APPENDIX B: RELATIONSHIP BETWEEN TIME ALLOTTED TO VERIFY PROVISIONAL BALLOTS AND THE LEVEL OF BALLOTS THAT ARE VERIFIED

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Executive Summary

One possible variable that can impact the rate at which states accept the provisional ballots that are cast is the time frame that they allow election officials to review those ballots. In this analysis, the time frame variable is analyzed to see if it has an impact on the counting rate, and if so, what that impact is. The results show that there is an impact that is reflected in the data. The greater amount of time permitted to officials, the greater proportion of ballots are counted. This seems to be best reflected by the number of weeks that are permitted for the counting of ballots. While this trend is apparent, the impact of the time frame seems to not have as strong as an effect as other variables that have been looked at previously.

The distribution of states along the time frame measurement is nearly identical when examined on the weeks-permitted measurement. 14 states permitted less than one week to evaluate provisional ballots, 15 states permitted between one and two weeks, and 14 states permitted greater than two weeks[1]. The percentage of those ballots that were counted proceeds in a clear linear trend as time increases. Those states that permitted less than one week counted an average of 35.4% of their ballots, while those states that permitted between one and two weeks counted 47.1%. The greatest proportion of counting was in the states that permitted greater than 3 weeks, counting 60.8% of the provisional ballots cast[2].

The time permitted to count provisional ballots would seem to be related to the amount of ballots that were cast. When this hypothesis is tested, the results show that there the impact of time is felt most strongly in states where greater than 1% of their overall turnout was of provisional ballots. In these high-cast level states, those that permitted less than one week to evaluate ballots counted 58.6% while those that permitted one to two weeks counted 65.0% of ballots. Again, those states that permitted greater than three weeks verified the highest proportion of provisional ballots, at 73.8%. In states where provisional ballots were less than 1% of the total turnout, the findings are less clear. States allowing less than a week counted 31.6% of their provisional ballots, while those permitting between one and two weeks counted less than that, 26.7%. Those permitting greater than two weeks again counted the highest rate, at 47.8%.

When the impact of time requirements is inputted into a regression equation, with the dependant variable being the percent of cast provisional ballots that are counted, the results are unclear in regards to how influential the time requirement was. The addition of this variable does explain an additional proportion of the overall variation in national provisional ballot numbers, but it proves to not be as influential as the level of ballots that was cast. These results indicate that while time requirements are a factor, they are not one of the most significant factors in this model, and that other variables seem to play a more important role.

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[1] Many thanks are due to Ben Shepler, who assembled complete data on the time requirements states permitted for the counting of provisional ballots.

[2] 43 states are included in this analysis, including Washington D.C. The 7 election-day registration states are omitted, as is Mississippi, which never provided data on provisional ballots. North Carolina is also omitted from the regressions, as it does not have a statewide policy on how it verifies provisional ballots.

Overall, the impact that time requirements for the counting of provisional ballots seems to be positive, with greater time allowed leading to more ballots being included in the final vote. This is especially true in areas where high levels of provisional ballots are cast. While this is the case, it also appears to be true that time requirements are not as significant factors as other variables. The 3 major determinants of how many provisional ballots are counted are more likely to be: the level of ballots that are cast out of overall turnout (the higher the number, the more are counted), the verification requirements to count provisional ballots (the more rigorous the requirements, the fewer are counted) and whether ballots cast outside of the correct precinct are eligible (if they are not, fewer are counted).

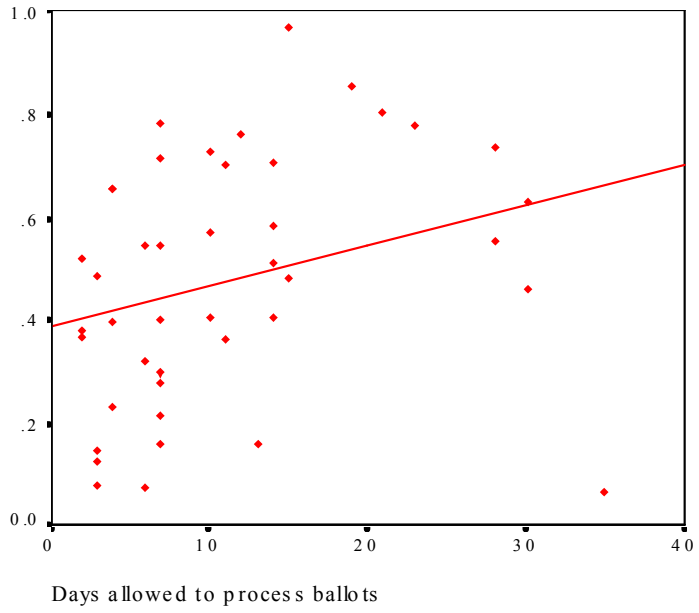
Relationship Between Time Allotted to Verify Provisional Ballots
and the
Level of Ballots that are Verified

One possible variable that can impact how many provisional ballots that have been cast will eventually be counted is the amount of time election officials have to process those ballots. If officials do not have an adequate amount of time, they may be forced to arbitrarily rule on the validity of provisional ballots that they simply do not have the time to assess. This could increase the level of ballots counted, or decrease the level, depending on whether election officials choose to accept or reject the ballots they were unable to evaluate. By examining the data for overall trends, some conclusions may be drawn out in regards to how provisional ballots were handled when little time was available to evaluate them.

Analysis by Days Allotted to Evaluate Cast Provisional Ballots

A quick scatterplot reveals a potential relationship between the time States allow for the evaluation of provisional ballots and the percentage of those ballots that are finally counted as legitimate (Figure 1). Though the relationship is not perfect, there does seem to be a tendency for states that allow more days to evaluate provisional ballots to validate more of those ballots. Those states that allow fewer days to evaluate tend to occur in the lower left hand quadrant of the scatterplot, while those that allow more days tend to move towards the upper right hand quadrant. A computer-generated trend line helps to make this tendency more apparent.

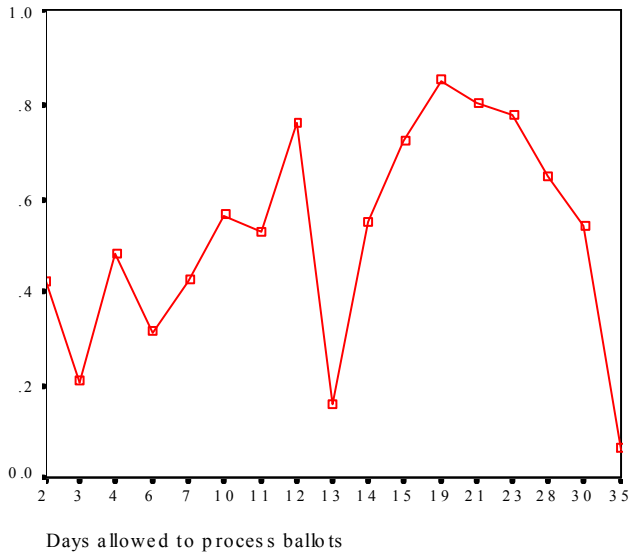
Figure 1: Percent of Cast Ballots Counted, by Days Allowed



Another method to analyze the impact that time has upon the verification of ballots is a means plot of the average level of ballots that were counted for each amount

of days allotted. This is essentially condensing the previous scatterplot to reflect one average rate of counting for each point on the independent variable (time allotted). The results clearly indicate a positive trend line around which the points cluster. As more days are permitted to election officials, those officials tend to count a higher level of provisional ballots.

Figure 2: Average Percent of Cast Ballots Counted, by Days Allowed

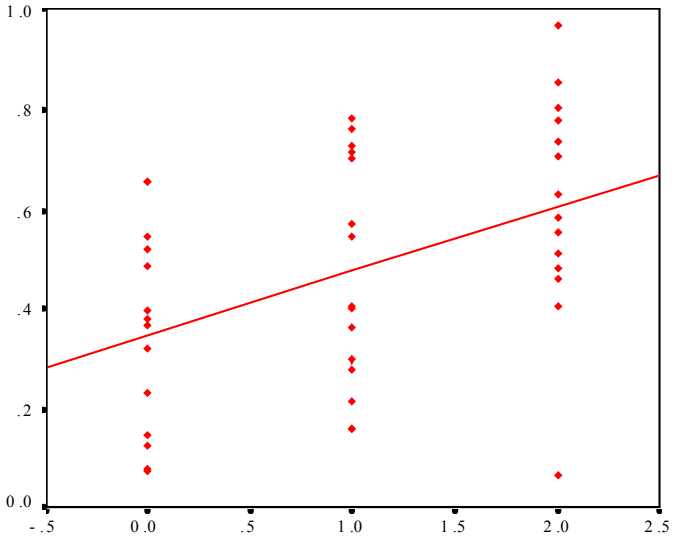


Analysis by Weeks Permitted to Evaluate Ballots

A weakness of the analysis conducted by the number of days permitted is that it spreads the limited number of cases available over a wide range of potential values. This weakens any ability to draw conclusions from the data, because it spreads the trend over too many points, using too little data. This can be refined somewhat by reducing the data to the amount of weeks allowed, rather than days. The days allotted measurement was reduced to: one week or less (2-7 days), between one and two weeks (8-14 days), and greater than two weeks (15 days or more). Similar, but clearer, results are obtained using this measurement.

The scatterplot (Figure 3) reflects this change in measurement and clusters all of the measurements within the three new values permitted. The trend line that occurs is similar to the original scatterplot, but the tendency of the actual data points becomes more apparent. Aside from the outliers at the very bottom of the chart, it becomes obvious that the lower data point in each value area is well above the average in the value that precedes it. The positive relationship is much more clearly revealed.

Figure 3: Percent of Cast Ballots Counted, by Level of Weeks Allowed



Replicating the means plot conducted earlier produces more striking results, providing a better clearer of the overall role played by time restrictions on the counting process. A steady positive trend becomes apparent between the weeks permitted and the amount of provisional ballots that are confirmed. There are large differences between the results for states that allowed "Less than one week" (35.4%) and "Between one and two weeks" (47.11%) for evaluating ballots. The results also indicate large differences between the "Between one and two weeks" and the "greater than two weeks" (60.8%) time frame. Each additional week permitted seem to add approximately an additional 12% to the rate of counting ballots.

Figure 4: Average Percent of Cast Ballots Counted, by Level of Weeks Allowed

Role of High and Low Cast Rates

An additional question seems to need to be asked regarding whether the *amount* of ballots cast impacts this role. Longer time lines would seem to be more necessary in areas where high levels of ballots are cast, whereas in areas where few ballots are cast, additional time would seem to be less necessary. The distinction between high and low levels was made by separating the states based upon whether provisional ballots counted for greater or less than 1% of the overall number of ballots cast in the election. 17 states fall into the high-cast level category, while 25 states are in the low-cast level category.

Previous research has shown that States that had higher levels of ballots cast typically counted more of those ballots. States with more than 1% of their turnout consisting of cast provisional ballots typically counted an average of 67.9% of them, while those states with less than 1% counted almost half that amount, an average of 34.6%. This analysis adds to that finding, and shows that States that had high-levels of ballots cast, and allowed greater time to evaluate those ballots, on average counted much higher levels of those ballots. Figures 5 and 6 show scatterplots and means plots of states that had high levels of provisional ballots cast. Figures 7 and 8 show the same information for states with low levels of provisional ballots cast.

Figure 5: Scatterplot for High-Cast Level States

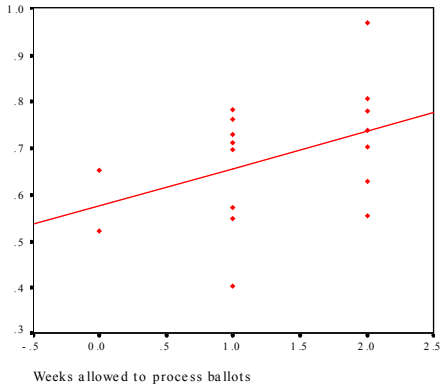


Figure 6: Means plot for High-Cast Level States

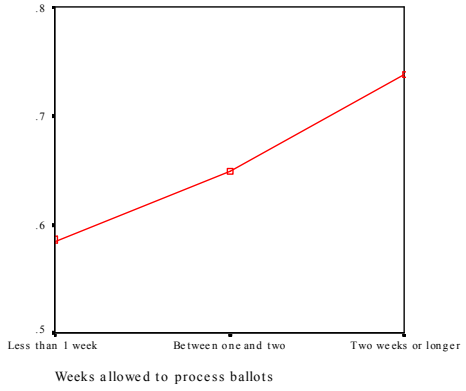
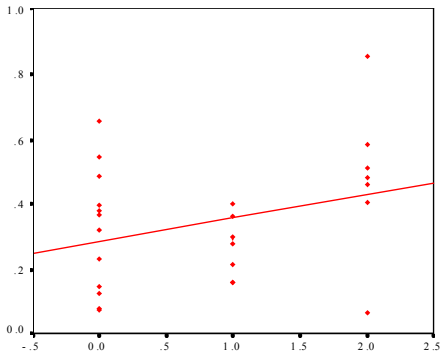


Figure 7: Scatterplot for Low-Cast Level States

Figure 8: Means Plot for Low-Cast Level States



In the high-cast level states, a straight positive trend is found from the "less than one week" on through the "Greater than two weeks" group. In the shortest time period, an average of 58.6% of the ballots were counted, rising to 65.0% in the "one to two week" time frame. In the "greater than two weeks" time frame, this level jumps up to 73.8%. In the low-cast level States, the results were not as uniformly related to each other. The "less than one week" category counted 31.6% of its provisional ballots, while the "one to two week" category counted fewer ballots, 26.7%. The "greater than two weeks" time frame counted vastly more, around 47.9%. An interaction between the low-high cast rate, and the time period allowed to count ballots seems to exist. Specific Figures are shown for this in Table 1.

Table 1: Interaction of Level of Ballots Cast and Time to Evaluate

Level of Ballots Cast	Time to Evaluate	Percent Counted
High	Greater than 2 Weeks	73.8%
High	1 – 2 Weeks	65.0%
High	Less than 1 Week	58.6%
Low	Greater than 2 Weeks	47.9%
Low	1-2 Weeks	26.7%
Low	Less than 1 Week	31.6%

Regression Analysis

These results indicate that the time requirements states face when handling provisional ballots do impact how they count those ballots. There also appears to be an effect from the level of provisional ballots cast of overall turnout, as well as an interaction between those two factors. The role that these influences play within the overall counting process can be examined by entering them into an ordinary-least-squares regression, using other predictors previously examined in prior research[3] as a baseline for comparison. The results of that analysis are shown in Tables 2 and 3.

Table 2: Predictive Utility of Regression Model

Model	**R Square**	Std. Error of the Estimate	Sig.
Original Model	**.415**	.184	.000
With Time, Cast Level and Interaction Variables	**.570**	.158	.000

a. The dependant variable in this case is the percent of cast provisional ballots that were finally counted in the vote total. The independent variables include whether the State: was new to provisional voting, had a registered voter database, counted out-of-precinct ballots, what type of ID they required at the polls and the method that they used to verify cast ballots. The R Square explains how much of the variance of in the dependant variable is explained by the independent variables. The Adjusted R Square accounts for how many variables are used in the model. The closer the R and adjusted R are to 1.0, the more predictive the model is.

Table 3: Individual Variable Coefficients of New Variables

Model		Standardized Coefficients Beta	Std. Error	T	Sig.
	(Constant)	.340	.234	1.455	.155
New	Weeks to Evaluate	-.004	.108	-.033	.974
New	Level of Ballots Cast	.235	.128	1.837	.075*
New	Interaction (Time * Cast Level)	.019	.077	.251	.804
Old	States that used Provisional Ballots for the First Time in 2004	-.080	.070	-1.141	.262
Old	Does State have a Statewide Voter Registration Database	-.063	.055	-1.157	.256
Old	Does State Count PB's Cast Outside of Correct Precinct	.092	.057	1.628	.113
Old	Voter Identification Required In Order To Cast a Normal Ballot	-.010	.025	-.411	.683
Old	What Criteria was used to Count or Discard a PV	-.059	.030	-1.941	.061*

a Dependent Variable: Percent of Provisional Ballots Cast that were Counted in 2004
* - Indicates statistical significance at the .10 level.

[3] See Andersen "Statistical Analysis of Provisional Voting".

Of note in this chart is that the only two variables that are statistically significant, and that there is thus full confidence in, are the level of ballots cast in the state and the verification requirements used to count ballots. Whether a state permitted out-of-precinct ballots to be counted is also nearly significant. The rest of the variables have a greater degree of uncertainty to them. The standardized coefficients indicate the impact that these variables have upon the final value of the dependant variable. The larger the coefficients are, the greater degree of impact the variable had in the counting process. The role that the time allotted to review ballots plays appears to be weak, in comparison to the other variables. This is not to argue that the role played by time allotments is insignificant, simply that it does not have as much of an impact as do other variables.

Conclusion

This analysis offers support for the assertion that allowing more time to evaluate provisional ballots increases the amount of those ballots that are finally counted within the final vote total. It seems difficult to generate a plausible reason why a short time frame would provide more accurate evaluations of ballots, so this may provide an indication that a majority of provisional ballots that are cast are in fact legitimate. Longer time frames suggest that more thorough evaluations can be conducted, leading to more accurate results in the counting process. If longer time frames can be expected to result in more accurate assessments, these findings can provide a validation of the provisional balloting process. Longer time frames led to higher counting rates, indicating that greater accuracy in the evaluation process consistently validated more of the ballots they encountered. This also suggests that legitimate voters who otherwise could have been disenfranchised by the elections process often cast provisional ballots.

The disparity in the counting of ballots between the high and low cast-level states may have arisen from the disparity in the importance of provisional ballots within the final vote tally. States that had low levels of provisional ballots cast may not have felt an incentive to evaluate them accurately, because they would not impact the final results. The role that provisional ballots played in these states may have been viewed as minimal to election officials, decreasing their incentive to evaluate them thoroughly. Short time restrictions would have compounded this indifference, and left many valid ballots uncounted. States with higher rates of provisional ballots cast may have viewed the number of provisional ballots as potentially influential in the final outcome. This would have provided a greater incentive to include them accurately within the final vote tally. In either case, it seems likely that greater amounts of time available to assess those ballots would provide greater accuracy in their evaluation. In a close election, such accuracy may be crucial in creating perceptions of legitimacy in an election.

Attachment A: Data Used In This Analysis

State	Total Provisional Ballots Cast	% of Turnout of Cast Provisional Ballots	% of Cast Provisional Ballots that were Counted	Total Provisional Ballots Counted	% of Turnout of Counted Provisional Ballots	What is the time line for counting PV ballots?
Alabama	6,560	0.35%	27.99%	1,836	0.10%	7 days
Alaska	**23,275**	**7.45%**	**96.66%**	**22,498**	**7.20%**	**15 days**
Arizona	**101,536**	**5.04%**	**72.54%**	**73,658**	**3.66%**	**10 days**
Arkansas	7,675	0.73%	47.92%	3,678	0.35%	15 days
California	**668,408**	**5.38%**	**73.57%**	**491,765**	**3.96%**	**28 days**
Colorado	**51,477**	**2.42%**	**76.08%**	**39,163**	**1.84%**	**12 days**
Connecticut	1,573	0.10%	31.66%	498	0.03%	6 days
Delaware	384	0.10%	6.25%	24	0.01%	35 days
D.C.	**11,212**	**4.93%**	**71.15%**	**7,977**	**3.51%**	**7 days**
Florida	27,742	0.36%	36.07%	10,007	0.13%	11 days
Georgia	12,893	0.39%	29.78%	3,839	0.12%	7 days
Hawaii	348	0.08%	7.18%	25	0.01%	6 days
Idaho	N/A	N/A	N/A	N/A	N/A	N/A
Illinois	43,464	0.82%	51.00%	22,167	0.42%	14 days
Indiana	5,707	0.23%	15.95%	910	0.04%	13 days
Iowa	**15,454**	**1.03%**	**52.08%**	**8,048**	**0.53%**	**2 days**
Kansas	**45,563**	**3.84%**	**69.80%**	**31,805**	**2.68%**	**11 days**
Kentucky	1,494	0.08%	14.79%	221	0.01%	3 days
Louisiana	5,880	0.30%	39.32%	2,312	0.12%	4 days
Maine	N/A	N/A	N/A	N/A	N/A	N/A
Maryland	**48,963**	**2.05%**	**65.07%**	**31,860**	**1.33%**	**4 days**
Massachusetts	10,060	0.35%	23.05%	2,319	0.08%	4 days
Michigan	5,610	0.12%	58.41%	3,277	0.07%	14 days
Minnesota	N/A	N/A	N/A	N/A	N/A	14 days
Mississippi	UK	UK	UK	UK	UK	UK
Missouri	8,183	0.30%	40.23%	3,292	0.12%	14 days
Montana	653	0.14%	54.67%	357	0.08%	6 days
Nebraska	**17,003**	**2.18%**	**78.21%**	**13,298**	**1.71%**	**7 days**
Nevada	6,154	0.74%	39.76%	2,447	0.29%	7 days
New Hamp.	N/A	N/A	N/A	N/A	N/A	N/A
New Jersey	**64,226**	**1.78%**	**55.26%**	**35,493**	**0.98%**	**28 days**
New Mexico	**15,360**	**2.03%**	**57.08%**	**8,767**	**1.16%**	**10 days**
New York	**243,450**	**3.29%**	**40.26%**	**98,003**	**1.33%**	**10 days**
N. Carolina	**77,469**	**2.21%**	**54.66%**	**42,348**	**1.21%**	**7 days**
North Dakota	N/A	N/A	N/A	N/A	N/A	N/A
Ohio	**158,642**	**2.82%**	**77.88%**	**123,548**	**2.20%**	**23 days**
Oklahoma	2,615	0.18%	7.69%	201	0.01%	3 days
Oregon	8,298	0.45%	85.29%	7,077	0.39%	19 days
Pennsylvania	53,698	0.93%	48.59%	26,092	0.45%	3 days
Rhode Island	2,147	0.49%	45.83%	984	0.23%	30 days
South Carolina	4,930	0.30%	65.05%	3,207	0.20%	4 days
South Dakota	533	0.14%	12.38%	66	0.02%	3 days
Tennessee	8,778	0.36%	37.57%	3,298	0.14%	2 days
Texas	36,193	0.49%	21.47%	7,770	0.10%	7 days
Utah	**26,389**	**2.84%**	**70.39%**	**18,575**	**2.00%**	**14 days**
Vermont	101	0.03%	36.63%	37	0.01%	2 days
Virginia	4,609	0.14%	15.80%	728	0.02%	7 days

Washington	**86,239**	**3.01%**	**80.33%**	**69,273**	**2.42%**	*****
West Virginia	**13,367**	**1.77%**	**62.68%**	**8,378**	**1.11%**	**30 days**
Wisconsin	N/A	N/A	N/A	N/A	N/A	*
Wyoming	N/A	N/A	N/A	N/A	N/A	*

* No data for how long is permitted for the evaluation of provisional ballots was found. Sources searched include state legislation and elections websites

N/A – These states used Election Day registration, and were exempt from HAVA mandated provisional ballots

UK – No data on provisional balloting has been obtained from this state

Bold – States in bold experienced greater than 1% of their overall turnout as cast provisional ballots.