

# **May I See Your ID, Please? Measuring the Number of Eligible Voters with Photo Identification.**

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An election administration policy debate has emerged around a photo identification requirement for voters. Supporters herald it as a method to reduce voter fraud, while those in opposition are concerned those eligible voters lacking approved photo identification will be turned away or not attempt to vote. It is not without irony that the debate is expressed in terms of privileges (those capable of obtaining photo identification prove who they are and demonstrate they are responsible to vote) and rights (the right to vote should not be impeded), as it has throughout American history.<sup>1</sup>

The debate would be irrelevant if every eligible voter possessed acceptable photo identification. An important question to address, then, is does every eligible voter have photo identification? If not, how many eligible voters might be disfranchised by a photo identification requirement? In asking these questions, I do not imply there is an acceptable level of disfranchisement, that it is more legitimate to disfranchise one person than a hundred thousand.

I argue that the available data to measure the question are susceptible to enough error that we cannot know within a reasonable degree of uncertainty that some eligible voters do not possess acceptable photo identification. Further, while proponents of photo identification requirements advocate their use to prevent vote fraud, statistics presented here suggest that more study needs to be done into the integrity of photo identification rolls. I call for the placement of a photo identification question on the 2010 census to assess if voter photo identification laws may disfranchise some voters. If we can determine that a reasonably high number of eligible voters possess photo identification, then we may proceed with photo identification policies without fear of disfranchising disadvantaged populations.

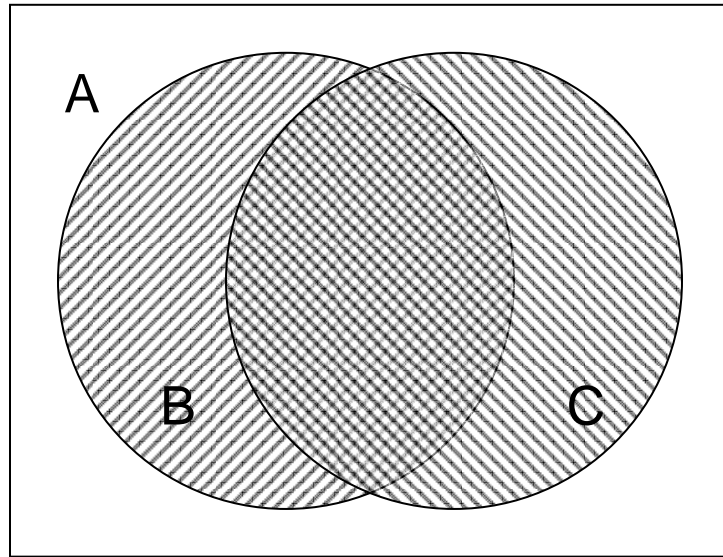
### ***Available Data and Methodologies***

To measure how many eligible voters do not have an acceptable form of photo identification, we would ideally conduct a complete enumeration of all eligible voters, identifying those with and without acceptable photo identification. But even the most valid measure in the form of the national decennial census has error, as described below, and thus using even the best measure we would be uncertain if all eligible voters have acceptable photo identification. If the most valid measure has error, then it is not surprising that other measures and methodologies to estimate the number of eligible voters without acceptable photo identification also possess error. Indeed, unlike the study of planetary motion or particle physics, it is rare in the social sciences to perfectly measure any concept.<sup>2</sup> Understanding these data and their potential sources of error can help inform the validity of these measures, and thereby help us better understand the implications of voter photo identification policies.

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<sup>1</sup> See: Alexander Keyssar. 2000. *The Right to Vote: The Contested History of Democracy in the United States*. New York, NY: Perseus Book Group.

<sup>2</sup> For an overview of validity issues, see: Michael P. McDonald. 2005. "Validity, Data Sources" in *Encyclopedia of Social Measurement, Vol. 3*. Kimberly Kempf-Leonard, ed. San Deigo, CA: Elsevier Inc.



**Figure 1. All Persons (A), Eligible Voters (B), and Persons with Photo ID (C)**

To understand the nature of the measurement problem, consider Figure 1. The entire population is represented by the area of the box, region A, those who are eligible to vote are represented by the region in circle B, and those with photo identification are those represented in circle C. The areas are presented merely for expositional purposes and in no way imply relative sizes of the populations. The cross-hatched overlapping region between B and C represent persons eligible to vote who have photo identification. The region in circle B non-overlapping with circle C represents eligible voters without photo identification. Persons not eligible to vote are in the region outside circle B, and among these, those without photo identification are in the un-shaded area of A outside circles B and C. Ineligible voters with photo identification are located within the areas of circle C non-overlapping with B.

To start, consider the entire population, represented in area A. The United States Census Bureau, Population Division produces the best population estimates for the nation, states and counties of the United States.<sup>3</sup> Current estimates are constructed by adjusting the 2000 census for births, deaths, and migration.<sup>4</sup> At the outset, then, the base for the population estimate has an error component manifested in a net undercount of the population from the decennial census.<sup>5</sup> As we move forward from the last census, the

<sup>3</sup> See: <http://www.census.gov/popest/estimates.php>.

<sup>4</sup> The Census Bureau releases population estimates for July 1 of a calendar year. There is a lag in the release of the estimates as the data necessary to construct the estimates are collected and analyzed. As of September, 2006, the most recent population estimate is for July 1, 2005. The best method to estimate populations is to interpolate or extrapolate the difference between pairs of population estimates. When new July 1 population estimates become available, current estimates can be revised to reflect the new data. At the end of a decade, the Census Bureau releases revised population estimates to conform the end of the decade population estimate to the decennial census.

<sup>5</sup> See: U.S. Census Bureau. 2001. "Report of the Executive Steering Committee for Accuracy and Coverage Evaluation Policy on Adjustment for Non-Redistricting Uses." Oct. 17, 2001. <http://www.census.gov/dmd/www/EscapRep2.html>.

magnitude of the current error resulting from imperfect measurement of births, deaths, and migration, will be unknown until we can observe the difference between the 2010 population estimates and the 2010 census. Furthermore, population estimates are released for July 1 and usually lag the current date by over a year. For dates between available population estimates, the population estimates can be estimated by linear interpolation. Population estimates for dates following the last available estimate can be estimated through extrapolation. Both methods assume the change in population is at a constant rate between a pair of population estimates.

The voting-eligible population (VEP), represented by circle B, can be estimated by subtracting the voting-ineligible populations from the total population.<sup>6</sup> Ineligible populations include persons under age eighteen, non-citizens, ineligible felons (depending on state law), mentally incompetent, and those persons who recently moved and have not fulfilled residency requirements. The Census Bureau population estimates are for the domestic population, and thus eligible voters living outside the national or a particular state should be added to the resident VEP, including eligible voters living overseas. Like population estimates, estimates of voting-ineligible populations also have error, and for some adjustments there simply are no good estimates available for the nation, state, or counties.

Population estimates by age can be subset to estimate the voting-age population, those persons over age eighteen. The Census Bureau produces population estimates by age through “aging” the population estimates each year while controlling for the elements of population change: births, deaths, and migration. Population estimates by age are thus subject to similar errors as the total population estimates. These estimates are for the resident population of a state, and does not account for a state’s citizens living in other states, such as college students, or citizens from other states living within a state.

The Census Bureau does not enumerate overseas citizens.<sup>7</sup> One can piece together a national estimate from various sources. The military maintains lists of their overseas personnel and their dependents. The Department of State also tracks overseas personnel and their dependents, and until 1999, the Bureau of Consular Services reported United States civilians registering at a county’s U.S. embassy. Unfortunately, these statistics are no longer reported, and were an under-estimate of the overseas civilian population as they only included those who registered with an embassy. These statistics can be used to formulate a national estimate of the overseas voting-eligible population, but they are not reported by state and there is no method to apportion the overseas population to the states.

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<sup>6</sup> The methodology of estimating aggregate statistics of the voting-eligible population was pioneered by Walter Dean Burnham, see Burnham, Walter Dean. 1965. “The Changing Shape of the American Political Universe.” *American Political Science Review* 59 (March): 7-28; and Walter Dean Burnham. 1987. “The Turnout Problem.” In *Elections American Style*, A. James Reichley, ed.. Washington DC: The Brookings Institution. For recent elections, Michael P. McDonald takes a lead role in calculating these statistics, see: Michael P. McDonald and Samuel Popkin. 2001. “The Myth of the Vanishing Voter.” *American Political Science Review* 95(4): 963-974; and Michael P. McDonald. 2002. “The Turnout Rate Among Eligible Voters for U.S. States, 1980-2000.” *State Politics and Policy Quarterly* 2(2): 199-212. Updated statistics of the voting-eligible population can be found at [http://elections.gmu.edu/voter\\_turnout.htm](http://elections.gmu.edu/voter_turnout.htm).

<sup>7</sup> For an explanation why the Census Bureau does not enumerate overseas citizens, see: U.S. Census Bureau. “Issues in Counting American Overseas in Future Censuses.” September 27, 2001.

There are two methods available to estimate the citizen-voting-age population (CVAP). One method measures CVAP from decennial census questions and uses interpolation and extrapolation between censuses to estimate population in non-census years.<sup>8</sup> Interpolation works well between censuses, but extrapolation assumes past levels of migration remain constant over the following decade. This assumption is observably false, as evident in the upward trend in legal immigration starting in 1972, reaching a peak in 1991, and generally leveling since.<sup>9</sup> Another method uses the Census Bureau's Current Population Survey (CPS). The CPS is a large-scale monthly survey of nearly a hundred thousand people used to develop labor statistics for the nation and states.<sup>10</sup> The CPS includes a citizenship question, and in election years, the survey includes a limited number of political participation questions, including voting and voter registration. The CPS is an important survey that guides government policy, and thus the government has a stake in its integrity. But as a survey, the CPS has all of the statistical and non-statistical error associated with survey methodology.<sup>11</sup> The benefit of using the CPS to estimate CVAP is that it does not assume immigration and naturalization remains constant from the proceeding decade. Thus, despite the survey error, the CPS estimates are generally better than extrapolation to estimate current CVAP (though data release lags a few months).

Ineligible felon populations can be estimated from Department of Justice, Bureau of Justice Statistics reports on the number of prisoners, parolees, and probationers.<sup>12</sup> Annual reports of January 1 statistics can be used to produce interpolated and extrapolated estimates which can be matched with state law to estimate the number of ineligible felons in a state.<sup>13</sup> These statistics cannot estimate those disfranchised in the fourteen states with some form of post-correctional disfranchisement law, as recidivism, migration, and deaths of felons are largely unknown. Thus, the true number of disfranchised felons within these states is certainly an under-estimate.

For two remaining ineligible populations, those deemed mentally incompetent by a court and those who are not eligible under residency requirements, no reliable, uniform statistics exist to estimate these populations. This is not to say that a particular state might attempt to track these populations.<sup>14</sup> Best estimates of the mentally incompetent suggest that these populations are relatively small compared to the total population.<sup>15</sup>

In sum, aggregate statistics provide an estimate of the total and the voting-eligible population, an estimate that contains error. Error components can be identified and the error can be reduced as more data become available, but the overall magnitude of the

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<sup>8</sup> This is a method recommended by Walter Dean Burnham, *supra*, and used by Curtis Gans of the Center for the Study of the American Electorate. See: <http://spa.american.edu/csae/>.

<sup>9</sup> Kelly Jefferys and Nancy Rytina. 2006. "U.S. Legal Permanent Residents: 2005." U.S. Department of Homeland Security, Office of Immigration Services. April, 2006. Available: <http://www.uscis.gov/graphics/shared/statistics/yearbook/index.htm>.

<sup>10</sup> See: <http://www.census.gov/cps/>.

<sup>11</sup> For a review, see Herb Asher. 2006. *Polling and the Public: What Every Citizen Should Know, 6th Edition*. Washington, DC: Congressional Quarterly Press.

<sup>12</sup> For current and past reports: <http://www.ojp.usdoj.gov/bjs/welcome.html>

<sup>13</sup> For a current list of laws, see: [http://elections.gmu.edu/felony\\_disfranchisement.htm](http://elections.gmu.edu/felony_disfranchisement.htm).

<sup>14</sup> For example, a Missouri Department of Revenue report identified persons living in "facilities licensed under chapter 198" (essentially nursing homes) that would be exempt under a state photo identification law. Brad Brester. 2006. Missouri Department of Revenue, Fiscal Note 4947-01. February 10, 2006.

<sup>15</sup> See McDonald and Popkin (2001), *supra*, footnote 1.

error is largely unknown. Thus, estimates of the voting-eligible population are a best guess at the true value and should not be treated as a true value.

Another measure of the voting-eligible population comes from voter registration files, which record persons registered to vote. At the outset, this is not a measure of the VEP because there are eligible persons who are not registered, evident in people who continually register to vote, particularly young persons who tend to vote at increasingly higher rates as they age.<sup>16</sup> Voter registration measurement error goes deeper. Most notably, there is deadwood, people who are registered at an address, but for whatever reason no longer live there. To manage deadwood, states and localities purge their registration rolls of persons who have moved or have become ineligible for other reasons. Purging often occurs in real time as records are updated, and some states do not archive their registration rolls. The result is the number of persons with a record of voting can shrink over time as people are routinely removed from the files.<sup>17</sup> The net of deadwood and purging means that the list of persons on the voter registration files is not an accurate snapshot of those who are currently registered to vote or registered to vote in a past election.

Deadwood manifests itself in measurable ways. In 2004, Alaska and Maine reported to the United States Election Assistance Commission more persons registered to vote than an estimate of their citizen-voting-age population.<sup>18</sup> Survey respondents report registering at lower rates than aggregate statistics indicate, an ironic twist on the over-report bias often observed on the vote question, where a greater percentage of persons report voting than aggregate statistics indicate.<sup>19</sup>

A method to measure deadwood computes total registration as a percent of CVAP and compares the value to the percent CPS CVAP respondents reporting being registered. Clark Bensen, an expert witness for defendants in a challenge to Indiana's voter identification law, used this method to argue that Indiana's voter registration lists were among the most highly inflated in the nation.<sup>20</sup> Ironically, the court cited this as evidence of vote fraud, "...even though there is no evidence of voter fraud as such."<sup>21</sup> Given the lack of vote fraud evidence, it is more likely that deadwood is the primary cause of Indiana's inflated registration rolls, rather than vote fraud; but it could also be a result of error in the aggregate CVAP estimates or of CPS survey methodology error, both discussed above.

To measure area C, those with photo identification, we can examine a common form of photo identification, a drivers license, which may include a non-drivers license photo identification card (hereafter I refer to both as simply a drivers license). Many states release drivers license statistics. Here, I examine an ad-hoc sampling of eleven

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<sup>16</sup> See, for example, Raymond Wolfinger and Stephen Rosenstone. 1980. *Who Votes?* New Haven: Yale University Press.

<sup>17</sup> Michael P. McDonald. Forthcoming. "The True Electorate: A Cross-Validation of Voter File and Election Poll Demographics." *Public Opinion Quarterly*.

<sup>18</sup> See Kimball Brace and Michael P. McDonald. 2005. "Report to the Election Assistance Commission on the Election Day Survey." Sept. 27, 2005.

<sup>19</sup> Michael P. McDonald. 2004. "Is Voter Registration Up Everywhere in America?" The Brookings Institution, October 5, 2005. <http://www.brookings.edu/views/papers/mcdonald/20041005.htm>.

<sup>20</sup> *Indiana Democratic Party, et al., v. Todd Rokita, et al.*, (1:05-CV-0634-SEB-VSS), April 14, 2006 at p. 22.

<sup>21</sup> *Supra* at p. 21

states: Arizona, California, Connecticut, Florida, Georgia, Indiana, Iowa, Kansas, Missouri, Virginia, and Wisconsin.<sup>22</sup> Reporting details vary, and suggest caution should be exercised in analyzing these data. Arizona and Washington report tens of thousands of drivers licenses issued to persons outside their state.<sup>23</sup> Georgia reports 288,883 persons had both a drivers license and a non-drivers license photo identification card.<sup>24</sup> There are many license types, from learners permits to moped licenses to commercial truck operators. States may include suspended or revoked licenses, among other categories, in their records. In sum, it bears repeating that care should be taken in analyzing drivers license statistics.

Given these caveats, we can probe the validity of drivers license rolls by comparing the total number of issued drivers licenses to the state's voting-age population to construct a percentage of persons eligible for a drivers license that have a drivers license. The legal driving age varies among states, typically age 16, but as low as age 14 in Iowa and Kansas. The percentage of persons under age 18 on drivers license rolls can be ascertained for states that release statistics by age (California, Iowa, Missouri, and Wisconsin), and varies between 2.0 percent in California to 3.9 percent in Missouri.<sup>25</sup> (Kansas has a separate category of restricted licenses for persons age 14 and 15).<sup>26</sup> To correctly gauge the percentage of the voting-age population of a state that might hold a drivers license, ineligible younger voters need to be removed from the drivers license statistics. The voting-age population estimates can be constructed for the date most approximate to a state's report through the interpolation or extrapolation methods described above.

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<sup>22</sup> I unsuccessfully searched for statistics for Massachusetts, New York, and Hawaii. Tennessee and Washington annual reports were for annual drivers license transactions and did not include statistics on the total number of drivers licenses issued by the state.

<sup>23</sup> Arizona reports 75,203 or 1.9 percent of drivers licenses were issued to persons out of state and Washington reports 161,445 out of state persons obtained a drivers license in a twelve-month period ending August, 2006. See: Arizona Department of Transportation, Motor Vehicles Division. "Point-in-Time Driver Licenses, by County, 4th Quarter of Fiscal Year 2006," July 3, 2006, available: [http://www.azdot.gov/mvd/statistics/documents/StatewideDLsAgeEndorse\\_4QtrFY2006.pdf](http://www.azdot.gov/mvd/statistics/documents/StatewideDLsAgeEndorse_4QtrFY2006.pdf); and State of Washington, Department of Licensing. "Washington State Drivers Report for August 2006," September 21, 2006. See: <http://www.dol.wa.gov/about/reports/Aug2006WDLReport.pdf>.

<sup>24</sup> See, Plaintiff's Motion to Leave to File Second Amended Complaint and Brief in Support, in *Common Cause/Georgia, et al., v. Ms. Evon Billups*, Case No. 4:05-cv-00201-HLM. Document 79, Filed 2/23/2006.

<sup>25</sup> *California*: Mary K. Janke, Scott V. Masten, Debbie, M. McKenzie, Michael A. Gerbers, and Shara Lynn Kelsey. "Teen and Senior Drivers." California Department of Motor Vehicles, Research and Development Branch, Licensing Operations Division. Report Number RSS-03-194. July 2003. [http://www.dmv.ca.gov/about/profile/rd/r\\_d\\_report/Section%206/194-TeenandSeniorReport.pdf](http://www.dmv.ca.gov/about/profile/rd/r_d_report/Section%206/194-TeenandSeniorReport.pdf); *Iowa*: Department of Transportation. "Iowa Drivers Records." August 8, 2006. <http://www.dot.state.ia.us/mvd/ods/dlrecords.pdf>; *Missouri*: Department of Revenue, Informations Systems. "Total Drivers by Age per County." Sept. 15, 2006. [http://www.dorx.mo.gov/publicreports/drivers\\_age\\_cnty\\_report.txt](http://www.dorx.mo.gov/publicreports/drivers_age_cnty_report.txt); and *Wisconsin*: Department of Transportation. "Drivers License by County." December 1, 2003. Available: <http://www.dot.state.wi.us/drivers/docs/drlscounties.pdf>

<sup>26</sup> State of Kansas. "Department of Revenue Annual Statistical Report, Fiscal Year Ending June 30, 2005." Available at: <http://www.ksrevenue.org/pdf/forms/05arcomplete.pdf>

<b>State</b>	<b>Date of Report</b>	<b>Number of Drivers Licenses</b>	<b>Most Approximate November Voting-Age Population</b>	<b>Most Approximate November Voting-Eligible Population</b>
<i>Arizona*</i>	July 3, 2006	4,032,905	4,575,232	4,012,545
<i>California</i>	January 1, 2001	21,042,000	24,877,906	19,685,241
<i>Connecticut*</i>	January, 2006	2,476,071	2,689,258	2,435,653
<i>Florida*</i>	January 1, 2006	15,888,511	14,159,475	12,162,569
<i>Georgia^</i>	February 23, 2006	7,087,987	6,993,905	6,115,991
<i>Indiana*</i>	January 2006	4,030,000	4,711,595	4,574,276
<i>Iowa</i>	August 8, 2006	2,154,104	2,324,225	2,222,849
<i>Kansas*</i>	December 31, 2004	1,979,746	2,049,542	1,890,455
<i>Missouri</i>	Sept. 15, 2006	4,068,650	4,491,414	4,356,016
<i>Virginia*</i>	June 30, 2005	5,178,156	5,860,190	5,428,573
<i>Wisconsin</i>	December 1, 2003	3,834,923	4,192,517	3,930,978

Notes: \* = Includes persons under age 18, ^ = Includes non-drivers license photo identification

**Table 1. Number of Persons with Drivers Licenses for Selected States.**

Sources: *Arizona*: Department of Transportation, Motor Vehicles Division. "Point-in-Time Driver Licenses, by County, 4th Quarter of Fiscal Year 2006," July 3, 2006, available: [http://www.azdot.gov/mvd/statistics/documents/StatewideDLsAgeEndorse\\_4QtrFY2006.pdf](http://www.azdot.gov/mvd/statistics/documents/StatewideDLsAgeEndorse_4QtrFY2006.pdf). *California*: Mary K. Janke, Scott V. Masten, Debbie, M. McKenzie, Michael A. Gerbers, and Shara Lynn Kelsey. "Teen and Senior Drivers." California Department of Motor Vehicles, Research and Development Branch, Licensing Operations Division. Report Number RSS-03-194. July 2003. Available: [http://www.dmv.ca.gov/about/profile/rd/r\\_d\\_report/Section%206/194-TeenandSeniorReport.pdf](http://www.dmv.ca.gov/about/profile/rd/r_d_report/Section%206/194-TeenandSeniorReport.pdf). *Connecticut*: State of Connecticut, Department of Motor Vehicles. "Statistics on Organ Donors." March 27, 2006. Available at: [http://www.ct.gov/dmv/cwp/view.asp?a=805&q=273344&dmvPNavCtr=\[41752\]](http://www.ct.gov/dmv/cwp/view.asp?a=805&q=273344&dmvPNavCtr=[41752]). *Georgia*: Plaintiff's Motion to Leave to File Second Amended Complaint and Brief in Support, in Common Cause/Georgia, et al., v. Ms. Evon Billups, Case No. 4:05-cv-00201-HLM. Document 79, Filed 2/23/2006. *Indiana*: Indiana Bureau of Motor Vehicles. "BMV: By the Numbers." <http://www.in.gov/bmv/statistics/>. *Iowa*: Iowa Department of Transportation. "Iowa Drivers Records." August 8, 2006. <http://www.dot.state.ia.us/mvd/ods/dlrecords.pdf>. *Kansas*: Department of Revenue. "Department of Revenue Annual Statistical Report, Fiscal Year Ending June 30, 2005." Available at: <http://www.ksrevenue.org/pdf/forms/05arcomplete.pdf>. *Missouri*: Department of Revenue, Informations Systems. "Total Drivers by Age per County." Sept. 15, 2006. *Virginia*: Virginia Department of Motor Vehicles. "Agency Strategic Plan." <http://www.dmv.state.va.us/webdoc/general/pdf/dmvstrategic.pdf>. [http://www.dorx.mo.gov/publicreports/drivers\\_age\\_cnty\\_report.txt](http://www.dorx.mo.gov/publicreports/drivers_age_cnty_report.txt). *Wisconsin*: Wisconsin Department of Transportation. "Drivers License by County." December 1, 2003. Available: <http://www.dot.state.wi.us/drivers/docs/drlscounties.pdf>.

When the number of drivers licenses and the voting-age population are compared for selected states, presented in Table 1, we see that Florida and Georgia report substantially more drivers licenses than their state's voting-age population. Florida's drivers license statistics include persons under age 18, but even assuming 3.9 percent of the records are for persons under voting age, as in Missouri, there are still over an estimated one million more drivers licenses than voting-age population. A nefarious explanation might suggest rampant fraud, or there could be more reasonable

explanations, such as drivers license deadwood, duplicate drivers licenses, inaccurate population estimates, or in the case of Florida, out-of-state military persons who claim Florida as their home state to take advantage of the state's zero percent income tax rate.

Reports from California and Wisconsin subset their state's drivers license statistics by age and gender and compare these to the Census Bureau's age-sex-race population estimates to construct rates of holding a drivers license among these populations.<sup>27</sup> These reports find that younger and older persons are less likely to have a drivers license and that a slightly greater percentage of men have drivers licenses than women. The Wisconsin study locates drivers license holders by zip code and analyzes 2000 census data on minorities and income, among other demographic characteristics, to conclude those without photo identification are more likely to be minorities and poor.

An approach to measure the cross-hatched overlapping area of Figure 1, those eligible to vote and have photo identification, is to compare aggregate statistics of the number of persons with photo identification to estimates of the voting-eligible population. Jeff Milyo and Martin Overby, experts for interveners in Missouri's photo identification lawsuit (who graciously refer to my estimates as "the best estimates of VEP that we know") use this approach.<sup>28</sup> Of the eleven states examined here, only Indiana, Iowa, Missouri, Virginia, and Wisconsin report fewer total drivers licenses than the voting-eligible population. (Milyo and Overby report 4,458,726 total drivers licenses for persons age 18 and older while the state reports a considerably lower number, 4,068,650. If the larger number is used, the number of issued drivers licenses exceeds the voting-eligible population of the state.)<sup>29</sup> For Florida, the number of drivers licenses exceeds the voting-eligible population of the state by 3.7 million.

Statistics indicating the number of drivers licenses exceed the number of eligible voters do not necessarily provide evidence that all eligible voters have a drivers license. First, the state voting-eligible estimates are subject to error, as described above. Second, as Florida's statistics should caution, the number of issued drivers licenses is a function of rules and procedures endemic to a state. Duplicate licenses, under-voting-age persons, out of state persons, suspended and revoked licenses, and other accounting procedures need to be carefully evaluated to validly measure the potential number of eligible voters with a drivers license.

Another approach to measure the cross-hatched overlapping area of Figure 1, and to potentially measure the types of registered voters who do not hold drivers licenses, matches names on voter registration files with those who have photo identification. Unmatched records represent registered voters without photo identification, and information available on voter registration files, such as age, gender and race, depending

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<sup>27</sup>See California, *supra*, and John Pawasarat. "The Drivers License Status of the Voting Age Population in Wisconsin." Employment and Training Institute, University of Wisconsin-Miwaukee, June 2005.

<sup>28</sup> *Kathleen Weinschenk, et al. v State of Missouri, et al. and Jackson County* (Case No. 06AC-CC00656), in support of intervenors, Dale L. Morris and Missouri Senator Delbert Scott, Martin Overby and Jeff Milyo. "Report on *Kathleen Weinschenk, et al. v State of Missouri et al. and Jackson County* (Consolidated), August 30, 2006, at p. 3.

<sup>29</sup> *Supra* at p.3. This is contrary to the findings of their report that the difference between the number of drivers licenses and voting-eligible population in the state is 6,969 (at p. 4). The difference seems to come from an over-estimate of the voting-age population of the state by Milyo and Overby. Their August 10, 2006 estimate is 4,509,709 (at p.3) while my November 1, 2006 estimate is 4,491,414 (see: [http://elections.gmu.edu/Voter\\_Turnout\\_2006.htm](http://elections.gmu.edu/Voter_Turnout_2006.htm)).

on the state, can provide clues as to which registered voters do not hold a drivers license. Unfortunately, this is not a perfectly valid method, either. First, only those who are registered – not eligible – to vote are examined, and thus this approach can at best measure a lower bound on the number of persons who are eligible to vote who lack photo identification. Second, the approach runs into practical problems involved with matching records across two lists.

List-matching produces both false negative and positive matches. A simple approach might match first names, last names, and birth dates common to the lists. Such matching, while theoretically simple, runs afoul of human error which creates false negative matches. An exact match of data will reject names that might have been incorrectly entered into a database or from ambiguity arising from common variations in spelling.<sup>30</sup> In an analysis of voter registration rolls, for example, I found obvious birth date errors, unless one believed people came from the future to vote or were hundreds of years old.<sup>31</sup> Indeed, when one carefully examines massive government databases, errors that might be interpreted as evidence of vote fraud are more likely evidence of poor database management.<sup>32</sup> When one matches databases that may contain spelling and other data entry errors there will be many unmatched records that are difficult to disentangle from records that are truly missing from either database.

In the case of false positives, two people can share the same name and birth date by chance alone, a twist on an elementary statistics puzzle known as the Birthday Problem.<sup>33</sup> While rare for an individual, the expected number of persons matched within a single file (the context of double voting) rises appreciably when considering that among the millions of voters there are hundreds of persons who share the same name. Thus, there is a strong probability that names will match within a list or across lists simply by chance. The number of false positives from list matching will depend on the relative sizes of the matched lists, but for a typical application will likely range in the hundreds.

In my experience of working with voter registration files, I believe that false negatives will typically greatly outweigh false positives as data issues that produce false negative matches are much more frequent than the random chance that produces false positive matches. In the context of determining the number of registered voters with

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<sup>30</sup> Michael P. McDonald. Expert report in *Washington Association of Churches, et al., v Sam Reed*.

<sup>31</sup> See: Michael P. McDonald. Forthcoming. "The True Electorate: A Cross-Validation of Voter File and Election Poll Demographics." *Public Opinion Quarterly*. These were the obvious errors. More difficult to identify are erroneous birth dates that otherwise appear to be reasonable.

<sup>32</sup> For example, over half the claims of double voting alleged by the New Jersey Republican Party was a consequence of voter registration records missing birth dates. See: Michael P. McDonald and The Brennan Center for Justice at NYU. 2005. "Analysis Finds Serious Flaws With New Jersey Voter Fraud Report." December 14, 2005.

<sup>33</sup> For an extension of the Birthday Problem to allegations of double voting, see: Justin Levitt and Michael P. McDonald. 2006. "Seeing Double Voting." Presented at the 2006 American Political Science Association Conference. For examples of the Birthday Problem, see: W. Feller. 1968. *An Introduction to Probability Theory and Its Applications*, 3rd Edition. New York, NY: Wiley and Sons; Edmund A. Gehan. 1968. "Note on the 'Birthday Problem'" *The American Statistician* 22(2): 28; Ned Glick. 1970. "Hijacking Planes to Cuba: An Up-Dated Version of the Birthday Problem," *The American Statistician* 24(1): 41-4; A. G. Munford. 1977. "A Note on the Uniformity Assumption in the Birthday Problem." *The American Statistician* 31(3): 119; M. Sayrafiezadeh. 1994. "The Birthday Problem Revisited," *Mathematics Magazine* 67(3): 220-3; and W. Schwarz. 1988. "Approximating the Birthday Problem" *The American Statistician* 42(3): 195-6.

photo identification, unless unmatched records are carefully evaluated, list matching will likely result in a sizable over-estimate of the number of registered voters lacking photo identification. For example, a report for Georgia's Secretary of State's office identified more than 676,000 registered voters lacked common forms of identification, but was found to have numerous errors, such as listing a member of the state Elections Board, which led to a re-examination that revised the number downward to 105,522.<sup>34</sup>

The issues of false positives and false negatives extend themselves to other list matching applications, for example, to tag ineligible felons or non-citizens that might appear on voter registration or photo identification databases. Florida's felon purge in preparation of the 2000 presidential election notoriously resulted in many false positive matches, particularly among Florida's African-American community.<sup>35</sup> As states bring their 2002 Help American Voter Act compliant statewide voter registration databases online, they are list-matching registration applications against drivers license and social security databases and in some cases rejecting applications for those that do not match, effectively pre-screening new registrations for identification.<sup>36</sup> A Washington district court issued an injunction against the state of Washington prohibiting further rejection in that state of voter registration applications through list matching techniques.<sup>37</sup> The court found that while HAVA requires states to match voter registration applications with drivers license and social security lists, the matching is intended to aid in the assigning of a unique identifying number and not "a restriction on voter eligibility."<sup>38</sup>

## **Discussion**

The Baker-Carter Commission on Federal Election Reform recommended adoption of photo identification when voting. However, that was only half of the recommendation. The commission's report expressed concern that disadvantaged persons might be disfranchised because they could not obtain a card. The recommendation was therefore tempered with a call for photo identification to be "...available without expense to any citizen and...by government efforts to ensure all voters are provided convenient opportunities to obtain a [photo identification card]."<sup>39</sup>

The rush to pass legislation requiring voter photo identification laws has exceeded sound analysis into their potential disfranchising effects. Conclusions drawn from

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<sup>34</sup> See, Walter C. Jones. 2006. "List of Voters Needing ID Hits Funding Snag." *The Augusta Chronicle*, August 3, 2006, p. B8; and Carlos Campos. 2006. "The Fight Over Photo ID Resumes." *The Atlanta Constitution-Journal*, September 2, 2006, available at:

[http://www.ajc.com/search/content/auto/epaper/editions/saturday/metro\\_449f32b4c2860223005e.html](http://www.ajc.com/search/content/auto/epaper/editions/saturday/metro_449f32b4c2860223005e.html).

<sup>35</sup> Gregory Palast. 2000. "Florida's Flawed 'Voter-Cleansing' Program." *Salon*, Dec. 4, 2000.

[http://archive.salon.com/politics/feature/2000/12/04/voter\\_file/print.html](http://archive.salon.com/politics/feature/2000/12/04/voter_file/print.html).

<sup>36</sup> Levitt, Justin, Wendy R. Weiser, and Ana Munoz. 2006. "Making the List: Database Matching and Verification Processes for Voter Registration." *The Brennan Center for Justice at New York University, Voting Rights and Election Series*. March 24, 2006.

<sup>37</sup> *Washington Association of Churches, et al, v Sam Reed* (Case No. C06-0726RSM), August 1, 2006.

<sup>38</sup> See *supra* at p.5. The relevant citations to the 2002 Help American Vote Act are 42 U.S.C. § 15483(a)(1)(A)(i) and (ii). For legislative history in support of the court's interpretation, see: 148 Cong. Rec. S10488-02, \*S10490 (daily ed. Oct. 16, 2002); and H.R. Rep. 107-329(I), at 36 (2001). The court went further in interpreting HAVA's identification requirements for first time registrants as not requiring a match across databases to verify eligibility, see 42 U.S.C. § 15483(b)(2)(A); 3(A); and 3(B).

<sup>39</sup> American University Commission on Federal Election Reform. "Building Confidence in U.S. Elections: Report of the Commission on Federal Election Reform." September 2005, p. 20.

estimates and poor list-matching techniques are bandied about as truth by both sides of the ensuing policy debate without regard to the limitations of these data. Reports in California and Wisconsin are suggestive that disadvantaged populations – the young, elderly, minorities, and the poor – do not have drivers licenses, but these reports rely on state statistics and Census Bureau estimates that are not error free. With the data available at this time, we simply cannot know the true number of eligible voters without a drivers license or other form of photo identification. It may be less or more than the rhetoric suggests.

I propose that we use this debate as an opportunity to seek a sound and reasonable policy. The Baker-Cater commission recommended that policies be implemented immediately to distribute photo identification and that photo identification be used for voting starting January 1, 2010.<sup>40</sup> If the date was delayed to January 1, 2012, the national government could collect the most accurate (though not error free) measure of the number of persons with photo identification through a question on the 2010 decennial census. Analysis could then determine possession of photo identification among disadvantaged populations. No government policy can be expected to be implemented with perfect success nor can we expect to perfectly measure its effect. If rates of persons among disadvantaged groups not possessing photo identification are below some reasonable tolerance level, then I propose that photo identification can be used for voting purposes, with the caveat that the federal government continue to monitor photo identification possession to make sure that all future eligible voters have the opportunity to obtain photo identification. In this way, the goals of the Baker-Carter commission could be realized: distribution of photo identification to all eligible citizens and the use of such identification for voting purposes without disfranchising disadvantaged populations.

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<sup>40</sup> Ibid, p. 19.