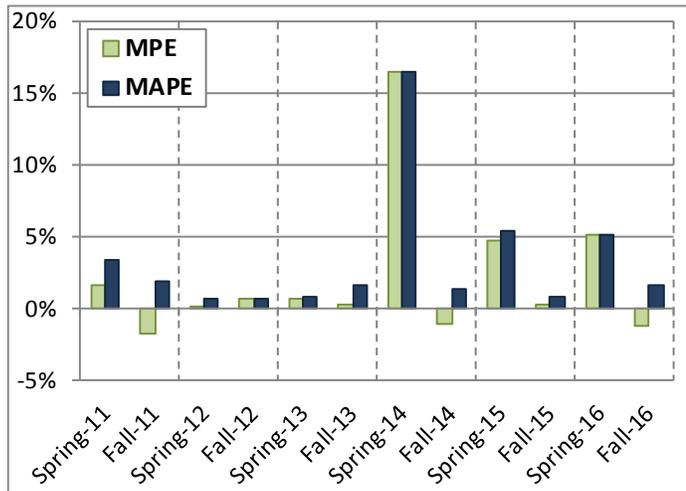
N/A – Cannot be evaluated because not all of the months in the time span have values.

N/F - Forecast not available or was not done due to data issues.

## Appendix D3: Medical Assistance Programs, Pregnant Women

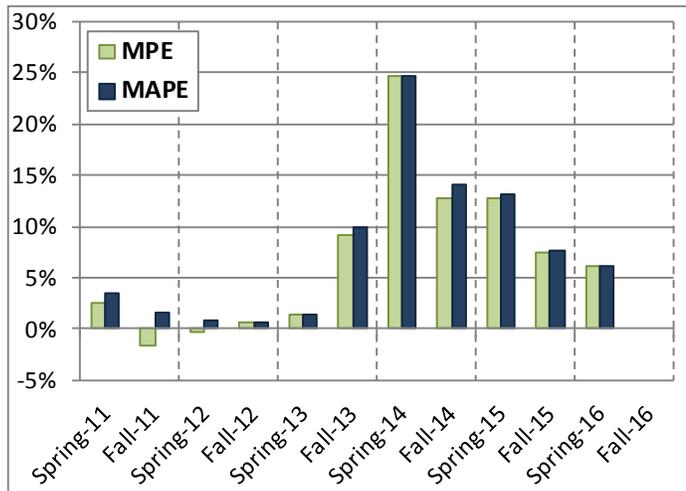
### Quality of the first 6-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	12,709	12,492	1.6%	3.4%
Fall-11	12,944	13,176	-1.8%	1.9%
Spring-12	13,128	13,105	0.2%	0.7%
Fall-12	12,996	12,918	0.6%	0.7%
Spring-13	13,080	12,995	0.6%	0.8%
Fall-13	13,531	13,494	0.2%	1.6%
Spring-14	16,975	14,043	16.5%	16.5%
Fall-14	20,871	21,095	-1.1%	1.4%
Spring-15	21,113	20,066	4.7%	5.4%
Fall-15	19,442	19,399	0.3%	0.9%
Spring-16	18,049	17,147	5.1%	5.2%
Fall-16	15,769	15,935	-1.2%	1.6%



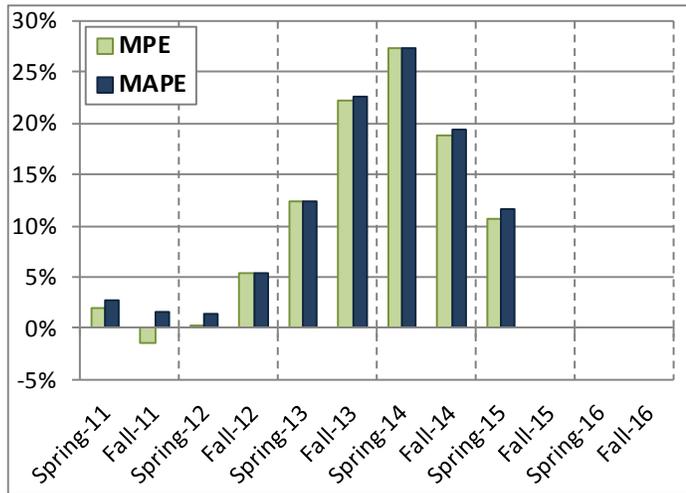
### Quality of the first 12-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	12,833	12,494	2.6%	3.5%
Fall-11	13,057	13,259	-1.6%	1.6%
Spring-12	13,062	13,101	-0.3%	0.9%
Fall-12	13,061	12,978	0.6%	0.7%
Spring-13	13,242	13,056	1.4%	1.5%
Fall-13	15,253	13,612	9.2%	10.0%
Spring-14	19,094	14,146	24.6%	24.6%
Fall-14	20,992	18,248	12.8%	14.1%
Spring-15	20,948	18,238	12.7%	13.1%
Fall-15	18,599	17,276	7.4%	7.7%
Spring-16	16,684	15,669	6.1%	6.2%
Fall-16	N/A	N/A	N/A	N/A



### Quality of the first 24-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	12,948	12,695	1.9%	2.6%
Fall-11	13,097	13,282	-1.4%	1.7%
Spring-12	13,166	13,144	0.2%	1.4%
Fall-12	13,932	13,051	5.3%	5.4%
Spring-13	15,501	13,168	12.3%	12.4%
Fall-13	18,293	13,707	22.2%	22.6%
Spring-14	19,921	14,310	27.2%	27.2%
Fall-14	20,250	16,419	18.7%	19.4%
Spring-15	18,975	16,831	10.7%	11.7%
Fall-15	N/A	N/A	N/A	N/A
Spring-16	N/A	N/A	N/A	N/A
Fall-16	N/A	N/A	N/A	N/A

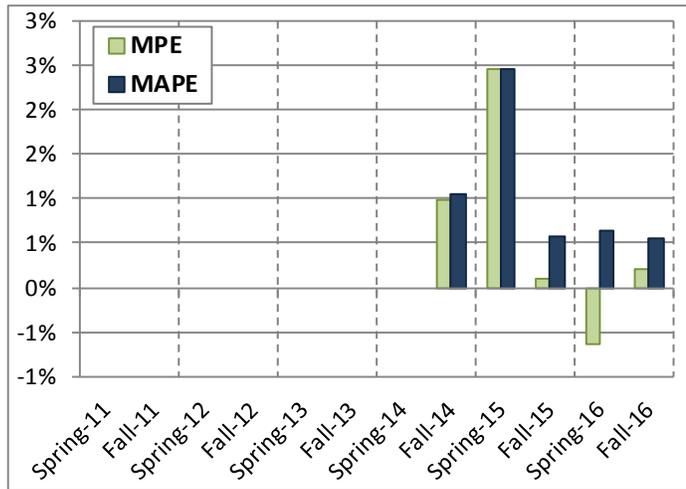


N/A – Insufficient time has elapsed since the forecast was made to be evaluated.

## Appendix D4: Medical Assistance Programs, Children’s Medicaid

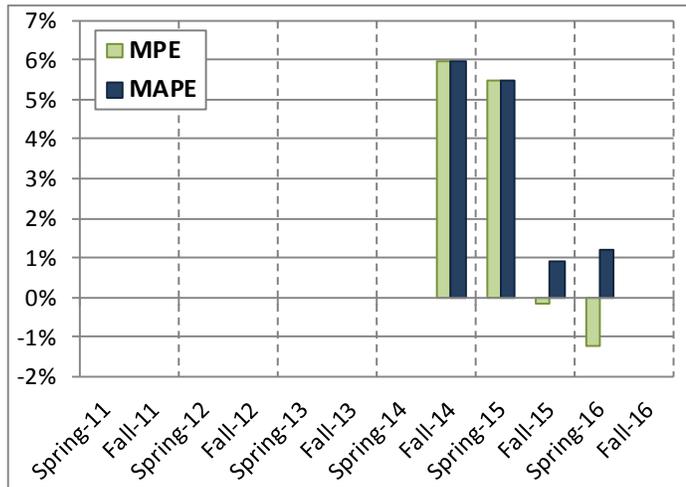
### Quality of the first 6-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	N/F	N/F	N/F	N/F
Fall-11	N/F	N/F	N/F	N/F
Spring-12	N/F	N/F	N/F	N/F
Fall-12	N/F	N/F	N/F	N/F
Spring-13	N/F	N/F	N/F	N/F
Fall-13	N/F	N/F	N/F	N/F
Spring-14	N/F	N/F	N/F	N/F
Fall-14	337,593	334,176	1.0%	1.1%
Spring-15	349,784	341,076	2.5%	2.5%
Fall-15	347,376	347,028	0.1%	0.6%
Spring-16	351,588	353,806	-0.6%	0.6%
Fall-16	338,852	338,165	0.2%	0.5%



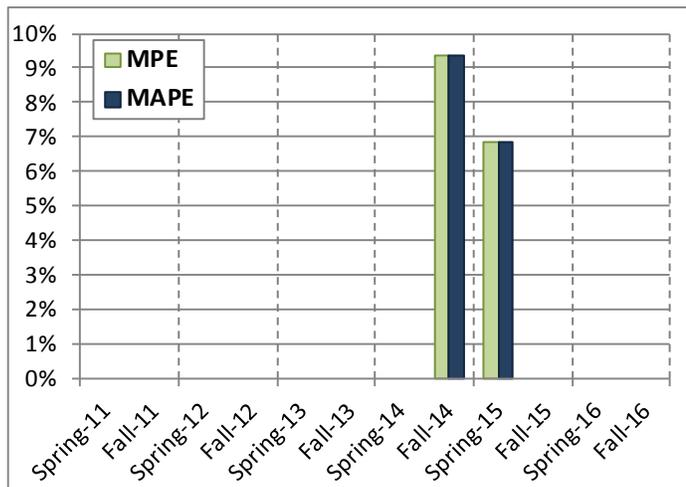
### Quality of the first 12-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	N/F	N/F	N/F	N/F
Fall-11	N/F	N/F	N/F	N/F
Spring-12	N/F	N/F	N/F	N/F
Fall-12	N/F	N/F	N/F	N/F
Spring-13	N/F	N/F	N/F	N/F
Fall-13	N/F	N/F	N/F	N/F
Spring-14	N/F	N/F	N/F	N/F
Fall-14	343,689	322,671	6.0%	6.0%
Spring-15	351,696	332,288	5.5%	5.5%
Fall-15	349,507	350,061	-0.2%	0.9%
Spring-16	343,894	347,974	-1.2%	1.2%
Fall-16	N/A	N/A	N/A	N/A



### Quality of the first 24-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	N/F	N/F	N/F	N/F
Fall-11	N/F	N/F	N/F	N/F
Spring-12	N/F	N/F	N/F	N/F
Fall-12	N/F	N/F	N/F	N/F
Spring-13	N/F	N/F	N/F	N/F
Fall-13	N/F	N/F	N/F	N/F
Spring-14	N/F	N/F	N/F	N/F
Fall-14	347,776	314,836	9.3%	9.4%
Spring-15	348,091	324,144	6.8%	6.8%
Fall-15	N/A	N/A	N/A	N/A
Spring-16	N/A	N/A	N/A	N/A
Fall-16	N/A	N/A	N/A	N/A



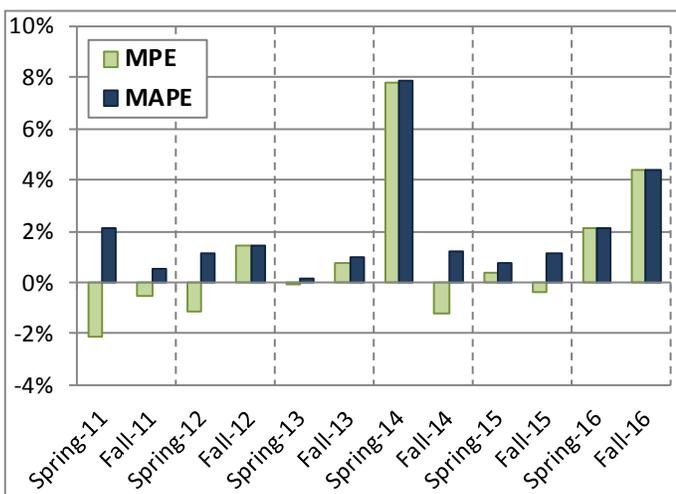
N/A – Cannot be evaluated because not all of the months in the time span have values.

N/F - Forecast not available or was not done due to data issues.

## Appendix D5: Medical Assistance Programs, Children’s Health Insurance Program

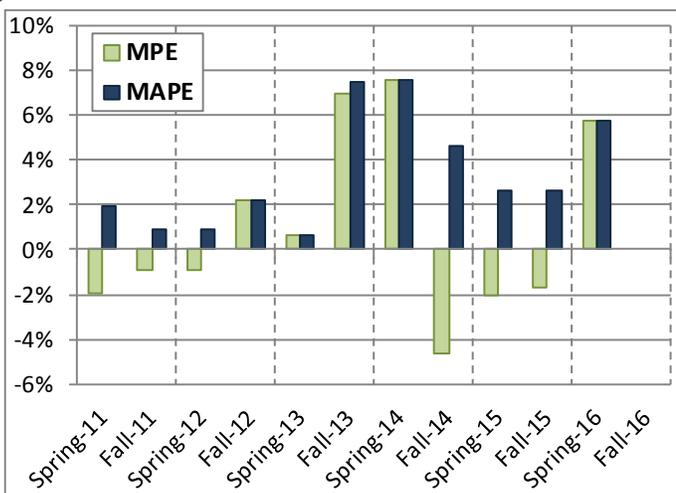
### Quality of the first 6-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	64,804	66,159	-2.1%	2.1%
Fall-11	69,598	69,953	-0.5%	0.5%
Spring-12	70,646	71,437	-1.1%	1.1%
Fall-12	72,566	71,493	1.5%	1.5%
Spring-13	74,682	74,693	0.0%	0.1%
Fall-13	77,923	77,306	0.8%	1.0%
Spring-14	77,186	71,222	7.8%	7.9%
Fall-14	77,141	78,057	-1.2%	1.2%
Spring-15	70,077	69,793	0.4%	0.7%
Fall-15	62,443	62,668	-0.4%	1.1%
Spring-16	63,649	62,301	2.1%	2.1%
Fall-16	65,037	62,159	4.4%	4.4%



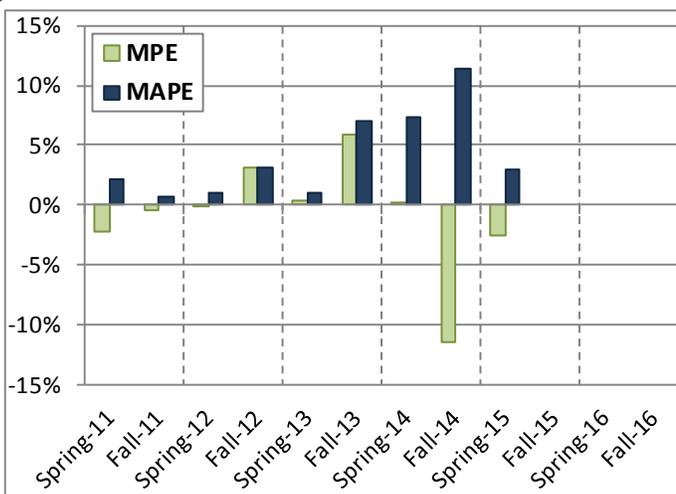
### Quality of the first 12-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	66,651	67,943	-1.9%	1.9%
Fall-11	70,272	70,915	-0.9%	0.9%
Spring-12	71,606	72,277	-0.9%	0.9%
Fall-12	73,757	72,132	2.2%	2.2%
Spring-13	75,698	75,224	0.6%	0.7%
Fall-13	77,554	72,218	6.9%	7.5%
Spring-14	76,651	70,853	7.5%	7.6%
Fall-14	73,609	76,901	-4.6%	4.6%
Spring-15	67,181	68,438	-2.0%	2.6%
Fall-15	63,185	64,264	-1.7%	2.6%
Spring-16	64,704	60,944	5.7%	5.7%
Fall-16	N/A	N/A	N/A	N/A



### Quality of the first 24-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	69,129	70,653	-2.2%	2.2%
Fall-11	72,389	72,713	-0.5%	0.7%
Spring-12	73,869	73,857	0.0%	1.0%
Fall-12	75,605	73,172	3.2%	3.2%
Spring-13	76,635	76,294	0.4%	1.0%
Fall-13	75,256	70,718	5.9%	7.0%
Spring-14	71,510	70,896	0.2%	7.4%
Fall-14	68,689	76,073	-11.4%	11.4%
Spring-15	65,663	67,219	-2.5%	3.0%
Fall-15	N/A	N/A	N/A	N/A
Spring-16	N/A	N/A	N/A	N/A
Fall-16	N/A	N/A	N/A	N/A

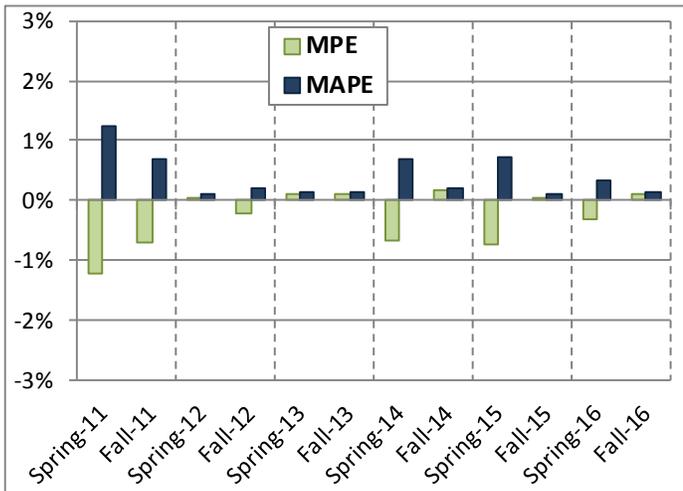


N/A – Insufficient time has elapsed since the forecast was made to be evaluated.

## Appendix D6: Medical Assistance Programs, Aid to Blind and Disabled

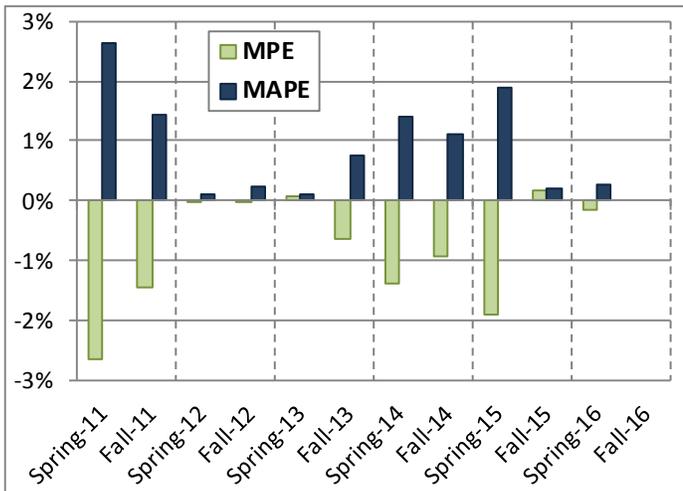
### Quality of the first 6-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	76,683	77,629	-1.2%	1.2%
Fall-11	78,353	78,894	-0.7%	0.7%
Spring-12	79,145	79,105	0.1%	0.1%
Fall-12	80,614	80,789	-0.2%	0.2%
Spring-13	81,867	81,770	0.1%	0.1%
Fall-13	83,976	83,877	0.1%	0.1%
Spring-14	83,878	84,433	-0.7%	0.7%
Fall-14	83,253	83,116	0.2%	0.2%
Spring-15	82,175	82,778	-0.7%	0.7%
Fall-15	81,393	81,352	0.1%	0.1%
Spring-16	81,431	81,694	-0.3%	0.3%
Fall-16	82,045	81,947	0.1%	0.1%



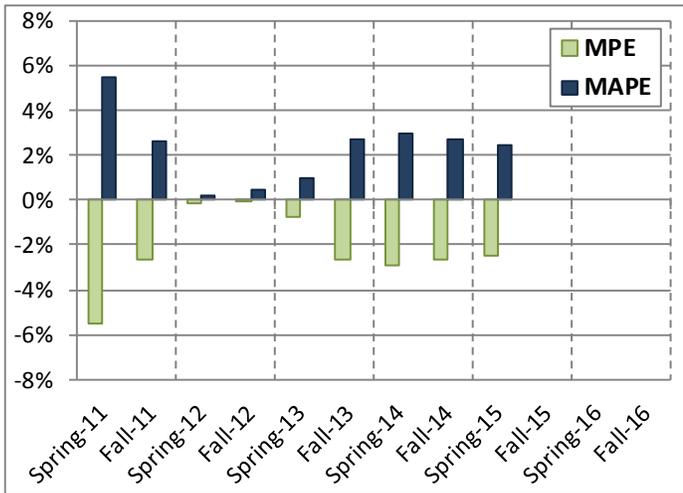
### Quality of the first 12-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	77,323	79,369	-2.6%	2.6%
Fall-11	78,961	80,109	-1.4%	1.4%
Spring-12	79,880	79,884	0.0%	0.1%
Fall-12	81,379	81,407	0.0%	0.2%
Spring-13	82,660	82,589	0.1%	0.1%
Fall-13	83,927	84,460	-0.6%	0.8%
Spring-14	83,485	84,630	-1.4%	1.4%
Fall-14	82,714	83,481	-0.9%	1.1%
Spring-15	81,830	83,368	-1.9%	1.9%
Fall-15	81,436	81,293	0.2%	0.2%
Spring-16	81,823	81,956	-0.2%	0.3%
Fall-16	N/A	N/A	N/A	N/A



### Quality of the first 24-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	78,601	82,952	-5.5%	5.5%
Fall-11	80,440	82,593	-2.6%	2.6%
Spring-12	81,414	81,556	-0.2%	0.2%
Fall-12	82,636	82,663	0.0%	0.5%
Spring-13	83,226	83,881	-0.8%	0.9%
Fall-13	83,243	85,413	-2.6%	2.7%
Spring-14	82,607	85,000	-2.9%	2.9%
Fall-14	82,076	84,232	-2.6%	2.7%
Spring-15	81,774	83,772	-2.4%	2.4%
Fall-15	N/A	N/A	N/A	N/A
Spring-16	N/A	N/A	N/A	N/A
Fall-16	N/A	N/A	N/A	N/A

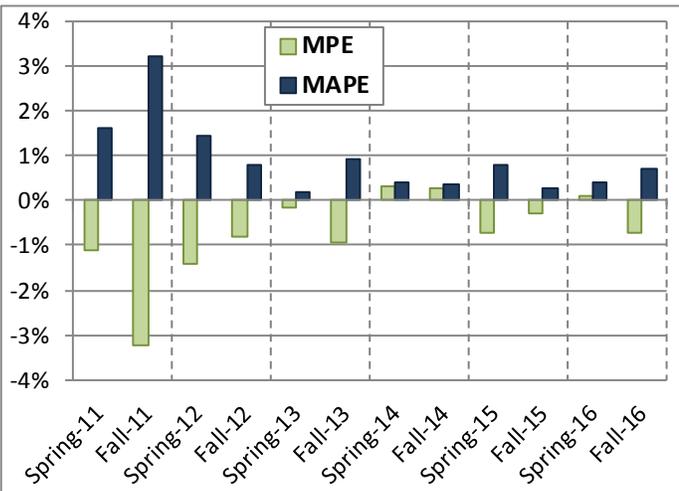


N/A – Insufficient time has elapsed since the forecast was made to be evaluated.

## Appendix D7: Medical Assistance Programs, Old Age Assistance

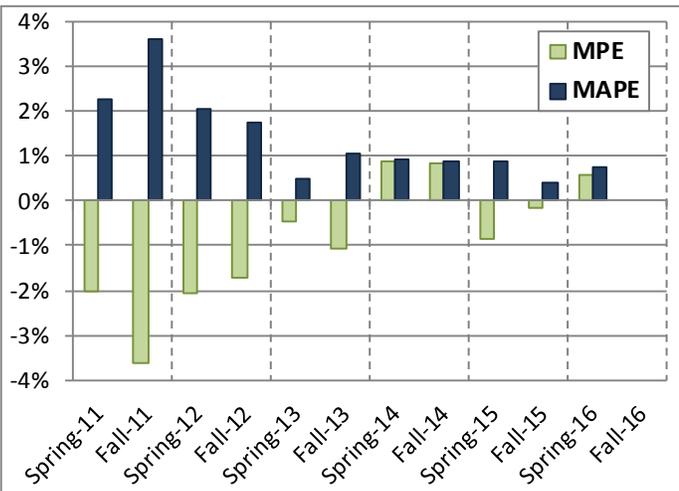
### Quality of the first 6-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	33,251	33,622	-1.1%	1.6%
Fall-11	33,778	34,867	-3.2%	3.2%
Spring-12	34,141	34,628	-1.4%	1.4%
Fall-12	34,871	35,152	-0.8%	0.8%
Spring-13	35,240	35,299	-0.2%	0.2%
Fall-13	36,024	36,361	-0.9%	0.9%
Spring-14	36,812	36,697	0.3%	0.4%
Fall-14	37,888	37,777	0.3%	0.4%
Spring-15	38,939	39,226	-0.7%	0.8%
Fall-15	40,445	40,557	-0.3%	0.3%
Spring-16	41,288	41,251	0.1%	0.4%
Fall-16	42,464	42,767	-0.7%	0.7%



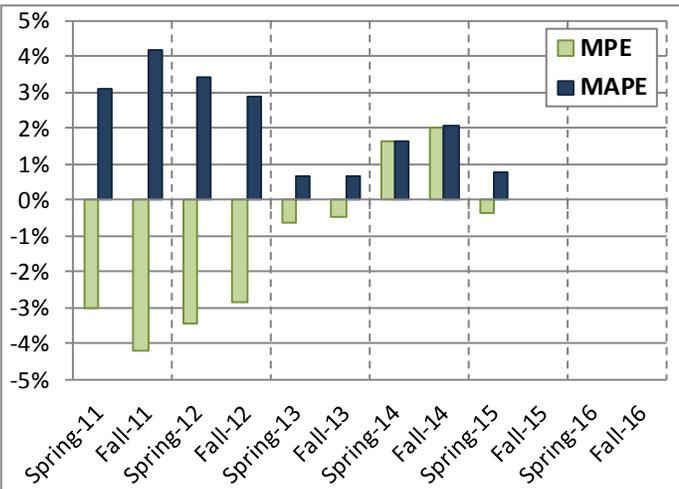
### Quality of the first 12-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	33,411	34,085	-2.0%	2.3%
Fall-11	34,076	35,305	-3.6%	3.6%
Spring-12	34,506	35,219	-2.1%	2.1%
Fall-12	35,093	35,701	-1.7%	1.7%
Spring-13	35,521	35,684	-0.5%	0.5%
Fall-13	36,418	36,799	-1.0%	1.0%
Spring-14	37,460	37,121	0.9%	0.9%
Fall-14	38,414	38,088	0.8%	0.9%
Spring-15	39,505	39,836	-0.8%	0.9%
Fall-15	41,001	41,059	-0.1%	0.4%
Spring-16	41,968	41,717	0.6%	0.7%
Fall-16	N/A	N/A	N/A	N/A



### Quality of the first 24-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	33,958	34,980	-3.0%	3.1%
Fall-11	34,673	36,129	-4.2%	4.2%
Spring-12	35,058	36,267	-3.4%	3.4%
Fall-12	35,685	36,713	-2.9%	2.9%
Spring-13	36,302	36,533	-0.6%	0.7%
Fall-13	37,503	37,674	-0.5%	0.7%
Spring-14	38,570	37,930	1.6%	1.6%
Fall-14	39,495	38,679	2.0%	2.0%
Spring-15	40,639	40,787	-0.4%	0.8%
Fall-15	N/A	N/A	N/A	N/A
Spring-16	N/A	N/A	N/A	N/A
Fall-16	N/A	N/A	N/A	N/A

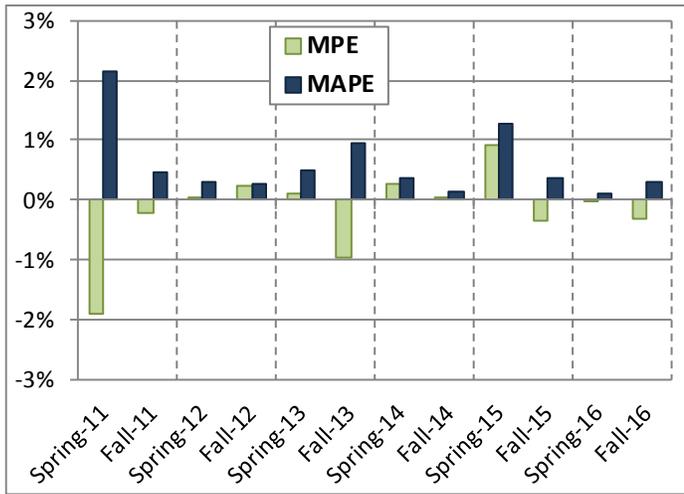


N/A – Insufficient time has elapsed since the forecast was made to be evaluated.

Appendix D8: Medical Assistance Programs, Foster/Substitute Care and Adoption Assistance

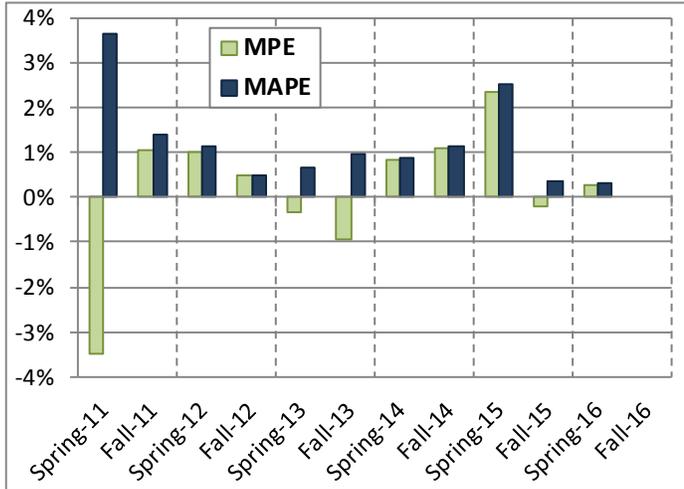
Quality of the first 6-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	18,773	19,123	-1.9%	2.2%
Fall-11	18,400	18,439	-0.2%	0.4%
Spring-12	18,582	18,581	0.0%	0.3%
Fall-12	18,936	18,893	0.2%	0.3%
Spring-13	19,065	19,043	0.1%	0.5%
Fall-13	18,765	18,943	-1.0%	1.0%
Spring-14	18,692	18,642	0.3%	0.4%
Fall-14	18,921	18,916	0.0%	0.1%
Spring-15	19,103	18,926	0.9%	1.3%
Fall-15	19,427	19,495	-0.4%	0.4%
Spring-16	19,499	19,501	0.0%	0.1%
Fall-16	19,712	19,773	-0.3%	0.3%



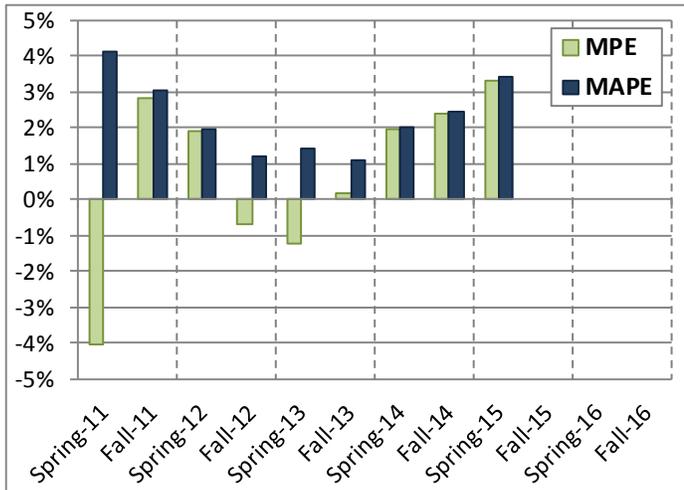
Quality of the first 12-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	18,590	19,237	-3.5%	3.6%
Fall-11	18,562	18,366	1.0%	1.4%
Spring-12	18,759	18,568	1.0%	1.2%
Fall-12	19,000	18,909	0.5%	0.5%
Spring-13	18,977	19,041	-0.3%	0.7%
Fall-13	18,728	18,903	-0.9%	1.0%
Spring-14	18,812	18,655	0.8%	0.9%
Fall-14	19,012	18,807	1.1%	1.1%
Spring-15	19,274	18,819	2.3%	2.5%
Fall-15	19,484	19,524	-0.2%	0.3%
Spring-16	19,629	19,579	0.3%	0.3%
Fall-16	N/A	N/A	N/A	N/A



Quality of the first 24-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	18,675	19,424	-4.0%	4.1%
Fall-11	18,787	18,246	2.8%	3.0%
Spring-12	18,851	18,489	1.9%	2.0%
Fall-12	18,870	19,000	-0.7%	1.2%
Spring-13	18,871	19,104	-1.2%	1.4%
Fall-13	18,893	18,859	0.2%	1.1%
Spring-14	19,061	18,680	2.0%	2.0%
Fall-14	19,232	18,765	2.4%	2.4%
Spring-15	19,429	18,783	3.3%	3.4%
Fall-15	N/A	N/A	N/A	N/A
Spring-16	N/A	N/A	N/A	N/A
Fall-16	N/A	N/A	N/A	N/A

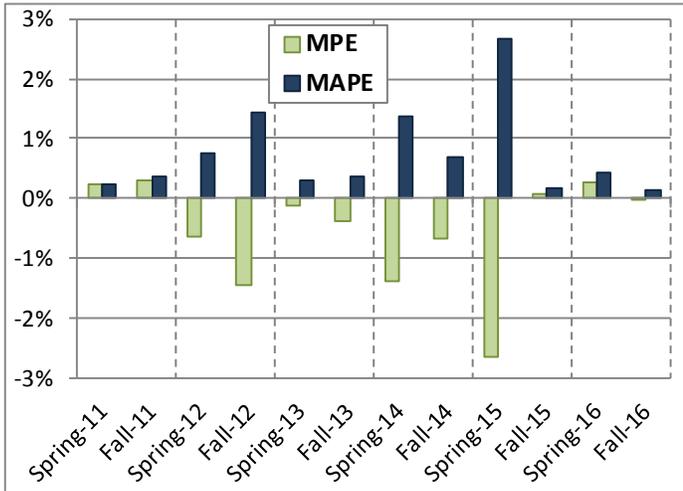


N/A – Insufficient time has elapsed since the forecast was made to be evaluated.

## Appendix D9: Medical Assistance Programs, Qualified Medicare Beneficiary

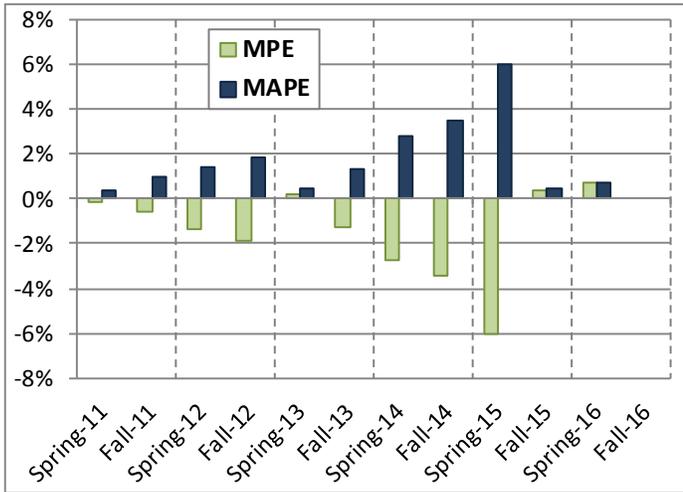
### Quality of the first 6-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	16,539	16,499	0.2%	0.3%
Fall-11	18,230	18,173	0.3%	0.4%
Spring-12	18,793	18,913	-0.6%	0.8%
Fall-12	19,459	19,741	-1.4%	1.4%
Spring-13	20,250	20,276	-0.1%	0.3%
Fall-13	21,673	21,756	-0.4%	0.4%
Spring-14	22,321	22,628	-1.4%	1.4%
Fall-14	22,497	22,651	-0.7%	0.7%
Spring-15	22,744	23,345	-2.6%	2.7%
Fall-15	22,914	22,894	0.1%	0.2%
Spring-16	23,503	23,441	0.3%	0.4%
Fall-16	24,551	24,556	0.0%	0.2%



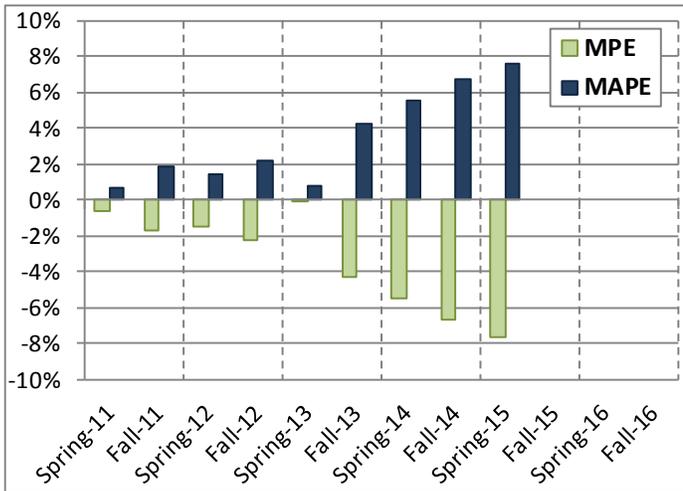
### Quality of the first 12-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	17,168	17,193	-0.1%	0.4%
Fall-11	18,588	18,695	-0.6%	0.9%
Spring-12	19,126	19,390	-1.4%	1.4%
Fall-12	19,931	20,300	-1.8%	1.8%
Spring-13	20,780	20,739	0.2%	0.4%
Fall-13	21,997	22,287	-1.3%	1.3%
Spring-14	22,427	23,053	-2.8%	2.8%
Fall-14	22,620	23,405	-3.5%	3.5%
Spring-15	22,778	24,149	-6.0%	6.0%
Fall-15	23,321	23,224	0.4%	0.5%
Spring-16	24,111	23,944	0.7%	0.8%
Fall-16	N/A	N/A	N/A	N/A



### Quality of the first 24-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	18,147	18,260	-0.6%	0.7%
Fall-11	19,428	19,760	-1.7%	1.8%
Spring-12	20,038	20,330	-1.5%	1.5%
Fall-12	20,906	21,381	-2.2%	2.2%
Spring-13	21,554	21,559	0.0%	0.7%
Fall-13	22,316	23,278	-4.3%	4.3%
Spring-14	22,616	23,871	-5.5%	5.5%
Fall-14	22,842	24,377	-6.7%	6.7%
Spring-15	23,355	25,143	-7.6%	7.6%
Fall-15	N/A	N/A	N/A	N/A
Spring-16	N/A	N/A	N/A	N/A
Fall-16	N/A	N/A	N/A	N/A

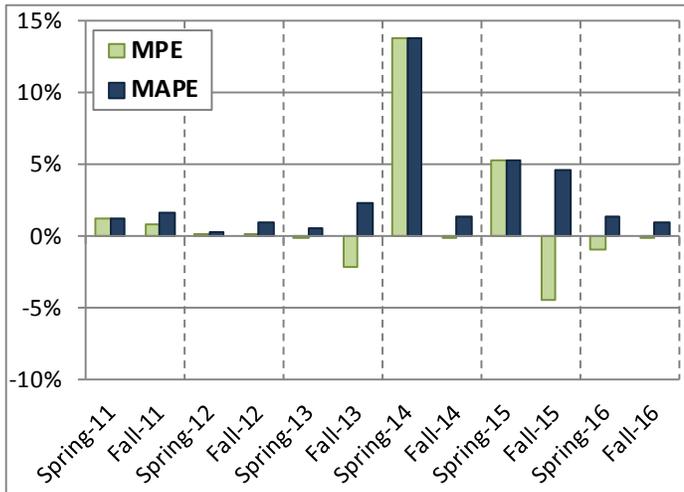


N/A – Insufficient time has elapsed since the forecast was made to be evaluated.

## Appendix D10: Medical Assistance Programs, Citizen/Alien-Waived Emergent Medical

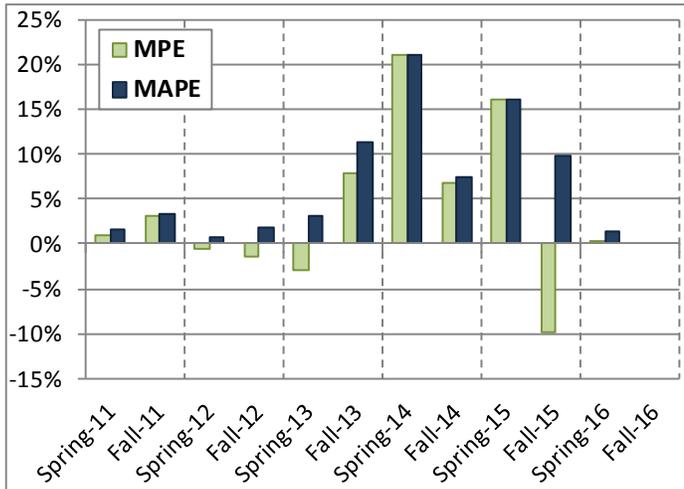
### Quality of the first 6-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	26,254	25,938	1.2%	1.2%
Fall-11	26,408	26,204	0.8%	1.6%
Spring-12	26,887	26,871	0.1%	0.3%
Fall-12	26,352	26,314	0.1%	0.9%
Spring-13	25,770	25,773	0.0%	0.5%
Fall-13	24,374	24,904	-2.2%	2.2%
Spring-14	31,630	26,904	13.7%	13.7%
Fall-14	38,402	38,448	-0.1%	1.3%
Spring-15	43,041	40,726	5.2%	5.2%
Fall-15	51,525	53,858	-4.5%	4.5%
Spring-16	52,143	52,647	-1.0%	1.4%
Fall-16	47,559	47,578	-0.1%	1.0%



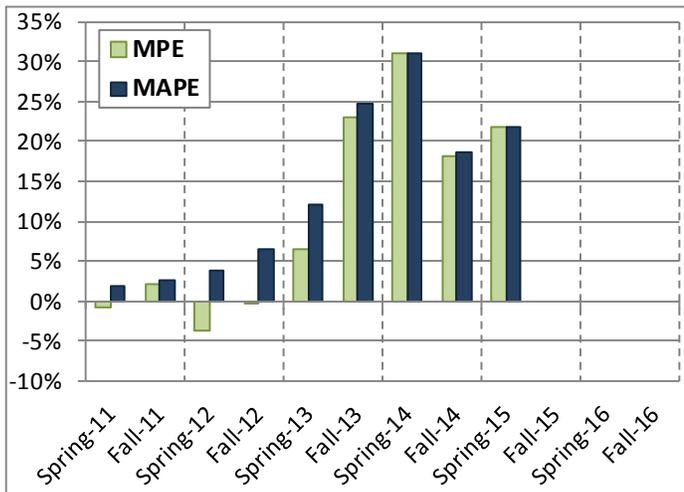
### Quality of the first 12-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	26,393	26,127	1.0%	1.6%
Fall-11	26,707	25,896	3.0%	3.4%
Spring-12	26,619	26,742	-0.5%	0.6%
Fall-12	26,029	26,363	-1.3%	1.8%
Spring-13	25,305	26,032	-2.9%	3.2%
Fall-13	28,002	25,151	7.8%	11.3%
Spring-14	35,282	27,391	21.0%	21.0%
Fall-14	40,721	37,746	6.7%	7.4%
Spring-15	46,820	38,848	16.0%	16.0%
Fall-15	51,646	56,689	-9.8%	9.8%
Spring-16	49,343	49,312	0.1%	1.3%
Fall-16	N/A	N/A	N/A	N/A



### Quality of the first 24-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	26,506	26,677	-0.7%	2.0%
Fall-11	26,223	25,682	2.0%	2.7%
Spring-12	25,883	26,792	-3.6%	3.7%
Fall-12	26,536	26,341	-0.3%	6.4%
Spring-13	28,929	26,237	6.5%	12.0%
Fall-13	34,820	25,359	23.0%	24.7%
Spring-14	41,505	27,680	31.0%	31.0%
Fall-14	46,057	36,908	18.2%	18.6%
Spring-15	48,346	37,459	21.7%	21.7%
Fall-15	N/A	N/A	N/A	N/A
Spring-16	N/A	N/A	N/A	N/A
Fall-16	N/A	N/A	N/A	N/A

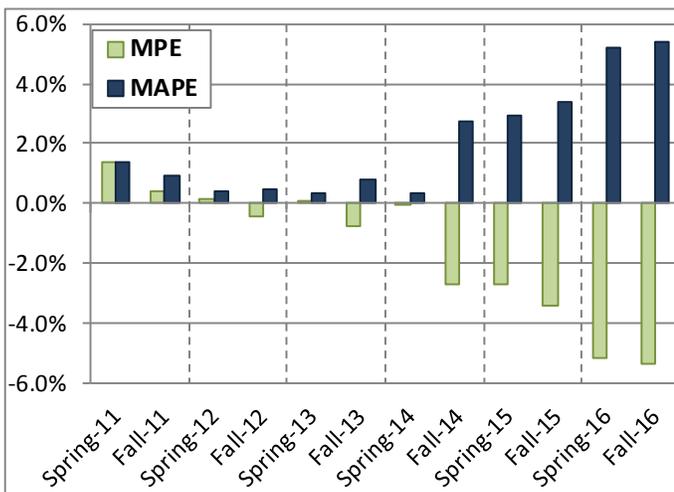


N/A – Insufficient time has elapsed since the forecast was made to be evaluated.

## Appendix E1: Self Sufficiency Programs, Temporary Assistance for Needy Families

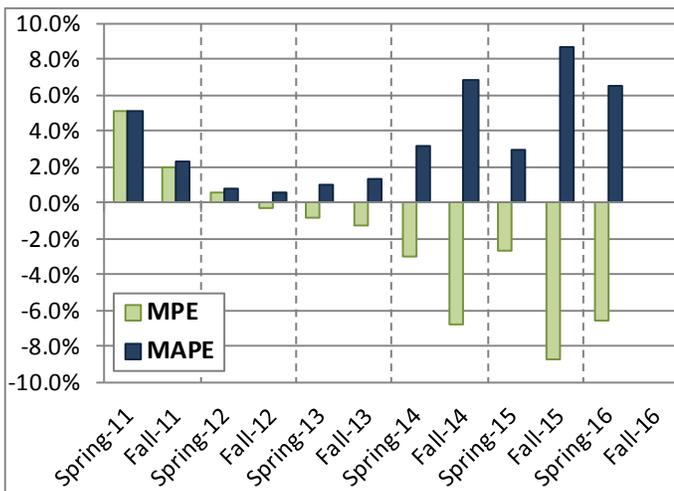
### Quality of the first 6-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	30,084	29,660	1.4%	1.4%
Fall-11	33,842	33,689	0.4%	0.9%
Spring-12	35,487	35,440	0.1%	0.4%
Fall-12	35,884	36,030	-0.4%	0.5%
Spring-13	36,014	35,973	0.1%	0.4%
Fall-13	34,331	34,593	-0.8%	0.8%
Spring-14	33,697	33,698	0.0%	0.4%
Fall-14	31,153	31,975	-2.7%	2.7%
Spring-15	28,251	28,989	-2.7%	2.9%
Fall-15	24,154	24,972	-3.4%	3.4%
Spring-16	22,382	23,525	-5.2%	5.2%
Fall-16	21,197	22,336	-5.4%	5.4%



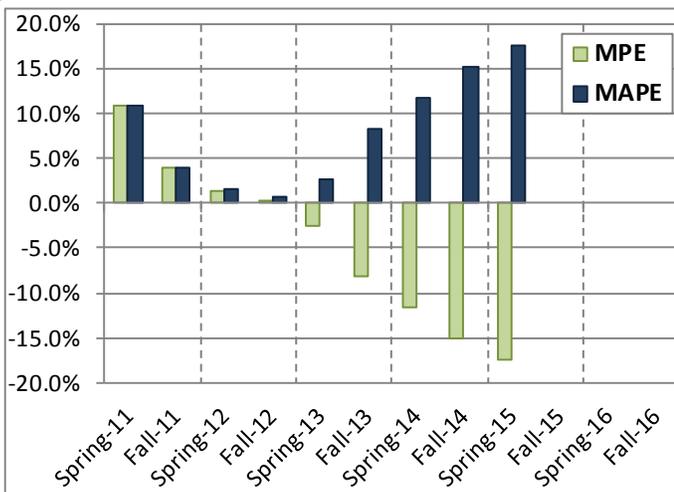
### Quality of the first 12-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	31,338	29,654	5.2%	5.2%
Fall-11	34,664	33,943	2.0%	2.3%
Spring-12	35,686	35,471	0.6%	0.7%
Fall-12	35,688	35,788	-0.3%	0.6%
Spring-13	35,263	35,534	-0.8%	1.0%
Fall-13	33,569	33,999	-1.3%	1.3%
Spring-14	32,175	33,086	-3.0%	3.2%
Fall-14	29,702	31,629	-6.8%	6.8%
Spring-15	28,251	28,989	-2.7%	2.9%
Fall-15	23,104	25,051	-8.7%	8.7%
Spring-16	21,758	23,162	-6.5%	6.5%
Fall-16	N/A	N/A	N/A	N/A



### Quality of the first 24-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	33,379	29,581	10.9%	10.9%
Fall-11	35,176	33,795	3.9%	4.0%
Spring-12	35,306	34,797	1.4%	1.5%
Fall-12	34,761	34,703	0.2%	0.7%
Spring-13	33,930	34,754	-2.6%	2.7%
Fall-13	30,858	33,155	-8.2%	8.2%
Spring-14	29,209	32,277	-11.6%	11.7%
Fall-14	26,936	30,703	-15.1%	15.1%
Spring-15	24,473	28,465	-17.4%	17.5%
Fall-15	N/A	N/A	N/A	N/A
Spring-16	N/A	N/A	N/A	N/A
Fall-16	N/A	N/A	N/A	N/A

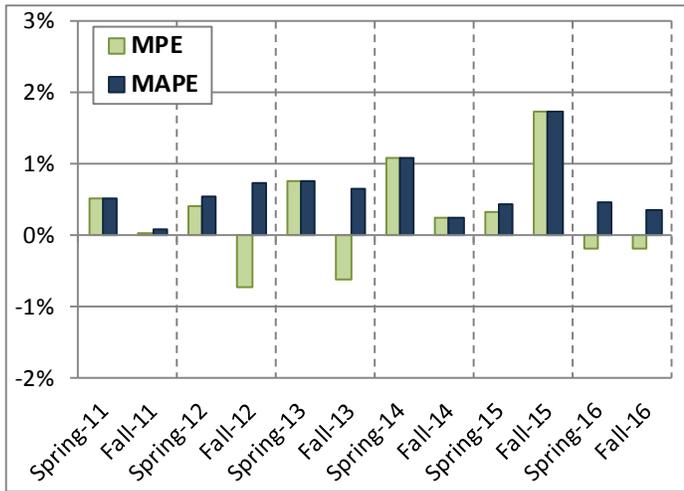


N/A – Insufficient time has elapsed since the forecast was made to be evaluated.

## Appendix E2: Self Sufficiency Programs, Supplemental Nutrition Assistance Program

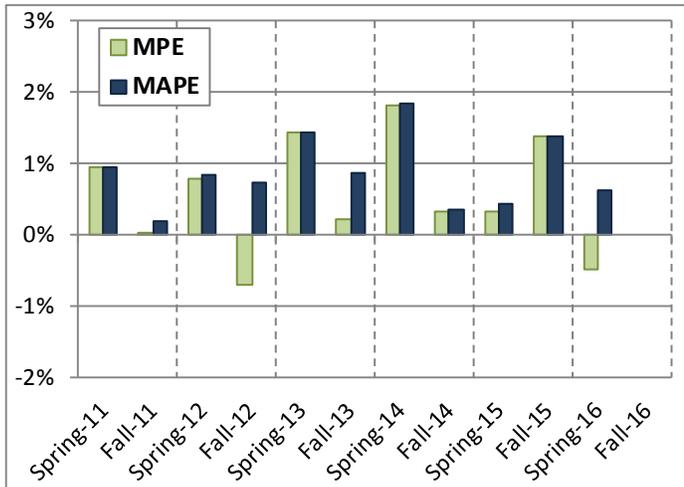
### Quality of the first 6-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	411,976	409,914	0.5%	0.5%
Fall-11	431,841	431,779	0.0%	0.1%
Spring-12	442,843	441,030	0.4%	0.5%
Fall-12	443,237	446,474	-0.7%	0.7%
Spring-13	443,902	440,609	0.7%	0.7%
Fall-13	438,814	441,532	-0.6%	0.6%
Spring-14	440,428	435,724	1.1%	1.1%
Fall-14	436,685	435,704	0.2%	0.2%
Spring-15	435,129	433,700	0.3%	0.4%
Fall-15	417,167	409,954	1.7%	1.7%
Spring-16	403,581	404,356	-0.2%	0.5%
Fall-16	394,078	394,884	-0.2%	0.3%



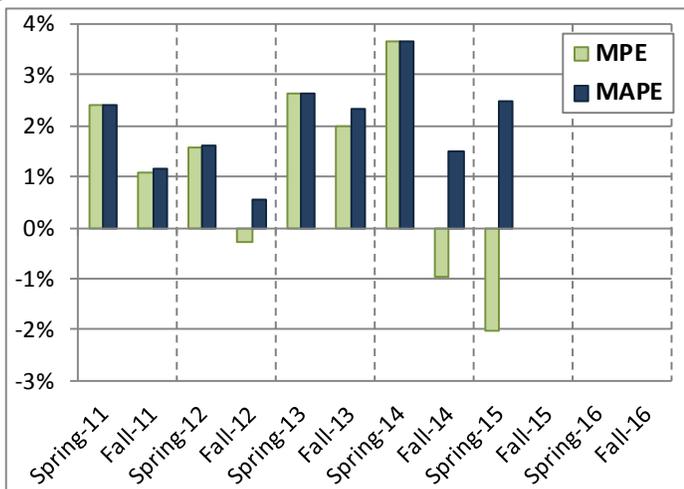
### Quality of the first 12-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	419,496	415,497	0.9%	0.9%
Fall-11	437,342	437,216	0.0%	0.2%
Spring-12	443,040	439,608	0.8%	0.8%
Fall-12	443,480	446,628	-0.7%	0.7%
Spring-13	442,052	435,739	1.4%	1.4%
Fall-13	439,209	438,236	0.2%	0.9%
Spring-14	438,166	430,224	1.8%	1.8%
Fall-14	435,907	434,469	0.3%	0.3%
Spring-15	435,129	433,700	0.3%	0.4%
Fall-15	408,945	403,274	1.4%	1.4%
Spring-16	398,100	400,028	-0.5%	0.6%
Fall-16	N/A	N/A	N/A	N/A



### Quality of the first 24-months of the forecasts

Forecast Cycle	Avg Mo Caseload		MPE	MAPE
	Actual	Forecast		
Spring-11	430,671	420,117	2.4%	2.4%
Fall-11	440,411	435,614	1.1%	1.2%
Spring-12	442,167	435,163	1.6%	1.6%
Fall-12	441,520	442,794	-0.3%	0.6%
Spring-13	440,298	428,820	2.6%	2.6%
Fall-13	436,789	428,123	2.0%	2.3%
Spring-14	433,569	417,816	3.7%	3.7%
Fall-14	426,718	430,512	-0.9%	1.5%
Spring-15	416,379	424,330	-2.0%	2.5%
Fall-15	N/A	N/A	N/A	N/A
Spring-16	N/A	N/A	N/A	N/A
Fall-16	N/A	N/A	N/A	N/A



N/A – Insufficient time has elapsed since the forecast was made to be evaluated.

## Appendix F: Resources

1. CBO's Economic Forecasting Record: 2010 Update, available at: <http://www.cbo.gov/publication/21520>, last accessed on 4/24/2017
2. CBO's Economic Forecasting Record: 2013 Update, available at: <http://www.cbo.gov/publication/43846>, last accessed on 4/24/2017
3. CBO's Economic Forecasting Record: 2015 Update, available at: <http://www.cbo.gov/publication/49891>, last accessed on 4/24/2017
4. Various Semi-annual Forecasts publications by OFRA, available at: <http://www.oregon.gov/dhs/business-services/ofra/Pages/Forecasts-Reports-Publications.aspx>
5. Office of Economic Analysis, Oregon Youth Authority Forecast Tracking Report: April 2007 Forecast, available at: <http://www.oregon.gov/das/OEA/Documents/oyatrackingreport.pdf>, last accessed on 4/24/2017
6. Office of Economic Analysis, Oregon Prison Population Forecast Accuracy 2000-2012, available at: <http://www.oregon.gov/das/OEA/Documents/DOCForecastHistoricalAccuracy2000to2012.pdf>, last accessed on 4/24/2017
7. Office of Economic Analysis, Excel file for Oregon's Correction Forecast Historical Accuracy, 2000 to 2012 (xls), available at: <http://www.oregon.gov/das/OEA/Pages/forecastcorrections.aspx>, last accessed on 4/24/2017
8. Wikipedia, <http://en.wikipedia.org/wiki/Forecasting>, last accessed on 4/24/2017